

ASSOCIATION FOR COMMON EUROPEAN NURSING
DIAGNOSES, INTERVENTIONS AND OUTCOMES



A C E N D I O

ACENDIO 2007

6th European Conference of Acendio

Nursing Communication in Multidisciplinary Practice
Pflegerische Kommunikation und multidisziplinäre Praxis
Communication infirmière et pratique multidisciplinaire

Oud Consultancy

ACENDIO 2007

Nico Oud
Fintan Sheerin
Margareta Ehnfors
Walter Sermeus

Editors

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Oud Consultancy & Conference Management
Hakfort 621
1102 LA Amsterdam
The Netherlands
Telephone: +31 20 409 0368
Telefax: +31 20 409 0550
E-mail: info@oudconsultancy.nl
www.oudconsultancy.nl

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Foreword

The book that you have in your hand is the proceedings of the 6th ACENDIO conference, this time held in Amsterdam. The Association for Common European Nursing Diagnoses, Interventions and Outcomes is a membership organisation that was established in 1995 to promote the development of nursing's professional language and provide a network across Europe for nurses interested in the development of common terminology to describe the practice of nursing.

I am convinced that healthcare will gain from ICT being applied to areas such as patient care, administration, education and research by enabling the synthesis of evidence, provision of guidelines for practice, providing information for consumers via the Internet and the development of decision support systems for use in close connection to patient care.

ACENDIO has, for more than ten years now, in many ways promoted and facilitated this work in nursing through the provision of conferences, seminars and workshops, as well as via its newsletters and website (www.acendio.net). It is therefore a great pleasure to present this book to you.

The content is a mirror of the current situation primarily in Europe, but also to some extent internationally. This book will provide you with an understanding of our position today and from this you may ponder the huge development that has taken place since the beginning of ACENDIO.

The theme of this meeting "Nursing Communication in Multidisciplinary Practice" has been carefully chosen by the board and the scientific committee as an area of crucial importance to our time, to challenge your thinking and to stimulate further development in this area of nursing. It is an impressive body of knowledge as confirmed by the papers in this book.

Many people have been involved in the work of ACENDIO during the years, and most recently in the compilation of this book and preparing for this conference. Most of them are giving of their time and efforts on a voluntary basis using a lot of their spare time. They are all devoted to the utmost idea of providing a better care for the patients by using the existing knowledge paired with the best technology. They all have my deepest respect and reverence and it is an honour for me to count them among my friends.

Let this conference and the content of this book be a challenge for you all to increase your participation in the shaping of our common future!

Örebro, April 2007

Professor Margareta Ehnfors
President of ACENDIO
University of Örebro, Sweden

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1. – Introduction to standardisation of nursing language (for beginners)

By Anne Casey (UK)

No abstract available

2. – Introduction to nursing informatics

By Charles Docherty (UK) & Anneli Ensio (Finland)

No abstract available

3. – Introduction to ICNP® version 1.0 – International Classification for Nursing Practice: a unified nursing language system

By Amy Coenen (USA), Nicholas Hardiker (UK), Claudio Bartz (USA), Kay Jansen (USA) & Élvio H. Jesus

No abstract available

4. – 3. Nursing interventions based on the International Classification of Functioning, Disability and Health (ICF). (Tutorial)

By Ehnfors, M. (Sweden) & Junger, A. (Switzerland)

Background

Driven by the increased computerization in the health care society there is a need for a classification that comprises multi-professional activities within the health care sector and that facilitates the registration of health care interventions both on a detailed and aggregated level. In both Sweden and Switzerland work is ongoing to develop interventions within the health care sector. The International Classification of Functioning, Disability and Health (ICF) (WHO 2001) was developed for descriptions of functions and disabilities. The development of interventions in the two cases discussed below was based on the ICF.

The Swedish case

Existing classifications of health care interventions, used for quality assurance issues and for decisions on resource allocation in Sweden, do not capture all types of health care interventions. Although there is an existing national classification for nursing called the VIPS-model (Ehrenberg et al 1996), which has 12 key words for interventions on a more generic and aggregated level, there is a need for common expressions on a more detailed level. The work of professional groups like physiotherapists, occupational therapists, and nurses is partly invisible, which implies that patient care is not represented in health records in all its complexity.

A multi professional collaborative work started, therefore, to develop a classification for interventions. The work was administrated and partly financed by the National Board for Health and Welfare in Sweden and coordinated by the Swedish Society of Nursing. Several work- and reference groups have been established. The work process is presented elsewhere (Florin et al 2005). Included in the classification should be interventions for assessment and investigation as well as for treatment of health related problems. The professional groups reached a common understanding about the use of the ICF as a unifying framework for the new classification. This was seen as a good way of overcoming professional differences and at the same time facilitating the process of reaching a common language for health interventions. The foundation for this work is that each professional group must respect and value the others' existing system. Today there is a preliminary classification available for testing that can be downloaded from the website of the National Board of Health and Welfare in Sweden. Examples from the test module of investigating interventions and treating interventions in this still ongoing work (Tables 1 and 2).

From ICF	Proposed investigating interventions
Psychological functions	Investigation of psychological functions
Consciousness functions	Assessing consciousness functions
Orientation functions	Assessing orientation functions
Intellectual functions	Assessing intellectual functions
Global psychosocial functions	Assessing global psychosocial functions

From ICF	Proposed investigating interventions
Energy and drive functions	Assessing energy and drive functions
Sleep functions	Assessing sleep functions
Attention functions	Assessing attention functions
Memory functions	Assessing memory functions
Psychomotor functions	Assessing psychomotor functions
Emotional functions	Assessing emotional functions
Perceptual functions	Assessing perceptual functions
Thought functions	Assessing thought functions
Higher-level cognitive functions	Assessing higher-level cognitive functions
Mental functions of language	Assessing mental functions of language

Table 1: Examples from the test module of interventions for investigation

From ICF	Proposed treating intervention
Consciousness functions	Monitoring consciousness
Orientation functions	Training orientation functions
Intellectual functions	Training intellectual functions
Energy and drive functions	Training energy and drive functions
Sleep functions	Facilitating sleep functions
Attention functions	Attention training
Attention functions	Distraction
Memory functions	Memory training
Psychomotor functions	Training psychomotor functions
Emotional functions	Emotional support
Perceptual functions	Perceptual training
Higher-level cognitive functions	Cognitive training
Mental functions of language	Aphasia training
Mental function of sequencing complex movements	Apraxia training

Table 2: Examples from the test module interventions for treating

All interventions are described without any link to method for application; the same intervention may be implemented in different ways depending on method used in the specific situation. There is no link to severity or resources needed; the same code can be used for a plain activity as well as for a very complex and time and resource demanding intervention. The interventions are neutral in relation to etiology; the same code can be used independently of nursing or medical diagnosis.

Testing of the KVA needs to be done in various clinical areas both within hospital and community care, systematically, preferably from a specific perspective. Important clinical areas are acute care, somatic care, pediatric care, psychiatric care, geriatric care, primary health care, rehabilitation, home care and nursing homes. One perspective might be a patient group such as patients with stroke or hip fracture. There has been some limited testing in Sweden that is under analysis. During the tutorial we will also discuss the KVA test module in relation to the Swedish VIPS model.

The Swiss case

Switzerland is composed of 26 states (cantons), which are autonomous for their healthcare policy. The actual statistical system on health apply mainly to the inpatient/medical setting and omit one group of major health care providers, the nurses. National standardized general data still do not exist to answer the following questions:

- What is nursing care (services, interventions, required care, etc.);
- What purpose does nursing serve (nursing diagnostics, nursing phenomena, etc.).

Systematic data collection appeared to be therefore essential, not only due to the important role nursing plays in providing care but also due to the substantial resources and jobs involved. Another reason for implementing a systematic approach is the considerable lack of information on financing nursing care services, which until now have been dealt with somehow ineffectively.

The general concept of NURSING data was developed between 1998 and 2000 (Berthou and Junger 2000) and the go-ahead for its realization was given in June 2000. The end point of the development and test phase was June 2006. The project has now reached the implementation stage. The aim of the NURSING data project is to develop a national nursing information system which will allow the collection of nursing data in the three areas of healthcare (community care, long-stay institutions and the hospital sector), across all specialties and over the four linguistic regions. This system should be compatible with the other Swiss classification systems (federal statistics and medical classifications), allow for international comparisons and take into account the law on the protection of data. Moreover, it will be flexible and as complete as possible, in order to avoid repeated data collections.

The NURSING Data project aims to produce:

- A list of appropriate variables which describe the “how” and “why” of nursing in Switzerland and which takes into account the needs of the various partners: the Swiss Nursing Minimum Data Set (CH-NMDS) (Junger 2003).
- An accepted nursing terminology for phenomena and interventions, adapted to the different areas of clinical practice.
- A validated system of data analysis, allowing different types of feedback according to specific needs (clinical, research, finance, etc.).

Nursing aggregated classifications

In a non-standardized environment (Hardiker 2000) the pragmatic solution followed by the project was the development of a National Nursing Terminology system, composed by the classifications:

- A nursing phenomenon has been defined by NURSING data as a “health aspect of one or of several persons, which justifies the nursing interventions”. 51 items (focus) can be combined with a judgment: risk, resource, problem;
- A nursing intervention is defined as “a set of nursing actions which are organized with the intention to achieve a nursing goal”. 56 items (target) have to be completed by 4 verbs (action).

The nursing intervention classification

Model

Both classifications are built on the base of the ISO 18104 standard. The intervention classification terms are limited to two elements, the action and the target. The recipient of care is implicit because it's the NMDs subject (Figure 1). The foci (phenomena) and targets contents were given by the working groups and Delphi panel. The items of the action list are taken from the International Classification for Nursing Practice (ICNP, Axis 2A – Nursing Actions) (ICN, 2005).

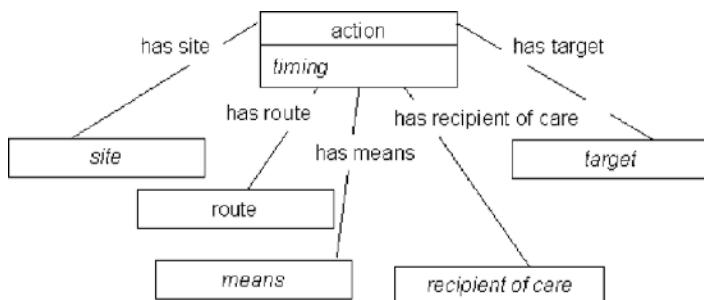


Figure 1: The nursing intervention model (ISO, 2003)

Structure

A unique framework was chosen for the two classifications. The ICF hierarchy responds to most of our criteria.

Structure	Target	Action ICNP
ICF (WHO) ANATOMICAL STRUCTURE ORGANIC FUNCTION ENVIRONMENTAL FACTORS ACTIVITY AND PARTICIPATION	56 items	<ul style="list-style-type: none"> ⌚ Observe/evaluate ⌚ Inform/teach ⌚ Guide/assist ⌚ Act/do

Examples:

Body functions

Chapter 4. Functions of the cardiovascular, haematological, immunological and respiratory systems

- Observe the cardiovascular system;
- Teach about the haematological and immunological systems;
- Assist the respiratory system.

Activities and participation

Chapter 4: mobility

- Carrying, moving and handling of objects;
- Walking and moving.

A short analysis made in 2002 showed that most of the hierarchy items were equivalent in the NNN framework.

Concluding remarks

Our society is quickly becoming increasingly computerized, and the health care sector is slowly following. Inherent in this development are increased demands, both from within the profession and from others, for standardization of the health care language including interventions. Some crucial areas concern the possibility of transferring information in a secure way between units, as well as the ability to aggregate data and to follow up on and evaluate the effects of various activities within nursing and other disciplines. From a nursing perspective, it is of great importance that we facilitate relevant recording, thereby making nursing care visible as a foundation for good decisions and conclusions.

To arrive at good decisions for patient care, together we need to process some significant issues, such as:

- How much granularity is needed for meaningful follow-ups?
- What areas are crucial for an optimal future development of nursing interventions?
- Does it express nursing sensitive and research based interventions good enough?
- How can different professions work together for the benefit of the patient, aiming at increasing patient safety and care quality?
- What are the core areas for nursing care recording?

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5. – Introduction to SNOMED Clinical Terms® (SNOMED CT®): the universal health care terminology

By Cyndie Lundberg (SNOMED international)(USA)

No abstract available

6. – NANDA International: the development and refinement of nursing diagnoses

By T. Heather Herdman (president of NANDA)

No abstract available

7. – The Outcome-Present-State-Test (OPT) Model of reflective clinical reasoning in practice and education

By Daniel Pesut (USA) and Carmen Espinosa (Andorra)

No abstract available

8. – Standardisation of nursing language (advanced)

By ACENDIO Standardisation Committee: Saranto, K. (Finland), Junger, A. (Switzerland), Odenbrait, M. (Switzerland), Sermeus, W. (Belgium), Talbot, M. (England), Coenen, A. (USA), Ensio, A. (Finland), Moelstad, K. (Norway) and Thoroddsen, A. (Iceland)

Introduction

This tutorial will address the main standardization issues. Firstly, the process of translation from an international classification to a national classification will be discussed from the perspective of three different countries. Secondly, the relationships between terminologies, the purpose of mapping and approaches to mapping will be presented. The cultural validation of translated terminology will then be discussed with consideration of the related activities for standardization work in ACENDIO.

The outcomes of the tutorial are that the participants will be able to:

- discuss the current status of terminology translation activities in some European countries
- discuss approaches to mapping and cultural validation of terminology.

The issues that will be discussed are:

- The translation of a standardized terminology: why do it;
- NANDA as an example (Asta Thoroddsen and Matthias Odenbrait).
- Purposes and approaches to mapping: how to do it
- ICNP as an example (Amy Coenen).
- Experiences about cultural validation: how we have done it?
- Clinical Care Classification as an example (Kathryn Moelstad and Anneli Ensio).
- Translation - nursing issues with terminology translation: what do we know and what are the gaps?
- Discussion and further activities for the standardization committee

9. – Keynote 1 – The art, science and complexity of clinical reasoning. (Keynote)

By Pesut, DJ. PhD APRN BC FAAN (USA)

Introduction

Edward Tufte (2006) in his book, Beautiful Evidence, observes the common analytic task in nearly all disciplines is to help people understand causality, make multivariate comparisons, examine relevant evidence and assess the credibility of evidence and conclusions. There is an art, science and complexity to the thinking that supports clinical reasoning. The purpose of this presentation is to introduce the OPT model of clinical reasoning and encourage interdisciplinary dialogue regarding the usefulness of the model to help people master the common analytic tasks noted by Tufte (2006). The OPT model is a meta-model of clinical reasoning that may well have value for teaching clinical reasoning and supporting interdisciplinary collaboration, and communication. Engaging in dialogue about the art, science and complexities of clinical reasoning is intended to stimulate learning and promote interdisciplinary teamwork.

Framing Phenomena through Knowledge Representation

Clinical reasoning requires an understanding of the issue of knowledge representation in specific disciplines and mastery of critical, creative, systems and complexity thinking skills. “Framing” a situation involves giving a meaning to a set of facts. Frames are mental models that help clinicians make sense of experience given a particular set of values, beliefs, theories, conceptual orientation or discipline specific world views (Kaufman et al 2006). Diverse disciplines frame situations in different ways. Physicians frame issues in terms of disease and pathophysiology. Nurses frame issues in terms of people’s responses to health states and conditions. Physical therapists frame issues in terms of function and rehabilitation. Social workers frame issues in terms of system resources that help people manage social systems in which they live and work. Each of these “frames” builds on the professional identities, values, beliefs, theories and conceptual frameworks of those individuals who operate within their disciplinary perspective. Nearly every discipline uses knowledge representations or classification schemes that organize complex phenomena into understandable categories. Knowledge classification schemes provide discipline specific clinical vocabularies. These clinical vocabularies become the content of clinical reasoning efforts. Reflecting on issues of framing and reframing in interdisciplinary work helps clarify disciplinary contributions and efforts toward a transcendent patient care goal or outcome.

A number of clinical vocabularies are shared among disciplines. For example, several clinicians reason from a disease management frame of reference, whereas nurses may use the knowledge classification of nursing diagnoses (NANDA), interventions (NIC) and/or outcomes (NOC). Other nurses may choose to use the 7-Axis Model of ICNP. The WHO International Classification of Disease or the WHO International Classification of Functioning, Disability, and Health may be preferred by some. Other clinicians may be more familiar with the Systematized Nomenclature of Medicine-Clinical Terms (SNOMED-CT). Classification schemes provide a conceptual, clinical or disciplinary lens through which to view phenomena and help structure clinical thinking and reasoning. As Davis et al (1993) suggest, a theory of knowledge representation is a theory of reasoning. It could be argued that differences of opinion arising in interdisciplinary teams are differences in knowledge representation and “framing” related to each discipline’s phenomena of concern. Maybe one way to support interdisciplinary communication is to begin a dialogue about discipline specific differences in “framing” and dialogue about how differences in framing

are complementary rather than competitive in service to patient care? Another strategy that might support interdisciplinary communication is to consider how a meta-model like OPT is used to transcend and embrace cooperation among members of an interdisciplinary team. The meta-components of OPT are capable of application to any discipline. What makes the OPT model discipline specific, is the framing and knowledge classification or clinical vocabularies used by the discipline. Essential elements of clinical reasoning include attention to the patient story, given the context, framing the situation, setting up of contrast conditions between problem-outcome states, paying attention to multivariate comparisons and developing a strategy for decision making and judgment associated with evidence of outcome achievements. The OPT Model (Pesut and Herman 1998, 1999) builds on the heritage of the nursing process and fits contemporary clinical practice needs for outcome specification and attention to issues of clinical judgment (Pesut 2001).

The OPT Model of Clinical Reasoning

The OPT Model of Clinical Reasoning provides a structure, and process for consideration of patient stories in light of discipline specific knowledge representations. Relating elements of the story in systematic ways requires application of critical, creative, systems and complexity thinking strategies. These thinking strategies lead to framing, understanding of system dynamics and ultimately the juxtaposition of present states with desired outcome states. Decision making leads to concurrent consideration of interventions that facilitate the transition from the defined present state to the desired outcome state.

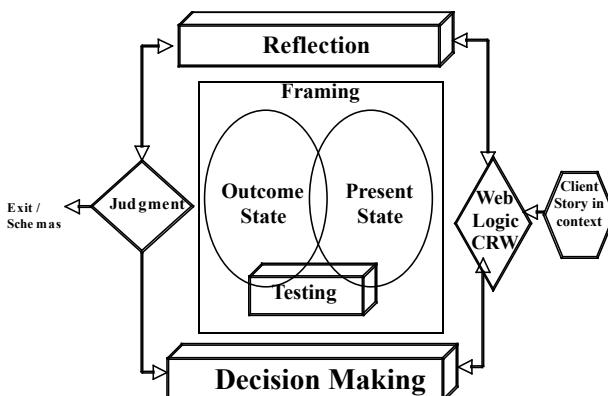


Figure 1: The OPT Model of Clinical Reasoning (Pesut and Herman 1998, 1999)

The Outcome-Present State-Test (OPT) model (Figure 1) emphasizes reflection, outcome specification and tests of judgment within the context of individual patient stories. The models advocates clinicians simultaneously consider and understand relationships between and among competing diagnoses and consider the balancing and reinforcing loops, and causal connections among the diagnoses. Relationships among diagnoses are represented in a visual way with a tool called a Clinical Reasoning Web (CRW). As patterns and relationship are linked and connected what often emerges, is complexity insight and understanding of relationships in the complex system dynamic of patient care needs. Iterative reflection and expressed relationships between and among multivariate issues leads to the identification of an “attractor” or “key stone” issue that is a leverage point in the system dynamic.

Discerning the dynamic system complexity of relationships enables one to focus effectively and efficiently on a key factor or variable that sustains the system dynamic. Through consideration and

inter-relating the facts, clinicians discover patterns among competing patient care problems and needs. Thus, OPT is an iterative, recursive concurrent information processing model that requires clinicians to consider the cause and effect-balancing and reinforcing loops among numerous problems simultaneously. The CRW visually represents the “web” of causal loop diagrams and helps explicate balancing and reinforcing connections among issues. Use of a CRW fosters development of both systems and complexity thinking. The emergent pattern of relationships in a web helps to zero in on key stone issues. Analysis and evaluation of complex associations, balancing-reinforcing loops, and cause and effect relationships leads to the identification of an “attractor” in the complex system of patient care problems. The attractor or “keystone issue” that emerges is a result of the analysis and synthesis of relationships between and among diagnoses. This “keystone issue” is the focal point for determining the complementary nature associated with a problem-outcome juxtaposition (Kelso and Engstrom 2006). For example, if the problem is pain the complementary outcome is comfort. The “keystone problem-desired outcome” representation requires creative thinking, framing and reframing of the identified problem into a positive outcome. After this evidence or clinical indicators are established as criteria for outcome achievement. Clinical decision-making in the OPT model is the choice of interventions that help progress clients from present to desired outcome states. All the while clinicians attend to the four C’s of clinical judgment. The first C of clinical judgment involves creating a “contrast” or juxtaposition between a present and desired state. Second, clinical judgment involves identification of selected “criteria or clinical indicators” that are used to detail outcome achievement. Third, clinical judgment requires “concurrent consideration” of intervention influences effecting transitions to desired outcome states. Finally clinical judgment requires a “conclusion” about outcome achievement. Judgments made, contribute to clinician’s schemas or cognitive maps that support neural network development that guide future thinking, analysis and action. The self-talk and reflection or metacognition that supports clinical reasoning involves several types of thinking.

Types of Thinking that Support Clinical Reasoning

Perkins and Tishman (1993) recommend a need to augment the language of thinking. They note there are “differences that make a difference” in our conceptions of thinking. For example, they note we language and differentiate thinking categories. For example, thinking processes are “languaged” through such terms as examine, justify, elaborate, reflect, infer. Thinking products are categorized as a theory, hypothesis, summary, deduction, or guess. Thinking stances are described as agreements, disagreements, questions, concurrence, doubts, or disputes. Thinking states can be defined like confusion, awe, wonder, or being overwhelmed. Reflect on the complexity of thinking in clinical reasoning and how seldom we make explicit the critical, creative, systems and complexity thinking involved in clinical reasoning. Perhaps we are becoming more explicit in our notions of the complexity of thinking in clinical reasoning efforts.

Scheffer and Rubenfeld (2000) published results of a Delphi study to derive a consensus statement on the nature of critical thinking in nursing. An international panel of expert nurses from nine countries: Brazil, Canada, England, Iceland, Japan, Korea, Netherlands, Thailand, and 23 states in the U.S. participated in this study between 1995 and 1998. The panel identified and defined 10 habits of the mind (affective components) and 7 skills (cognitive components) of critical thinking in nursing. The habits of the mind included: confidence, contextual perspective, creativity, flexibility, inquisitiveness, intellectual integrity, intuition, open-mindedness, perseverance, and reflection. Skills of critical thinking in nursing included: analyzing, applying standards, discriminating, information seeking, and logical reasoning, predicting and transforming knowledge. The consensus statement on critical thinking describes critical thinking in nursing as “an essential component of professional accountability and quality nursing care. Critical thinkers in nursing exhibit these habits of the mind: confidence, contextual perspective, creativity, flexibility, inquisitiveness, intellectual integrity, intuition, open-mindedness, perseverance, and reflection. Critical thinkers in nursing practice the cognitive skills of analyzing, applying standards,

discriminating, information seeking, logical reasoning, predicting and transforming knowledge” (Rubenfeld and Sheffer 2000). While critical thinking is a valuable tool in the acquisition of effective reasoning; there are other thinking skills that are perhaps even more important than critical thinking that support the acquisition of clinical reasoning expertise. These are the skills of creative thinking, systems thinking, and complexity thinking.

Creative thinking is a requisite meta-cognitive skill that supports clinical reasoning. Creative thinking is a meta-cognitive process of generating novel and useful associations, attributes, elements, images, and abstract relations or sets of operations that better solves a problem, produces a plan, or results in a pattern, structure or product not clearly present before (Pesut 1984,1985). Metacognitive knowledge consists primarily of knowledge or beliefs about what factors or variables act and interact in what ways to affect the course and outcome of cognitive enterprises (Flavell 1979). It is one’s metacognitive knowledge that leads one to select, evaluate, revise and or abandon a line of thinking. Kuiper and Pesut (2004) have expanded notions about the relationships between cognition and metacognition relative to clinical reasoning skill acquisition.

Two additional types of thinking skills required for effective clinical reasoning are systems thinking and complexity thinking. The Clinical Reasoning Web used to support learning of the OPT Model is a teaching strategy that supports the development of systems and complexity thinking. Systems’ thinking encompasses a number of methods, tools, and principles oriented to the examination and explanation of the interrelationships of variables and or forces as part of a common process. Systems’ thinking makes explicit both the visible and invisible relationships among variables in a system dynamic. Through an analysis of balancing and reinforcing loops, causal diagrams, and attention to events, and patterns of behavior over time, complexity insights are revealed (Bellinger n.d.).

It is the use of a CRW that helps illustrate relationships between and among diagnoses given a particular client story. Systems’ thinking helps to reveal reinforcing loops, balancing loops, and delays to system dynamics. Consider the interactions and inter-relationships among the four variables of pain, anxiety, energy management and self care given a specific patient story. What and how are patterns among these variables mapped, explained and described? As anxiety increases, does pain increase and if so, how specifically does the increased pain influence and affect energy management and self care? A systems thinking approach informs reasoning among diagnoses, and helps explain causality and multivariate comparisons among balancing and reinforcing loops related to the patient’s story and system of problems/care needs.

Complexity thinking has emerged as an explanatory model for a variety of phenomena. Complexity thinking is derived from chaos theory and is currently a new cultural metaphor (Briggs and Peat 2000). Chaos theory teaches when our psychological perspective shifts through moments of amplification and bifurcation our degrees of freedom expand and we experience being, truth and creativity. Small changes can have big effects, and diverse chaotic systems self-organize around attractors. Complexity thinking helps us master the complexity of clinical reasoning and the complementary nature of paired relationships (Kelso et al 2006) that sustain outcome-problem specification and clinical actions/ interventions that lead to judgments about outcome achievements. Given the structure, as well as the teaching and learning strategies associated with the OPT model, clinicians, from a variety of disciplines may be able to adopt or adapt the model to achieve some of the goals of analytic reasoning. Hopefully the OPT model will help people understand causality, make multivariate comparisons, examine relevant evidence and assess the credibility of evidence and conclusions as they reason about complex patient care problems.

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Contact

Daniel J. Pesut PhD APRN BC FAAN
 Professor and Associate Dean for Graduate Studies
 Indiana University School of Nursing
 1111 Middle Drive Nu 136
 Indianapolis, Indiana 46202 USA
 e-mail: dpesut@iupui.edu

10. – Keynote 2 – The relevance of interdisciplinary communication for integrated patient care

By Prof. Guus Schrijvers (Netherlands)

No abstract available

11. – Standards to support the ongoing development and maintenance of nursing terminologies

By Hardiker, N. (UK) and Coenen, A. (USA)

Introduction

Version 1.0 of the International Classification for Nursing Practice (ICNP®) was released by the International Council of Nurses in 2005, building on previous versions (i.e. α, β and β2). ICNP® is described as “a unified nursing language system. It is a compositional terminology for nursing practice that facilitates the development of and the cross-mapping among local terms and existing terminologies” (International Council of Nurses 2007a). In contrast to previous versions, ICNP® Version 1.0 has been developed using the Web Ontology Language (OWL) (World Wide Web Consortium 2004) within the Protégé ontology development environment (Stanford Medical Informatics 2006). As such ICNP® might be considered a formal terminological system (rather than for example a statistical classification). A Technical Specification developed under the auspices of the International Organization for Standardization, ISO/TS 17117 Health informatics – Controlled health terminology – Structure and high-level indicators, seeks “to document to principal ideas, which are necessary and sufficient to assign value to a controlled health vocabulary” (International Organization for Standardization 2002). ISO/TS 17117 was published in 2002. Even though the Technical Specification has been available for 5 years, there is little reported evidence of its practical applicability. It is currently under review. Certain aspects of focus on issues around the ongoing development or maintenance of controlled health terminologies and in this respect it identifies a number of relevant ‘desirable characteristics’ for formal terminological systems such as ICNP®. In this paper we seek to determine the suitability of ISO/TS 17117 for assigning value to formal terminologies. We do this by judging the degree of conformance of ICNP® to a set of characteristics identified within ISO/TS 17117. This is an initial exploratory study. We do not consider at this stage issues around activities other than ongoing development and maintenance e.g. evaluation; nor do we consider characteristics that pertain to other terminological systems such as statistical classifications.

Method and results

For each characteristic under examination we reviewed relevant documentation, and applied our knowledge of ICNP®, OWL and Protégé in order to assess degree of conformance of ICNP® to ISO/TS 17117. The chosen characteristics and associated results are presented in Table 1.

Feature	Solution for ICNP Version 1.0
<i>Concept orientation</i>	
Concept-orientation The basic unit of a terminology must be a concept, which is the embodiment of some specific meaning and not a code or character string	The basic unit of Version 1.0 is an OWL class (representing a nursing entity), with codes, preferred terms and synonyms maintained in separate tables
Non-redundancy There shall not be more than one concept identifier in the terminology with the same meaning e.g. ‘Wound dressing’ and ‘Dressing’ (Note that as the $\beta 2$ Version comprises multiple axes, there were also multiple parallel hierarchies e.g. between the Target axis and the Means axis. This also introduced redundancy)	The migration to a single hierarchy from the multi-axial representation of the $\beta 2$ Version has necessitated a re-examination of all classes across parallel hierarchies e.g. the target of an intervention or the means of carrying out that intervention
Non-ambiguity No concept identifier shall have more than one meaning e.g. ‘Dressing’ – as in wound dressing, and ‘Dressing’ – as in putting on clothes	The use of OWL within Protégé prohibits the use of duplicate knowledge names; moreover, in the asserted Version 1.0 hierarchy, multiple parents are not allowed. This limits substantially the possibility of ambiguity
Non-vagueness Concept names shall be context free e.g. terms such as ‘Well-controlled’ that rely on a parent term such as ‘Diabetes’ for their interpretation shall not be allowed	Entities, represented as OWL classes within Version 1.0, are described by fully-specified knowledge names i.e. context is included in the names of classes so that they can be interpreted independently of their hierarchical placement, often to the detriment of readability e.g. ActualNegativeAbilityToWalk
Internal consistency Relations between concepts should be uniform across parallel domains within the terminology	This would be difficult to demonstrate in practice without performing pairwise comparisons across the entire terminology. However the high degree of compositionality within Version 1.0 and consistent patterns of pre-coordination do serve to promote consistency across parallel domains e.g. GrandfatherRole is a child of FamilyMemberRole; through composition Grandfather is necessarily a child of FamilyMember
<i>Purpose and scope</i>	
Statement of purpose and scope Any terminology shall have its purpose and scope clearly stated in operational terms so that its fitness for particular purposes can be assessed and evaluated	The International Council of Nurses provides a clear statement of purpose and scope for ICNP®: “The ICNP® is a unified nursing language system. It is a compositional terminology for nursing practice that facilitates the development of and the cross-mapping among local terms and existing terminologies” (International Council of Nurses 2007b)

Feature	Solution for ICNP Version 1.0
Coverage The extent to which the depth of coverage is incomplete shall be explicitly specified for each domain and purpose e.g. a terminology developer might state that their terminology does not cover job role below the level of principal professional grouping	There is no evidence for Version 1.0 of incompleteness of depth of coverage. However this would be difficult to demonstrate in practice without specifying depth of coverage for each entity represented within the terminology
Comprehensiveness The extent to which the degree of comprehensiveness is incomplete shall be explicitly specified for each domain and purpose	Version 1.0 complies by inclusion rather than exclusion i.e. ICNP® comprises the following nursing elements: phenomena (diagnoses), actions, outcomes (International Council of Nurses 2007b)
Mapping The degree to which the terminology is “mappable” to other classifications shall be explicitly stated	Previous work has demonstrated that it is possible to map other terminologies to ICNP® through processes that reveal resolvable deficiencies in source and target terminologies and in the mapping process itself (Hardiker et al 2006). However there is no explicit statement that indicates the degree to which mapping is possible. This would be difficult to demonstrate in practice without specifying degree of ability to map to all known classifications
<i>General organisation</i>	
Structure The structure of the terminology will be appropriate for the stated purpose(s) and domain of use	Version 1.0 conforms to current best practice for reference terminologies (i.e. the mechanism for cross-mapping as cited in the statement of purpose and scope) e.g. it is underpinned by description logic and amenable to automated reasoning
<i>Additional organisational characteristics of formal systems</i>	
Formal definitions A compositional system shall contain formal definitions for non-atomic concepts and formal rules for inferring subsumption from these definitions	Within OWL, conditions associated with classes represent formal definitions for entities. OWL is underpinned by description logic that helps to determine subsumption relations among classes
Explicitness of relations The formal behaviour of all relations among concepts in a concept system shall be explicitly defined	Within OWL, relations among classes are explicit – there are no implied relations. Version 1.0 is represented in OWL with associated description logic for determining the behaviour of relations among classes
Composite concepts Composite concepts shall fit into a practical model that extends a terminology	The Version 1.0 ontology comprises OWL classes, properties and conditions. The conditions form part of and serve to extend Version 1.0

Feature	Solution for ICNP Version 1.0
Normalisation of semantics The extent to which normalization of semantics can be performed formally by the terminology shall be clearly indicated	Although not explicitly stated in the context of Version 1.0, OWL has an explicit formal semantics (World Wide Web Consortium 2004) that can be subjected to automated description logic-based reasoning. It is the responsibility of the reasoner used to explicitly state the degree of normalisation that can be performed
Multiple hierarchies Concepts shall be accessible through all reasonable hierarchical paths	OWL permits multiple parents for individual classes. While in the asserted Version 1.0 hierarchy, multiple parents are not allowed (see Non-ambiguity), Version 1.0 is multi-hierarchical after reasoning
<i>Maintenance</i>	
Context-free identifiers Unique codes attached to concepts must not be tied to hierarchical position or other contexts	Sequential numeric codes are arbitrarily-assigned to OWL classes within Version 1.0 (see Concept orientation)
Persistence of identifiers Codes shall not be reused when a concept is obsolete or superseded	
Version control Updates and modifications shall be referable to consistent version identifiers	
Editorial information New and revised terms, concepts and synonyms shall have their date of entry or effect in the terminological system, along with pointers to their source and/or authority	There is no evidence of any systems to support quality management and version control for ICNP®
Obsolete marking Superseded entries shall be so marked, together with their preferred successor	

Table 1: Degree of conformance of ICNP® Version 1.0 to a subset of characteristics within ISO/TS 17117

Summary

Through this exploratory study we have sought:

- to demonstrate the practical applicability of ISO/TS 17117 to its intended users (i.e. ‘governments, funding agencies, terminology developers, terminology integration organizations, and the purchasers and users of controlled health terminology systems’)
- to facilitate the further development and maintenance of ICNP®.

This paper does not constitute a comprehensive statement of conformance of ICNP® to ISO/TS 17117. However, by identifying positive characteristics concerning purpose, scope and organisation, while highlighting significant deficiencies concerning quality management and version control, this initial assessment has demonstrated the usefulness of ISO/TS 17117 for developers of terminologies such as ICNP®.

It has also raised issues to be resolved for ISO/TS 17117, such as how in practical terms to specify Internal consistency, Coverage and Mapping, and whether it is necessary to specify for a formal terminology its semantic properties or whether this should more properly be the responsibility of the particular representation or reasoner used.

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Contact

Nicholas R Hardiker RN PhD
Salford Centre for Nursing, Midwifery and Collaborative Research
C715 Allerton Building
University of Salford
M6 6PU UK
phone: +44 161 295 7013
email: n.r.hardiker@salford.ac.uk

12. – Mapping NNN to the International Classification of Functioning, Disability and Health (ICF)

By Swanson, E., Moorehead, S., Johnson, M. and Maas, M. (USA)

Efforts are under way to map NANDA diagnoses, NIC labels and NOC labels to the International Classification of Functioning, Disability and Health (ICF) developed by the World Health Organization first published in 1980 using the current version adopted in May 2001 by the fifty-fourth World Health Assembly. NIC includes the full range of nursing interventions from general practice and specialty areas. NOC contains outcomes for individuals, family caregivers, the family and the community that can be used in all settings and clinical specialties. The ICF has 2 parts: Functioning and Disability and Contextual Factors and is designed to be used with any individual, not just the disabled. The classification focuses on describing individuals with an array of health and health related problems within the context of environmental and personal factors. This project maps the major concepts used in NANDA International, NIC and NOC to the terms used in the ICF classification and will assist nurses wishing to use the standardized languages along with terms in the ICF. The findings will include: 1) the linkages created between the terms in these classifications; 2) suggestions for additions to the nursing languages based on this evaluation; and 3) issues identified from the mapping process.

Contact

E. Swanson
458 NB
College of Nursing
University of Iowa
Iowa City, Iowa 52242
phone: +3193357110
e-mail: elizabeth-swanson@uiowa.edu

13. – International cooperation among nursing scientific societies: toward development of standardized nursing classification systems

By Hongo, K., Fujimura, R., Nakajima, T., Ikematsu, Y., Egawa, K. and Emoto, A. (Japan)

Introduction

The Japan Nursing Society of Nursing Diagnosis (JSND) was started as the Japan Nursing Diagnosis Research Group in 1991. JSND was founded as the National Nursing Academic Society in 1995, and the Science Council of Japan accepted the JSND as a member of the Science Council of Japan in 1995 based on the large size of its membership and its financial backing. Since 1995, JSND has been supporting the dissemination of standardized professional nursing language by providing a conference annually to promote and advance the integration of nursing diagnosis into daily patient care in multidisciplinary practice.

The International Communication Committee was established at the 4th Annual JSND Conference in 1998 with the aim of facilitating our international communication and sharing our research findings at international conferences. Following the foundation of JSND, there have been twelve successful annual conferences. We held the 12th JSND Conference in Nagoya International Conference Center, Japan on June 24th and 25th 2006. This particular conference focused on the integration of nursing diagnosis into computerized patient care systems. Over two thousand six hundred nurses attended this conference and we exchanged our research findings regarding implementation of nursing diagnosis and opinions on the usefulness of terminologies and classifications, the use of nursing diagnosis, interventions and outcomes for nursing practice.

At the Conference, we, the members of the International Communication Committee, presented by poster our analysis of the content of the last twelve conferences focusing especially on the content of the keynote speeches given by overseas speakers. The findings showed the constant progress of nursing science in Japan due to the effort of development of standardized nursing terminology, that is nursing diagnosis, interventions and outcomes. In 2001, the Ministry of Health and Labor of Japan promulgated a new ordinance which ordered that computerized patient data systems must be set up by all large hospitals, with over 400 beds, by 2006. JSND has been working to establish standardized nursing terminology that is effective in the ever changing Japanese health care society. This is done through sharing important information obtained through communication between the International Nurse Informatics' Society and the faculty of the Center for Nursing Classification and Clinical Effectiveness. We would like to present the history and progress of JSND and how we are accomplishing our professional goals through dissemination of the standardized nursing terminology.

Content

Cooperation between the JSND and North America Nursing Diagnosis Association International (NANDA International), and its the influence on the development of JSND.

The location of each conference is chosen according to its suitability for JSND members, clinical nurses, nurse researchers, and nurse educators. We have had twelve successful conferences in different locations such as Tokyo area, Kansai (west of Tokyo), Tohoku area (north of Tokyo) and Kyushu (southern island in Japan). The theme of each conference reflected the needs of health service consumers and issues perceived by JSND to be current. In order to expand the theme of conference, JSND has invited guest speakers from overseas for each conference. They have included speakers from, for example, NANDA International Board of Directors, NANDA

International Diagnosis Review Committee and the Taxonomy Committee. Analysis of the content of these talks revealed four phases:

1. period of enlightenment and sharing the knowledge of nursing diagnosis;
2. accurate utilization of nursing diagnosis in clinical settings;
3. evidenced based nursing diagnosis;
4. cooperation between NANDA International and JSND.

As mentioned above, guest speakers' special talks enhanced the minds of the audience in relation to nursing diagnosis and encouraged the audience to apply nursing diagnosis more accurately in their own clinical settings. The JSND Conference is held once a year in June or July. The numbers of those in attendance vary from 2600 to 3200. Compared to the number of other nursing conferences' attendees, JSND's large attendance is one of its features.

Trends of studies reported at the JSND conferences and articles submitted to the JSND journals

The trends of oral presentations and poster sessions reported at the last eleven annual (1995-2005) JSND conferences are as follow:

1. There were 62 studies in the area of nursing education including lectures, clinical practicum and curriculum;
2. There were 133 studies in clinical settings including investigation of the current status of clinical areas, application reports, continuous education, development of systems, evaluation studies, development of a website simulator and linkage of NANDA-NOC-NIC;
3. There were 90 studies related to development of terminology, case studies, literature review, and concept analyses;
4. There were 28 primary literatures.

Analysis of the total of 313 studies reveals the following:

1. 70% of nursing problems were expressed by NANDAI's terminology list at computer –based health records;
2. Development of a Japanese evaluation scale to test the accuracy of nurses' diagnoses;
3. Present condition of the curriculum regarding nursing diagnosis;
4. The relationship between critical thinking and nursing diagnosis;
5. Testing some specific nursing diagnoses, such as, "anxiety", "role conflict", "impaired tissue integrity", "disturbed self-esteem", "disturbed body image", "ineffective therapeutic regimen management", and "risk for infection";
6. Nursing diagnosis in the area of critical care nursing;
7. Nursing diagnosis in the area of home care nursing;
8. Nursing diagnosis applied to care plans for aging clients;
9. Nursing record improvement through the use of nursing diagnosis;
10. Examination of content validity of nursing diagnosis categories in Japan;
11. Introduction and use of computer systems in nursing diagnosis;
12. Current status of frequency in use of nursing diagnosis in Japan.

Hereafter, further study of the development of nursing standard terminology in Japan and testing the linkage of nursing intervention and nursing outcomes are needed. The Japanese Ministry of Health and Labor suggested promoting communication of nursing within multidisciplinary practice for the improvement of patient care. The system to fulfill this goal needs to be developed.

Conclusion

Toward International Joint Partnership

The process of forming joint memberships between NANDA International and JSND was discussed at the recent NANDA International Board of Directors meeting and the JSND Board of Director meetings. Both boards approved a proposal for a 25% reduction of the annual membership fee for individuals who choose to join both organizations. This partnership will indeed enhance the best interests of both organizations. We look forward to other opportunities for our organization, JSND, to have closer relationships with other organizations like ACENDIO near the future.

14. – Proposal of a nursing assessment tool at neonatal unit

By do Vale, IN., Carmona, EV. and do Amaral, MCE. (Brazil)

Introduction

Nursing care and its teaching are still strongly based on biomedical model with physiology-pathology as its conceptual structure and cure of illness as its aim. Teaching of nursing process in nursing undergraduate courses is a gradual process, which demands involving all teachers in this task.

The nursing process provides a systematic guide or provides a method to develop a way of thinking which leads to appropriated clinical judgments (Doenges et al 2000). The process of collecting data includes: interviews – to obtain subjective information from the patient or significant people, regarding the patient's beliefs and feelings; physical assessment, providing data from patient records and laboratory tests – to obtain objective information –that which can be identified or obtained through diagnostics studies.

- Data collection should be interactive: physical data is observed while the interview is performed
- Instruments for data collection based in nursing models lead to a better identification of nursing diagnoses. Its consistency depends upon the professional's basic knowledge, choice and sequencing of questions, as well as on the ability to give meaning to patient's answers, integrate gathered data and give priority to the resulting information.
- Consistency can be increased by using the same model both for the interview (history) and physical assessment.

Considering the provision of nursing care to newborns in the intensive neonatal care unit:

- The setting is characterized by its highly technological approach, and assessment is strongly influenced by medical diagnoses.
- Professionals have difficulties facilitating the approach between babies, mothers and the family who experience newborn hospitalization (Fenwick et al 2001).
- The development of an instrument for data collecting is required which focuses on the phenomena of interest to nursing.

Objective

The objective of this paper is to present a guide, created for assessment of newborns in neonatal units, including maternal evaluation structured according the NANDA's Taxonomy II domains.

Material and methods

The creation of this guide reflects the authors' search, over several years, for a strategy that would make possible patient assessment by nursing students in both a systematized and logical way, from a theoretical background.

Starting from literature review, some steps were taken to reach the guide's final version:

1. Assessment and registration of subjective (nursing history) and objective (newborn physical assessment) data according to Functional Health Patterns (Gordon 1994).
2. Evaluation and registration of subjective data were separated from objective data.

3. Inclusion of maternal assessment using NANDA's Taxonomy II domains, maintaining the former structure proposed to newborns (head-to-toe approach).
4. Adjustments in form and order from observations, contributions and difficulties expressed by students. Newborn assessment underwent adjustments to follow the order adopted by other teachers, maintaining a head-to-toe approach, impairing a clear relation with the domains.
5. Development of a card based on the assessment tool, to be used by students during practical activities. This card is colorful, resistant with easy handles and cleaning.
6. Inclusion of useful information in assessing newborn and mother.
7. Alterations in assessment structure in order to follow the domains of Taxonomy II in newborn assessment.

Results

The authors developed the assessment document in the form of a plastic card entitled the “nursing neonatal health history”. It has two sides: on one there are suggestions on maternal interview for collecting maternal and family data. On the other there are suggestions about assessment of the newborn: classificatory parameters for it (gestational age, weight, prematurity and birthweight); common laboratorial tests results; vital signs values; indicators to start oral feeding and other useful information in neonatal care. The two sides are structured considering NANDA’s Taxonomy domains.

The maternal side has, at the top, the following statement: “Newborn care cannot be separated from mother and family care; they can not be broken up. Therefore, nursing history must contemplate both of them”. On the neonatal side it states that: “During physical assessment, the infant must be manipulated the minimum possible, in order to maintain heat and energy.”

This card is colorful, resistant, and cleanable with easy handles. It can be used by nursing students and professionals to conduct, improve and make easier assessment and documentation in neonatal care.

Final considerations

The development of a guide for assessment of hospitalized newborns and their mothers based in NANDA domains showed how difficult is to include all possible issues. It will be always necessary to give priority to some and to reevaluate others, in order to meet the patient’s individual needs. Some domains do not include diagnoses that contemplate the infant specificities, especially when premature or sick, which indicates the need for more studies in this area.

The next step will be a systematized evaluation of this guide after its use by students and nurses in neonatal unit context. Their contributions will certainly improve its adequacy to nursing care and teaching.

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Contact

Ianê Nogueira do Vale, PhD, RN
Nursing Professor
Nursing Department of State University of Campinas (UNICAMP),
Campinas/SP,
Brazil.

15. – Nursing processes used in the treatment of patients with a bipolar disorder: building a body of knowledge.

By Goossens, PJJ., Beentjes, TAA., Knoppert-van der Klein, EAM. and van Achterberg, T. (Netherlands)

Introduction

Bipolar disorder is a complex and chronic psychiatric condition with an estimated lifetime prevalence rate of 1.5 – 2% of the population in the European Union (Pini et al. 2005). The disorder is characterized by the alternating occurrence of (hypo)manic, depressive, and sometimes mixed episodes. Bipolar disorder is associated with a considerable degree of illness-related morbidity (Post et al. 2003) and also constitutes a major social and occupational burden for both the patient and his or her family (Aboot et al. 2002, Vornik & Hirschfeld 2005, Bowden 2005, Pini et al. 2005). The Dutch Nemesis study (Regeer et al. 2004, Ten Have et al. 2002) found 56% of respondents to turn to a mental health organization for help. For 97% of the respondents requesting help, care was provided—to at least some extent—in an outpatient care setting. Community psychiatric nurses (CPNs) are increasingly being involved in the provision of care for such a group of patients. Closer examination of the mental health care programs (Boer 2001) showed a description of the professional contributions of nurses to only exist in a very brief form or simply not all. In 2006, a review of the literature was undertaken to identify those nursing processes used in the treatment of patients with a bipolar disorder (Goossens et al. 2006). The number of publications in indexed journals was found to be very limited. Most of the articles were descriptive reports written by practicing nurses. Only a few articles involved actual research reports. In addition to the results of the aforementioned review, insight into the daily practices of CPNs working with patients with a bipolar disorder is critical for the description of the nursing contribution to the relevant mental health programs and the further development of integrated evidence-based treatment. For this reason, the aim of the present study was to investigate the daily practices of nurses working with bipolar disorder outpatients. Three research questions were addressed:

1. What problems do nurses identify for outpatients with a bipolar disorder and what are the specific signs and symptoms of these problems?
2. What are the desired outcomes identified for the nursing of outpatients with a bipolar disorder?
3. Which interventions are used for the nursing of outpatients with a bipolar disorder?

Methodology

A qualitative approach was adopted. Semi-structured individual interviews and focus group meetings were held.

Data Collection

A total of twenty-three CPNs from twenty mental health organizations were interviewed at the work place. Three of the interviews were actually held with two CPNs working closely together within the same organization. Sixteen of the CPNs were recruited from the Dutch Lithium Plus Working Group (Li+WG), a national network of professionals concerned with the treatment of patients with a bipolar disorder. The other seven CPNs were recruited via snowball sampling (Polit

& Beck 2004). The interviews were semi-structured; that is, a topic list was used to obtain the data. More specifically, the nurses were asked to compose a hierarchical list of problems encountered by their patients, desired nursing outcomes, and interventions used. Three focus group meetings were held. The researcher, a secretary, and a group leader were present at each meeting. The focus group meetings were audio recorded and transcribed. During the focus group meetings, the participants were asked to discuss the top five problems, outcomes, and interventions revealed by the interviews and to deepen them in terms of signs and symptoms, indicators, and activities.

Data analyses

Content analyses were conducted on the interview data to identify categories of the relevant problems, outcomes, and interventions. Rank orders were calculated. The data from the focus group meetings were analyzed using a so-called “long-table approach” (Krueger & Casey 2000).

Results

Eight of the twenty participating organizations actually described their treatment policies in mental health care programs. Five of the organizations held regular multidisciplinary evaluations of a patient’s treatment plan; the other fifteen organizations undertook only ad hoc evaluations. Six of the twenty organizations measured patient satisfaction. None of the CPNs reported use of the North American Nursing Diagnosis Association (NANDA) taxonomy, the Nursing Intervention Classification (NIC), or the Nursing Outcome Classification (NOC). Similarly, none of the CPNs reported use of nursing plans.

The results of this study regarding the nursing processes are only briefly presented in this paper. The complete results are written down in an article that is submitted for publication in a peer reviewed journal. In this paper we will present one patient problem with signs and symptoms, one desired outcome with the reported indicators and one nursing intervention with the related nursing activities. In Table 1, the total list of the problems, outcomes, and interventions mentioned by the nurses in the interviews is presented.

	Patient problems	Desired outcomes	Current interventions
1	Non-acceptance of disease	Euthymic mood state	Nurse accessibility
2	Social problems	Self-management of disease	Information and education
3	Work-related problems	Quality of life	Support and counseling
4	Relational problems	Acceptance of having a chronic disease	Action plans
5	Mood instability	Understanding the disease	Monitoring of medication use
6	Problems with daily activities	Treatment adherence	Life charts
7	Integration of the disease into the self	Healthy structure for daily activities	Family counseling
8	Social isolation	Social competence	Promotion of contact with other patients
9	Stigmatization	Trust in treatment	Enhancement of motivation for treatment
10	Uncertainty	Proper diagnosis	Enhancement of structure for daily activities
11	Insufficient knowledge of the disease		Monitoring of symptomatology

Patient problems	Desired outcomes	Current interventions
12 Medication-related problems		Enhancement of problem-solving skills
13 Financial problems		Interventions in case of crisis
14 Mourning about health loss		Prevention
15 Low self-esteem		Cognitive-behavioral therapy
16 Life events		Education of others
17 Addictions		Counseling for work resumption
18 Sleep disorders		Counseling in case of pregnancy
19 Housing problems		
20 Anxiety		
21 Stress		
22 Treatment non-adherence		

Table 1: Overview of patient problems, desired outcomes, and current interventions mentioned in interviews with CPNs.

Patient problem: non-acceptance of disease. The nurses report non-acceptance of the disease by particularly those patients who have not given up hope of being cured. These patients are convinced that their condition is of a temporary nature despite doctors and nurses telling them that they having a chronic condition. Other symptoms reported by the nurses are: patients not showing up for appointments; neglect of treatment advice; nonuse of prescribed medication; claims that complaints are not related to bipolar disorder but some other condition.

Desired outcome: euthymic mood state is the major desired outcome set by the nurses for their patients. Evaluation of this involves assessment of—among other things—mood state, sleeping behavior, weight gain or loss, medication use, and the occurrence of life events. Other indicators used to assess mood state are the serum levels of medication in the patient's blood, nonverbal signs, and the pattern of daily activities.

Nursing intervention: Nurse accessibility. All of the nurses spoke of approachability and accessibility as the most common intervention. Given that mood swings can occur within a very brief time span, contact with the nurse should be possible within a very few hours. This contact can occur via the telephone, face to face, or via email. The nurses emphasize the importance of taking time to see the patient and mention a half hour as the minimum. Continuity in the patient-nurse relationship is of critical importance. The nurses observe that the patient-nurse relationship is not only a therapeutic relationship but also a matter of trust. Patients should feel free to talk about fears and uncertainties, ask questions, and tell their stories. According to the nurses, they need to be open, interested, and concerned. The nurses should speak to the patient as an equal and use clearly understandable language. The nurses report widespread use of self-disclosure to normalize the experiences of the patient. The contact with patients should be safe and secure; nurses should not judge their patients but, try to fit the perceptions of the patient. In other words, the nurse must be trustworthy, reliable, even-minded, and calm.

Discussion

This study involved 23 CPNs who were carefully selected on their knowledge-richness and broad experience in nursing bipolar disorder patients. It should be noted that, although the nurses came

from organizations distributed across the Netherlands, the present sample is not necessarily representative of the Dutch population of CPNs. Furthermore, the data were all self-reported, which raises the risk of a social-desirability bias. In future research, additional evidence of the identified problems, desired outcomes, and current interventions should therefore be sought in actual nursing records. The use of semi-structured interviews and focus groups involving multiple organizations helped us gain a thorough and fully contextualized picture of the outpatient nursing process for patients with a bipolar disorder. The present findings provide a clear overview of what CPNs encounter during the daily practice of nursing such outpatients. In closing, one of the main conclusions to be drawn on the basis of the present results is the general lack of a systematic approach to the nursing activities of CPNs. It is therefore recommended that CPNs perform more structured clinical judgment processes by conducting systematic nursing assessments, formulating nursing diagnoses and desired nursing outcomes, and making choices of nursing interventions. Regular evaluation of outcomes with both the patient and a multidisciplinary team of professionals is also clearly necessary to improve patient outcomes in cases of a bipolar disorder.

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a. Adhesie Mental Health Care Midden-Overijssel, Deventer, The Netherlands
b. Radboud University Medical Centre, Nijmegen, The Netherlands
c. Rivierduinen Centre for Mental Health, Leiden, The Netherlands

Contact

P.J.J. Goossens RN MScN
 Adhesie GGZ Midden-Overijssel
 Expertise Centre of Bipolar Disorders
 Nico Bolkesteinlaan 1
 7400 GC Deventer
 The Netherlands
 phone: + 31 570 639 829
 fax: + 31 570 639 710
 e-mail: p.goossens@adhesie.nl

16. – Nursing diagnoses and interventions in elderly patients hospitalized in a university hospital in the south of Brazil

By Almeida, MA., Aliti, GB., Thomé, EGR., Unicovsky, MR., Franzen, E., Ludwig, MLM., Araújo, VG., Moraes, MA. and Rabelo, ER. (Brazil)

Introduction

The elderly population has increased considerably worldwide both in absolute numbers and in average of years lived. Demographic transition has been slow and gradual in the industrialized countries in Europe and the US (Laurent 1990). However, in Latin-American countries the accelerated drop in mortality since 1940 has contributed for the progressive increase in the number of elderly in these populations. In 2000 in Brazil, for each group of 100 children aged 0-14 years there were 18.3 elderly aged 65 or up, and the estimate for 2050 is for this ratio to be 100 to 105.6. Moreover, it has been verified in this aging process seen in the Brazilian population that in 2000 there were 1.8 million people aged 80 or up and that in 2050 this figure could reach 13.7 million (Oliveira et al 2004). Therefore, elderly people will live longer, will thus tend to develop chronic illnesses inherent of the aging process and will more likely need hospitalization. These chronic damages are defined as usually incurable conditions, which call for individual adaptive processes in order to prevent, minimize, and control long-term complications (Chodosh et al 2005).

Nursing Assistance Systematization is the methodology used by nurses to develop individualized and humanized care at the hospital where this study was conducted. This method is developed by a computerized prescription system that includes nursing diagnoses according to NANDA Taxonomy (NANDA 2005) as well as the referential of Basic Human Needs and a checklist of care for each of the nursing diagnosis (ND) (Almeida and Vieira 2005).

The objectives of the present study were to identify the prevalent ND present in the nursing practice with hospitalized elderly, to compare prevalent ND with duration of hospital stay, and to compare prescribed nursing care with these diagnoses.

Method

This was a cross-over retrospective study that was conducted in 2005; 1,665 medical records of patients aged ≥ 60 were included; patients were hospitalized in clinical units of a university hospital in the south of Brazil. The following patients were excluded from the sample: patients who underwent surgical intervention; patients whose registers did not include ND; and those whose duration of hospitalization was less than 48 hours. By means of the computerized system of the institution, the registers of nursing diagnoses and prescriptions were obtained, as well as the demographic and clinical variables. Statistical analyses were done using the statistics program SPSS version 12. Continuous variables are expressed as mean \pm standard deviation, and category variables, as percentages. The project was approved by the Research Ethics Committee of the Institution where the study was conducted.

Results

Mean age of hospitalized patients was 72 ± 8 years; 54% of patients were female; 89.6% were white; 56.2% had incomplete middle school, and 91.3% were from the metropolitan region. The following were most frequent clinical causes of hospitalization: 28.4% circulatory diseases,

17.9% neoplastic diseases, and 16.6% respiratory diseases. The remaining sample characteristics are shown in Table 1.

Total of hospitalizations	N = 1665
Age (years)*	72 ± 8
Female	890 (54)
White	1492 (89.6)
<i>School attainment</i>	
Middle School: incomplete	935 (56.2)
Middle School: complete	241 (14.5)
<i>Origin</i>	
Metropolitan region	1520 (91.3)
Countryside	145 (8.7)
<i>Main CIDs at hospital discharge</i>	
CID I (circulatory diseases)	473 (28.4)
CID C (neoplasias)	298 (17.9)
CID J (respiratory diseases)	276 (16.6)

Table 1: Sample characteristics. * Mean and standard deviation; category variables n (%).

Table 2 shows the four prevalent ND of the 62 ND prescribed. Mean hospitalization in days were: self-care deficit – bathing/hygiene, 14 days; imbalanced nutrition – less than body requirements, 14 days; risk for infection, 17 days, and ineffective breathing patterns, 15 days. On average, each patient presented 4 ND.

Prevalent Nursing Diagnoses	N (%)	Days of hospitalization
Self-Care Deficit – Bathing/Hygiene	793 (11,7)	14±16
Imbalanced Nutrition – Less than Body Requirements	640 (9,4)	14±17
Risk for Infection	585 (8,6)	17±19
Ineffective Breathing Patterns	535 (7,9)	15±18

Table 2: Nursing Diagnoses and duration of hospitalization Mean and standard deviation; category variables n (%)

For the four prevalent ND, 197 different cares were prescribed. As to the ND – self-care deficit – bathing/hygiene, the most frequent aetiology was the disease evolution (27%), and the predominant care was bed bath (28.7%). As to the ND – imbalanced nutrition – less than body requirements, the aetiology was lack of appetite (29%), and the main care was communicating diet acceptance (34%). In the ND – risk for infection, the aetiology present in 96.4% of the records was invasive procedure (96.4%), and the most frequent care was implementing routines of care in venous puncture (100%). As for the ND – ineffective breathing patterns, the main aetiology was airway infectious processes (24.3%), and care was checking respiratory pattern (46.3%).

Discussion

The present study detected the following prevalent ND: self-care deficit – bathing/hygiene, imbalanced nutrition – less than body requirements, risk for infection, and ineffective breathing patterns. The most frequent reasons for hospitalization of the sample population were circulatory diseases, followed by neoplasms and respiratory diseases. These diseases are in agreement with the ND established, since they are a result of degenerative processes that are common in the aging process (Marin and Barbosa 2000). For the patients with ND – self-care deficit – bathing/hygiene, the most frequent aetiology was the evolution of the disease, and the predominant care was bed bath. A recent study aiming to assess the meaning of comfort from the standpoint of patients and caregivers showed that cares related to body hygiene and daily cares are the focus of comfort for hospitalized patients. These cares are not essential for the survival rate related to the evolution of the disease; however, they are important for the well-being of patients (Tutton 2004).

As to imbalanced nutrition – less than body requirements, the most reported aetiology was lack of appetite, and the main care was communicating acceptance to diet. Nutrition is an essential factor for the promotion, maintenance and/or recovery of health at all stages of life and, with aging, people may lose their interest in fixing and eating meals (Cervato et al 2005). At the study hospital, this care is prescribed to be implemented by the nursing staff aiming at daily nutritional control. As a result of aging, physiological changes may affect various organs and systems resulting in malfunctioning (Santos and Rezende 2006). Nutritional disorders in the elderly may result in a broad range of diseases that may aggravate the nutritional status of these individuals. Thus, the need of an adequate nutrition in all stages of life is a determining factor for quality of life and is reflected in the old-age (Santos and Rezende 2000). The identification of inadequate nutritional patterns during hospitalization is essential so that the health staff, especially nurses, start early follow-up and monitor nutritional strategies in these most vulnerable patients.

In the diagnosis – risk for infection, the prevalent etiology was invasive procedure and as main interventions: implementing routines of care in venous puncture, with a vesical probe, and management of a venous catheter. During hospitalization, the elderly have a greater chance of developing hospital infections, and the most common sites are infections of the urinary tract, pneumonia, and sepsis (Zamir et al 2003, Martone et al 1998).

As to the ineffective breathing patterns, the main etiology was infectious airway processes, and care, checking respiratory pattern. The respiratory tract may suffer anatomical and functional changes at different degrees that are inherent to the elderly and that should not be assessed in isolation. There are several factors that may affect pulmonary function and that often worsen the aging process, such as smoking and other environmental factors, besides of course previous pulmonary diseases (Gorzoni and Russo 2006). The weather in the region where the present study was conducted is humid and has great variability, what may also predispose respiratory infections in the elderly.

Conclusion

The prevalence of these ND and the most frequent clinic situations characterize the inherent limitations of this age group and the risks to which the aged are exposed to tend to aggravate with hospitalization time. The prescribed nursing cares have as an objective to minimize or avoid these situations.

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Contact

Miriam de Abreu Almeida, RN, PhD
Nursing Professor
School of Nursing
Universidade Federal do Rio Grande do Sul
Rua São Manoel, 963 – ZIP 90620-110
Porto Alegre – RS – Brazil
e-mail: miriam.abreu@terra.com.br

17. – Working together to make NANDA – International truly International! : an interactive workshop

By D. Weir-Hughes (UK)

NANDA International, formerly the North American Nursing Diagnosis Association, is the world's oldest nursing language organization. Since 2002 the organization has undergone considerable change with the aim of developing a more internationally orientated organization. This has included a radical overhaul of Board and Committee structures and reflects the fact that the majority of NANDA International's members now reside and practice nursing outside North America. NANDA International's unique contribution to nursing language is its classification of Nursing Diagnoses. This dynamic resource is translated into various languages and provides an essential tool for teaching, evaluation and practice. However, as more complex nursing phenomena are defined and submitted for inclusion it has become clear that the classification will need to be sufficiently sophisticated to incorporate Nursing Diagnoses which are more culturally specific. It is acknowledged that there are gaps within the classification and that these are frustrating for clinical nurses. It is now important to enter into meaningful and constructive dialogue with nurses from Europe to identify priorities for the further development of the classification and the organization.

The purpose of this session is to:

- Inform and update nurses from Europe on the changes within NANDA International and explore the positive impact these will have on practice
- Enter into a dialogue with nurses from Europe to better understand their needs and ways in which NANDA International can support them in their practice
- Together, explore the priorities for further developing new and revised diagnoses within the NANDA classification and in particular to try to capture some of the rich and diverse cultural nursing phenomena in Europe for future work programmes
- Celebrate working together as professional nurses who are committed to nursing language development, who's values transcend national boundaries and who relish cultural diversity

The presenter will be the first European nurse to be elected to the NANDA Board, currently the President Elect.

Contact details:

Prof. Dickon Weir-Hughes,
Chief Nurse / Deputy Chief Executive, The Royal Marsden Hospital, Fulham Road, London SW3 6JJ, England
Telephone: + 44 207 808 2121
Fax: + 44 207 808 2206
E-mail: dickon.weir-hughes@rmh.nhs.uk

18. – Walter Sermeus or Alex Westbrook

19. – Content validation of the nursing diagnosis “parental role conflict”: a perspective of the neonatal period

By Carmona, EV. and de Mores Lopes, MHB. (Brazil)

Introduction

The technological progress of medical and nursing assistance has made possible the survival of many newborns with medical complications. As the staff consider that the baby's condition is evolving well, the mother has more opportunity to take care of him or her. Assume the maternal role may not be an easy experience in the neonatal care unit due to the special characteristics of the situation and the environment, but also because of the mother's fragility, being distant from the child and taking care less often than the nursing staff (Costello and Chapman 1998, Tronchin 2003).

Caring for the baby should imply caring for the mother as well; thus, maternal nursing diagnoses should also be made in neonatal units. Considering that events can be identified and interventions can be proposed through the use of nursing diagnoses, “Parental role conflict” is one of them that needs to be researched with regard to mothers of hospitalized babies.

Purpose

The aims of this study were: to validate the content of the defining characteristics (DCs) of “Parental role conflict”, a NANDA nursing diagnosis (ND), with nurses who work in neonatal care units and with researchers in this area; to identify minor and major DCs of this diagnosis; and finally, to verify whether or not the scores attributed by nurses to the defining characteristics were influenced by factors as age, experience in nursing, time of neonatology practice, continuing education about nursing diagnoses, post-graduation, development of researches and the use of nursing diagnoses.

Methods

This was a descriptive study in which the diagnostic content validation model proposed by Fehring (1987) was used. This consists of obtaining opinions from nursing experts about to what degree certain defining characteristics (DCs) are indicative or not of a diagnosis. Fifty-nine Brazilian nurses were conveniently sampled from the population.

The ideal situation, according to Fehring (1987), would be for the subject nurses to hold master degrees in the area of the diagnosis to be validated. However, professional experience may be taken into consideration to establish a specialist or expert. Thus, with the Brazilian nurses sample, the criteria of years of experience was set as an inclusion criterion.

The data collection instrument was designed in two phases: developing Operational Definitions (OD) to each DC, based on literature; and having later definitions evaluated by six judges (nurses). In order to establish OD, some NANDA DCs had to be split into four.

The resulting instrument was comprised of 14 DC from NANDA, three fictitious, as distractions, and two characteristics developed based on the literature: “verbalizes concerns about physical or emotional limitation to parental role” (Cunha 2000), and “mother expresses guilt about contributing to the child's illness through lack of knowledge and judgment” (Carpenito 2002). Thus, the final instrument contained a total of 19 DCs and their OD. In accordance with the Fehring Method for Diagnostic Content Validation, the nurses attributed a value to each DCs,

on a scale from 1 to 5, in which “1” meant that the nurse considered the DC “absolutely non characteristic” and 5 “very characteristic” of this diagnosis. The weighted average of the scores attributed to each of the DCs was calculated, considering the following weights: 1=0; 2=0.25; 3=0.50; 4=0.75; 5=1. The DCs were provisionally considered major when their weighted average was higher than or equal to 0.80 and as minor when their weighted average was lower than 0.80, but higher than 0.50. It would be necessary to conduct a study involving a bigger sample, with different centers, to exclude a DC (Fehring 1987).

For the statistical analyses of data correlation, the Mann-Whitney test and Spearman’s correlation coefficient were used.

Findings and discussion

Fifty-nine nurses participated in the study, most of them female (94.9%). The mean age was 36.8 years with the minimum 24 years and the maximum 55 years. The mean time working in the nursing profession was 12 years and the mean time working in neonatology was 9.6 years. According to Carpenito (1998), it is still a challenge to have nurses value and apply ND in health care. To the author, this is related to the health care model centered on medical diagnoses and not on patient response to the events, failure of undergraduate courses to integrate ND into the curriculum and lack of perception of nurses who actually propose diagnoses all the time but do not write them in a standard manner (Table 1). The validation of fictitious DCs may have happened for two reasons. Firstly, participants may have little experience with the ND being studied, because health care is often centered on the newborn in neonatal care units (Lupton and Fenwick 2001). Secondly, it may be that, as pointed out by Carpenito (2002), some NDs are very similar and related. Consequently, so are their DCs. This is a further reason to continue studying, discussing and validating diagnoses.

Conclusions

The DCs of “parental role conflict” were content validated for use in neonatal unit by 59 brazilian nurses. Four defining characteristics were considered major because they achieved scores of 0.80 and higher; 15 were considered minor.

The major DCs are:

1. Mother expresses concern(s)/feeling(s) of inadequacy to provide for child’s physical and emotional needs during hospitalization;
2. Mother expresses concern(s)/feeling(s) of inadequacy to provide for child’s physical and emotional needs at home;
3. Mother expresses concern(s) about changes in parental role;
4. Mother expresses concern(s) about family health. No defining characteristic was eliminated.

There was not correlation between nurses’ profile and the judgment of the defining characteristics.

Defining Characteristics of Parental Role Conflict	Score
<i>MAJOR</i>	
Mother expresses concern(s)/feeling(s) of inadequacy to provide for child’s physical and emotional needs during hospitalization	0.92
Mother expresses concern(s)/feeling(s) of inadequacy to provide for child’s physical and emotional needs at home	0.88
Mother expresses concern(s) about changes in parental role	0.88

Defining Characteristics of Parental Role Conflict	Score
Mother expresses concern(s) about changes in family health	0.87
<i>MINOR</i>	
Mother verbalizes or demonstrates feeling of anxiety about effect of child's illness on family process	0.77
Mother expresses concern(s) about changes in family functioning	0.76
Mother expresses guilt about contributing to the child's illness through lack of knowledge and judgment***	0.76
Reluctant to participate in usual caretaking activities even with encouragement and support	0.75
Mother verbalizes or demonstrates feeling of fear about effect of child's illness on family process	0.74
Mother verbalizes or demonstrates feeling of guilt about effect of child's illness on family process	0.73
Mother expresses willingness to enhance parenting*	0.73
Mother expresses concern about perceived loss of control over decisions relating to her child	0.72
Mother verbalizes or demonstrates feeling of frustration about effect of child's illness on family process	0.69
Mother verbalizes concerns about physical or emotional limitations to parental role **	0.68
Mother expresses concern(s) about changes in family communication	0.67
Rejection or hostility to child*	0.62
Demonstrated disruption to caretaking routines	0.59
Negative statements about child*	0.53
Mother verbalizes or demonstrates feeling of anger about effect of child's illness on family process	0.52
<i>TOTAL</i>	0.73

Table 1: Major and minor DCs of "Parental role conflict" and their scores.

* Defining characteristics not pertinent to diagnosis, according to Taxonomy II of NANDA International. ** (Cunha 2000). *** (Carpenito 2002)

Final considerations

The difficulties of elaborating operational definitions and the commentaries of nurses showed that the DCs proposed by NANDA need to be studies to become more objective and to describe more accurately patients' answers concerning health problems and life issues. It is recommended that a diagnostic content validation, followed by a clinical validation, happens in different settings of care and cultures to reach specific needs of clients. This issue is important because practical and professional nursing development require a greater domain of nursing diagnoses and, according to literature, neonatal care units are deprived of this kind of study.

One of the limitations of this work were the small sample and the poor experience and formation of Brazilian neonatal nurses in relation to ND, particularly regarding this one, considering what is proposed by Ferhing (1987).

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Contact

Elenice Valentim Carmona Doctoral Student, MSN, RN,
Professor of the Nursing Department of School of Medical Science
State University of Campinas (UNICAMP), Brazil.
e-mail: elenicevalentim@uol.com.br or elenice@fcm.unicamp.br

20. – Validity of nursing diagnoses in Flemish home care nursing

By Paquay, L., Wouters, R., Debaillie, R. and Geys, L. (Belgium)

Introduction

In Belgium, a rating scale for the dependency in the activities of daily living (ADL) is an important instrument in the federal health care regulations on home care nursing. These regulations state that persons with low or intermediate ADL dependency are eligible to receive hygienic care from registered nurses. Persons with the lowest ADL dependency level may receive hygienic assistance two times a week whereas persons with an intermediate level of ADL dependency may receive daily hygienic care and holistic nursing care.

Because the ADL dependency is a non-specific indicator of the need for nursing care, a more detailed and specific description of the patient's problems and needs is required. Therefore, the "Wit-Gele Kruis van Vlaanderen", an umbrella organisation for five collaborating home care nursing agencies in the Flemish speaking region of Belgium, has introduced the NANDA nursing diagnoses system. The five autonomous agencies employ 4,600 registered nurses and deliver nursing care to approximately 50,000 patients every month. Training programmes on the diagnostic process and the classification of M. Gordon started gradually in 1999. At present, approximately 75% of all nurses have participated to an introductory course on nursing diagnostics.

The objective of the present study was to investigate the concurrent validity and the discriminant validity of NANDA nursing diagnoses on ADL problems in patients with low and intermediate ADL dependency.

Methods

An exploratory cross-sectional survey was carried out on a stratified random sample of 2409 study subjects from the total population of all patients of the five home care nursing agencies. Data were extracted from patient records by home care nurses using a checklist of 101 NANDA nursing diagnoses, the official Belgian assessment instrument for activities of daily living (ADL), and standardized checklists for instrumental activities of daily living, medical pathology, service utilization, assistive devices and the nursing care that was administered.

Prior to the study, a list of all available NANDA nursing diagnoses was pilot tested in two regional nursing departments. The pilot test yielded a selection of 101 NANDA nursing diagnoses which were applicable in home care nursing. The selection of 101 nursing diagnoses was used to construct the checklist for the present study.

The concurrent validity of the nursing diagnoses for the activities of daily living was investigated using the odds ratio (with the 95% confidence interval; CI) for evaluating the association between the presence of a nursing diagnosis and the subject's dichotomized item score of the rating scale for ADL dependency. The discriminant validity of the nursing diagnoses for the activities of daily living was investigated using the chi-square test and the Wilcoxon test to test for differences between patients with the lowest level and the intermediate ADL dependency level. The number of all nursing diagnoses formulated per patient (including other nursing problems than problems with ADL) was also used as a summary measure for investigating the difference between patients with the lowest and intermediate ADL dependency.

Results

Sample

Data about nursing diagnoses were collected for 1952 subjects, which means that the proportion of subjects for whom at least one nursing diagnosis was formulated, was 0.81 and not different between subjects with different dependency levels (χ^2 -test, $p=0.62$). Subjects ranged in age from 4 years to 101 years, with a median age of 80 years; 1382 persons (71%) were female. There were no differences in age, sex, marital status, widowed state or living situation between subjects of both dependency levels (Table 1). The median number of nursing diagnoses formulated per patient was 5; the interquartile range (IQR) ranged from 3 to 9 nursing diagnoses per patient.

Characteristic	Study population (n = 1952)	Subjects with the lowest dependency (n = 1184)	Subjects with intermediate dependency (n = 768)	p-value
Female: n (%)	1382 (70.8)	833 (70.4)	549 (71.5)	0.59*
Age: median (IQR)	80 (74 - 84)	80 (75 - 84)	80 (73 - 84)	0.30**
Married: n (%)	562 (28.8)	348 (29.4)	214 (27.9)	0.47*
Widowed: n (%)	1011 (51.8)	620 (52.4)	391 (50.9)	0.53*
Living alone: n (%)	1058 (54.2)	662 (55.9)	396 (51.6)	0.06*

Table 1: Demographic characteristics of the study subjects. Statistical tests were performed to test for differences between subjects with low and intermediate dependency. IQR=interquartile range;
* calculated using the chi-square test; ** calculated using the Wilcoxon test.

Concurrent validity

The odds ratios for the association between the presence of the nursing diagnoses and the dichotomized item scores of the rating scale for ADL dependency are presented in Table 2.

Nursing diagnosis	Dichotomized item score	Odds ratio (95% CI)
Bathing self-care deficit	Washing	1.9 (1.6 – 2.4)
Dressing self-care deficit	Clothing	2.1 (1.7 – 2.5)
Impaired physical mobility	Transfer	2.4 (2.0 – 3.0)
Toileting self-care deficit	Toileting	3.5 (2.3 – 5.4)
Any urinary incontinence nursing diagnosis	Continence	3.6 (2.8 – 4.5)
Feeding self-care deficit	Eating	2.4 (1.7 – 3.3)

Table 2: Odds ratios and 95% confidence intervals for the association between the nursing diagnosis and the dichotomized item score of the rating scale for ADL dependency. CI: confidence interval.

Discriminant validity

The total number of nursing diagnoses formulated per patient with intermediate dependency (median=6; IQR: 3–10) was significantly higher than the number of nursing diagnoses per patient with the lowest dependency (median=5; IQR: 3–8; p<0.001) (Table 3).

Nursing diagnosis	Presence of the nursing diagnosis in the study population (n = 1952)	Presence of the nursing diagnosis in subjects with the lowest ADL dependency (n = 1184)	Presence of the nursing diagnosis in subjects with intermediate ADL dependency (n = 768)	p-value
Bathing self-care deficit: n (%)	1376 (70.5)	827 (69.9)	549 (71.5)	0.44
Dressing self-care deficit: n (%)	918 (47.0)	493 (41.6)	425 (55.3)	< 0.001
Impaired physical mobility: n (%)	797 (40.1)	448 (37.8)	349 (45.4)	0.001
Toileting self-care deficit: n (%)	96 (4.9)	32 (2.7)	64 (8.3)	< 0.001
Any urinary incontinence diagnosis: n (%)	466 (23.9)	230 (19.4)	236 (30.7)	< 0.001
Feeding self-care deficit: n (%)	180 (9.2)	79 (6.7)	101 (13.2)	< 0.001

Table 3: Presence of nursing diagnoses in patients of home care nursing with low and intermediate ADL dependency. The chi-square test was performed to test for differences between subjects with the lowest and the intermediate ADL dependency level.

Conclusion

The fact that in the present study nursing diagnoses were formulated for approximately 80% of the patients was considered as a successful outcome of the gradual implementation process. Most indicators of concurrent and discriminant validity of nursing diagnoses for problems in the activities of daily living were highly significant. The NANDA nursing diagnosis classification is a useful instrument for documenting the need for ADL care of patients receiving home care nursing. Future studies will address the validity of nursing diagnoses in other domains and the accuracy of the nursing diagnoses in relation to diagnostic reasoning and based on adequate identification of signs/symptoms and aetiology.

Contact

Louis Paquay
 Wit-Gele Kruis van Vlaanderen
 Adolphe Lacomblélaan 69
 B-1030 Brussels
 Belgium
 e-mail: louis.paquay@vlaanderen.wgk.be

21. – The INMDS nursing information tool – a proof of concept

By Henry, P., Clinton, G., Scott, PA., Mac Neela, P., Treacy, P., Hyde, A., Morris, R., Irving, K., Corbally, M., Lehwaldt, D., Sheerin, F., Byrne, A., Butler, M. and Drennan, J. (Ireland)

Introduction

Patient outcomes have been linked to nursing care and staffing levels in healthcare provision (Aiken et al 2002, Rafferty et al 2006). Information management tools, which make nursing care evident, must take account of the fact that the planning of patient care is not a singular disciplinary process, but one that integrates a number of disciplines. Thus for those individuals who are engaged in the process of developing nursing data repositories it is imperative that the tools are created as part of a larger framework. Such structures can then take into account and accommodate respective stakeholders engaged in the process of health information management. Two examples of potential stakeholders who will have a keen interest in the development of data which can be derived from a nursing data repository include, but are not restricted to, software developers of a common health care record repository (E.H.R.) and those groups who are required to make nursing care evident by implementing such tools and then justifying such expenditure. It is both of these that this paper is directed towards.

A recent presentation by Melvin Reynolds cited an NHS model for identifying health care provision (Figure 1). For anyone who is employed in healthcare field it is apparent that this model whilst useful as a reference tool can be portrayed as an over simplistic representation of the domain. Information within the sphere of healthcare is overburdened with information that is heterogeneous in nature (Furuie et al 2007). Significantly, it is also worth noting that the information pathways are not always linear in presentation. A paper by Salvador-Curulla et al (2006) typifies this information as qualitative and quantitative, or data that includes knowledge discovery and domain specific information. Salvador-Curulla et al (2006) discuss and devise a specific framework to organise information. In brief, this framework includes three core elements, which comprise of; outcomes management, knowledge discovery from data, and decision support systems. Underpinning this framework the authors refer to a standardised set of procedures for knowledge transfer and management.

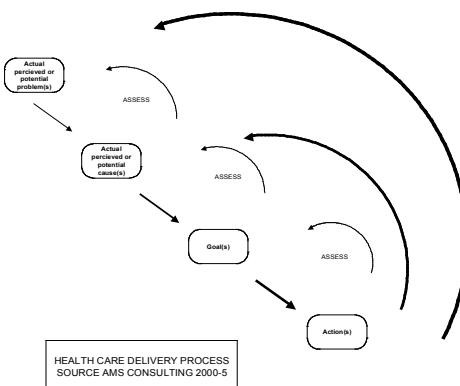


Figure 1 Model Health Care Delivery Process (Reynolds 2006)

The development and delivery of a framework for an electronic nursing data repository are explored further in this paper within the context of the first Irish National Research Programme (2002-2007) for nursing in Ireland funded by the Health Research Board. This proposed repository will draw upon information from the emerging Irish Nursing Minimum Dataset (INMDS). One key driver in the development of the INMDS tool has been to make nursing care evident (Macneela et al 2006). Just where and how the INMDS tool will be deployed and locate itself within such a framework as the Salvador-Curulla et al (2006) model has yet to be determined. Suffice to say that the authors would concede that the INMDS tool could be categorised in the area of knowledge discovery and it is an appropriate tool to use as a basis in the delivery of nursing data repositories.

Background

According to recent news reportage, some specific projects within the health reform programme in Ireland could be noted to require a “health check”, and indeed in some instances certain projects were noted to be heading in the direction of a “high risk” status on the project livelihood (Bowers 2006). One example of a national system that has failed to meet its anticipated target/s in 2006 is the national payroll and rostering system entitled PPARS. However it is worth noting within the text of this paper that the “health checks on system delivery” are not isolated incidents within Ireland but indeed are reflected in other countries in Europe. A recently published report by the British Computer Society December 2006, ‘The way forward for the NHS Health Informatics – Where should NHS connecting for Health (NHS CFH) go from here?’, recommends that an evolutionary approach to system procurement/development is required. Systems implementation that is positioned within a business framework and that fosters local ownership at trust and provider unit level is suggested as the optimum approach for the NHS CFH organisation (p. 4) Adopting such a strategy will enable the National Programme for IT systems to be driven and owned by the service so that patients can realise the benefits as quickly as possible.

This record also alludes to the heterogeneous nature of health information and emphasizes that systems developers must continue to adopt a strong focus on using standards such as ISO and HL7. They recommend ENV13606 / CDA Version 2 as a good starting point (p.12). This will accommodate interoperability of systems and shift the focus from monolithic systems development to a platform, which will accommodate local heterogeneous legacy systems that can evolve in the longer term based on healthcare service and patient requirements.

Development of an informatics tool

One potential open source tool that can be adopted and used practically in tandem with system development and implementation within the practice setting is introduced in this paper. The tool, CHASEtown®, has been developed over a four-year period in the School of Nursing, at Dublin City University. It has been constructed to develop virtual patients and records within a time concept or object (Figure 2). The rationale for this approach is reflected in the previous section; that it will accommodate an evolutionary approach to the development of nursing repository in accordance with ISO 13606.

CHASE HOSPITAL - NURSING ASSESSMENT AND HISTORY SHEET	
BIOGRAPHICAL DATA	
Name: Mathew Maher	male M.R.N.: 000010
Preferred Name: Mathew	Maiden Name: N/A
Address: Daffodil Nursing Home	Marital Status: Widowed
Occupation: Retired Accountant	Phone (H): 01 6669950
Religion: Roman Catholic	Phone (M): N/A
Num of siblings under 18: 0	Phone (W): N/A
	Nationality: Irish
	GP: Dr Terence Brown
	Num of dependants under 18: 0
Episodes of Care	
January 12 2007 <u>Vascular problems</u>	
January 21 2007 <u>Self care deficit</u>	

Figure 2: CHASEtown Screen shot

However in order to realise the anticipated benefits of any health information tool it is important to focus on specific strategic innovations (Kutscha et al 2006). Such innovations are devised to assist and address data integrity and quality at the point of data collection (Cruz-Correia et al 2006). Migrating elements of the INMDS from a paper based exercise to an electronic repository offers the team an opportunity to ensure that those nurses who will engage in completing the process will realise local benefits to their practice setting.

The inclusion of such initiatives within the scope of the system development will endorse local uptake and assist with quality of information recorded. Thus impacting on potential success or failure of the system in terms of social acceptance specifically in terms of rural and urban spread at a national level. The premise for adopting this particular approach to the development of this research project is outlined further in the conference presentation.

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Contact

School of Nursing
Faculty of Science and Health
Dublin City University
Dublin
Ireland
e-mail: pamela.henry@dcu.ie

22. – The validation of Irish Nursing Minimum Data Set for general and mental health nursing in Ireland.

By Morris, R., Byrne, AS., Scott, PA., Treacy, MP., MacNeela, P., Hyde, A., Drennan, J., Matthews, A., O'Brien, J. and Sheerin, F. (Ireland)

The aim of this study is to establish the validity and reliability of the Irish Nursing Minimum Data Set (I-NMDS) for general and mental health nursing in Ireland.

A nursing minimum dataset is a multipurpose data collection tool designed to standardize the collection of essential nursing data (Werley et al 1991, Goossen 2001). The information derived from a nursing minimum data set can be used to identify trends in nursing care, research, education and the evaluation of nursing care (Werley et al 1991). The I-NMDS was developed using a multi-method research design aimed at identifying the core elements of nursing care in Ireland. This resulted in two stands of the I-NMDS instrument, one specific to general nursing and the other specific to mental health nursing. The I-NMDS is based on a bio-psycho-social conceptual model of care and is made up of three main categories: patient problems, nursing interventions and co-ordination of care activities. In preparation for national validation, the instrument was pilot tested with clinicians, educators and nurse managers. Data to validate the general nursing strand of the I-NMDS was collected from five acute hospitals in Ireland in the areas of cardiology, coronary care, oncology, medicine and surgery. This resulted in the collection of 1,538 days of patient care related data. Data to validate the mental health nursing strand of the I-NMDS was collected from acute in-patient units, home care teams, day hospitals and day centers attached to twelve hospitals across Ireland. This resulted in the collection of 1,612 days of patient care related data.

The construct validity of the I-NMDS was established using exploratory factor analysis. The resulting factor structure was closely aligned to the bio-psycho-social model of care. The internal reliability for the resulting factor structure was established using Cronbach alpha scores while the inter-rater reliability of the instrument was established using Cohen's Weighted Kappa. Finally, discriminant validity was established using RIDIT (Relative to the Identified Distribution) analysis which served to illustrate expected differences in patient problems and nursing interventions across the different areas of nursing care.

Contact

e-mail: roisin.morris@dcu.ie

23. – The Belgian Nursing Minimum Data Set II: end results and practical implementation.

By Michiels, D., Sermeus, W., Van den Heede, K., Van Herck, P., Delesie, L., Thonon, O., Van Boven, C., Codognotto, J. and Gillet, P. (Belgium)

Summary

Six years of preparation have yielded a new Belgian Minimum Data Set as a base for substantive applications in the fields of nurse staffing, the use of appropriateness evaluation protocols, the refinement of financing of nursing care and outcome and events research to investigate quality of care. This implied a nationwide involvement of numerous healthcare institutions, in collaboration with government and multiple centres of research. Now the data set is ready for use, although a continuous innovation process is envisioned. In 2007 NMDSII will be implemented in all Belgian general hospitals. Practical issues are being considered with regard to the renewed data collection process, such as the redistribution of coding responsibility and the extraction of NMDSII from patient records. The final Belgian NMDSII development results and implementation experiences are described.

Background

The Ministry of Public Health commissioned a research project to revise the Belgian Nursing Minimum Dataset (B-NMDS) for six care programmes (cardiology, oncology, geriatrics, chronic care, paediatrics and intensive care). Starting from 2000 a structured framework was used to guide the NMDSII development. This directed a broad set of consecutive phases. The conceptual grounding during the first phase gave way to language development based on the Nursing Interventions Classification in 2003. Afterwards an alpha version of the NMDS was developed, which was pilot tested on 158 nursing wards in 66 hospitals. Interrater-reliability and criterion validity were investigated.

Study objective

After pilot testing the data set could be optimized, taking into account the potential applications of NMDS. A complement module of personnel data registration also had to be devised. Another objective of the final research phase was the design of the practical NMDS collection, analysis en feedback model. Finally, the implementation process itself needed to be prepared in terms of redesign of hospital information systems and education of nationwide involved people and institutions.

Methodology

A combination of multidimensional statistical analysis (CATPCA) and NMDS expert feedback resulted in the beta version of NMDS in 2004. The focus was extended to include maternity and neonatal wards. During 2005 the registration of personnel data was revised to facilitate potential staffing applications. The scheduling of data collection is simulated using multiple scenarios. Practical modalities are specified to ensure optimal registration in all sorts of clinical and operational situations in the complex hospital environment. Inherent data controls and auditing possibilities are investigated. A first proposal of feedback of information output towards hospital management is considered. In 2006 continuous communication between all involved parties gave way to final refinements of NMDSII.

Results

The final Belgian NMDSII is the end result of the described roadmap. The return of these efforts will be realized during the years to come. Together with the first experiences in the implementation process, the renewed NMDS can give lead to inspiration for development initiatives abroad.

Contact

D. Michiels,
Centre for Health Services Research
Catholic University of Leuven
Kapucijnenvoer 35/4
B-3000 Leuven
Belgium
phone: +32 16336982
fax: +32 16336970
e-mail: Dominik.michiels@med.kuleuven.ac.be

24. – The Hung postpartum stress scale

By Chich-Hsiu Hung. (Taiwan)

Introduction

The Hung Postpartum Stress Scale (Hung PSS) was initially developed in 1993 by Hung and her associates to measure low-risk women's postpartum stress during their 42-day postpartum period. Revalidation was done in 1995 due to rapid changes within the Taiwanese social system.

Objectives

The purpose of this study was to revalidate the Hung Postpartum Stress Scale again by expanding the contexts to reflect all postpartum women regardless of low-risk and high-risk.

Methods

A non-experimental, quantitative research design and a proportional stratified quota, sampling by birth rate from 11 hospitals and 7 clinics in Kaohsiung area of Taiwan, was employed. 859 postpartum women were selected.

Results

An exploratory common factor analysis indicated the structure validity of three dimensions of postpartum stress: concerns about maternity role attainment; concerns about negative body changes; and concerns about lack of social support. The generalizability of the factors across subgroups including the type of delivery, levels of education, pregnancy planning, preferred sex, number of children, and postpartum days within the population showed high coefficients of congruence. The internal consistency reliabilities for the total Hung PSS and its three dimensions, across the full sample and within pertinent sub-samples, showed that the Hung PSS is a reliable tool for measuring women's postpartum stress regardless of high or low-risk.

Discussion.

The Hung PSS is a culturally specific instrument that has been conceptualized, created, and tested with Taiwanese postpartum women. It will be necessary to test the generalizability of the Hung PSS to postpartum women of other cultural groups both within Asia and of other regions.

Contact

Chich-Hsiu Hung, RN, PhD

Associate Professor and Deputy Director

College of Nursing, Kaohsiung Medical University

No. 100, Shih-Chuan 1st Road Kaohsiung City 80708 Taiwan

phone: +07 312-1101 ext. 2601

fax: +07 321-8364

e-mail: chhung@kmu.edu.tw

25. – Improved quality of nursing documentation: results of a nursing diagnoses, interventions and outcomes implementation study

By Müller-Staub, M. (Switzerland), Lavin, MA (USA), Needham, I. (Switzerland), Odenbreit, M (Switzerland) and van Achterberg, T. (The Netherlands)

Introduction

Nursing diagnoses, interventions and outcomes (NANDA, NIC and NOC = NNN) are implemented internationally (Lavin 2004, Müller-Staub et al 2006). There is a demand for research regarding diagnostic-specific nursing interventions – leading to favorable nursing sensitive patient outcomes (Müller-Staub 2006, Lunney 2006). This study evaluates the implementation of nursing diagnoses, interventions and outcomes in regard to this demand.

Background

The use of nursing classifications such as NNN allows for the collection of evidence-based and comparable nursing data (Lunney 2006). Studies have indicated improvements in documentation after the implementation of NANDA-I diagnoses (Müller-Staub 2006). However, precisely formulated diagnoses, accurate signs/symptoms and correctly related etiologies were found only partially (*ibid.*). Authors agree that nurses must be better trained in documenting nursing diagnoses, signs/symptoms and etiologies (Courtens 1998, Delaney et al 2000, Delaney and Moorehouse 1997, Ehrenberg and Ehnfors 1999, Rivera and Parris 2002).

Lack of reliable nursing data motivated the management of a Swiss hospital to implement nursing diagnoses, interventions and outcomes classifications (Doenges et al 2002). An educational intervention, including an introductory class and consecutive classes, was planned (Odenbreit 2002a). Nursing care was carried out up to this date according the nursing process (Allemann et al 2003, Fiechter and Meier 1981). Nursing problems were worded in free style, and nursing goals and interventions were chosen according to the nursing problems (Fiechter and Meier 1981). Because classifications were lacking, nursing problems were insufficiently described, and relations between nursing assessments, interventions and outcomes were not coherent (Bartholomeyczik 2004, Moers and Schiemann, 2000, Müller-Staub 2003).

Research question

Does the implementation of diagnoses, interventions and outcomes improve nursing documentation according to

- Correctly formulated nursing diagnoses, including signs/symptoms and etiologies?
- Nursing interventions specific to the identified etiology along with a plan and its implementation?
- Measurable, achievable nursing outcomes, describing improvement in patients?

Methodology

Six comparable wards were randomly selected for study participation. In a pre- and post-test design, the quality of 72 randomly selected nursing diagnoses, related interventions and outcomes was analyzed in nursing documentation. Inclusion criterion was length of the patient's hospital stay of at least 4 days. To analyze nursing documentation, the quality of the nursing diagnoses,

interventions and outcomes were assessed using the measurement instrument Q-DIO. This consists of 29 items and was tested in previous studies (Müller-Staub et al). The effect of the study intervention was judged by comparing the documented quality of nursing diagnoses, interventions and outcomes before, and one year after, the educational intervention items were measured by the 5-point scale (0 to 4) of the Q-DIO. The highest attainable mean for all three concepts was 4. Results were analyzed by t-tests.

Study Intervention: Implementation of Nursing Diagnoses, Interventions and Outcomes

The research intervention consisted of an educational program including content on the principles of nursing diagnoses, interventions and outcomes (Odenbreit 2002a, 2002b, 2002c). Intervention goals were:

- The entire diagnostic process is to be carried out more purposefully and the nurses learn to document nursing diagnoses by means of the signs/symptoms and the etiology (PES-format);
- The nurses select nursing interventions corresponding with the etiology of nursing diagnoses; these are to be documented exactly and purposefully;
- The nursing outcomes should be described in relation to the nursing diagnoses. Outcomes should be evaluated more frequently and describe improvements in patients.

The nurses on all wards took part in an introductory class lasting 2 hours. Then the basics were enhanced by following classes, using case discussions about real patients (1 per month). The duration of the implementation was one year (Odenbreit 2002a).

Content of the Introductory Class:

Introduction of the topics:

- a. What are diagnoses in general? What are nursing diagnoses?
- b. What are the significance and the structure of nursing diagnoses?
- c. How do they differ from medical diagnoses?
- d. How are nursing diagnoses determined? The PES-Format (diagnostic problem statement, etiology, signs/symptoms).
- e. Deepening the understanding of the nursing process in connection with nursing diagnoses and nursing interventions.
- f. The NANDA-Classification and the relationship between nursing diagnoses, interventions and outcomes. Furthermore, examples for the organizational integration were provided and documentation guidelines presented (Odenbreit 2002a).

Following Classes

In case discussions examples of actual patients were used to teach the diagnostic process, to apply nursing diagnoses, and to choose nursing interventions and nursing outcomes. Goals for the diagnostic process were defined for nursing documentation purposes (Allemann et al 2003).

Results

Nursing Diagnoses

Before the education/case discussions, the pre-intervention mean in nursing diagnoses was 0.92 ($SD=0.41$). One year later, the post-intervention mean was 3.50 ($SD=0.55$), $p < 0.001$. This result shows a significant improvement in formulating nursing diagnoses, including improvements in stating signs/symptoms and correct etiologies. Also the documentation of nursing goals improved. In the pretest data, nursing goals were often not related to the nursing problem, specifically they did not point to the etiology assigned in the problem statement. Examples illustrate this: "Patient has a decubitus at the left heel" (problem statement without signs/symptoms/etiologies). The corresponding nursing goal was: "Healing of wound". In the post-intervention data, we found the

nursing diagnosis “Impaired Tissue Integrity, Grade II Decubitus” with etiologies: “Mechanical (pressure, shear, friction), nutritional deficit, and impaired physical mobility” and signs/symptoms: “Damaged tissue at left heel, 2x3 cm wide, .1 mm deep”. The nursing goals were: 1) The patient achieves an observable healing, free of complications. 2) The patient reaches a balanced nutritional stage and shows no signs of malnutrition. 3) The patient understands and can explain his condition and etiology, and takes an active part in change of position and mobility.”

Nursing Interventions

The pre-intervention mean was 1.27 ($SD=0.51$); the post-intervention mean was 3.21 ($SD=0.50$), $p<0.0001$. The results demonstrate a significant increase in naming and planning nursing interventions, showing what will be done, how, and how often. Examples illustrate the findings. In relation to the problem “Patient has a decubitus at the left heel”, we found the nursing intervention (pre-intervention data): “Change bed position every 4 hours, change dressing daily”. In the post-intervention data, we found the statements: “Observe wound daily”, “constant pressure-free positioning of heel”, “Aguagel dressing, next change at (date)”, patient positioning every 3 hours with wedge-pillow”, “mobilize patient 3 times daily”, “observe and document food and fluid intake (according to protocols)”, “instruction of patient about condition and interventions”. This example demonstrates nursing interventions not only linked to the etiologies stated, but also directed to reach the nursing goals. Such examples reached maximum mean scores and showed that nursing interventions were chosen correctly, according to defined linkages between NNN.

Nursing Outcomes

The pre-intervention mean of outcomes was 0.95 ($SD=0.66$), the post-intervention mean was 3.02 ($SD=0.95$). Outcome assessments were documented daily in the post-intervention data, while these assessments were hardly found at pre-intervention. Higher scores were found in observably/measurably formulated nursing outcomes at post-intervention. Higher scores were also found about relations between nursing diagnoses, interventions and outcomes, and the attained outcomes were better than at pre-intervention. Examples illustrate this: At pre-intervention, for the problem “Patient has a decubitus at the left heel”, we found the nursing outcomes statement: “Skin still red, small tissue damage”. At post-intervention, the outcomes were: a) tissue integrity/observable healing with epithelialized, dry, irritation- and odorless skin, free of pain; b) unimpaired mobility; c) improved self-care ability = patient performs impaired tissue risk management (skin observation and care, change of position, mobility and constant pressure free positioning of heel); d) Patient can explain his condition and the etiology (pressure, immobility, nutritional status and meaning of risk management).

Discussion

Nursing diagnoses

Correct signs/symptoms and etiologies were hardly found in the pretest data. The same was true for etiologies: while only some nursing problems based on etiologies, many were incorrect. After implementing nursing diagnoses, individual and accurate diagnoses were found. The posttest data showed almost no nursing diagnoses without signs/symptoms or etiologies.

Nursing interventions

While the pre-intervention data showed unspecific nursing interventions, the post-intervention data revealed not only more specific interventions, directed to affect the etiology of the nursing diagnosis. The interventions were also more comprehensive and more effective.

Nursing outcomes

After implementation of nursing diagnoses, interventions and outcomes, the nursing documentations contained better outcomes attained. They demonstrated improvements of

patient's symptoms, improvements of patient's knowledge state, improvements of patient's coping strategies, improvements in self-care abilities and improvements in functional status. The results showed that the outcomes were more often internally related to the diagnosis stated and to the interventions performed.

Conclusions

Staff education led to enhanced quality of documented nursing diagnoses, interventions and outcomes. Formerly, it was reported that the quality of care plans had no evidenced impact on patient outcomes (Daly et al 2002, Currell and Urquhart 2003). In our study, higher quality nursing diagnosis documentation and etiology specific nursing interventions correlated with improvements in nursing-sensitive patient outcomes documented. The Q-DIO showed to be a useful audit tool.

To improve nursing diagnostics documentation, nurses did benefit from training in diagnostic reasoning and by applying NANDA, NIC and NOC (Doenges et al 2002, Carlson 2006, Lunney 2001). The study supports the need to state accurate nursing diagnoses to reach favorable patient outcomes(Lunney 2006). To attain favorable patient outcomes, nursing diagnoses must be linked with interventions, specific to an identified etiology, and nursing-sensitive patient outcomes must be identified.

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Contact

Maria Müller-Staub PhD, MNS, EdN, RN

Stettlerstrasse 15

CH - 3006 Bern

Switzerland

phone: +41 31 351 23 09

e-mail: muellerstaub@bluewin.ch

26. – Development and testing of a Context Assessment Index

By McCarthy, G., McCormack, B., Coffee, A., Wright, J. and Slater, P. (Ireland/N. Ireland)

Background: context for professional practice

There is substantial evidence that practitioners continue to utilize outdated practices and have difficulty in implementing evidence based care (Irwin et al 2001). The professional practice environment or context within which patient care is given is acknowledged as having considerable effect on quality of care. Authors such as McCormack et al (2002) argue that person centred practice cannot be implemented unless the context is supportive. In the United States Aiken (2002) has contributed much to the literature on context and has developed an instrument to measure context. Research in the UK lead to the development of a theoretical framework for incorporating research into nursing practice – the PARIHS Project (Promoting Action on Research Implementation in Health Services) (Kitson et al 1998, Roycroft-Malone et al 2002). Key components of the framework have been subjected to conceptual testing including practice context, facilitation (McCormack et al 2002) and evidence (Roycroft-Malone et al 2002). The research to be presented will contribute significantly to the growing body of knowledge on context

Research conducted by Aiken (2002) and her colleagues in relation to the development of a Nursing Index has received considerable attention in America but this has not been without its critics (Slater and McCormack 2006). The importance of Aiken's work (2002) stems from its ability to identify certain elements of context, which may be amenable to change in an effort to retain nurses and deliver quality care. For example Aiken et al (2000) examined whether hospitals selected for recognition by the American Nurses Credentialing Centre (ANCC) Magnet accreditation application process, were as successful in creating environments in which excellent nursing care was provided, as the original AAN Magnet hospitals.

Seven ANCC Magnet hospitals were compared with 13 original Magnet hospitals; nurses on medical and surgical units were invited to complete the Nursing Work Index – Revised (NWI-R) (Aiken and Patrician 2000) to measure the extent of nurse autonomy, nurses' control over their practice environment and quality of nurses' relations with physicians. Nurse autonomy and nurse control over the practice setting were more characteristic of ANCC Magnet hospitals, than the original Magnet hospitals and the differences were statistically significant. In the ANNC Magnet hospitals, contributions nurses made were greatly appreciated, a powerful chief nurse executive was evident; nurses were significantly more likely to stay in employment, were more involved in policy decisions and had control over their own practice. A collaborative research endeavour in five countries (United States, Canada, England, Scotland and Germany) obtained reports from 43,000 nurses from 711 hospitals to articulate the contribution of nurse staffing to hospital patient outcomes. The study obtained information on organizational climate, nurse staffing and nurse and patient outcomes (Aiken et al 2002). Core problems in work design and workforce management were found. For example, small numbers of staff reported that administrative staff listen and respond to nurses concerns. This is important, as an indicator of context is organizational or administrative support. The only Irish study investigating the context within which professional practice takes place using the NWI-R (Flynn and McCarthy 2006) investigated the characteristics of the nursing practice environment in eleven major acute general hospitals in Southern Ireland from the perspective of staff-nurses ($n=368$) and Directors of Nursing ($n=10$). Results indicated that staff-nurses had a moderately positive perception of relationships with doctors; autonomy in practice; organisational support and control over practice settings. A significant statistical difference was found between the practice environments in the eleven hospitals. When comparisons were

made with US Magnet hospital research, findings of lower scores on all dimensions of professional practice environment were achieved by Irish nurses. Considerable research currently exists on the context within which clinicians practice. However, just one instrument exists which measures context. The research builds on that detailed above. It sets out to develop a new instrument to measure context and it has been supported by both the Health Research Board (HRB) in Southern Ireland and the Research and Development Office in Northern Ireland.

Aims

The overall aim of the research was twofold: a) to determine the contextual indicators that enables or inhibits effective continence promotion and continence management in rehabilitation settings for older people; and b) to develop a tool for assessing the contextual factors and to test the reliability, validity and factor structure of a developing instrument.

Method

The research was conducted across two services and developed in 2 phases. Patients and staff from two rehabilitation units for the elderly (in Southern Ireland a unit of 80 beds, 43 nursing staff, 12 paramedical personnel and in Northern Ireland a unit of 78 beds and a day hospital, 4 consultant medical staff, 90 nursing staff and 25 therapists) participated. In Phase 1 a case study methodology set with the PARIHS Framework (Kitson et al 1998, Rycroft-Malone et al 2002) was conducted. Data were collected using (a) The RCP Audit (1998), (b) a knowledge questionnaire (Irwin et al 2001), (c) the Nursing Work Index- Revised (NWI-R) (Aiken et al 2001) focus groups and (d) observations of practice. Data were analyzed using both qualitative (Ely et al 1991) and quantitative methods.

Findings

Phase 1

Data supported a weak context and illustrated that practitioners had some insight into the contextual factors that hindered or enhanced evidence based practice. The approach to problems reflected reactive care with limited assessments and an over reliance on the use of outdated practices.

Phase 2

By utilizing the context framework the research team were able to identify the specific contextual issues that were hindering and enabling the delivery of person centered care and the themes that arose from this process were developed into item statements. Thus the CAI was developed using standard approaches to reducing a large item pool.

Method- Phase 2

The development of the CAI went through several processes of testing for validity, reliability and usability, with nurses across the Republic of Ireland and the UK. Specifically the CAI was developed through:

- a. Pilot testing the instrument for face and content validity, comprehensiveness and specificity (n=22 nurses).
- b. Large sample factor structure testing (n=936 nurses).
- c. Test retest for reliability, stability and homogeneity (n=23 nurses).
- d. Telephone interviews testing usability (n=20 nurses).

Context assessment index (CAI)

The CAI that was developed consists of 43 items. Factor analysis supported a 5 factor scale: collaborative practice, respect for persons, evidence informed practice, practice boundaries and evaluation. Overall item test-retest reliability was high, scales showed good variability, high internal consistency (Cronbach alphas .78-.91) and high test re-test reliability. The results indicated that the CAI can be considered a valid instrument according to the results of the statistical analysis. Response to the usability of the revised CAI was positive and most of the respondents found that it made them reflect on practice. The scale of the study and the collaborative approach adopted has enabled systematic and rigorous testing of the validity and reliability of the CAI and enabled a context factor structure to emerge. The CAI has been recognized by practitioners as user friendly and as relevant to their practice. Overall the research was conducted as planned and the research objectives achieved. Based on the work four publications have been submitted and a further 2 are in preparation.

Further Developments

The CAI would be of value in other clinical settings. As the psychometric properties of scales are sample dependent, scales require evaluation in different settings, thus the focus is now to undertake research to test the reliability, and factor structure of the CAI in an independent sample (with nurses in general clinical settings).

Conclusions

Context is a multidimensional phenomenon comprised of collaborative practice, evidence informed practice, respect for persons, practice boundaries and evaluation. The CAI has initial reliability and validity. It has extended knowledge on practice context and will continue to be tested within diverse practice context areas.

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Authors' Note

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Contact

Professor Geraldine McCarthy
University College Cork
Ireland
e-mail: g.mccarthyu@ucc.ie

27. – Mapping nursing prescriptions for the ineffective breathing pattern diagnosis in an intensive care unit, and the NIC.

By de Assis, C.C., de Fátima Lucena, A., Bottira, AL. De Barros, L. (Brazil)

Purpose

To identify the prescribed nursing care for Intensive Care Unit (ICU) patients with a diagnosis of Ineffective Breathing Pattern, and to compare it with NIC interventions.

Methodology

Descriptive cross-sectional study carried out in a university hospital ICU in Porto Alegre/Brazil, which has analyzed the nursing prescriptions for the Ineffective Breathing Pattern nursing diagnosis. Data were collected retrospectively, with a database, from July-December 2003. Analysis was made on two phases: descriptive statistical analysis, and cross mapping of every prescribed nursing care and the NIC interventions for the Ineffective Breathing Pattern nursing diagnosis.

Findings

Identified 494 admissions with that diagnosis, for which a total of 2, 657 nursing care were prescribed, divided into 49 types. The cross mapping was made in 96% of the cases, with 47 situations of nursing care mapped in 24 NIC interventions: two priority, six suggested, seven optional added and nine ones not linked to the studied diagnosis. On some occasions the prescribed nursing care and the NIC intervention and activity were mapped; on others only the NIC intervention was mapped; there were cases in which more than one NIC intervention were mapped.

Discussion

The findings have made the nursing clinical practice evident, in correlation with an intervention classification system, which has highlighted what nurses do during patient care.

Conclusion

NIC applies to the nursing practice since most of the prescribed nursing care is congruous to the interventions proposed by it, which may help prescription qualification and the nursing care realized.

Contact

e-mail: ci_calsinski@terra.com.br

28. – NIC interventions and NOC outcomes in patients with activity intolerance

By de Assis, C.C., Rodrigues, FG., dos Santos, FA. and de Barros, ALBL. (Brazil)

Purpose

To evaluate the effectiveness of NIC interventional activities and the NOC outcome “activity tolerance” of patients with cardiac insufficiency and whose clinical conditions suggest the nursing diagnosis “activity intolerance”.

Method

This is a prospective study, which was carried out in the cardiology ward of public teaching hospital in São Paulo, Brazil from February 2005 to May 2005. The NIC interventional activities were performed and evaluated daily for all patients interned in the cardiology ward whose clinical conditions suggest the diagnosis “activity intolerance” during the first 15 days. A Likert scale was used for the collection of data.

Results

The patients had a gradual improvement of the activity intolerance after the NIC interventions, during the hospitalization. The main associated causes of cardiac insufficiency were Chagas disease and myocardial infarction.

Discussion

The literature demonstrated that physical characteristics of patients are being used to evaluate the efficiency of nursing system. The main NIC interventions carried out in this hospital were cardiac care and energy conservation.

Conclusion

The NIC interventions activities improved the clinical conditions of the patients.

Authors' Note

Study linked to the Integrated Research Project: “Nursing Assistance Systematization in Teaching Hospitals” sponsored by the National Council of Scientific and Technological Development (CNPq).

Contact

e-mail: ci_calsinski@terra.com.br

29. – Nursing diagnoses in an intensive care unit: the Brazilian experience

By de Assis, C.C., de Fátima Lucena, A. and de Barros, ALBL. (Brazil)

Introduction

The nursing staff at Hospital de Clínicas in Porto Alegre (HCPA), Brazil, a university hospital of the Federal University of Rio Grande do Sul (UFRGS), has been working with the nursing process for more than 20 years. Furthermore, the need to improve the model in this institution, the evolution of nursing knowledge, and changes in the informatics system at the hospital gave rise to new studies and discussions concerning the references and strategies in order to make the required changes toward implementing a computerized system of nursing care plans that took into consideration the nursing diagnosis stage, which up to that time had been absent. A work group made up of nurses from the hospital and professors in the School of Nursing at UFRGS was organized and, with the help of the institution's system analysts, a computerized model of nursing care plans was created and implemented between 1998 and 2000 with a focus on nursing diagnoses. The model was based on the work of Benedet and Bub (2001), which is structured on taxonomy I of NANDA (2000) and related to the theory of basic human needs used by Horta (1979). Furthermore, ideas of other authors were used along with the practical clinical experience of the nurses at the hospital (Carpenito, 1999; Doenges and Moorhouse, 1999). The implementation of the new model took place initially in an intensive care unit (ICU) and was slowly applied to the other units in the hospital.

We currently work with a computerized nursing process in the stages of nursing diagnosis and planning care (in Brazil we call this last stage "nursing prescriptions"), but assessment and nursing evaluation are still added manually to the records. The computerized system of nursing care of HCPA makes it possible, in essence, for each nursing diagnosis identified to present a list of corresponding actions/interventions that are selected depending on the nurse's clinical evaluation (Crossetti et al 2002, Crossetti and Dias, 2002). Preliminary evaluations show that this model has assisted in solving patient health problems by individualizing nursing diagnoses and improving care planning as a result the provided care quality. Despite these advances, there is a constant need to update and evaluate the model in order to constantly improve it through discussions, studies, and research. With this as a background, an investigation into the frequency of nursing diagnoses and their related or risk factors with patients admitted to the ICU was undertaken to contribute to the work already begun in the hospital as well as to deepen knowledge in the area and improve the functioning of nurses in Brazil. We hoped, in addition, that these results would provide further progress in the knowledge of applicability and validity of the terminology in nursing diagnoses in Brazilian clinical practice and favor the identification of strategies for improving the quality of the interventions offered, as well as making it possible to use these results in new research about diagnostic precision and the development of computerized information systems.

Methods

This descriptive, cross-sectional, study was carried out in the ICU of HCPA, a large university hospital located in the south of Brazil. This unit cares for critically ill adults of clinical or surgical services and has 34 beds divided into two large areas – Area 1 and Area 2 – both providing the same services. Area 1, however, includes specific facilities for the recovery of patients after heart surgery in the Cardiac Care Unit (CCU). The research project was approved by the research ethical committees of the institutions involved. Data consisted of information contained in the database

of the hospital's computerized system of nursing care plans related to the patients admitted to ICU during a period of six months. The most frequently made nursing diagnoses were identified along with their related or risk factors. Being admitted to the unit was the only inclusion criterion. Data gathering was retrospective. Information was entered on spreadsheets using Microsoft Excel for Windows. The data analysis included descriptive statistics, with the help of two programs: Microsoft Excel for Windows and the Statistical Package for the Social Sciences (SPSS 12.0) for Windows (Motta and Wagner 2003, Wagner et al 2005).

Findings

A total of 991 hospital admissions to the ICU during the selected timeframe: 345 of these in CCU; 336 in Area 2; and 310 in Area 1. These admissions generated a total of 6,845 nursing diagnoses with 63 different diagnostic categories, for which 39,947 nursing interventions were prescribed. The average number of nursing diagnoses per admission in the ICU was 6.9. Six of the diagnoses were assigned greater than 40% of the time. They included bathing/hygiene self-care deficit, risk for infection, impaired physical mobility, ineffective breathing pattern, impaired spontaneous ventilation, and risk for impaired skin integrity. They accounted for 3,834 (56%) of the nursing diagnoses made, which represented more than half of the total of nursing diagnoses carried out in the period analyzed. For these six nursing diagnoses, 4,493 related or risk factors (aetiologies) were identified, divided into 29 different types, an average of 1.2 etiologies per nursing diagnosis.

Discussion

The six most frequent nursing diagnoses identified in the ICU, with a percentage greater than 40%, most of the times they are also described in the literature as being the most common, which would likely indicate that they are common to the clinical nursing practice as a whole and therefore deserve greater attention and knowledge about them (Pasini et al 1996, Maria 1997, Killen et al 1997, Barros 1998, Guerriero et al 2000, Ventura 2001, Galdeano et al 2003, Canero et al 2004). The average of 6.9 nursing diagnoses per patient admitted was also similar to those described in studies with patients in critical care ((Pasini et al 1996, Maria 1997). As for the related or risk factors (aetiologies), it is important to reinforce the idea that to know them and identify them correctly is fundamental to precise clinical judgment, which will become the basis for choosing the best intervention and activities to help the patient with a certain diagnosis and eventually reach the expected outcome.

Conclusions and Implications

The results of this study made it possible to identify the most frequent nursing diagnoses and their related or risk factors in the clinical nursing practice in an ICU in Brazil. These results have served as a basis for implementing new practices, helping in the training of nursing assistants, and guiding the continued education and teaching process for nurses and others, also collaborating to the developed of the standardized nursing language usage. Of the nursing diagnoses that currently exist in the hospital's computer system, 63 different categories were identified in the ICU. Six had a percentage higher than 40% of the patients admitted. The elevated frequency of these six nursing diagnoses is similar to those found in literature, which confirms that they are common to clinical practice and therefore it is essential that they be explored through studies and practices that increase our understanding. The identification of the different related or risk factors was also important inasmuch as these increase diagnostic precision and provide guidance for the best choice of interventions and the expected nursing outcome. This facilitates the qualification of the care offered to the patients. Finally, we believe that this study has contributed with knowledge concerning the task of diagnosing with precision and helping to prioritize diagnoses for clinical studies and development of information technology systems in nursing.

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30. – A new nursing diagnosis classification system

By Carpenito-Moyet, LJ. (USA)

Nursing Diagnosis, as defined by NANDA, does not address the scope of nursing practice. This system utilizes unfamiliar and confusing terms to describe certain clinical conditions. For example increased intracranial pressure is renamed as “Decreased Intracranial Adaptive Capacity” and “Ineffective Renal Tissue Perfusion” is used to describe, for example, shock, renal failure, or renal calculi. Not only is this terminology confusing to nurses but it is rejected by other members of the multidisciplinary team.

This paper will describe a nursing diagnosis classification system which includes core and collaborative nursing diagnoses. This system will completely classify the focus of patient care for clinical nurses. The terminology is acceptable and compatible for multidisciplinary use. Definitions to differentiate core and collaborative nursing diagnoses and clinical examples will be presented.

Contact

Lynda Juall Carpenito-Moyet
48 West Wolfert Station Road
Mickleton, N.J. 08056
U.S.A.
e-mail : Juall46@msn.com
cell/mob: 609-617-3275

31. – Mild, moderate, severe: using decision making data to clarify levels of nursing problem states.

By Mac Neela, P. Scott, PA., Treacy, MP., Hyde, A., Clinton, G., Irving, K. and Lehwaldt, D. (Ireland)

Objectives

The aim of this study was to support the accurate classification of nursing problem states encountered in mental health nursing. Qualitative think aloud and interview data were used to achieve two objectives related to this aim: to define nursing problem states and describe problem intensity levels. One of the key purposes of a nursing terminology system is to classify patient phenomena to an agreed set of nursing problem or diagnostic states. At the specific item or problem level, accurate classification results in identification of the appropriate nursing problem state and its current severity level.

Methods

Qualitative data was collected from 38 mental health nurses working in acute and community practice in Ireland. Individual think aloud data were recorded in response to four case simulations. Follow up interviews yielded further data on the nurse's prior knowledge. Data collection (four think aloud sessions, four interviews) required approximately two hours per nurse. Data were transcribed and content analysed with the aim of identifying nursing problems and how they were described. The analysis focused on the range of content for each problem (e.g., for 'mood') and the discrimination of different levels of problem severity.

The study is one element of the work carried out to develop the Irish Nursing Minimum Data Set (INMDS), a newly designed tool for recording nursing data. Two versions of the INMDS have been developed, for mental health and general nursing. This paper is based on the INMDS for mental health. INMDS elements are divided into patient problems (e.g., mood, independent living, hygiene), nursing interventions and coordination activities. Each section comprises one-item indicators rated on a 0-4 scale (e.g., not a problem-severe problem). Nurses record INMDS data by completing the INMDS form in respect of a particular patient's problems and nursing care over the previous 24 hour period.

Results

The content categories identified through the analysis were applied to INMDS problem states described in the INMDS user manual. The user manual explains the scoring system and defines the INMDS data elements. Qualitative decision making data is a resource for describing problem definitions and severity levels, contextualising the user manual in the language of clinical practice. Given the importance of user engagement and involvement with nursing terminology systems, using data from clinical nurses grounds the description of problem states in naturalistic terms with which other nurses can readily and reliably identify.

Contact

Dr Pádraig Mac Neela
Department of Psychology
National University of Ireland, Galway
Galway
Ireland.
phone: +353 91 495121
e-mail: padraig.macneela@nuigalway.ie

32. – A comparison of the similarities and differences between NANDA and the ICF

By Lavin, MA., Oud, N. and Threats, T. (USA/Netherlands)

Introduction

Fifty-five citations were retrieved on January 2, 2007 when the search terms “nursing and ICF” were entered into the PubMed search engine of the U.S. National Library of Medicine (NLM). When the search terms “NANDA and ICF” were entered into the PubMed database, only one article was retrieved (Müller-Staub et al 2006). Given the dearth of comparative data, it was decided to examine basic similarities and differences in the structures of NANDA Taxonomy II and the ICF as a prelude to subsequent research.

Objective

The primary objective of this study was to compare the classification structure of NANDA Taxonomy II (NANDA 2005-2006) and the International Classification of Functioning, Disability and Health (WHO 2001). A secondary objective was to disseminate information to classification developers for collaborative research purposes.

Background

NANDA Taxonomy II and the ICF share commonalities. NANDA classifies nursing diagnoses, i.e. “individual, family, or community responses to actual or potential health problems/life processes which prove the basis for definitive nursing therapy” (NANDA 2005-2006:229, NANDA 1991:65). The ICF classifies “health or health related states” (WHO 2001:8). The NANDA domains are an adaptation of Gordon’s Functional Health Patterns (NANDA 2005-2006, Gordon 1998). The ICF is a classification of functioning, health, and disability. Each is recognized internationally.

Methods

The official versions of NANDA Taxonomy II (2005-2006) and the ICF (2001) were compared in terms of: classification scheme, domains and components, classes and categories; classification levels; elements, codes, and units of classification; code structure; number of codes in use; axes and qualifiers; definitions; and uncoded items. ICF and NANDA Taxonomy II examples are provided for illustration purposes. The analysis was supplemented, where indicated, with definitions from the glossary of terms of the ANA Nursing Practice Information Infrastructure (ANA 2006) and ISO 11179-1 (Gillman 2004).

Results

The order discussed in the methods sections was used to organize results.

Classification scheme, domains and components, classes and categories.

Every classification possesses a scheme, i.e. a method of “assigning objects into groups based on characteristics which the objects have in common” (ANA 2006) In NANDA, the highest taxonomic group is the domain, of which there are 13 (NANDA 2005-2006: 230-231). By definition, a domain represents the dominant theme for a set of concept categories (Gillman 2004). In NANDA, these concept categories are called classes. In the ICF, the highest taxonomic

group is the component (WHO 2001:21), of which there are four. Within each ICF component, there are domains, i.e., the second highest ICF taxonomic group.

Classification levels.

NANDA Taxonomy II is a three-level structure: domain, class, and diagnosis. The ICF is a five-level structure, consisting of the component, domain, category, and two subcategories.

Elements, codes, and units of classification.

The fundamental element of NANDA Taxonomy 3 is the diagnostic concept, embedded in the nursing diagnosis. Analogous to the “fundamental element” in NANDA is the “unit of classification” in the ICF (WHO,2001:8).

Code structure.

The code structure of NANDA Taxonomy II is a single five digit code, assigned only once. When the diagnosis is retired, the code is retired. Consistent with U.S. National Library of Medicine recommendations, the NANDA numeric code does not include data on the level or the location of the diagnosis within the classification (NANDA 2005-2006). The alphanumeric structure of the ICF provides information on the level and location of the coded items, and this is consistent with WHO methods.

Number of codes in use.

The total number of codes in use is, in NANDA, the total number of diagnoses classified, and, in the ICF, the total number of classified health or health related states. In NANDA Taxonomy II (2005-2006), there are a total of 172 nursing diagnoses. In the ICF, there are 384 coded items within the activities and participation component alone.

Axes and qualifiers.

NANDA Taxonomy II is a multiaxial system with each axis possessing a number of modifiers. These axes are (NANDA 2005-2006: 232-233):

- *Axis 1:* The diagnostic concept
- *Axis 2:* Time (acute, chronic, intermittent, and continuous)
- *Axis 3:* Subject of the diagnosis (individual, family, group, community)
- *Axis 4:* Age
- *Axis 5:* Health status (wellness, risk, actual)
- *Axis 6:* Descriptors (limits or specifies the meaning of a diagnostic concept, e.g., impaired, effective, decreased, increased, deficient)
- *Axis 7:* Topology (parts/regions of the body and related functions)

Axes are not coded items within NANDA Taxonomy II. They are intended to be selectively used by nurses in developing diagnoses. For example, the diagnosis “risk for impaired parent/infant/child attachment” includes the:

- Diagnostic concept of “attachment” selected from Axis 1.
- Descriptor “impaired” selected from Axis 6.
- Subject of the diagnosis: “parent/infant/child” from Axis 3.
- Health status of the subject: “Risk for” from Axis 5.

The ICF uses qualifiers for each of its health or health related states. These qualifiers are not used to “build” the health related state but to “qualify” the state observed within a patient or client. The qualifiers differ according to the component within which the health or health related states exist. For example, the qualifiers within activities/participation component are performance and capacity (WHO 2001: 14, 22). Performance refers to how a person is actually “performing” at present; capacity refers to the “ability” of a person to perform/execute a task. Performance may

be equal to, less than, or in some cases seem to exceed capacity. In the ICF (WHO 2001:22), the severity of an observed performance or capacity problem is quantified on a 0-4 Likert scale (including two additional spaces for responses that are “not specified” or “not applicable”). In addition, each performance and capacity qualifier may be further conditioned by whether or not assistance is required. For example, a health related state, e.g., “parent-child relationships,” may be qualified in terms of performance or capacity or both, with each qualifier quantified on a 0-4 Likert-type scale, and then conditioned on whether assistance was needed or not.

- Performance, indicative of a moderate parent/child relationship problem
 - With assistance
 - Without assistance
- Capacity, ability to have a parent/child relationship with negligible problems
 - With assistance
 - Without assistance

Unlike NANDA, where the modifiers are built into the coded nursing diagnosis in a pre-coordinated manner, the ICF qualifiers and quantifiers are post-coordinated, requiring the addition of coded spaces to the health or health related state code to accommodate qualifiers, quantifiers, and assistance/no assistance conditions.

Definitions.

NANDA Taxonomy II provides definitions of each nursing diagnosis; the ICF provides definitions of each health/health related states.

Uncoded items.

NANDA includes uncoded defining characteristics and related factors in its official classification (NANDA 2005-2006). The ICF does not include defining characteristics or related factors per se. The ICF does include what are called “contextual factors,” i.e., environmental factors and personal factors (WHO 2001:16-17). Environmental factors are coded; they exist within the environmental factors component. The personal factors are not coded. They include factors such as demographics, current and past life experiences and lifestyle.

Conclusions and recommendations

The main conclusions are three:

- The ICF includes a greater number of health or health-related states than the number of diagnoses included in NANDA Taxonomy II.
- The five digit coding structure of NANDA Taxonomy II is more consistent with the recommendations of the U.S. National Library of Medicine that the alphanumeric coding structure of the ICF; on the other hand, the ICF coding structure is consistent with WHO classification methods.
- The multiaxial nature of NANDA creates flexibility in the building/construction and ease of use of NANDA Taxonomy II diagnoses, whereas qualifiers (e.g., performance/ capacity), quantifiers (severity), and conditions (with/without assistance) add complexity. In making such selections, developers weigh the benefits and costs of each method in conjunction with the needs of the clinicians using the classification.

From these conclusions, the following recommendations were drawn. The first is to analyze the extent to which the ICF can contribute concepts for diagnostic development within NANDA Taxonomy II. The second is to explore ways in which NANDA International informaticists, developers, and researchers can contribute to future ICF development and use.

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Contact

M. A. Lavin
Saint Louis University
Saint Louis
Missouri 63104, USA.
Phone: +3149 77 89 61
Fax: +3145 77 88 40
E-mail: lavinma@slu.edu

33. – The Relationship between Information Systems Use, and Nurses' Perceptions of Improved Interdisciplinary Communication and Documentation

By Abdro, A. & Hudak, C.A. (USA)

The purpose of this study is to explore the relationship between information systems (IS) use among nurses and their perception of interdisciplinary communication and documentation. Hospitals are information-based organizations. Nurses manage a large part of patient information and, as such, are gatekeepers to other health care providers. The Institute of Medicine reports the importance of the communication process in health care for improving quality of care and patient safety (Anthony & Preuss, 2002; Institute of Medicine, 2001). With the increasing implementation of IS in health care, there is potential for change in the work processes and outcomes. Particularly, nurses' use IS to provide patient care and communicate with other nurses and physicians.

Nurses are the largest group of IS users as well as being responsible for the patient care around the clock. Nurses' use of IS improves the reporting, organizing, locating, and utilization of clinical information. They also updating and transmitting information about patients' conditions. Managing patient data requires a shared structure of patient data among health care providers. IS changed the way staff nurses interact with information and getting information quickly. The Joint Commission on Accreditation of Health Care Organizations recommended using IS to improve workflow processes within health care organizations (JCAHCO) (2003). Yet there is little information and clinical evidence of the relationship between IS use in general and, specifically nurses' perceived interdisciplinary communication and documentation.

Literature Review

Few studies have investigated improvements in communication and documentation but they have been reported as an important outcome of using IS in health care (Dennis, Sweeney, Macdonald, & Morse, 1993; United States General Accounting Office, 2003; Weir, Johnsen, Roscoe, & Cribbs, 1996). Dennis et al., (1993) conducted a three month trial of a bedside computer system for nursing documentation in medical units. Three data collection methods were used: chart monitoring, self-report questionnaire, and semi-structured interview among 28 nurses. The chart monitor was used to assess the impact of a bedside computer system on the quality of patient care documentation in which the JCAHCO standards were used for evaluation. Twenty charts pre-implementation and 20 charts post-implementation were randomly selected and reviewed by a clinical nurse specialist. The researchers developed a reliable (Cronbach's alpha .80) and valid (evaluated by four clinical nurse specialists) questionnaire to measure the impact of the bedside nursing documentation system on nurses' work efficiency and effectiveness and their professional/personal satisfaction from using the system. The bedside computer system significantly improved nurses' compliance with the JCAHO standards for nursing documentation, and it was considered an indicator of quality of care because the documentation included nursing assessment and patient responses. In addition, nurses qualitatively reported that there was improvement in the ease and speed of finding information and that charting was easily readable. There was an increase in the frequency of charting and nurses could consistently chart within the care plan. Furthermore, at the completion of the three-month trial, nurses reported positive influences on their work effectiveness. They indicated that charts were always available, used in a timely manner, saved more time than paper documentation, and facilitated interdisciplinary communication among nursing staff and other

health care team members. The U.S General Accounting Office (2003) reported that 10 private and public health care delivery organizations, 3 health insurers, and 1 community data network using IS have reported increased accuracy and completeness of medical documentation. Several researchers reported that nurses expected that IS use improves documentation and communication, therefore streamlining nursing activities (Kirkley & Rewick, 2003; Rewick & Gaffey, 2001). In a descriptive study by Walker & Prophet (1997), on-line retrieval charting and data based IS were implemented. By reviewing chart completeness using Nursing Interventions Classification, the results indicated that the level of charting completeness nearly doubled from the manual to the online system. There was an improvement in standards compliance from a 60% (manual charting) compared to a 100% using online documentation.

Theoretical Framework

This current study was guided by Donabedian's (1996) and Holzemer and Reilly's (1995) conceptual framework which is an input-process-outcome model. IS use was conceptualized as the process by which nurses are engaged to accomplish and support nursing task activities. Interdisciplinary communication and documentation was conceptualized as outcomes and improvements obtained from the process of IS use.

Methods

The study utilized a descriptive correlational cross-sectional design. Study questionnaires were mailed according to a modified Dillman's Tailored Design Method (2000) for mail surveys. First, a random sample of 108 staff nurses who work in hospitals was obtained from a list of names and addresses from Ohio Nurses Association. Inclusion criteria included that nurses had to have spent at least 50% of their time providing direct patient care and use at least one IS to be included in the study. Then, the study questionnaire was mailed to nurses with a personalized letter explaining the purpose of the study and a return envelope with postage. The second contact with nurses was a thank you postcard, which was mailed a week after the questionnaire to express appreciation for responding or remind the nurses who have not yet completed the questionnaire (Dillman, 2000).

Measures

Nurses were to complete a demographic sheet including nurses' demographics information (e.g., age, level of education) and hospital characteristics (Specialty, bed N.). They were also asked to indicate IS types that are included in the hospital (See Table 1). IS use instrument was used from a pilot study done among nurses (Abdrbo, Hudak, & Anthony, 2006). Nurses were asked to indicate the frequency of use of IS to accomplish specific nursing tasks based on nurses process using 7 questions measured on 5-point likert type ranging from (0) never/almost never to (4) always/almost always. Total score ranged from 0 to 28, with higher scores indicative of a higher level of IS use. Nurses also were asked to respond to 18 questions about interdisciplinary communication and documentation (Abdrbo et al., 2006) measured on a 5-point Likert scale ranging from (1) strongly disagree to (5) strongly agree; higher scores indicated high agreement. Both scales established high reliability and validity (Abdrbo, Hudak, & Anthony, 2006).

Findings

Nurses' Demographics

The majority of nurses ($n = 90$, 88.2%) were female, white ($n = 97$, 95%), 5% were Africa American. The average age of nurses was 48.9 years ($SD = 8.9$), with 23.5 years ($SD = 9.1$) experience in nursing, and 18.1 years ($SD = 9.0$) working in the hospital. Thirty four percent of nurses had a BSN ($n = 35$), 33% ($n = 34$) had an associate degree and 24 % had a diploma degree.

Most of the participants were staff nurses ($n = 97$, 95.1%), worked full time ($n = 66$, 64.7%) on average of 35 hours per week. Thirty seven percent of nurses were working in critical care units ($n = 37$), 18% were in obstetric; and 20% in medical-surgical units while the others were working in other various units. Nurses reported that they worked in multipurpose hospitals ($N = 94$, 95.9%), located in urban areas ($N = 58$, 56.9%) with an average of 405 bed.

IS Type	N.	%	IS Type	N.	%
*Systems that support the nursing process:	49	46.2	-Radiology systems	99	91.7
- Online assessments					
-Nursing care plans	61	57.5	-Laboratory systems	101	93.5
-Care paths	58	55.2	-Nutritional systems	92	85.2
-Flow sheets	68	63.6	-Ancillary systems	92	86
-Intake & output sheets	71	66.4	*Systems that support results reporting:	76	73
			-Pharmacy systems		
-Patient notes	67	62.8	-Radiology systems	104	97.2
*Systems that Support Professional Communication:	97	90.7	-Laboratory systems	104	97.2
-E-mail					
*Systems That Support Information Retrieval from Internet	103	97.2	-Nutritional systems	81	75.7
*Systems that Support Patient Care Administration:	92	86	-Ancillary systems	78	73.6
-Admission, Discharge, Transfer (ADT)					
*Systems that support order entry:	92	85.2			
-Pharmacy systems					

Table 1- Number and Percentages of IS types Available Reported by Nurses in Their Hospitals

Communication and Documentation

Nurses reported an IS use score average of 17.80 ($SD = 6.84$). They also reported their perceptions of improved communication and documentation on average score of 3.51($SD = .62$). Pearson product moment correlation was used to describe the relationship between IS use and improved communication and documentation. Assumptions were tested by examining normal probability plots of residuals and scatter diagrams of residuals versus predicted residuals. No violations of normality, linearity, or homoscedasticity of residuals were detected. There was significant positive correlations between IS use and improved communication and documentation ($r = .28$, $p < .01$). This result indicates that the higher the IS use, the higher the nurses perceptions of improved communication and documentation.

Discussion

The study results revealed that although IS are available in most hospitals, as indicated in Table 1, nurses used IS on a relatively moderate basis. These results differ from the existing IS literature of limited use of IS among nurses (Goossen, Epping, & Dassen, 1997). There was a statistically significant positive relationship between IS use and nurses' perception of improved communication and documentation. Consistent with this findings, Dykes et al. (2006) study that found via an electronic survey high percentages of nurses working in 4 different health care organizations agree that information technology applications facilitate interdisciplinary communication and documentation. Weir and colleagues (1996) found that there are no differences in nurses' ratings of the frequency of contact and ease of access to physicians between nurses who use the physician order entry and nurses who do not use it. The current study results may be affected by the age and years of experience of the participants. In addition, access to IS and attitudes about use should be included in the future studies. Further research can be conducted using different samples of nurses or a longitudinal design to ensure the consistency of the results and use changes over time.

Summary

Understanding the role of IS use among nurses in improving communication and documentation is important for both nurse and patient outcomes. IS can help nurses save time and focus on direct patient care. IS use could decrease errors that may result from poor communication between nurses and physicians. In addition, using IS can improve the quality of life for nurses and the quality of care for patients (Joint Commission on Accreditation of Health care Organizations, 2003).

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Contact

e-mail: amany.abdrbo@case.edu

34. – Communicating nursing practice: identification of common patient problems (nursing diagnoses) and level of staff preparedness to manage problems as identified by staff nurses and clinical nurse specialists

By Jeffries, M., Connors, P. and Jones, DA. (USA)

Introduction

Communicating nursing practice is critical to the role of the staff nurse and the clinical nurse specialist. Within an interdisciplinary care environment, documentation of nursing's phenomena of concern increases nursing's visibility and can identify nursing's contributions to patient outcomes. The identification of frequently occurring patient problems (nursing diagnoses) is essential to defining the focus of nursing practice and guiding staff development initiatives often designed by the clinical nurse specialist to improve patient care.

Objectives

The objectives of this study were twofold: 1) to compare the ranking of the ten most common patient problems as reported by staff and clinical nurse specialists; and 2) to identify nurses' overall level of preparedness to address each problem across three study groups.

Methodology

A survey entitled "Common Patient Problems" was developed as a component of a larger evaluation survey, by a group of Clinical Nurse Specialists (CNS) at a Large Medical Centre in Massachusetts, USA. A patient problem list was generated using the NANDA Classification list and clinical expertise. The survey containing 27 common problems was validated by a group of expert clinicians. The survey asked staff and CNS's to rank those patient problems frequently occurring in their patient populations and rate their level of preparedness to address the problem. There were three data samples analysed in the current investigation: 1) CNS's attending a national meeting; 2) CNS's at the medical center; and 3) over 900 nurses completing a staff survey in which the "Common Patient Problems" survey was included. Respondents' ratings were placed on two separate Likert scales, one for the problem frequency and one for preparedness. Additional demographic information was also obtained.

Results

In general, staff nurses ranked problems such as anxiety and ineffective pain management as the most frequently observed. They also reported being prepared to address problems such as pain better than ineffective airway clearance. Nurses working in different units also ranked ordered problems differently. In one data set of 104 nurses caring for patients in seven critical care units (ICU, MICU, SICU, etc), skin breakdown was identified as occurring 57% of the time which differed in frequency within other populations. The CNS's identified the top ten most frequently occurring patient problems which were further analysed according to variables such as years of experience, geographic work setting, etc. Many of the problems identified were consistent with

other survey data. The level of preparedness was high for CNS's across many problems listed. The study results indicated that many of the patient problems identified in Massachusetts are also problems observed in other parts of the United States. CNS's have found that this data helpful in guiding evidence-based practice initiatives, focusing staff development, articulating the role of nursing and linking the contributions of the nurse to decreased length of stay and a reduction in the cost of care.

Contact

Dr. Dorothy A. Jones
399 Pond Street F-12
Braintree
MA 02184
fax: +6175520745
e-mail: Dorothy.jones@bc.edu

35. – Impaired physical mobility: pattern of use for adult patients

By Cruz, DALM., Silva, EL., Leal, FAO., Trindade, MM., Oliveira, NB. and Tsukamoto, R. (Brazil)

Introduction

Impaired physical mobility is a frequent nursing diagnosis of hospitalized adult patients (Chang 1995, Hur et al 2005). Clinical experience with the NANDA-I Classification (NANDA 2005) has been challenging nurses to differentiate between that diagnosis and others which have overlapping defining characteristics. The authors of this ongoing study have observed that hospital nurses are uncomfortable dealing with diagnostic decisions related to exercise/activity responses. This study was proposed in order to produce information on the clinical use of impaired physical mobility that can be applied both to the debate of the complexity of the diagnostic task and to the refinement of the clinical use of this particular diagnosis.

Purpose

This study is being developed to describe the clinical use of impaired physical mobility (IPM) documented for acute-care adult patients. The objectives are to examine: 1) the frequency of IPM; 2) the defining characteristics and related factors documented for IPM; 3) association of IPM with selected variables (age, gender, co-occurring nursing diagnoses, hospitalization outcome, and care setting); and 4) the interventions planned to address impaired physical mobility. The first 3 objectives are addressed in this presentation.

Method

A retrospective descriptive study, conducted by nursing records analysis, was used to study nursing diagnoses and nurse orders daily documented for patients interned on August 2005 at two wards (surgical and non-surgical) in an academic hospital in São Paulo, Brazil. In this setting, formal documentation of nursing diagnosis, according to the North American Nursing Diagnosis Classification (NANDA 2005), started in May 2005. Nursing documentation was manual (paper and pen); there was a printed numbered list of high frequency nursing diagnoses and a list of high frequency nurse orders. Nurses were required to check the nursing diagnoses they stated and also the defining characteristics and related factors they judged to support the statement. There were blank spaces to add diagnoses, characteristics, related factors or nursing orders not printed in the forms. Nurses were also required to point out the linkages between nursing diagnoses stated and nurse orders by means of adding to each nurse order the number of the correspondent nursing diagnosis.

Patients' clinical and demographic data, daily nursing diagnoses and nursing orders documented by nurses on patients' charts were collected from patients' charts.

The sample was 2,257 daily nursing records of 375 adult patients who were admitted on August 2005 at the surgical (253 / 67.5%) or non-surgical wards (122 / 32.5%) (male = 50.7%; mean age = 51.5 ± 19.8 years; mean length of hospitalization = 5.7 ± 5.9 days; intra-hospital death = 4.0%). Diseases of digestive system (28.1%) were the most frequent major medical diagnoses.

Data were descriptively analyzed (nursing diagnosis; impaired physical mobility defining characteristics and related factors) and univariated statistic (t-Test and Chi-square) were applied to test for association between IPM and selected variables. An alpha level of .05 was applied for all

tests. Examination of nursing orders and cluster analyses of nursing diagnoses co-occurring with impaired physical mobility will be conducted in future study.

Findings

This study sample was 2,257 (100%) daily nursing records of 375 patients admitted to the surgical or non-surgical ward. Out of the total daily nursing records, 969 (42.9%) had IPM stated. These daily records were from the charts of 177 patients (44/24.9% from non surgical ward; 133/75.1% from surgical ward). Table 1 is a reference to sample and sub samples.

Reference	Sub samples		Sample
	Surgical Ward	Non-Surgical Ward	
<i>Set of records</i>			
Daily nursing records	1,211	1,046	2,257
Hospitalizations (patients)	253	122	375
<i>Sub set of records (IPM)</i>			
Daily nursing records wt IPM	574	395	969
Hospitalizations (patients) wt at least one record of IPM	133	44	177

Table 1. Reference numbers of sample and sub samples

For the total sample (2,257 daily records) there were 11,673 nursing diagnoses stated (mean per patient/day = 5.3 ± 3.0 ; median = 5.0; range = 0-16) and 590 collaborative problems. There were 113 daily records with neither nursing diagnoses nor collaborative problem stated; 72.8% were on the discharge day and 15.6% were on the admission day. Forty-eight nursing diagnoses occurred at least once; 33 occurred in both wards, 3 occurred just on non-surgical records, and 14 just on surgical ones (including collaborative problems as a general category of nursing diagnosis to simplify this presentation).

Five nursing diagnoses were statistically associated with IPM for the total sample: ineffective airway clearance ($\chi^2=34.77$, $p=0.000$); impaired skin integrity ($\chi^2=72.78$, $p=0.000$); impaired tissue integrity ($\chi^2=75.18$, $p=0.000$); risk for impaired skin integrity ($\chi^2=126.51$, $p=0.000$); and ineffective tissue perfusion (peripheral) ($\chi^2=122.34$, $p=0.000$).

IPM were statistically associated to age and length of hospitalization of surgical, non-surgical and total sample patients. Table 2 presents the results of the t-Test applied to the total sample patients.

IPM was not statistically associated to gender. About 52% of the patients admitted to the Surgical ward, and 36.1% of the ones admitted to the Non-surgical ward had IPM at least one day ($\chi^2 = 8.346$; $p = 0.004$).

Variables	IPM	N	Mean	SD	SE	t - Test			
						t	p	IC 95%	
Age*	Yes	176	56.1	19.1	1.4	4.38	0.000	4.84	12.72
	No	196	47.4	19.4	1.4				
LOH	Yes	177	7.3	6.9	0.5	4.96	0.000	1.80	4.18
	No	196	4.3	4.2	0.3				

Table 2: Results of t-Test for IPM and age and length of hospitalization (LOH) (N=375).

* Missing data = 2

Table 3 presents nursing diagnoses with frequencies above 30% for the sample and sub samples of daily nursing records.

Diagnosis	Ward				Total	
	Surgical (N=1221)		Non-Surgical (N=1046)		n	%
	n	%	n	%		
Acute pain	1°	70.3	3°	54.7	1°	63.0
Impaired skin integrity	2°	57.7	2°	59.3	2°	58.4
Impaired tissue integrity	*		1°	61.4	3°	44.4
Impaired physical mobility	3°	47.4	6°	37.8	4°	42.9
Anxiety	4°	43.8	5°	38.5	5°	41.3
Innefective protection	*		4°	52.7	*	
Innefective airway clearance	*		7°	33.6	*	
Imbalannced nutrition: less...	5°	33.9	*		*	
Bathing/Hygiene self-care deficit	5°	33.9	*		*	

Table 3. High frequency nursing diagnoses. *Frequency < 30%

IPM was one of the most frequent nursing diagnoses. All daily records with IPM were extracted of the total sample resulting in 969 daily nursing records. This daily records were from charts of 177 patients (44/24.9% from non surgical ward; 133/75.1% from surgical ward) (Table 4).

Variable	Ward				Total (N=177)	
	Surgical (N=44)		Non-Surgical (N=133)		n	%
Gender	Female	Male	N (valid)			
Female	64	48.1%	26	59.1%	90	49.2%
Male	69	51.9%	18	40.9%	87	50.8%
N (valid)	133		44		177	

Variable	Ward		Total (N=177)	
	Surgical (N=44)	Non-Surgical (N=133)		
<i>Outcome</i>				
Discharge	124	93.2%	40	90.9% 164 92.7%
Death	8	6.0%	4	9.1% 12 6.8%
N (valid)	132		44	176
<i>Age</i>				
Range	15-91		17-85	15-91
Mean±SD	53.6±19.1		63.8±16.9	56.1±19.1
Median	54.0		70.0	58.0
N (valid)	132		44	176
<i>Length of stay (hospital)</i>				
Range	1-39		12-24	1-39
Mean±SD	6.2±6.9		10.7±5.6	7.3±6.9
Median	3.0		9.0	5.0
N (valid)	133		44	177

Table 4: Characteristics of patients with IPM recorded at least once during the hospitalization. (N=177)

The most frequent major medical diagnosis for the surgical ward sub sample patients was diseases of the digestive system (44/33.1%), and for the non-surgical ones it was diseases of the respiratory system (13/29.5%) and of the circulatory system (12/25.0%). IPM was stated at least one day for 47.2% (177/375) patients hospitalized during the study period; for 52.6% (133/253) patients at the surgical ward and for 36.1% (44/122) at the non-surgical one.

Comments

The preliminary results of this ongoing project present characteristics of the clinical use of the IPM for adult patients in acute care settings. IPM was one of the most frequent diagnoses and it was associated to higher length of hospitalization and older patients. The results of defining characteristics, related factors, and co-occurring nursing diagnosis suggest the need to develop staff education programs to improve the use of IPM as a reliable label for a human response concerned to nursing care. Future examination of the nursing orders linked to IPM and cluster analyses of co-occurring nursing diagnoses will aggregate important information to better discuss the present results.

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Contact

Dina Monteiro da Cruz
Alameda Itu, 483 ap.92
São Paulo, SP
CEP 01421-000
Brazil
E-mail: mtmllf@usp.br

36. – A conceptual model for nursing information. (Workshop)

By Hughes, R., Clark, J. and Lloyd, D. (Wales)

Introduction

This workshop will consider the relationship between the core nursing activity of clinical decision making and the data that is eventually recorded in the Electronic Patient Record (EPR).

Content

A Conceptual Model for Nursing Information is presented for debate. Its foundation is the description of the core activities of nursing and the collection of information about these. We believe that the core activities of nursing as shown in the model must be described in documentation using standardised nursing languages. The model produces a data set for nursing that would allow nurses to describe care, manage care, quality assure care, and for the description and measurement of outcomes of nursing care. It will also provide the information required to research nursing phenomena. Such outputs are essential if we are to be in a position as a profession to articulate what we do and our reasons for doing it. In the UK (and perhaps in some other countries) the nursing profession is not well served by the various information systems currently offered by vendors and we believe that this is due to the inability of the profession to articulate clearly its requirements.

A Maximum Data Set, that is the information that nurses need to collect for their work in planning and giving care to patients, is the starting point; such a Data Set could then be refined electronically to create the Nursing Minimum Data Set for inclusion in the EPR. The Nursing Minimum Data set would contain the information required for monitoring purposes at the macro level.

To produce a Maximum Data Set for nursing, the ‘thinking’ that serves to produce such a data set has to start at the level of the individual patient and the nurses’ approach to individualised nursing care. The Conceptual Model of a Nursing Information System builds up the Nursing Maximum Data Set.

To make this Conceptual Model a reality in the United Kingdom we believe that a new and radical approach to what is called ‘the nursing process’ is required; this does not imply the abandonment of what has gone before but a new approach that also takes nurses information needs into account. In the United Kingdom nurses continue to use what Pesut and Herman (1999) have described as the 1st generation of Nursing Process - the four- stage process characterised by the four letters APIE, namely Assessment, Planning, Implementation and Evaluation. The USA moved during the 1970’s to a five-stage process - ADPIE where the ‘D’ represents Diagnosis, that is Nursing Diagnosis – and Pesut and Herman (1999) have argued for a ‘third generation’ model focussed on outcomes.

A few British texts use a five-stage approach, usually: assessment; identifying problems; defining expected outcomes; prescribing interventions; and evaluation. The second of these, “identifying problems” avoids the use of the term ‘Nursing Diagnosis’ but we would argue that the time has come in Wales for us to embrace the concept of ‘Nursing Diagnosis’ despite the objections currently articulated.

Stages of the Conceptual Model of a Nursing Information System

The Conceptual Model has six stages as follows.

Nursing Assessment

Nurses use various approaches to assessment, usually based on a model of nursing. Models of assessment are useful in framing the way the nursing assessment is undertaken but the model used should be 'fit for purpose'. We question whether it is appropriate to use the same model for patients with mental health problems as for clients who are expecting a baby. As the Nursing Assessment is the first action taken by nurses it is axiomatic that this has to be undertaken by a qualified first level nurse. The Assessment is for a purpose, it leads to Diagnosis by the application of clinical reasoning. Nursing Assessment is not a once and for all matter-it will need to be revisited regularly.

Nursing diagnosis

"Nursing Diagnoses: Definitions and Classification 2007/8" (NANDA International 2007) provides labels, definitions, and defining characteristics for more than one hundred and seventy nursing diagnoses. When diagnoses are defined using standardised terms, and coded, they can be captured by both paper and electronic means. Each diagnosis forms the basis for the selection of nursing interventions and outcomes, each requires nursing action and the nurse has to make additional decisions regarding the severity of each, the urgency with which they have to be addressed etc.

Objectives

This is the where the expected outcome is identified. The nurse agrees with the patient (and where relevant with his/her informal carers) the objectives in resolving, controlling or ameliorating the diagnoses. This empowers the patient to be part of the therapeutic team. For the nurse it involves clinical decision-making and clinical reasoning skills as well as good interpersonal skills.

For the nurse's communication with the patient/family the nurse will use language that is familiar to the patient, but in documentation shared by the professional staff the expected outcome would be expressed using standardised language. "The Nursing Outcomes Classification", (Moorhead, Johnson and Maas 2004) provides one example. Again the nurses are in no doubt about the objectives, which are clearly labelled and defined.

Interventions

Select the interventions that will achieve the objectives that have been agreed. The nurse's education and experience will inform her of the range of interventions that will be appropriate to use to address the diagnosis to achieve the objectives and will be based on the best evidence available. The "Nursing Interventions Classification", (McCloskey Dochterman and Bulechek 2004) provides a label and definition for 514 Nursing Interventions that could be incorporated into both paper and electronic documentation. Selecting the interventions involves clinical reasoning skills and will be concerned with selecting the appropriate interventions based on the needs of that particular patient and tailored to his needs. These interventions could be as part of a Care Pathway, but it should be noted that 'Care Pathways' tend to be based on Medical Diagnoses which do not correlate exactly with the nursing diagnoses: patients with the same medical diagnosis often have different nursing needs and therefore different nursing diagnoses.

Implement

Undertake the interventions appropriately, to an agreed standard. Modify the interventions based on the patient's responses and level of acceptability.

Evaluate

Evaluate the effect of the interventions/implementation on the diagnosis. Did the selected intervention achieve the predicted result? How do you measure? What tools do we, as nurses

have to do the measuring? As well as providing a label and definition for outcomes, the Nursing Outcomes Classification (2004) also provides the means for measurement. In this way we can begin to indicate if the nursing care has been effective, (clinical/nursing effectiveness) and to develop the research capacity of nursing to find out what works. As a result we will truly have developed Evidence Based Practice.

Inside this circle we have identified that every piece requires clinical decision making skills and should also provide an opportunity for knowledge development. Decision support systems can assist in this decision making.

It has to be recognised that in order to move from present nursing to 'New Nursing', nurses will need additional education if they are to develop top quality clinical reasoning and clinical decision making skills.

The model shows some of the nursing languages used or being developed. NANDA, NIC, NOC are incorporated into SNOMED CT which is the language of choice for the UK. In Wales we operate in a bi-lingual environment and the use of standardised languages needs to take this into account. There is every reason why the Standardised Nursing Languages should be translated into Welsh. We also feel that there is work to do in the development of synonyms, and we would want to explore how patients and others use synonyms to describe their situations. These could be cross-mapped to existing nursing terminology.

We would argue that everything in and around the outer circle should comprise the Maximum Data Set for Nursing. If that information is collected for each patient then we have a tool for care, for teaching, for research, for EBP and, at different levels of aggregation, a tool for managing the service. Of course what we have outlined can work with paper but we would see it being developed electronically.

Implementing such a model presents huge challenges to nurse educators, nurse managers and to clinical nurses themselves. The workshop will debate the challenges faced by these major stakeholders together with ways of meeting them.

We believe that unless nurses have a clear view of what the profession requires from technological solutions for the recording of nursing activity and the collection of nursing data, we will be forced to accept less than optimal solutions simply because we could not articulate our needs clearly and unambiguously. When we as a profession can agree what we need, we can ask someone to build it for us rather than have to accept what particular vendors want us to have.

We further believe that the Conceptual Model answers unambiguously the long-standing question of 'What is nursing?' The model shows that nursing is decision making and that this decision making takes place in every part of the core activities of nursing.

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Contact

J.R.Hughes
 Isallt
 Borth-y-Gest
 Porthmadog
 Gwynedd LL49 9TP
 Wales
 United Kingdom
 e-mail: rodney@isallt.freeserve.co.uk

37. – Nursing diagnoses in healthy volunteers admitted to the hospital for a study of drug bio-equivalence.

By de Assis, C.C., de Freitas, JB., Tavares, A., de Barros, ALBL. And Toffoletto, O. (Brazil)

Aims

This study aimed to observe and record the expression of possible nursing diagnoses in clinically healthy individuals admitted to the hospital who volunteered to participate in studies on drug bioequivalence, at the Hospital do Rim e Hipertensão (EPM – UNIFESP – São Paulo – Brazil), with an emphasis on the nursing diagnoses of anxiety and its probable relationship with changes in bioavailability (Cmax and Tmax) of the investigated drugs.

Methods

This is a sectional study carried out with volunteer male and female adults (18 to 50 years old), admitted to the hospital for studies on drug bioequivalence. This study comprised 188 volunteers (85 men and 103 women), over 12 months, including 9 protocols (Ranitidine, Bromocriptine, Tramadol, Sertraline, Dihydroergocristine, Nortriptyline, Enalapril, Acyclovir e Furosemide). The Functional Health Pattern Assessment Screening Tool – FHPAST © (Foster & Jones, 1997/2000) questionnaire, with 58 assessment items from the definitions of Gordon's 11 Health Functional Patterns and the defining characteristics of the nursing diagnoses; demographic and socioeconomic variables were collected as well. ANOVA statistics were applied.

Results

26 (13.8%) volunteers were identified with a total of 186 Gordon's Health Functional Patterns. The most prevalent patterns were Nutrition/Metabolic in 24 (12.9%) volunteers; Role/Relationship in 24 (12.9%) volunteers, and Self-perception/Self-concept in 23 (12.4%) volunteers, with 75 patterns (40.3%) in men and 111 patterns (59.7%) in women. These diagnostic hypotheses identified, in a decreasing sequence, were Anxiety, Situational Low Self-Esteem, Imbalanced Nutrition, Decisional Conflict, Disturbed Sensory Perception, Ineffective Coping, Relocation Stress Syndrome, Ineffective Role Performance, Risk for Activity Intolerance, Ineffective Health Maintenance, Risk for Constipation, Impaired Urinary Elimination and Disturbed Sleep Pattern, respectively. As to the volunteers with a hypothetical diagnoses of Anxiety we noticed, regarding only the study with Ranitidine, a marginal statistical significance was related to a smaller maximum concentration ((*p* value = 0.05673).

Discussion

As, according to NANDA, nursing diagnoses are a clinical judgement about the individual, the family and the community's reactions to actual or potential health problems/vital processes, this study was able to show the potential diagnoses (13.8%) even for people regarded as clinically healthy, including other possible changes in drug bioavailability.

Conclusions

Our study suggests that anxious individuals can change bioavailability patterns depending on the drug group; but more studies are necessary to shed more light on the interaction between the various nursing diagnoses and drug bioavailability.

Contact

João Batista de Freitas
Professor in Nursing
Fellow of Nephrology Division
Universidade Federal de São Paulo - Brasil
Rua Botucatu, 740 – Vila Clementino - São Paulo - SP - Brasil – Zip Code 04023-900
phone: (55-11) 55 74 63 00
fax: (55-11) 55 73 96 52
e-mail: prof.joaofreitas@uol.com.br

38. – Communication errors as definitions of patient participation lacks patient's point of view.

By Eldh, AC., Ekman, I. and Ehnfors, M. (Sweden)

Introduction

Patient participation is regarded as a primary condition for good care (WHO 1994, Wallersten 2006). However, to understand health care, one must understand the phenomena that relate to it (Meleis 2005), and before communicating (Ryle 1949) a phenomenon, such as patient participation, we need a shared understanding of the word "participation" and must agree on the content of the related concept, which should originate from the experience of the phenomenon (Ogden and Richards 1989). In this paper, the authors present an extensive literature review of patient participation and provide a basis for discourse on common definitions in comparison to patients' lived experiences of the phenomena of participation and non-participation.

Perspectives on participation and non-participation from a semantic analysis

The word "participation" is ancient, and is suggested to originate from the same root as partaking: to partake, to share (Partridge 1990). To participate is, for example, described as to 'share' or 'communicate', whereas participation is 'the action of partaking', 'taking part', 'associating', or 'sharing' with others in some action or matter, more specifically described as 'the active involvement of members of a community or organization in decisions which affect their lives and work' (Simpson and Weiner 1989). Although participation is commonly found in thesauri, non-participation is rarely included (Simpson and Weiner 1989, Fergusson et al 2000) but has been defined as 'not taking part' (Robinson and Davidson 1999).

Legal aspects of patient participation

The past decades have shown a trend towards enhancement of patients' rights to influence and direct their care. This trend has taken a range of expressions throughout Western society, for example, the Dutch right to determine when to end one's life (Ministry of Health, Welfare and Sport and Ministry of Health 2006), Finnish and American regulations concerning the writing of living wills (Finlex 2003, Garas and Pantilat 2001), and the Norwegian demand for the informed patient who can partake in planning for care (Patienträttighetslagen 2003). Furthermore, the American Patient Self-Determination Act of 1990 provides that individuals receiving health care services will be given an opportunity to participate in and direct health care decisions affecting them (National Institutes of Health 2004), which corresponds to the legislation of many European countries, where patient participation is regarded primarily as partaking in decision-making (Coulter and Magee 2003). Thus, there are broad descriptions of the term participation, yet the concept in health care legislation is based primarily on one specified definition (Simpson and Weiner 1989). As a result, patient participation has been assumed to represent the involvement of patients in decisions that affect their care and treatment.

Participation and non-participation according to health care classifications

The specified definition of the Oxford English Dictionary (Simpson and Weiner 1989) corresponds to the definition of patient participation found in the National Library of Medicine's Medical Subject Headings (MeSH) (National Institutes of Health 2006): 'patient involvement

in the decision-making process in matters pertaining to health.' Consumer Involvement is equivalent to Consumer Participation, which is noted as 'community or individual involvement in the decision-making progress', whereas Patient Participation is noted as patient involvement in the decision-making process in matters pertaining to health. The database text clarifies that patient participation should not be confused with patient compliance, which is, rather, defined as 'voluntary cooperation of the patient in following a prescribed regimen'.

"Non-participation" does not correspond to any term in the MeSH database, but "Refusal to participate" and "Treatment refusal" do. Refusal to participate is noted as 'refusal to take part in activities or procedures that are requested or expected of an individual'. The refusal of patients to participate is described as 'refusal by patients or members of the public to take part in clinical trials or health promoting programs'. Treatment refusal is described as 'patient or client refusal of or resistance to medical, psychological, or psychiatric treatment'.

In a widely implemented Swedish model for nursing documentation (Ehrenberg et al 1996), "participation" is used as one of the keywords for nursing interventions. It is described as either abstract, for example, taking part in planning, or concrete, performing self-care tasks. It has been suggested that enhanced patient participation can be achieved through the patient's being involved in care planning, decision-making, and evaluation of nursing care or in performing self-care.

The International Classification of Functioning, Disability and Health (ICF) (WHO 2001) has a domain for activities and participation. Participation appeared in the earlier versions of the classification (ICIDH-2) separate from activity. Though the two terms have now been merged, they still carry their specific definitions, whereby participation is defined as 'being involved in a life situation'. Involvement is pointed out as incorporating such things as partaking and being accepted or being engaged in an area of life.

Patient participation and non-participation as reflected in scientific studies

"Participation" was present from the origin, of the Medline (PubMed) database in 1966 (Medline 2006). Initially, the numbers of published articles on participation were few, but a constant increase has led to today's approximately 500 articles per year that relate to patient participation. This area has been studied both with qualitative and with quantitative approaches. Few phenomenological studies with an explicit aim of defining patient participation are found, though one study suggested patient participation to involve shared aims and desires between interactants (Ashworth et al 1992). However, the suggested definition is not based primarily on patients' experiences (Ashworth P. and Ashworth A., 2003 August 14, personal communication). In the only published concept analysis of patient participation (Cahill 1996), participation was associated with partnership, collaboration, and involvement. These were presented in a hierarchical order, wherein involvement/collaboration is the lowest level, participation mid-level, and partnership the highest level.

Most research regarding patient participation seems to maintain the notion that it corresponds to being involved in decision-making from different perspectives, for example:

- perception of self-determination (Nordgren and Fridlund 2001);
- preferences for participation in decision-making on treatment (Deber et al 1996);
- degree of participation, primarily in decision-making (Arnetz and Arnetz 1996);
- aspects that influence the degree of participation in decision-making (Robinson and Thomas 2001);
- interventions to increase participation, as in partaking in decision-making (Kennedy and Rogers 2002).

On the other hand, previous scientific articles that match patient non-participation provide yet another perspective, reporting patient non-compliance to scientific studies or pharmacological treatment (Medline 2006).

Patients' experiences of patient participation and non-participation

Findings from three studies regarding patients' experiences of patient participation and non-participation provide additional aspects to the phenomena: patient participation is being provided with information and knowledge in order for one to comprehend one's body, disease, and treatment and to be able to take self-care actions based on the context and one's values (Eldh et al 2004, Eldh et al 2006a, 2006b). Participation was also found to include providing the information and knowledge one has about the experience of illness and symptoms and of one's situation. Participation occurs when being listened to and being recognised as an individual and a partner in the health care team. Non-participation, on the other hand, occurs when one is regarded as a symptom, a problem to be solved. To avoid non-participation, clinicians must provide information based on the individual's need and with recognition of the patient's knowledge and context.

A revised view of patient participation and non-participation

The definition of participation as the active involvement of members of a community or organization in decisions that affect their lives or work (Simpson and Weiner 1989) has come to be regarded as appropriate for the health care field. Yet, the interpretation of the concept as mainly related to decision-making leaves out major aspects, such as sharing, which, rather, corresponds to patients' experiences of the phenomenon and the ICF definition. Certain aspects of the VIPS model also match patients' experiences of participation. The view of the non-participating patient as one who does not comply with a prescribed treatment or does not agree to participate in a study differs both from patients' experiences of the phenomenon and from the MeSH statement that patient participation should not be confused with patient compliance. The lack of clarity and agreement on definitions between health care legislation, health care classifications, and patients' experiences of the phenomenon can cause different interpretations by patients and health care professionals and, as a result, influence their expectations and interactions. In the presentation, the authors will cover situations where lack of agreed understanding and lack of communication hindered productive interactions, but will also suggest approaches to support patient participation in health care.

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Contact

Eldh, AC. RN, PhD
 Capio St Görans Hospital
 Stockholm
 Sweden.
 e-mail: ann-catrine.eldh@capi.se

39. – Taxonomies define safe, effective practice or enable data retrieval?

By Fong, V. and Valentine, K. (USA)

Errors in communication are the leading cause of sentinel events (significantly harmful events to patients) as reported by the Joint Commission for Accreditation for Healthcare Organizations (JCAHO). The Institute of Medicine (IOM) identified “Priority Areas for National Action: Transforming Health Care Quality” (2003). Inter-disciplinary system level changes are recommended as one of the strategies to improve populations with chronic illness (heart disease, cancer, stroke, chronic obstructive pulmonary disease, and diabetes) which account for 63% of deaths in the United States (Minino and Smith 2001). A 5% reduction in mortality from system re-design could avert 75,000 premature deaths. Both effective communication between the entire healthcare team and data retrieval are imperative to improve a population’s health. In order to treat a patient safely and effectively, all disciplines caring for the patient must be able to communicate the patient’s condition and course of care to each other through use of standardized and structured terminology. Inter-disciplinary communications in documentation characterized by discipline-specific taxonomies will lead to increased errors and fail to re-design life saving systems. At the same time, any treatment and intervention data needs to be coded and retrieved in a systematic manner that informs and improves future practice. This can present challenging dynamics during the content build phase of an electronic health record (EHR).

The question guiding this project is whether it is possible to achieve multidisciplinary acceptance and use of nursing taxonomies in electronic health record documentation. Nursing taxonomies such as NANDA, NIC, and NOC are valuable for demonstrating organized thinking and assisting with data retrieval for practice improvements. The tangible benefits for non-nursing disciplines in using this taxonomy are less obvious. Agreement and validation of language between various disciplines is the essential foundation of the configuration and content design phase of building a robust EHR system. It is this foundation that can then define the actual care delivery practice, limit possibility for misinterpretation and understanding between care providers, and promote safe and effective professional practice.

In the attempt to achieve usability, user acceptance, and meaningful data, we took a ‘back-to-basics’ approach in defining principles of practice in documenting patient assessment findings and care planning using clinical content developed internally to the organization as well as content from a 3rd party vendor. Basic goals in the design of the practices included: 1) reduction of any documentation burdens such as duplication of effort; 2) provision of cues to help guide the end-user toward best practices; and 3) use of language that is understandable and comprehensible across disciplines.

The outcomes of this work were incorporated into the clinical documentation component of an EHR system launched in July, 2006. User acceptance levels during the first go-live of this EHR is high with communication and subsequent patient safety improved.

Contact

V. Fong
Kaiser Foundation Health Plan, Inc.
1800 Harrison St. 10th floor; Oakland, CA
United States of America
phone: +5106256438
e-mail: valerie.x.fong@kp.org

40. – ENP®-NANDA mapping: a study on the content validity of ENP®

By Wieteck, P. (Germany)

Introduction

The use of data from a nursing process using mapped standardised formulations can play an important role for outcome measurements in the future (Anderegg-Tschudin 1999, Klapper et al 2001). This statement can be transferred to the representation of the nursing process using the nursing language ENP®. Deviation from the nursing pathway can be identified or information on certain diseases and the required nursing input can be gained with statistical evaluation. By comparing certain outcome indicators which may occur during a hospital stay with complications occurring during that stay, such as pyrexia, pressure sores, pneumonia, or length of stay, with other nursing pathways from the same case groups, hypotheses regarding improvement possibilities can be developed.

To determine the reliability of classification systems and taxonomies which are used to illustrate the nursing process, nursing science requires validity of the same (Fehring 1986, Fehring 1987, van der Bruggen and Groen 1999).

Aim of the Study

The ENP®-NANDA cross mapping should primarily examine whether or not the terms used in ENP® to describe nursing diagnoses are meaningfully structured and linked. The ENP®-NANDA cross mapping should not only test whether the terms used in NANDA to describe a nursing diagnosis are also found in ENP® for describing nursing diagnoses, but should also evaluate the nursing statements from ENP® nursing diagnoses and compare them with NANDA nursing diagnoses, therefore, testing whether or not ENP® nursing diagnoses are the same or similar to NANDA nursing diagnoses with regard to content.

In respect of content validity, the ENP®-ICNP cross mapping study showed that ENP® uses, to a significant degree, terms for the description of nursing diagnoses that are similar and comparable to those in ICNP®. Due to ICNP's® multiaxial structure no statement can be made from this mapping as to whether the terms used in ENP® also result in meaningful formulations and structure in describing nursing-relevant aspects. Theoretically, it is conceivable that, although meaningful terms are used to describe ENP® nursing diagnoses, the terms and concepts, as a result of the integration, may lead to less meaningful statements (Wieteck 2006). With this in mind, the ENP®-NANDA cross mapping gains in importance. On the level of nursing diagnoses, NANDA, like ENP®, is a pre-combined classification system. Therefore, on the basis of the mapping and the subsequent assessment of the meaning of the statements it can be tested whether or not the structure (PES structure), as well as the combination of terms and concepts from ENP's® nursing diagnoses, meet the content validity requirements regarding the description of nursing diagnoses.

Research Questions

The focus of the ENP®-NANDA cross mapping is the comparison and evaluation of the expressiveness and completeness of the ENP® nursing diagnoses with NANDA nursing diagnoses. The following research questions should be answered:

- F1 Can the content (professional nursing statements) of NANDA nursing diagnoses be mapped against ENP® nursing diagnoses?
- F2 Which nursing diagnoses cannot be covered with ENP®?

F3 Which of ENP®'s nursing diagnoses have no NANDA equivalent?

F4 How do ENP® nursing diagnoses represent NANDA nursing diagnoses statements?

Research Method and Design

The cross mapping of ENP® version 2.1, last updated in 2005, with the German version of NANDA (Geor 2005) was carried out by an ENP® expert. This was a descriptive, comparative cross sectional study. The evaluation of the mapping carried out by the ENP® experts was carried out by NANDA experts and/or experts on nursing diagnostics. As quality criteria for the mapping procedure, the agreement measure between the ratings of the experts was determined. The aim of the study was to evaluate whether the ENP® nursing diagnoses feature a similar expressiveness as NANDA nursing diagnoses. Firstly, a bidirectional mapping was carried out by an ENP® expert. This means that NANDA x and ENP® y plus ENP® y and NANDA x were mapped independently of each. Through this "bidirectional cross mapping" approach (Franklin et al 2002), which is also referred to as "reverse mapping" (Zielstorff 1998), inconsistencies can be revealed. These inconsistencies were discussed by the experts regarding consensus building prior to the evaluation of the mapping results. In the next step, the results of both mapping procedures were compared by four experts regarding expressiveness, clarity, and completeness of content. The evaluation categories for this study were developed using a literature analysis. For the evaluation of the ENP®-NANDA mapping the following evaluation criteria were considered: expressiveness, completeness, and clarity. The evaluation criteria, coherence, usefulness, maintainability, atomic-based and compositionality were not relevant for answering the research questions in this study, but have been used in other studies (Arntz et al 2004, Hardiker and Rector 1998, Henry and Mead 1997).

Results of the Mapping

The completed mapping is divided into three steps, firstly NANDA→ENP® and ENP®→NANDA as well as the evaluation of the mapped NANDA and ENP® nursing diagnoses by four experts. ENP®→NANDA Mapping

With the ENP®→NANDA mapping it was considered which NANDA nursing diagnosis (target vocabulary) could illustrate the meaning of the ENP® nursing diagnoses (source vocabulary). The results of this consideration were compared and evaluated in the next phase according to the evaluation categories described by Zielstorff et al (1998).

Same

The term in the source vocabulary is identical in wording and definition to the term in the target vocabulary. For example, the NANDA term "Fluid Volume Deficit" is exactly the same as the HHCC term "Fluid Volume Deficit".

Similar

The term in the source vocabulary is comparable, or "alike in substance" to the term in the target vocabulary. For example, the NANDA term "Altered Nutrition: Less than Body Requirement" is similar but not identical to the HHCC term "Body Nutrition Deficit".

Broader

The term in the source vocabulary is larger in scope, or less specific, or can be considered to encompass the term in the target vocabulary. For example, the NANDA term "Pain" is broader than the HHCC term "Acute Pain."

Narrower

The term in the source vocabulary is smaller in scope, or more specific, or can be considered to be encompassed by the term in the target vocabulary. For example, the NANDA terms that contain

“deficit” or “impaired” are more restrictive than the HHCC terms using “alteration”.
(Zielstorff et al 1998)

Appropriate NANDA nursing diagnoses which illustrate the meaning of the ENP® nursing diagnoses could be found in 79% (n=407) of ENP® nursing diagnoses. The evaluation category “same” was not used, which means that no ENP® nursing diagnosis has the same wording as a NANDA nursing diagnosis. Five per cent (n=28) of the ENP® nursing diagnoses were rated as having the same content and meaning. Altogether 3% (n=17) of the ENP® nursing diagnoses were found to be narrower in meaning than the NANDA nursing diagnoses. A total of 71% (n=362) showed the range of meaning of the ENP® nursing diagnosis to be narrower than the attributed NANDA nursing diagnosis.

NANDA→ENP® Mapping

For the NANDA→ENP® Mapping it was considered which ENP® nursing diagnoses (as target vocabulary) could illustrate NANDA nursing diagnoses (as source vocabulary) with regard to meaning.

Seventy six per cent (n=129) of the NANDA nursing diagnoses could be compared to one or more ENP® nursing diagnoses. For approximately 25% (n=42) of the current 171 NANDA nursing diagnoses, no ENP® nursing diagnosis could be mapped. Eleven per cent (n=19) of the NANDA nursing diagnoses are so-called wellness diagnoses. These contents could be mapped in ENP® with resource formulations. Currently in ENP®, 396 resource formulations have been developed describing the patient’s abilities and motivation which are beneficial for recovery and health maintenance. The ENP® resource formulations were not considered in this study. Thirteen per cent of the NANDA nursing diagnoses could not be mapped against ENP®. These are presented in the following table.

NANDA Nursing Diagnoses	
Dysfunctional Family Process: Alcoholism	Chronic Sorrow
Disabled Family Coping	Parental Role Conflict
Risk for Urge Urinary Incontinence	Risk for Trauma
Autonomic Dysflexia	Impaired Dentition
Risk for Autonomic Dysreflexia	Ineffective Therapeutic Regimen Management Community
Disturbed Energy Field	Anticipatory Grieving
Adult Failure to Thrive	Risk for Poisoning
Risk for Sudden Infant Death Syndrome	
Risk for Injury	Disorganized Infant Behavior
Risk for Caregiver Role Strain	Risk for Disproportionate Growth
Caregiver Role Strain	Altered Protection
Risk for Disorganized Infant Behavior	Ineffective therapeutic Regimen Management: Family

Table 1: NANDA nursing diagnoses that could not be mapped against ENP®

Evaluation of NANDA nursing diagnoses mapped with ENP®

An exploration of the three evaluation categories, through the use of four raters, showed an acceptable inter-rater agreement. The percentage agreement established for the evaluation categories completeness (C), clarity (Cl) and expressiveness (E) was: C=48%, Cl=66%, E=69%.

Spearman ρ ($C=$ mean of the rater pair 0.54), Kendall W ($C=0.65$), Cohen's κ (median of the rater pairs $E=0.42$, $CI=0.51$), and the κ for the multirater was $E=0.43$, $CI=0.48$. Completeness was rated on a scale sectioned in 10, from 100%-0%. Clarity and expressiveness were evaluated on a three-level scale. The evaluation categories were: "expressiveness/clarity of the ENP® nursing diagnoses is higher, the same or lower than for the NANDA nursing diagnoses". For each of the 129 mapped NANDA nursing diagnoses, one judgement for each evaluation category was given. The NANDA nursing diagnoses terms were attributed to the ENP® nursing diagnosis terms to make the rating of the compared NANDA and ENP® nursing diagnoses possible,. The attributed terms were entered into an Excel table. The title and definition of a NANDA nursing diagnosis were entered into the first column, the defining characteristics and related factors of NANDA were entered below this. In the second column all ENP® characteristics/etiologies (ENP® nursing diagnoses set) were compared with the NANDA terms. ENP® nursing diagnoses terms are, as a rule, narrower in meaning than the NANDA nursing diagnoses, therefore, the ENP® nursing diagnoses, which could illustrate the meaning of a NANDA nursing diagnosis, were compared as an ENP® nursing diagnoses set and were subsequently rated by the experts.

Evaluation of the completeness of the 129 mapped NANDA nursing diagnoses

In 48.1% of the NANDA nursing diagnoses the meaning of NANDA, with regard to the defining characteristics and related factors, was mapped by the raters against ENP® nursing diagnoses and their characteristics/etiologies using the evaluation category 100-91%. For the remaining 52% of the mapped NANDA nursing diagnoses the meaning of the ENP® nursing diagnoses are partially mapped. In a large number (44%), the meaning of more than half of the NANDA nursing diagnosis are mapped against ENP® nursing diagnoses. In approximately 7% of the mapped NANDA nursing diagnoses, the raters mapped the meaning of NANDA against the attributed ENP® nursing diagnoses using the evaluation categories 50-21% (50-41%; 40-31%; 30-21%).

Evaluation of the expressiveness of ENP® nursing diagnoses in comparison

In altogether 53% of the NANDA nursing diagnoses, the mapped ENP® nursing diagnoses were rated higher than NANDA concerning their expressiveness. In approximately 31% of the NANDA nursing diagnoses the mapped nursing diagnoses were evaluated by the raters as being the same or similar, and in approximately 16% as being lower than the NANDA nursing diagnoses in respect of expressiveness.

Evaluation of the clarity of the ENP® nursing diagnoses in comparison with NANDA

With regard to clarity, approximately 86% of the mapped ENP® nursing diagnoses, in comparison with the NANDA nursing diagnoses, were evaluated by the rater as same (42.9%) or higher (43.2%). Fourteen per cent of the mapped ENP® nursing diagnoses were rated lower in clarity than the NANDA nursing diagnoses.

Discussion

In summary, the expressiveness and clarity of the ENP® nursing diagnoses were rated to a large extent as being higher or the same when compared to NANDA. Only a small share of ENP® nursing diagnoses (approx. 16%) was rated lower in expressiveness/clarity compared to NANDA. It appears that the granularity of ENP® nursing diagnoses accounts for the increase of expressiveness and clarity. Only a restricted statement can be made on the content validity of ENP®, because NANDA nursing diagnoses as gold standard apply to a limited extent due to the overlapping problems, the different abstraction levels and the inconsistencies of the NANDA nursing diagnosis formulations that became clear during the mapping. These have also been described by other authors (Ackley, 2006, Capuano; Hitchings; Johnson, 1990, Gray, 2006).

The ENP®-NANDA mapping is a research study which is part of an ongoing doctoral thesis at the Institute of Nursing Science, University of Witten/Herdecke.

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Contact

Pia Wieteck
 Falterstr. 17
 85107 Baar-Ebenhausen
 Germany
 phone: +49-(0)8453 332716
 fax: +49-(0)8453-332717
 e-mail: Pia.Wieteck@t-online.de

41. – Criterion related validity of ENP® – mapping of individually formulated nursing care plans with the standardised nursing language ENP®

By Berger, S. (Germany)

Summary

This study looks at how well individually formulated nursing care plans can be mapped against the standardised nursing language ENP® – European Nursing care Pathways. The study aim therefore is to demonstrate the criterion validity of ENP®.

Problem

Since 1989 the nursing classifications system ENP® has been developed in Germany. Few studies validating ENP® exist to date. A valid taxonomy increases the legitimacy of its constituent parts and also the confidence in its generalisability and predictive ability (Hollick and Kerves 2002). ENP® claims that relevant nursing phenomena, and the formulation of aims and nursing interventions can be recorded (Wietek 2004). A study validating this taxonomy is therefore of central importance for the further development of this professional language.

Study questions

The study questions are:

1. How well do nursing care plans, composed in a non-standardised language, map against ENP®?
2. How high is the agreement in the validation of the quality of the mapping?

Method

This study is carried out as a requirement for the degree of Master of Science in Nursing at the Institute of Nursing Science, University of Witten/Herdecke. The study has been reviewed by the institute's nursing ethics committee.

Design

This is a descriptive, cross-sectional study.

Sample

Due to feasibility a convenience sample of 25 freely formulated nursing care plans from two nursing schools was chosen, which would be mapped against ENP®. One school is situated in North Rhine-Westphalia, the other in Bavaria. In Germany, student nurses complete an individual nursing care plan for one patient as part of their final exam. In order to demonstrate the quality of ENP®, good individual, i.e. non-standardised, formulated nursing care plans were used. Only plans that achieved a grade one (very good) or two (good) were included.

Procedure

To determine the agreement categories the first five nursing care plans from the first institution were mapped against ENP® in all classes. All levels of agreement and problems with coding were documented and as a result a category system was derived, which would be used for further Mapping. The rating-categories are:

Complete Mapping

- ENP® completely maps the formulation, the contents of the statement are the same (J)
- ENP® completely maps the formulation and contains additional aspects (K)
- ENP® completely maps the formulation and the contents of the statement are more differentiated (L)
- ENP® completely maps the formulation and the contents of the statement are more abstract (M)

Partial Mapping

- ENP® maps a small part of the original formulation regarding content (subset of the contents) (F)
- ENP® maps a greater part of the original formulation regarding content (subset of the contents) (G)
- ENP® maps a small part of the original formulation and contains an additional aspect (overlapping of the contents) (H)
- ENP® maps a greater part of the original formulation and contains an additional aspect (overlapping of the contents) (I)

No Mapping

- The ENP® -Diagnosis is missing, therefore, further process elements are also missing (A)
- Indistinct original formulation (B)
- Content of the original formulation already comprised in other formulations (C)
- Accurate specialist original formulation cannot be mapped with ENP® (D)
- original formulation exhibits professional deficit (E)

Mapping Process

A mapping procedure is used to compare data from various groups, which use different classifications systems (Coenen et al 1997). The results of a mapping process can give another view of the data compared to the original care plans (Moorehead and Delaney 1997). Before the items from the nursing care plans were compared with ENP®, the original formulations regarding content were broken down into the constituent parts i.e. nursing problem, characteristics, etiology, resources, aims and interventions. Formulations, which were redundant, ambiguous or professionally not meaningful, were assessed using an appropriate category. The original formulation of the problem was assigned to one or more ENP®-Nursing diagnoses. The subsequent process elements of the problem formulations were mapped with the further path elements of the chosen nursing diagnosis from ENP®.

Initial Results

A total of 2378 valuations were carried out. In the group “no mapping” (n=708) the codes which arose through lack of expertise in the initial planning (n=448) were labelled “missing” (Figure 1).

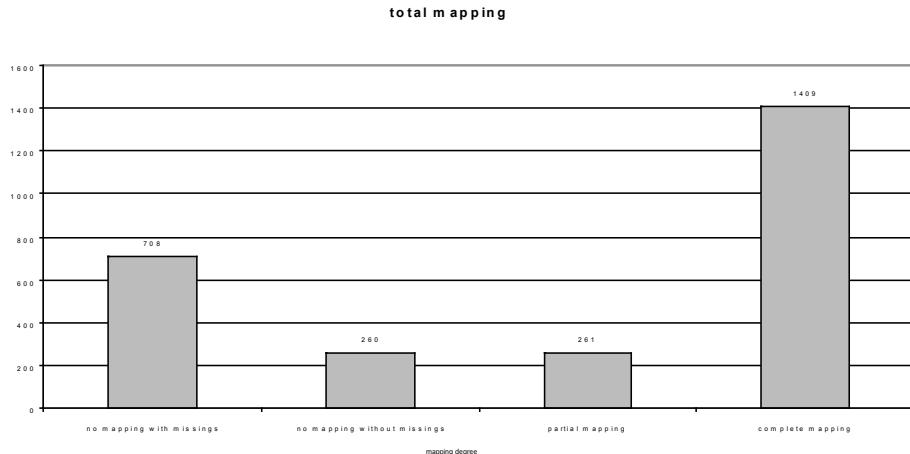


Figure 1: Total mapping

The proportion of the original formulations, which were completely represented by ENP®, was 73.01%, partial representation was 13.52% and no mapping of the formulations 13.47%.

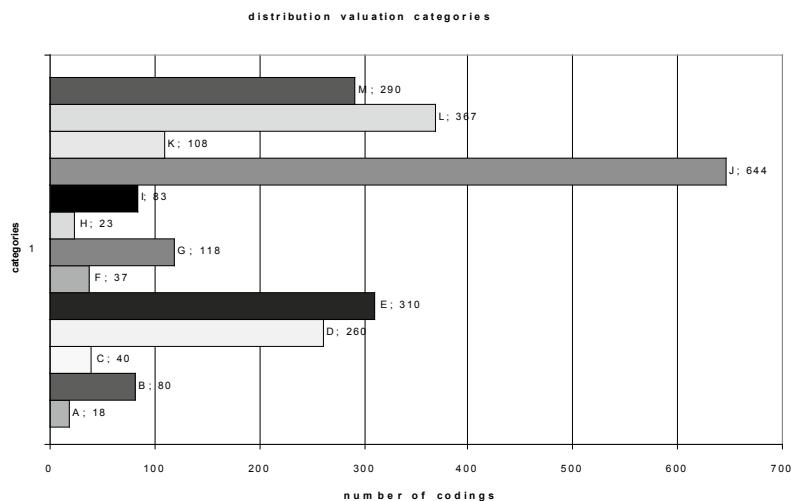


Figure 2: Distribution variation categories.

The breakdown of the original formulation will be demonstrated using the following example: “Due to diabetes mellitus pat. must adhere to diet” (N original) “Due to diabetes mellitus” (N revised) was assessed as aetiology, “must adhere to diet” as the formulated nursing problem, which technically seen does not describe the formulation of a problem. Here, the aetiology was mapped against the aetiology from the ENP®-Nursing diagnosis “The resident suffers fluctuation of blood sugar levels after food intake-- due to Diabetes Mellitus (N ENP®), there exists a risk

of Hyper- or Hypoglycaemia”, and counted as an aetiology. Assessed was the comparison with “ENP® completely maps the formulation, the contents of the statement are the same”.

	N original	N revised	N ENP®
Problem	315	264	251
Characteristic	4	80	58
Etiology	29	283	210
Resource	132	110	86
Aims	413	405	348
Interventions	969	879	682

Reasons for the difference between the number of formulations in the initial plan and the items accounted for in the mapping are due to professionally inaccurate formulations, or formulations which do not belong to the (appropriate) process step, or to their division into several single formulations. In 78.27% of the cases an original formulation could be compared with an ENP®-formulation, in 21.97% two or more ENP®-formulations were necessary. The amount of four and over ENP®-constituent parts was 3.21%.

Discussion

The primary results of this study confirm that nursing care plans written in a non-standardised language can be mapped to a large extent against ENP®. The very fact that a formulation can be completely mapped does not however imply that the complete information content can be transported. In particular, mapping on an abstract level leads to a loss of detailed information from the original formulation. Despite the effort to obtain good quality nursing process care plans to demonstrate criterion validity it must be recognized that many of the formulations exhibited deficiencies regarding content. Varying levels of abstraction between the initial care plan and ENP® often resulted in several ENP®-Pathways being set in opposition to one initial problem so no single ENP®-Pathway could be tested regarding its completeness (21.73%).

Outlook

In a future study, an independent rater will assess the compared formulations set with the validation categories (F2). The rater agreement will then be calculated. The results will also be reflected in the teaching of the nursing process within the two schools. For this purpose the institutions have been asked to complete a structured questionnaire.

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Contact

e-mail: sberger@recom-verlag.de

42. – Content validity of nursing language exemplified using ENP®-NANDA mapping

By Wieteck, P. (Germany)

Introduction

The cross mapping of European Nursing care Pathways (ENP®) - NANDA is carried out to find out if the terms used in ENP® for describing nursing diagnoses are meaningfully structured and linked. The cross mapping of ENP® - NANDA is not to verify if single terms used by NANDA to describe nursing diagnoses also appear in ENP® for the description of nursing diagnoses. It is to compare and assess the nursing contextual statements of ENP® nursing diagnoses with those of NANDA nursing diagnoses. It examines, if the ENP® nursing diagnoses contextually state the same or similar as NANDA nursing diagnoses. NANDA nursing diagnoses are suited for content validity, firstly due to their structure and precombinatory approach, and secondly because numerous NANDA validation studies have been carried out and published, assuring quality of the NANDA taxonomie (Berger 2005, Müller Staub 2004a, Müller Staub 2004b). In the ENP®-NANDA cross mapping the significance and completeness of ENP® nursing diagnoses will be compared and assessed with NANDA nursing diagnoses.

Question

The focus of the evaluation of the ENP® - NANDA cross mapping is the comparison of the expressiveness, completeness and clarity of ENP® nursing diagnoses with NANDA nursing diagnoses. This study aims to answer the following questions:

- F1 Can the content (professional nursing statements) of NANDA nursing diagnoses be mapped using ENP® nursing diagnoses?
- F2 Which nursing diagnoses cannot be covered with ENP®?
- F3 Which of ENP®'s nursing diagnoses have no equivalent in NANDA?
- F4 How do ENP® nursing diagnoses represent NANDA nursing diagnoses statements?

Method/Design

The cross mapping of ENP® Version 2.2_1 (stand 2006) with the German language version of NANDA (Georg 2005) is carried out by an ENP® expert. It is a non-experimental, descriptive, comparative, cross-sectional study. These mappings carried out by the ENP® expert are evaluated by four designated NANDA experts and/or experts in the field of nursing diagnosis. The aim of the study is to judge whether ENP® possesses a similar contextual expressiveness to NANDA.

The quality of the mappings is demonstrated:

- a. using bidirectional mapping for the complete mapping procedure;
- b. using agreement measures for the evaluation.

Findings

The results of the ENP® and NANDA mappings are presented in three parts. First, the results of the ENP®-NANDA mappings, then the NANDA-ENP® mappings are presented and discussed. Next, the results of the interrater reliability of the experts' ratings are presented and subsequently discussed.

Discussion

The results of the study show, that both systems are not complete. Nineteen per cent of the ENP® nursing diagnoses cannot be illustrated by NANDA and for 10% of the NANDA nursing diagnoses there is no match found in the ENP® nursing diagnoses. Primarily, three main reasons could be found which made the mapping proceedings difficult: the overlapping problem of the NANDA nursing diagnoses; the formulation of symptoms as nursing diagnoses by NANDA; and the different emphasis of both systems (ENP® and NANDA) in the formulation of one nursing diagnosis. ENP®'s nursing diagnoses are more specifically formulated (73%) than the NANDA nursing diagnoses as regards comprehension.

In the presentation the results will be critically reflected and the question pursued: which type of nursing diagnoses will nurses in practise require for process documentation and the evaluation of process data?

Contact

Pia Wieteck
Falterstr. 17
85107 Baar-Ebenhausen
Germany
phone: +498453332716
fax: +498453332717
e-mail: Pia.Wieteck@t-online.de

43. – Conceptual and statistical considerations in the factor analysis Irish Nursing Minimum Data Set for Mental Health Nursing

By Morris, R., Matthews, A., MacNeela, P., Scott, PA., Treacy, MP., Hyde, A., Byrne, A., Drennan, J. and O'Brien, J. (Ireland)

Background

The Irish Nursing Minimum Data Set (I-NMDS) is a recently developed instrument designed to identify and describe the contribution of nursing to health care in Ireland. In order to construct validate the I-NMDS for mental health nursing, factor analysis was used. Factor analysis consists of a number of different statistical techniques, the aim of which is to simplify complex sets of data and to define the underlying structure among variables in the data (Hair, 2005, Kline, 1994). While the findings of factor analysis in health care and other research are widely reported, there is little consideration given to the steps involved in arriving at those findings.

Aim

The aim of this paper is to report on the analytical steps and decisions made in the factor analysis of the Irish Nursing Minimum Data Set (I-NMDS) for mental health nursing. The conceptual and statistical assumptions underlying the analysis are considered and key decisions in arriving at an appropriate factor model are discussed. These include decisions regarding sample size, variable number and relevance, extraction and rotation techniques.

Methodology

Principal component analysis was used as a first step in order to establish the factorability of the data, the number of factors to extract and to highlight variables for potential elimination from the next stage of analysis. Exploratory factor analysis was then used to examine the underlying structure of the data in order to verify the construct validity of the instrument. This involved the use of a number of different extraction and rotation techniques to determine the most conceptually and statistically appropriate factor model.

Findings and Conclusion

Both Principal Axis Factoring and the Maximum Likelihood extraction methods resulted in conceptually and statistically appropriate models for the data. Variables loaded onto these models at acceptably high levels of .3 and above. Furthermore the resulting factor models were closely aligned to the bio-psycho-social model of care which was imposed on the I-NMDS during the course of its development. Both models also proved to be stable over time.

Contact

e-mail: roisin.morris@dcu.ie

44. – Incontinence after stroke: collaboration on minimum data set construction by a national network of nurse consultants.

By French, B., Burton, C. and Thomas, L. (England)

The Nursing, Midwifery and Allied Health Professional (AHP) consultant role was launched as a health policy initiative in the United Kingdom (UK) in 1998, and attempted to provide an alternative path for career progression for nurses within clinical practice (Department of Health 1999). Opportunities for consultantship for Allied Health Professionals were later identified in the NHS Plan for England (Department of Health 2000). Those non-medical professionals operating at a consultant level (hereafter referred to as consultants) have been charged with addressing four core role domains: expert clinical practice, leadership and consultancy, education and training, and service development, research and evaluation (Department of Health 1999).

With respect to research, national guidance states that 'consultant practitioners will have a track record of scholarship and the appraisal of research; and in many cases formal research experience' (Department of Health 1999). Detailed expectation of this aspect of the role in terms of outcomes is, however, lacking. The national evaluation of consultant posts indicates that whilst considerable advances have been made in other role domains, progress with the research role has been very limited (Guest et al 2004). Focus group discussions with a network of stroke nurse and AHP consultants suggest this may reflect a lack of any cohesive framework in which post holders can develop this aspect of their role, a lack of preparedness on the part of consultants, a lack of opportunity for research activity or other role priorities for host organisations.

Evidence from the practice development literature also suggests that people in roles with a formal service development component can experience isolation and role ambiguity. Relationships with higher education institutions can be an important means of reducing isolation, and a way of ensuring that systematic and rigorous processes to generate knowledge for the effective development of patient care are adopted (McCormack et al 2006). Networks of practitioners can also be a way of supporting programmatic research not attainable by individual endeavour (Gillibrand et al 2002). Recent developments in the NHS have focused on developing research networks that reflect national health priorities. These are developed and addressed within cognate groups, for example through the newly established UK Stroke Research Network.

This paper reports a collaborative project between a higher education institution and a national network of non-medical consultants. The aim of the network was to co-ordinate research capability building with domain specific service development and research activity. The rationale for working collaboratively within a network was to maximise the rigor and impact of the research activity that could be achieved, while also making research capability building more feasible and cost-effective. This pilot project therefore aimed to bring together a network of consultants to work collaboratively on one aspect of clinical practice to:

1. Review current practice and its evidence base;
2. Establish opportunities for protocol development and agree priorities and mechanisms for the collection of a minimum data set;
3. Implement and evaluate a data collection strategy throughout the network;
4. Disseminate findings, prioritise gaps in the knowledge base, and develop collaborative research proposals to address those gaps.

The consultants chose to focus on improving the provision of continence management for people after stroke. Between 40-60% of people admitted to hospital after a stroke can have problems with

urinary incontinence, and while differences in incontinence rates between centres reflect differences in the case mix of individuals and the methods of reporting, they may also indicate variations in the processes of continence assessment and management (Barrett 2001). In the latest National Sentinel Audit for Stroke (Intercollegiate Stroke Working Party 2004) only 58% of stroke patients had a management plan to promote urinary continence. This failure to address the problem may be because of a lack of evidence to inform practice as identified in a recent systematic review (Thomas et al 2005). The opportunity for early intervention to enhance natural recovery may therefore be being missed.

The assessment and management of incontinence is largely the remit of nurses, with input from other health professionals as necessary. Nurses are directly involved with patients 24 hours a day and are ideally placed to assist patients regain normal bladder function. However, there is a paucity of studies describing how nurses currently manage urinary incontinence in hospitalised stroke patients. An understanding of this is an essential first step in the process of evaluating complex interventions designed to promote continence.

Working in collaboration with the authors of the Cochrane systematic review on the management of incontinence after stroke, the National Network of Stroke Consultants are collating and analysing guidelines, protocols and audits of continence practice in participating stroke services, and identifying aspects of continence practice and other stroke-related variables for consideration in a minimum data set (MDS). The MDS will be used to identify and compare health care needs and patient outcomes across organisations.

The quality of data obtained through the use of a minimum data set depends on the degree of homogeneity in its implementation in different centres. Their development therefore required consensus on the patient and service variables to be measured. To identify clinical relevant and feasible data for an MDS, current protocols for the management of urinary incontinence were collated and content analysed. Data relating to patient age, gender, stroke type, pre-stroke continence status, Barthel Admission and discharge scores, type and degree of incontinence, catheter use and management methods, concomitant drug therapy, adverse events and continence status at discharge are to be collected. Three Trusts are currently piloting the MDS, with roll-out to 15 Trusts planned for March 2007.

This pilot project represents a shift in thinking about research capability building and knowledge transfer away from individual health practitioners at a local or regional level, to national networks of practitioners; from isolated research projects to coordinated, collaborative outcomes research, and demonstrates alignment with the proposed development of the UK National Health Service network strategy for research capability building.

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Contact

e-mail: bfranch1@uclan.ac.uk

45. – The Swiss Nursing Minimum Data Set - final version.

By Junger, A., Berthou, A. and Portenier, L.

Introduction

The aim of the NURSING data project was to develop a national nursing information system which will allow the collection of nursing data in the three areas of healthcare (community care, long-stay institutions and the hospital sector), across all specialties and over the four linguistic regions. This system should be compatible with the other Swiss classification systems (federal statistics and medical classifications), allow for international comparisons and take into account the law on the protection of data. NURSING data, the project for a Swiss Nursing Minimal Data Set CH-NMDS, finished by mid 2006.

Methods

A Delphi study and different expert panels established definitions and reference classifications for nursing phenomena and nursing interventions. In cooperation with different federal offices and other partners in the Swiss health care system those classifications were integrated in a comprehensive swiss nursing minimal data set and tested on both qualitative and quantitative levels.

Results

Different evaluations and studies proofed the need for further system development. However, the product of NURSING data, the Swiss Nursing Minimal Data Set (CH-NMDS), is ready to use. With this tool it Swiss nurses will be able to collect correct to integrate in regional, national and international health informations.

Discussion

One of the key elements of its acceptance will be the acknowledgement, by the professionals, of the nursing information system rationale within their own care setting as well as within the Swiss health information system. This set of arguments has been established in reference at the objectives defined by the Swiss Commission for Health Statistics for its general conception of health care setting statistics.

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<http://www.sbk-asi.ch/nursingdata/nursingdata.htm>

Authors' Note

Without the strong support of the project partners, the Federal Statistics Office (OFS), the Federal Office for Social Insurance (OFAS), the Federal Public Health Department (OFSP), the Conference of Directors of Health Affairs (CDS), as well as professional associations (Swiss Nursing Association, ASI; Swiss Association of Directors of Nursing, ASDSI; Swiss Conference of Nursing Schools, CSEI), H+ the Swiss Hospitals, the Loteries Romandes as sponsor, many

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A Junger¹, A Berthou², L Portenier³

1 CHUV University Hospital, Lausanne, Switzerland

2 ISE Institute for Health and Economics, Ecublens, Switzerland

3 Swiss Nursing Associations – SBK/ASI, Nursing Informatics Work Group, Switzerland

Contact

Lucien Portenier
Swiss Nurses Association SBK-ASI
Choisystrasse 1
Postfach 8124
CH-3001 Bern
e-mail : lucien.portenier@sbk-asi.ch

46. – Employing standardised nursing language to describe the interventional contribution of nursing to caring in a multidisciplinary context.

By Sheerin, F. (Ireland)

Introduction

This paper presents the results of a six-year research study aimed at identifying the usefulness of employing standardised nursing language as a tool for describing the interventional contribution of nursing to intellectual disability caring. The study was carried out within a branch of nursing that has become increasingly marginalised from the mainstream of Irish nursing and does not appear to be responding imaginatively to service developments. Mindful of reports aimed at describing the role of the intellectual disability nurse (Department of Health 1997), and supportive of the continuance of that role (Government of Ireland 1998, Eastern Regional Health Authority 2003, Bruton 2003), it is notable that no substantial attempt has been made to actually describe what such nursing has to offer to intellectual disability caring.

Objectives

The study specifically sought to identify:

1. the interventional foci of nursing
2. the current contribution of nursing
3. the usefulness of a terminological approach for describing the unique contribution of nursing to care in intellectual disability services.

The findings of the first two objectives are discussed within the context of an assessment of the usefulness of such a terminological approach.

Methodology

A two-stage methodological design was employed, incorporating an initial qualitative approach – Delphi study, focus groups and key informant interviews – which was investigatory in nature, and provided a grounding for a second, quantitative stage. This pan-organisational survey explored the frequency of employment of specific interventions and investigated various staff groupings' perceptions of who was responsible for their performance. This initial qualitative part of the study was presented previously and identified diagnoses and interventions that were considered to be central to caring in residential intellectual disability services. The employment of these interventions as generic activities, shared by various members of the multidisciplinary team, was explored through a pan-organisational survey which collected data from the 614 respondents. The data collected were subjected to factor analysis and logistic regression to produce interventional care matrices for two front-line groups of carers – nurses and non-nursing care staff.

The main body of informants for the study, which was set against a background of changing service provision, with increasing development of community-based residential services and redesignation of direct-care roles as generic positions, comprised 614 nurses, non-nurse care staff, multidisciplinary team members and service managers.

Findings

The factor analysis reduced the thirty-three interventions into five interventional groups, labelled:

1. physical health maintenance factor
2. psycho-social health maintenance factor
3. management factor; 4) technical health factor
5. mental health maintenance factor.

These accounted for 55.6% of the variance. Further group-based analyses demonstrated differences in relation to the frequency with which nurses and non-nursing care staff employed combinations of specific interventions. Whilst many of the same interventions arose in the analyses of both groups, they loaded together differently, leading to the emergence of distinct prioritised factors, which suggested varying, and perhaps unique, approaches to care. It is notable that nursing was linked to health (physical and mental) and its management using technical and clinical approaches. Comparison of the analysis of community and institution based residences did not demonstrate marked differences in relation to factor prioritisation.

Non-parametric analyses, carried out to investigate any differences in the frequency of employment of the five factors among nurses working in institutions, and the two community-based cohorts, found significant differences in all factors, except mental health, among institution-based nurses and their non-nursing colleagues in the community. The same pattern of difference was noted between nurses and non-nurses in the community, with the exception of the management factor. Whilst nurses in both settings reported more frequent employment of physical health maintenance and technical health factors than did non-nurses, this was reversed for the psycho-social health maintenance factor, which was more frequently employed by non-nurses.

No significant difference was noted among the two nursing groups in respect of any of the factors. This suggested that there may be a core nursing role transcending settings, and involving, in particular, physical health and technical health interventions. Any demarcation between nursing and non-nursing staff in the community in relation to management and mental health interventions appeared to have disappeared, with similar employment of such interventions reported by both groups. As these findings were not placed within any context, it was necessary to explore if any other factors could be responsible for the employment of particular factorial interventions, and could therefore be predictors for their occurrence. The results of the logistic regression analyses suggest that other pertinent findings might account for differences observed in earlier analyses. In specific physical health maintenance interventions, for example, it was found that the frequency of their employment was related to staff gender and age, type of nursing qualification, client age and service type. Similar findings emerged in respect of management interventions and technical health interventions. Only service variables were implicated as being predictive of psycho-social health maintenance interventions. Median scores showed no significant differences between nurses and non-nurses employment of a range of mental health interventions. Logistic regression, however, revealed that if the carer was a non-nurse, there was an increased likelihood of specific interventions being employed.

Discussion

This study, the first systematic attempt to examine the usefulness of standardised language for such a purpose, yielded important information on the interventions that are employed by front-line carers working in the field of intellectual disabilities.

The findings of this study suggest that interventional caring is a generic entity which transcends professional boundaries. It posits that intellectual disability nursing has, with the exceptions of physical care and technical health management, no unique interventional complement to add to such caring in residential settings for this population. It is acknowledged that, whilst this study

expressly set out to address the empirical component of such nursing, there may be a unique qualitative aspect which will require further investigation.

The findings pose a significant challenge for specialist intellectual disability nursing, which has not responded radically to the changing service context has posed. It is recommended that further research be carried out to examine the qualitative aspect of the intellectual disability nurse's role and to explore the future development of such nursing.

Conclusion

This study has examined the usefulness of standardised terminology as a basis for describing the contribution of nursing to interventional caring. In this it has revealed some of the practical and cognitive complexity underpinning nursing practice (Clark and Lang 1992). It has shown this approach to be useful in this regard. It has facilitated the explication of the unique and shared interventions of, not only intellectual disability nursing, but also of non-nurse care staff. It has, therefore, been demonstrated to have relevance outside of nursing and may provide a structure for the exploration of the role of any or all of the professional groups involved in the care, training and education of people with intellectual disability.

Contact

Fintan K. Sheerin PhD RNID RGN RNT
Lecturer
School of Nursing and Midwifery Studies
University of Dublin
Trinity College
Dublin, Ireland.
phone: +353 1 8964072
e-mail: sheerinf@tcd.ie

47. – Measuring patient outcomes using the nursing outcomes classification in multidisciplinary environments.

By Moorhead, S. (USA)

Nurses are consistently challenged in today's health care arena to demonstrate the outcomes of care provided to patients. This challenge is present in all areas where nurses work - hospitals, clinics, home care, and nursing homes. In many of these environments the work is interdisciplinary in nature, very complex, and requires coordination of care among a variety of care providers, all focused on improving the patient's outcomes. Nurses and other care providers have to provide this care during short lengths of stay in acute care facilities adding to the complexity of the care environment. Nurses in many organizations are faced with coordinating this complex care on behalf of the patient. This paper presentation will discuss the use of the Nursing Outcomes Classification (NOC) in a multidisciplinary environment focused on measuring patient outcomes. A brief overview of the key features of the classification and the advantages of using NOC in practice will be provided. Examples of how to use NOC in a variety of multidisciplinary settings will be included. A list of guidelines for use of NOC in a multidisciplinary environment will be provided to assist nurses and other care providers in measuring patient outcomes.

Contact

S. Moorhead
458 NB
College of Nursing
University of Iowa
Iowa City, IA 52240
phone: +319 335-7110
fax: +319 335-0999
e-mail: sue-moorhead@uiowa.edu

48. – Nursing diagnostics in cases of domestic violence against women: a systematic literature review.

By Gerlach, A. (Germany)

Introduction

The aim of this paper is to review and synthesize the literature related to the concepts and the nursing diagnostic process in cases of domestic violence against women. It is based upon a review of the current state of published research in English and German-speaking countries. With this review the author intends to create a scientifically founded basis for a discussion in German nursing practice and science. Domestic violence is spread world-wide and common in all cultures, religions and social classes. It poses significant social, psychological, and medical consequences and has been studied internationally by various academic disciplines for nearly 30 years. According to WHO (2002) domestic violence against women represents a central risk factor for the health of women. The term domestic violence is not specific to women alone; it is inclusive of both heterosexuals and homosexuals adult relationships.

This literature review is primarily concerned with domestic violence against women. As a result, the terminology "women battering" is deemed more appropriate. Woman battering is defined specifically "as a process whereby an adult women has been the recipient of intended acts causing physical or psychological pain by an adult partner" (Corbally 2001). The violence may be physical, sexual, emotional, or economic in the context of coercive control, often escalating in severity (McFarlane et al 2006, Romito et al 2005). This violence causes short- and long-term medical problems (Campbell et al 2002). Women abused by their partners or ex-partners are more likely to experience mental ill health, particularly depression and posttraumatic stress disorder, substance abuse, chronic pain, sexually transmitted diseases, and perinatal complications (Campbell et al 2002, Plichta 2004). Women experiencing domestic violence seek care from emergency departments approximately 3 times more often than non-abused women (Campbell 2002) and are also more likely to present to primary care and women's health services (Plichta 2004). Despite the many opportunities for disclosure of abuse in clinical settings, only a few women with current or past history of partner violence are identified by health care professionals (Ramsay et al 2002, Taket et al 2003). In the meantime, experts have developed standards and guidelines for health care for victims of domestic violence. In the United States and Great Britain nursing associations developed clinical guidelines for nursing practice (Griffin and Koss 2002, Walton-Moss and Campbell 2002). In Germany there has been so far no professional discussion about this topic and diagnostic measurement tools for the identification of domestic violence against women are missing in nursing science and practice.

Data Sources

This literature review analyses English and German articles in nursing and health-science of the last 15 years relating to "nursing diagnostics in cases of domestic violence against women". Articles from the early 1990's to the late 2005 were selected for inclusion on the basis that they either described the concept of diagnostic practice or investigated the process of diagnosing a client's condition in cases of domestic violence. The electronic literature search was conducted in the data bases CareLit®, Cinahl®, Pubmed®, Embase®, PsycInfo® and SOMED®, with the key words combinations: "domestic violence", "spouse abuse", "violence against women", "intimate partner abuse", "nursing assessment", "nursing intervention", "screening tools", "screening", and "diagnostic tests".

For each of the databases, an inclusive search was initiated using subject headings, text words and keywords; the Boolean logic terms “or”, “not” and “and” were also used to combine searches. The used search strategy and the results in the database PubMed® is exemplary shown in Figure 1.

Search terms	Limits	Results in PubMed	Included
(“Domestic Violence” [MeSH] OR “Spouse Abuse”) AND (“Nursing” [MeSH])	1990-2005 Gender:Female Languages: German & English	494	/
(“Domestic Violence” [MeSH] OR “Spouse Abuse”)AND (“Nursing Assessment”[MeSH])		229	/
“Domestic Violence”[MeSH] OR “Spouse Abuse” AND “Nursing”[MESH] AND assessment		150	48
(“Domestic Violence”[MeSH] OR “Spouse Abuse”) AND (“Nursing Intervention”)		6	4
“Domestic Violence”[MeSH] OR “Spouse Abuse” And “Nursing” [MeSH] And “Screening”		50	26
“Domestic Violence”[MeSH] OR “Spouse Abuse” AND “Nursing” [MeSH] AND “Screening tools”		3	2
“Domestic Violence” [MeSH] OR “Spouse Abuse” AND “Diagnostic Tests, Routine “ [MeSH]		3	3
(“Nursing Care”[MeSH] OR “Nursing Care/classification”[MeSH]) AND (“Domestic Violence” [MeSH])		288	43

Figure 1: PubMed® search strategy for “Nursing diagnostics in cases of domestic violence”

The electronic literature search was completed by a manual search of reference lists and hand-searching of key journals. Citations were rated and categorized according to (Polit and Beck 2004, Aldridge 2002, Behrens and Langer 2004, Harden and Thomas 2005). Altogether 37 articles, two statements, two manuals and two monographs met the inclusion criteria and were included in the review.

Findings

Diagnostic process

From approximately 1990 onwards, nursing diagnostics began increasingly to play a role within the nursing care process in Germany. With the introduction of the total-client-care concept, primary-nursing approach, and advanced practice nurses in contemporary nursing practice, assessment, planning, implementation, and evaluation become an essential framework in delivering clinical nursing care to clients. The main goal of the diagnostic process is information collection about the situational patient needs from which appropriate goals and effective interventions can be developed. There is a call for an emphasis on responsibility, autonomy, and accountability in the formation of judgements and decisions in the delivery of professional nursing care. These changes bring about an escalating need for sound and evidence-based practice in diagnosing clients’ clinical conditions. It is agreed that effective and efficient diagnostic skills to assess and identify clients’ clinical conditions are the bedrock of subsequent planning and implementation of high-quality nursing care. Hence, skilled diagnostic practice becomes an increasing concern of the nursing profession.

Nursing Diagnostic process in cases of domestic violence

In summary nursing diagnosis and two nursing diagnostic instruments to estimate domestic violence against women are described. Afterwards routine enquiry is described from the point of view of the victimized women as well as from the perspective of the health care professionals.

Nursing Diagnosis

It becomes important to assess diagnosis when working with women involved in domestic violence, because there are many diagnostic categories that have been associated with victim disorders. Certain diagnoses may suggest assessing for abuse or may point to areas of concern and potential intervention targets in identified populations. In cases of moderate to severe domestic violence the battered woman are rare characterised by diagnoses of the NANDA International, by interventions of the Nursing Intervention Classification (NIC) and outcomes of the Nursing Outcome Classification (NOC). The diagnoses identified in the literature were for instance "self esteem disturbances", "sleep pattern disturbances", "hopelessness" and "fear". The interventions identified were such as "abuse protection", "emotional support", "decision-making support", "sleep enhancement", "spiritual support", "group- and community-support-system enhancement" and "presence" (Carlson-Catalano 1998, Gagan 1998). The findings of several studies have shown several nursing diagnoses, for example, co-dependence, stress overload (Lunney 1996) and nursing interventions, for example, stress-reduction management, power enhancement (Carlson-Catalano 1998) that do not exist in the NANDA and NIC nursing classification systems. These and other diagnoses and interventions are important in the assessment and treatment of battered women and should be submitted to the appropriate category.

Nursing diagnostic instruments

Several screening tools to assess for domestic violence against women in nursing practice are identified in this review. The essential purpose of assessment in the diagnostic process for the health care professionals is thus to determine the type and scope of intervention needed, as well as to determine if additional services and referrals are needed. Two exemplary assessment tools are briefly described in this paper.

1. The Nursing Research Consortium on Violence and Abuse (McFarlane et al 1991) developed a four-question assessment tool (the Abuse Assessment Screen, or AAS) that directly asks about the characteristics of abuse in relationship and can be incorporated into the nurse-client interview or a written history. The AAS has excellent psychometric properties and provides a useful model of a brief partner abuse screening tool that could be used in a variety of health care settings by a range of professionals.
2. The Danger Assessment instrument, or DA (Campbell 1986) is a 15-question interview asking women in battering relationships about the presence of risk factors linked with eventual homicide of battered women by their abusers. The DA has good psychometric properties.

Routine enquiry

There are likely to be two main situations in the diagnostic process described. First, circumstances in which enquiry about the possibility of domestic violence is adopted with all patients as a matter of routine, and second, situations in which such enquiry follows only when there are reasons to assume that domestic violence might be taking place (Henwood and Department of Health 2000). Routine enquiry refers to asking about the experience of domestic violence of all people with certain parameters (e.g. women aged over 16), "regardless of whether or not there are signs of abuse, or whether domestic violence is suspected" (The Family Violence Prevention Fund 1999). Evidence from practice where this has been followed suggests that most women do not mind being asked when it is explained that the same inquiry is being made of all women because domestic violence is widespread and often hidden (Stenson et al 2001, Taket et al 2003). Approaches to routine enquiry should employ validated screening instruments. Such tools have been developed in the United States, but have not generally been tested in Europe. The introduction of routine

enquiry must be handled with care; staff must be properly trained in how to recognise domestic violence, in the use of enquiry tools and interview techniques, and to be able to respond skilfully and confidently.

Implications

This literature review shows that professionals in the health care system would have to take an important role in the support of women who experienced domestic violence. Nurses can assess women at each interaction and intervene with referrals, advocacy, education, and counselling. Assessment is intervention and an important part in the diagnostic nursing process. Assessment for abuse by the nurse acknowledges that violence occurs and that concern exists for the woman's physical safety.

The lack of comprehensive evidence on how the health service could effectively reduce the impact of domestic violence should not be an excuse for lack of action on what we know is a major cause of difficulty for women's health and their quality of life

(Davidson et al 2000 cited in Shipway 2004, p.191).

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Contact

Anja Gerlach; RN
Bachelor of Science in Nursing (BScN); cand. MScN
Brunebecker Strasse 122
D-58454 Witten
Germany
phone: +49-2302-982981
e-mail: agerlach@uni-wh.de

49. – Development of a tool for the evaluation of diagnostic accuracy.

By Matos, FGOA. and Cruz, DALM. (Brazil)

Introduction

The accuracy of a variable lies in its capacity to faithfully represent what it is intended to represent. The conceptual definition of diagnostic accuracy is based on the preposition that, in clinical situations, there are a wide variety of possible diagnoses besides the diagnoses which are highly precise (Lunney 1990). Consequently, the accuracy of a diagnosis adopts a character which is not dichotomous, but in fact, continuous (Lunney 1990). Aware of the importance of accurate nursing diagnoses for quality healthcare, Lunney, a nursing researcher from the United States of America, developed, during the 90s, a method for estimating it. This method utilizes a 7-point scale and is currently the only available tool which attends to this necessity. The method was developed for situations wherein the same nurse who applies the scale has the opportunity to assess the patient for whom the diagnosis was established (Lunney 1990). The validity of Lunney's method has been demonstrated in previous studies, however, results from the study of Cruz et al (2004), showed that this scale does not apply to written data. The aim of this ongoing research project is to develop a tool to estimate the accuracy of nursing diagnoses based on written data from the evaluation of the patient.

Methodology

This is a quantitative study of methodological development, the aim of which is to generate a tool to be used by a rater. The rater may or may not be the nurse who made the specific diagnosis under evaluation, but must have experience with diagnosis classification and with the concept of the diagnostic accuracy of the tool. The first phase, already completed, is based on Lunney's definition of accuracy, using a selection of 5 accuracy attributes as the item source: the presence of diagnostic cues, number of cues, specificity of cues and consistency of cues. Five items were constructed, adding operational definitions to each selected attribute. The items were submitted for apparent validity (3 specialists in nursing diagnosis and clinical reasoning) resulting in the maintenance of 4 items (the number of cues was eliminated). The 4 items were submitted for a pilot test by 12 nurses (Masters and Doctoral students) on 4 written patients' assessment data.

Results and discussion

The results of the pilot tests called for small adjustments to be made to the items and the tool format. During the next phase the tool will be tested by 15 nursing diagnosis specialists with clinical experience in adult health nursing, who will estimate the accuracy of diagnoses stated by researchers on 5 interned adults. The raters will be supplied with written assessment data of the patients (interview, physical examination and laboratory test results) together with a list of stated diagnoses for each patient. The nursing diagnosis list will include diagnoses with varied levels of accuracy. Reliability will be verified by inter-observer agreement (Kappa). The hypothesis that the highly accurate diagnoses stated by the investigators will be rated with higher accuracy scores by the raters will be tested as an estimation of the validity of the tool.

Contact

Fabiana Gonçalves de Oliveira Azevedo Matos
125, Monjoleiro Street Tropical
Cascavel
Parana Brazil 85807-300
phone: +554532261087
fax: +554532261087
e-mail: fabianamatos@hotmail.com

50. – Interprofessional development/testing of an NLINKS cost filter

By Lavin, MA., Wang, LH., Cvitan, T. and Krieger, M. (USA)

Objective

The research objective was to pilot test a secondary data analysis cost filter within the NLINKS Evidence Based Nursing (EBN) Filter Matrix. This matrix provides a framework for examining primary, secondary, and tertiary data citations withing assessment, diagnosis, intervention/treatment and outcome categories. NLINKS is an acronym for the Network for Language in Nursing Knowledge Systems (nlinks.org). The two specific purposes of this study were to: 1) initiate development and testing of a cost filter to facilitate rapid access to literature examining cost or cost-related outcome variables; and 2) test the newly developed cost filter using several different search strategies.

Methodology

The method consisted of the following steps. The first step was to select an initial search strategy to be applied consistently through the several stages of cost filter development. The second step was to locate cost filter placement within the NLINKS EBN matrix. Step 3 involved the recursive development of the cost filter. The fourth step was to store the cost filter and search results within PubMed My NCBI. Step 5 involved testing and refining the cost filter when applied to the PubMed database, until the preliminary filter sensitivity and specificity each approached or surpassed 80%. Testing and refining the filter meant performing an abstract review on the citations retrieved. Criteria for acceptable and unacceptable citations were established. Results were compared to manual review, which served as the gold standard. To establish the gold standard, abstracts were first sorted by journal with results limited to abstracts only, English language, and the nursing journal subset. All abstracts from the selected journals that contributed the greatest number of retrieved citations were printed and reviewed by an investigator, whose interrater reliability had previously been determined to be greater than 80%. Decisions rules or criteria for accepting or rejecting an abstract as relevant to cost related search were previously established by the interrater reliability team. Abstracts that met the previously determined criteria were accepted, those that did not were rejected. Abstracts accepted and rejected by the gold standard were then compared with abstracts accepted and rejected by the filter. Sensitivity, specificity, positive and negative predictive values were determined. Additional search strategies were tested and analyzed in the same manner.

Results

The results were displayed for each search strategy applied to the cost filter. The range of sensitivities, specificities, positive and negative predictive values were presented in tabular form. The cost filter was inserted into the EBN Matrix and posted on NLINKS as hyperlink for rapid access to PubMed.

Conclusion and discussion

Implications of this study are discussed in terms of the creation of a filter development methodology protocol for dissemination purposes, the importance of the interprofessional team in filter development, and implications of an easily accessible cost filter for EBN practice, education, and outcomes research.

Contact

M. A. Lavin
Saint Louis University School of Nursing
3525 Caroline Mall
Saint Louis
Missouri 63104, USA.
phone: +3149778961
fax: +3145778840
e-mail: lavinma@slu.edu

51. – The development of nursing diagnosis dependent outcome measurement: The measurement of “risk of falling” as an example

By Heller, R. (Switzerland)

Introduction

In the first part of the presentation the objective of the Verein Outcome will be shown. The stages of development of a nursing diagnosis dependent outcome measurement concerning “risk of falling” will be presented in the second part. This new measurement was developed with an interdisciplinary group of experts.

Verein Outcome and its measurement

Verein Outcome develops and conducts outcome measurements in acute care hospitals. A hospital reform project (LORAS) initiated the outcome measurements which, in 1999, led to the foundation of Verein Outcome now playing a major role regarding inpatient outcome measurement in Switzerland.

Verein Outcome, a non-profit organisation, is an association jointly held by hospitals, health authorities and insurance companies. It is a characteristic of Verein Outcome that hospitals commit themselves to conduct outcome measurement on a regular basis financed by health authorities and insurance companies. The development and management of the measurements are based on the philosophy of organizational development which means that hospitals with professionals of care and cure, and experts and representatives of health authorities and insurers, take part in it. Data collection is mainly based on self declaration. Target of the measurements is to promote quality in the hospitals on the basis of outcome measurements and to allow them to monitor quality over time.

In meetings for benchmarking, hospitals can compare themselves with each other. These meetings provide possibilities for networking and recognizing the own potential of quality improvement by comparing the own hospital with other hospitals and learning from one another. These meetings provide possibilities for networking and recognizing the potential for quality improvement by comparing one’s hospital with other hospitals and learning from one another.

The development of nursing diagnosis dependent outcome measurement

Although all the measurements of Verein Outcome are based on an interdisciplinary perspective and contain also nursing aspects, the number of measurements that focus on typical topics of physicians with respect to nursing topics is imbalanced. In order to adjust this imbalance, a committee of experts from nursing management and nursing sciences has written a paper to the strategic decision making committee of the Verein Outcome. This paper shows arguments for expanding the number concerning nursing diagnosis dependent outcome measurement. This development is pioneering, and is significant both nationally and internationally, because it is yet unknown to have systematic outcome measurements in nursing.

Outcome measurement “Risk of falling”

Patient falls are a frequent and often serious problem in hospitals. This measurement was developed because of its topicality and the demand from hospitals. The target of the project was the

development of suitable quality criteria, with corresponding indicators, that measure the outcome quality in the field of risk of falling. Besides showing the indicator, "rate of falls", information on fall prevention would be obtained to make conclusions about structures and processes. In the process of development of this measurement, setting the premises of interdisciplinarity and openness for consentable team work were important. Measuring instruments with appropriate indicators and forms for data collection, as well as tools for data analysis and data presentation were developed. The committee of experts was composed of nurse specialists, physiotherapists, physicians and persons with an architectural background. In a pretest the measuring instruments were checked for user comfort and comprehensibility before starting the pilot phase. In this part of the presentation the most important milestones, the quality criterias and indicators and first experiences and insights gained by the pretest and pilot phase are presented.

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Contact

Regula Heller MNSc
Manager for Quality Measurements
Verein Outcome
Josefstrasse 59
8005 Zürich, Switzerland.
phone: +41443808007
fax: +41443808009
e-mail: regula.heller@vereinoutcome.ch

52. – Assertive Community Treatment teams: opportunities for psychiatric nurses to maximize nursing contribution in a multidisciplinary practice (Workshop).

By Cherrey Jones, D. (USA)

Introduction

For more than 30 years, the Program of Assertive Community Treatment (ACT) in Madison, Wisconsin, in the United States of America, has served as a national model for integrating the roles of nurses, psychiatrists, social workers, substance abuse and vocational specialists, and other disciplines into a total team approach to providing community-based treatment, rehabilitation, and support for adults with severe and persistent mental illness. As such, these programs have much to teach about interdisciplinary communications and models for a team approach to service delivery. Psychotherapeutic Services has been a provider of replications of similar programs based on the principles of assertive community treatment since 1988 and presently operates numerous such programs in 4 states and the District of Columbia in the United States of America. Nurses are prominent members of these teams, both in number and scope of service, and frequently are at the core of the multidisciplinary communication process.

This paper presents a description of the roles assumed by psychiatric nurses on ACT teams and the benefits and challenges of transporting a total team approach from the setting of the psychiatric hospital to the social ecology of the natural community. It describes the organization of the ACT model, the evidenced-based treatment modalities that are incorporated within the ACT clinical approach, and the roles assumed by psychiatric nurse on ACT teams, with a focus on the communication processes for implementing nursing diagnoses, interventions and outcomes in this type of multidisciplinary psychiatric practice.

It provides an understanding of the historical and theoretical foundations, research evidence, and practical guidelines for the ACT approach as well as how innovative nursing communication techniques have contributed to the success of this model becoming and remaining one of the premier intervention strategies for clients with severe and persistent mental illness.

Contact

D. Cherrey Jones CS-P, APRN, BC, MBA,
Post Office Box 690, Chestertown,
MD 21620, USA.

phone: +410-778-1933
mobile: +443-480-1021
e-mail: djones@ps-corp.net

53. – Sharing of information in Matosinhos Health Care Unit: a pioneer experience in Portugal.

By Pinto, JL., Pinto, RA., Fonseca, BJ. and Osório, C. (Portugal)

In modern societies information plays a very important role. Therefore, in the health care area, there is a growing concern with the development of efficient information systems that will optimise service management and promote the improvement of health care quality. The difficulties in managing information within the health care area lead to a growing involvement of governments, responsible institutes, as well as health care professionals. Their aim is the development of information systems that would allow a rational and efficient use of information.

According to the Portuguese Ministry of Health (1998) "...a good information system is an indispensable tool for making correct decisions in all levels of the health care system... It is necessary to connect and articulate the different parts and resources that already exist in a coherent and functional health care information system...".

The articulation between the different levels in health care will make the access and forwarding of clinical information much easier and faster. Therefore, it would promote the assessment of the health care provided and substantially reduce bureaucratic processes. It is generally acknowledged that there is a basic need of accessing information produced by nurses. This access should be fast, effective and extend to all health care professionals.

Information sharing systems and, more specifically, their structures for exchange and consultation of information, will promote an efficient information flow between all the different actors in the nursing care process intervening in the various contexts of health care. With this aim, Matosinhos Local Health Care Unit (MLHCU), developed an information system that allows information produced by nurses to be shared in an effective way and in real time. Nurses preferably use the terms in the International Classification for Nursing Practice (ICNP®) in the design and documentation of the nursing care process.

Concerning relevant nursing information sharing, the health care information system allows different actors of different health care contexts to obtain automatically highly summarized nursing data; thereby, promoting the continuity of care.

The information sharing process in MLHCU

A - Access of the nurse in the health centre

1. Access to the identification of inpatients at MLHCU's hospital that are registered in the Family Health Care Unit that requested the connection;
2. Access to the identification of patients that had clinical release from the hospital in the last ten days and that are registered in the Family Health Care Unit that requested the connection;
3. Access to the information database of inpatients and/or patients that were released and classified as relevant for the continuity of care in the Family Health care Unit;
4. Outputs in PDF format.

B – Access of the nurse in the hospital

1. Access to the information database of inpatients and/or family documented by the Family Health Care Unit and that was classified as relevant for the continuity of care;
2. Outputs in PDF format.

Contact

J.L. Pinto
Unidade Local de Saúde de Matosinhos EPE
R. Dr. Eduardo Torres 4454 -509
Matosinhos
Portugal
phone: +351916383481
fax: +351229391654
e-mail: renato.pinto@hph.min-saude.pt

54. – The use of a multidisciplinary terminology in the electronic health record.

By Lerche, J. and Asholm, L. (Denmark)

Introduction

In Denmark SNOMED CT® is chosen as the basic clinical terminology to support the documentary need of the clinical team in a multidisciplinary EHR. The aim is to create a national health terminology for supporting documentation which has a problem oriented approach, which can be used to describe planning, execution and evaluation of the care process, which is cross professional and which can support cross sector information exchange. To get a successful EHR system, one of the main issues is to apply the terminology in standardised guidelines and clinical pathways, and make these and the terminology compatible within an EHR standard as illustrated below (Figure 1).

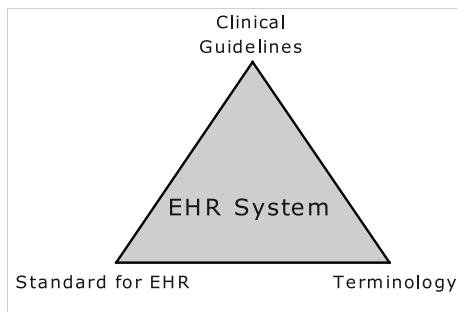


Figure 1: EHR standard

SNOMED CT® in short

SNOMED CT® is a multi-axial terminology organized in a number of hierarchies, each of which covers fields like body structure, finding, procedure, staging and scales, social context, etc. The concepts come from several different mono-disciplinary classifications, such as NANDA, NIC, NOC and ICD 10 and are mapped together, so one concept only appears at any one time. The concepts are linked to one another by means of semantic relations. They make up a structured definition of the single concept and may be patterns for extraction of relevant information. It would, for instance, be possible to find out how many patients in clinical department X have had pressure sore care activities in the last year by method Y by setting specific search criteria for the different information categories contained in the health records.

SNOMED CT® contains about 350,000 concepts and the multi axial structure of the terminology makes it possible to combine concepts needed for the recording of both fundamental and granulated information in patients' health records.

How to Approach the Terminology

To produce clinically relevant information reliably and reproducibly in software application, however, the implementation in practical use must take place in cooperation with the clinical community. But

because of the immense quantity of SNOMED CT® concepts and the highly structured way of defining and inter-linking the concepts, the system is not very user-friendly to the general clinician. To make the terminology manageable and usable in the daily use of an EHR, it is necessary to make use-case defined selections (subsets) of required concepts from the full SNOMED CT®. The Danish project for translating SNOMED CT® and clinical validation shows that it requires considerable knowledge from terminologists, systems builders and experienced clinicians to detect the meaning behind a given term by trailing the semantic relations between the concepts.

Creating subsets

SNOMED CT® does not show terminology specifically for nurses or doctors, and in principle the user can select from the whole terminology for describing patient diagnosis, problems, procedures and results. For this reason the Danish project SUNDTERM has chosen to create smaller subsets for use in a specific discipline to qualify the clinical validation of the translated terminology and production of Danish synonyms. One of the use-cases has been to detect terminology for documentation of general nursing in the light of "Guidance on Professional Nursing Documentation", published by the National Board of Health in Denmark. The reference points out 12 subjects which are essential for nurses to take into consideration in nursing care plans and has been used to guide the creation of 12 subsets, containing SNOMED CT® terminology for findings, procedures and results.

The subjects are: Activity, Nutrition, Skin and Mucous Membranes, Communication, Psychosocial Functioning, Respiration and Circulation, Sexuality, Pain and Sense Impression, Sleep and Rest, Knowledge and Development, Elimination and Observations.

Below is illustrated a small part of a subset regarding findings about Sleep and Rest (Figure 2).

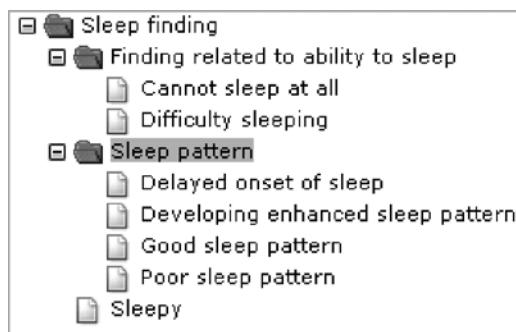


Figure 2: Subject relating to findings about sleep and rest

Experiences

One of the main experiences from creating the subsets was that the creator of the subset has to be very specific about the use-case and the terminology needed. If the use-case is imprecise the subset will end up just as imprecise with subsequent time-consuming edition or worse, as erroneous data in the patient record. When a subset is created and has been set up in a EHR system as 'drop-down lists' or in clinical pathways, the definition behind the SNOMED CT® concept is hidden, which can cause use of a concept with another semantic mean than intended. To avoid this, the reference or the use-case has to be precisely defined and the creator must be able to handle a qualified detection of the meaning behind a SNOMED CT® term by looking up the relations to other concepts. Finally it is imperative that the tool for handling the terminology makes it possible to make an advanced search cross the concept relations.

Discussion

The ability of SNOMED CT® terminology to cover the need of terminology in Danish clinical pathways regarding nursing history taking has been tested in the Hospital Organisation of Copenhagen. The test showed that approximately 85 % of the documentary needed could be found in SNOMED CT®.

We have taken a closer look into some of the work made in Copenhagen to find the corresponding terminology from SNOMED CT®. The purpose of providing the standardised clinical guidelines with terminology served two main questions:

1. Is it possible to find the adequate concepts?
2. Is it imperative to have semantic discussions to ensure the accuracy and understanding in the final product?

The original documents have been written in the language of the clinicians. When the language changes from daily wording into standardised terminology, it affects not only the formulation but also the interpretation and perception of the written documentation.

The goal is that the same term should induce similar concepts in different user's minds. To reach this goal we must plan a process where different competences are represented and involved: experienced health professionals, terminologists, vendors and developers.

Conclusion

The nurses and other health professionals need to find out what they want to document and for what purpose. The challenge is to focus on the benefit and use of the out-data to be specific in defining the in-data. The nurses should define which datasets they need from the system and what the output should be used for. In this process we find it essential that the nurses take into consideration how granulated the documentation needs to be, and if they maybe need to create extensions in some parts of the terminology.

We find there is a need for more pilot projects in Denmark, where SNOMED CT® is used for more specific purposes by clinicians and developers. These projects could focus on issues like:

- How does the terminology cover the documentation needs?
- What is important in the process of creating synonyms?

The SDO

A new SNOMED Standards Development Organisation (SDO) has been established in order to transform SNOMED CT® development into an international project. The status right now is that eight countries have signed an agreement to establish the SDO from January 1st 2007. The SNOMED intellectual property rights will be transferred to the new organisation, and Denmark will host the SDO secretariat.

Contact

Janni Lerche, RN, MI
Lene Asholm, RN, Stud. MI
National Board of Health
67, Islands Brygge
DK-2300 Copenhagen S
Denmark
phone: +457 22 27 864
fax: +457 22 27 415
e-mail: al@sst.dk

55. – Nursing communication and standardized documentation: continued refinement of the Functional Health Pattern Assessment Screening Tool (FHPAST)

By Jones, DA., Duffy, M., Herdman, H., Flanagan, J. and Foster, F. (USA)

Introduction

The Functional Health Pattern Framework (Gordon 1982) has been used to focus and structure patient assessment data within a nursing framework. Patient information is organized into eleven functional health patterns (FHP), which reflect behaviours that manifest how individuals experience daily living. The Functional Health Pattern Assessment Screening Tool (FHPAST) was developed to provide a reliable and valid instrument which could be used to screen the functional health patterns, minimize assessment time, and increase the utilization of a nursing assessment framework.

The FHPAST is a 58 item screening assessment tool generated from all of Gordon's Eleven Functional Health Patterns (Jones and Barrett 1996, Barrett and Jones 1997). The tool screens all eleven functional health patterns. The instrument is self completed by the patient and response to each item is organized on a four point Likert scale. The FHPAST is being used in research studies in Mexico, Brazil, Spain, Japan, England, and the United States. The psychometric properties of the FHPAST have been established in previous studies by the tool developers.

Objectives

To further test and refine the psychometric properties of the FHPAST by merging data from one current study and a previous large data set.

Methodology

A sample of 1500 cases from acute care settings were included in the data analysis. Reliability testing was preformed on the entire tool and yielded an alpha coefficient of 0.92. Item analysis was done and no items were eliminated during this analysis. Factor analysis was conducted using principal component matrix with varimax rotation. A factor solution was developed and reliability testing was established for each factor using alpha coefficient.

Results

Results are in process with additional data being included to determine the final psychometric properties of the instrument. In the past, a four factor solution accounting for 35% of the variance was proposed, with alpha coefficients ranging from 71-90. It is anticipated that with a much larger sample size these results will change.

The development of a reliable screening tool to evaluate functional health within a nursing framework will enable nurses to communicate nursing data about the patient experience in an electronic format. Data from the FHPAST can be used to isolate cues, guide further assessment and generate tentative nursing diagnoses. In the United States, the movement toward an interdisciplinary, electronic, standardized medical record is moving forward. The FHPAST can provide a framework for communicating nursing assessments and direct further nursing care, within an environment that promotes timeliness, efficiency and cost effectiveness within health care delivery overall.

Contact

Dr. Dorothy A. Jones
399 Pond Street F-12
Braintree
MA 02184
fax: +6175520745
e-mail: Dorothy.jones@bc.edu

56. – The refinement of financing criteria for hospital nursing care: an application of the use of Belgian NMDSII

By Van Herck, P., Sermeus, W., Michiels, D., Van den Heede, K., Delesie, L., Laport, N., Thonon, T., Gillet, P., Vanden Boer, G., Grietens, J. and Tambeur, W. (Belgium)

Introduction

There is a requisite for a needs-driven financing system in healthcare. Nursing minimum datasets (NMDS) and hospital discharge datasets (HDDS) can be used to investigate those needs, and the comparison with reality, if scientific evidence and clinical contextual experience can also be taken into account.

Background

The Belgian Healthcare Knowledge Centre commissioned a research project to construct a refined financing model for hospital nursing care in Belgium. It concerns a one-year feasibility study, initiated in February 2006. In the current hospital financing system, two nursing care indicators that are based on B-NMDS are used: an average cost-weight for surgical, internal medicine and paediatrics departments; and a weighted intensive care ratio (ZIP/ZAP) for intensive care departments. This financing system is criticized for the following reasons:

1. it is not linked with DRGs;
2. cost-weighting is based on actual staffing ratios, which favours nursing wards with high nurse staffing levels;
3. except for technical care, cost-weights are not sensitive enough for changes in nursing practice;
4. nursing intensive departments, such as geriatrics, are not included in the complementary financing scheme.

At present there is no link between financing criteria and patient centred nursing intervention needs, nor with the complementary staffing needs.

Study objective

The aim of the study is to develop a refined model of financing nursing care that makes the shift from financing current nursing activities and nurse staffing levels to a system that is based on appropriate nursing activities and appropriate nurse staffing levels. A further integration with DRG is also envisioned.

Methodology and procedure

The study encompasses two distinct parts, which are integrated in the final modelling: intervention needs based on evidence; and staffing needs based on perceptions of nursing personnel, in combination with multidimensional statistical analysis (CATPCA).

Intervention needs

During the first months, 9 nursing interventions were selected based on frequency, variability, and staffing and evidence related criteria in concert with expert opinion. A strict evidence based approach

was used to summarize the current state of the art in the application of these interventions. Proven indications and contra indications for combinations of these and other nursing interventions are extracted. Based on aggregated NMDS and HDDS analysis the relations between the concerned patient problems, nursing interventions and outcomes and events can be investigated to construct an algorithmic rule set. Different levels of evidence are taken into account. The effects in staffing and financial terms of diverse applications are clarified based on real patient cases.

Staffing needs

More than 100 real life patient cases from 38 hospitals were constructed based on comprehensive patient records analysis and clarification by involved nurses. A subdivision was made between general wards, paediatric wards, intensive care wards and geriatric wards to account for inherent staffing differences. More than 200 charge nurses distributed over all Belgian general hospitals applied for the rating of these cases, using a Delphi approach, with regard to staffing needs. External validation by means of the rating of separate nursing interventions in function of staffing needs effects is also tested.

Results

In the final stage both needs assessments, interventional and staffing related, will come together to construct a coherent financing model of hospital nursing care. NMDS and HDDS will be further integrated in this application. A literature review will also compare the model with hospital financing systems abroad.

Contact

Van Herck, P.
Centre for Health Services Research
Catholic University of Leuven
Kapucijnenvoer 35/4
B-3000 Leuven
Belgium.
phone: +3216336982
fax: +3216336970
e-mail: Pieter.Vanherck@med.kuleuven.ac.be

57. – Nursing economical knowledge: how much nursing care per DRG?

By Junger, A. and Frischknecht, B. (Switzerland)

In the Swiss medical sector, the problems of the costs occupy a growing place in the conscience of the two sides of the social partners. Health is no more the field of study reserved for a restricted group of disciplines. Since the critical approaches of the 1970s, health (Illich 1975) became a polymorphic field of study particularly invested by the social sciences, whose economic ones took a very visible place.

Gathering data since 1998 from hospitals to calculate yearly versions of cost-weights, we witnessed the impressive improvement in data quality in most cost components of DRG's (Fetter 1984, 1999). Nevertheless, one of the most difficult cost elements to gather was nursing care, since either the nursing data was not collected by case or the hospitals' accounting system could not produce its cost per case.

Things have changed with the improvement of hospital information systems; more hospitals now have acquired the capacity to do case-base costing which includes case-based nursing data.

This study describes the proportion of nursing care in each APDRG Cost weight. It was carried out in an 800 beds teaching hospital with more than 30,000 cases. This paper will also show the result of a second study based on data collected daily with PRN© tool (Projet de Recherche en Nursing) and linked to the APDRG. The question is to understand how nursing affects the APDRG and the length of stay as some international authors already described (Welton et al 1999).

The analysis show that the average share of nursing cost in the 31 most frequent APDRGs varies between 30% and 50%. On average, it is the most important cost components of these DRGs. The study describes some factors influencing the nursing cost and the LOS. This paper will also describe a regression model build to identify "outliers" by the nursing point of view in a clinical perspective.

Finally the conclusions will open the discussion to the needs for finer and standardised definitions of nursing care, as are pursued in Switzerland with the national NURSINGdata Project. Research also has to be encouraged to better define a few key elements: more precise definitions of the types of nursing care (intensive, continuous, normal, etc), further exploration of the benefits of including nursing phenomena as tools to explain observed variations, study of the comparative nursing share between day surgery and hospitalization, to name but a few.

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Contact

Alain Junger, MPA, MHM, RN
MP16 bur 406
CHUV
CH-1001 Lausanne
phone: +41213141820
e-mail: alain.junger@chuv.ch

58. – LEP Nursing 3 for the linkage of electronic patient record and nursing workload measurement

By Baumberger, D. and Kühne, G. (Switzerland)

Introduction

LEP is a nursing workload measurement system currently used in more than 150 different hospitals and medical centers throughout Switzerland and Germany and is translated into French and Italian. For the development of the SwissDRGs LEP is recognized for the calculation of the nursing cost weights. In order to facilitate the collection of nursing data a new LEP version was developed. In addition to the measurement of nursing workload LEP Nursing 3 can be used also in the patient record for documentation of nursing interventions. Automated linkage of the LEP nursing interventions, nursing workload measurement, nursing diagnosis and outcomes increase the explanatory of nursing data (e.g. in DRG systems). Thus for the different needs for information by politics, management, research, training, and practice relevant data are made available.

Methods

In projects suitability for daily use was tested. With developers of other intervention terminologies collaboration took place, in particular concerning completeness of the LEP interventions. The feedbacks of users in practice were taken up constantly to the development. Pilot tests concerning validity and reliability were accomplished.

Results and discussion

The architecture of LEP Nursing 3 and test results will be presented. Possible applications, usefulness, and limits of LEP Nursing 3 become discussed.

Contact

Dieter Baumberger
LEP AG
Blarerstrasse 7
CH-9000 St. Gallen
phone: +41 (0)52620 08 10
fax: +41 (0)71246 37 59
e-mail: dieter.baumberger@lep.ch

59. – Multi-dimensional evaluation of a Course on the NANDA Methodology for Psychiatric Nurses

By *De Pieri, C. and Casella, M. (Italy)*

Objectives

To verify whether the introduction of the NANDA methodology in a psychiatric unit:

1. causes changes in the ability of the nurses to detect the nursing problems of the psychiatric patients;
2. improves, perceived quality of work among nurses;
3. changes the score of burn-out in the nurses.

Rationale

In Italy, the nurses working in the psychiatric units do not generally have a specific preparation. This can cause difficulties in operating and defining one's own role.

The author believes that the introduction, among the nurses of a psychiatric unit, of a new method to recognize and to manage the problems of the patients, could have influence, not only on the clinic, but also on the organization and on the nurses well being.

Methodology

To achieve the first objective, we analysed 89 nursing-documentations of the year 2004 (time 0), produced with free methodology, before the beginning of the training in NANDA methodology and 50 of year 2005 (time 1), compiled according to the NANDA system. The principal end-point was the evaluation of the frequency of all reported nursing diagnoses/problems and some specific diagnoses, namely, "imbalanced nutrition", "disturbed sleep pattern" and "constipation", assumed as indicators.

We evaluated the second objective firstly with Q.A methodology. At time 0, the group of nurses (N. 35), had to individualize, with Isikawa strategy, significant problems affecting the unit; 12 problems were identified. At time 1 (16 months later) we submitted a questionnaire, a Likert scale model (1-5), asking nurses to declare the perceived change on 12 problems. For the third objective we used at time 0 and time 1 (9 months after the end of the course) two standardized questionnaires, the Maslach Burnout Inventory (MBI), and a questionnaire on the personality.

Results

First objective: no statistic differences ($p > 0.05$) were found, for age, sex and pathologies, between the two populations of patients (2004>2005). The number of nursing problem/diagnoses reported on nursing documentation, dramatically increased (11 to 16 times)

Second objective: on a scale 1-5, the improvement perceived about the problems of the psychiatric unit, in comparison to time 0, was of a mean value of 2,65 (S.D. 0,95).

Third objective: the scores of burn-out improved in about all the operators and many workers passed from an introverted personality typology to an extrovert.

Discussion

The results show, with no doubt, that the adoption of the NANDA diagnostic system, can improve enormously the ability to report the problems of the psychiatric patients. Furthermore, it can improve the judgment that the nurses have on their own situation in job and their comfort.

It appears that, for psychiatric nurses, the diagnostic system represents a sort of frame for better defining their own professional identity.

Contact

e-mail: depiericlaudio@tiscali.it
e-mail: depieri@med.unipmn.it

60. – Status of students' ability to determine NANDA nursing diagnoses

By Bedriye AK, Figen Isik Esenay and Zumrut Basbakkal (Turkey)

Introduction

The growth in knowledge in a profession is in parallel with the growth of its language and classification systems. A common language is an essential component of nursing being seen as a profession. A common language prevents chaos in the nursing profession, increases communication and provides for growth in the profession. The common language in the nursing profession is made possible with nursing diagnoses. Nursing diagnosis is a language that has been developed by nurses. Nurses describe findings about patients' previous life experiences and current or potential health problems to create independent direction for professional nursing actions (Hootman 1996).

In the last 25 years there have been developments in nursing diagnoses with studies conducted in this area which have added importance to nursing knowledge (Sieleman 1999). Nursing diagnoses guide the diagnoses of patients' problems, the planning of nursing care and its implementation (Erdemir 2003). Standardized nursing diagnoses which are a part of the nursing process, as a problem solving method, help to correctly determine the problem, plan interventions and achieve expected results (Gordon 2003).

The international definition of nursing diagnoses and work towards their development began formally in 1973 with the formation of the National Conference Group for Classification of Nursing Diagnoses. After 1982 this group continued under the name, North American Nursing Diagnosis Association (NANDA) and published the first list of diagnoses for the purpose of ensuring the use of a common language in nursing diagnoses (Carpenito 2005).

The use of nursing diagnoses began in Turkey with the inclusion of diagnoses in nursing education by educators who took this subject seriously. NANDA diagnostic statements are used in clinical practice in the nursing education program for the purpose of ensuring the development of a common language in the process of planning care for patients. The "Nursing Diagnoses Handbook," which was translated by Erdemir (2005), the Turkish member of ACENDIO, has increased interest in nursing diagnoses and is used as an important resource. However this interest which is shown in education is not found in hospital nursing services. Nevertheless nursing diagnoses are used in some private hospitals by using an electronic data base.

To be able to implement every step of the nursing process it is necessary to have knowledge and skill. Nursing students are expected to be able to use the nursing process with these skills in their clinical practice. The educational process is important in the development of these skills (Çam et al 2004).

They are used in planning and evaluating the care plans used by students' care of their patients in clinical practice in nursing education, as well as in the evaluation of students. The NANDA diagnoses are used for nursing diagnosis statements on their care plans. The students receive information about NANDA diagnoses in their theoretical education from the first year; however they do not receive a specific course about this subject.

Nursing diagnoses must have a place in nursing education. This kind of education will develop knowledge and skills, professional identity, self confidence, critical thinking and evidence based practice in future nurses. The stage of determining nursing diagnoses is based on the synthesis of all data that has been collected and guides the nursing care process. Nursing students find the determination of nursing diagnostic statements consistent with the data they have collected from an individual or a patient to be one of the most difficult areas in the formation of the nursing process.

It will speed the determination of the correct nursing diagnosis and resolution of patient's problems and will ensure that care is provided in a systematic manner (Carpenito 2005, Kaya et al 2003).

Purpose

This study was planned as a descriptive study for the purpose of determining the ability of students in their paediatric nursing course to identify nursing diagnostic statements that conform to NANDA nursing diagnoses and their ability to determine the related factors in an appropriate manner.

Methodology

Subjects

The research population was the 3rd year students in paediatric nursing at Ege University School of Nursing ($n=88$), during the 2005 - 2006 school year. The sample was comprised of 28 of these students who were chosen by a random sampling method. The students in paediatric nursing are separated into three rotation groups for clinical practice and the students in the rotation group that the instructors were responsible for were included in the research.

Instruments

Nursing Diagnosis Education. The students in the sample had a total of 20 hours of clinical practice per week during the 10-weeks of paediatric nursing, under the guidance of three instructors (researchers). During their clinical practice the students used NANDA nursing diagnostic statements to prepare their nursing care plans and presented these care plans with case discussions in a 4-hour group per week.

Written Case Study: After education and clinical practice, a sample case, which had been previously prepared by the instructors, was given to the students (Figure 1). The case study was prepared for an actual patient in the clinical area by two instructors.

Case:

Age: 8 days

Gender: Male

Diagnosis: Asphyxia, Sepsis and Acute Renal Insufficiency

General Condition: No spontaneous respiration, intubated, monitored, NPO, unconscious

Ward: Neonatal Intensive Care Unit

(This care was presented to students in a comprehensive manner.)

Figure 1: Case study given to students

The nursing diagnoses determined by the instructors were: nutrition: altered, less than body requirements; alteration in fluid volume: fluid volume excess; respiratory function, risk for impaired; ineffective tissue perfusion - specify (peripheral); mobility, impaired physical; family process, interrupted; parent - infant attachment, risk for impaired; breastfeeding, interrupted; grieving; tissue integrity, alteration (cornea); oral mucous membranes, impaired; skin integrity, impaired; risk of infection; ineffective airway clearance and growth and development, delayed.

Data collection and analysis

The study data were collected at the end of the 10-week clinical rotation. The data were collected using a questionnaire which included the students' socio-demographic data and a list of nursing diagnoses and related factors for the prepared case study. All of the students included in the research were gathered together in a meeting room the last week of clinical practice and a case study (socio-demographic data, system descriptions, physical examination and laboratory findings and treatment), which had been prepared by the instructors, was given to the students both verbally and in writing. During the verbal presentation the students' questions about the case study were answered by the instructors. After the presentation the students were asked to write a list of NANDA nursing diagnoses with related factors that they determined for the case study that was presented. The list of nursing diagnoses from the students was evaluated for appropriateness of NANDA nursing diagnostic statements for the case, and appropriateness of the nursing diagnostic statements with the related factors. Number and percentage were calculated in the data analysis.

Findings and Discussion

The age of the students in the study was between 20-26 years, and their mean age was 21.67 ± 1.30 . Only one of the students was male. None of the students had professional work experience in nursing.

Functional Health Patterns	Identified Number of Diagnoses	
	Instructors	Students
Nutrition	2	2
Activity – Rest	3	2
Role-Relationship	3	3
Coping - Stress Tolerance	1	1
Safety – Security	5	4
Growth - Development	1	1
Total	15	13

Table 1: Nursing Diagnoses Related to Functional Health Patterns Identified by Instructors and Students

In the distribution of 15 nursing diagnoses, according to functional health pattern that were identified in the case study, the instructors identified five diagnoses in the "safety-security" health pattern but the students identified four, and that health pattern included the highest number of diagnoses. The students were not able to identify one of the diagnoses in the "activity-rest" health pattern. That the students were able to identify the majority of the nursing diagnoses that had been identified by instructors was an encouraging finding. However the 13 nursing diagnoses identified by the students were not identified in the same percentage by every student (Table 2).

Kaya et al (2003) reported that students who have not taken a NANDA related course have a low rate of correctly determining NANDA nursing diagnoses. Although the students participating in our study had not had a separate course on NANDA nursing diagnoses they had benefited from the use of NANDA nursing diagnoses during their 10-week clinical rotation.

Nursing Diagnoses	N	%
<i>NUTRITION</i>		
Nutrition: altered, less than body requirements	6	21.4
Alteration in Fluid Volume: Fluid Volume Excess	11	39.3
<i>ACTIVITY – REST</i>		
Respiratory Function, Risk for Impaired	19	67.8
Ineffective Tissue Perfusion-Specify (Peripheral)	22	78.6
Mobility, Impaired Physical	0	0.0
<i>ROLE RELATIONSHIPS</i>		
Family Process, Interrupted	9	32.1
Parent-Infant Attachment, Risk for Impaired	7	25.0
Breastfeeding, Interrupted	5	17.9
<i>COPING - STRESS TOLERANCE</i>		
Grieving	1	3.6
<i>SAFETY – SECURITY</i>		
Tissue Integrity, Alteration (Cornea)	0	0.0
Oral Mucous Membranes, Impaired	21	75.0
Skin Integrity, Impaired	26	92.9
Risk of Infection	19	67.8
Ineffective Airway Clearance	1	3.6
<i>GROWTH AND DEVELOPMENT</i>		
Growth and Development, Delayed	19	67.8

Table 2: Nursing diagnoses identified by students (N=28)

The highest number of students identified the “skin integrity, impaired” (92.9%), “ineffective tissue perfusion - specify (peripheral),” (78.5%), and “oral mucous membranes, impaired” (75.0%) diagnoses; the lowest number of students identified “grieving” (28.6%) and “ineffective airway clearance” (3.6%) diagnoses. The identification of “skin integrity, impaired” by the most number of students in our research was also seen in studies by Babadağ et al (2003) and Altun (2001).

The diagnoses, “tissue integrity, alteration (cornea)” and “mobility, impaired physical”, that were identified by the instructors, were not identified by any of the students. Capuano et al (1990) reported that one of the most valid of the nursing diagnoses in patients with respiratory problems is the diagnosis, “ineffective airway clearance”. In our study it was seen that the students were not able to adequately use these diagnoses. The reason for this deficit may be a result of the students experiencing confusion in the meaning of diagnostic statements because of the use of a diagnostic system from a foreign source.

There were fewer students who identified the nursing diagnoses in the functional health pattern areas of “coping-stress tolerance” and “role-relationships.”

The findings show that the students were able to identify nursing diagnoses related to physical findings more easily than those related to psychosocial findings. The students who participated in the research had completed fundamentals of nursing, medical nursing, surgical nursing, maternity nursing and paediatric nursing courses in their baccalaureate nursing education, but had not yet taken a psychiatric nursing course. These other courses being more weighted towards physical care may explain the students’ inadequacies in recognizing psychosocial findings. These results show that more emphasis needs to be given to psychosocial care starting in the first year.

Nursing Diagnoses	Correct Related Factors		Incorrect Related Factors	
	N	%	N	%
<i>NUTRITION</i>				
Nutrition: altered, less than body requirements	6	100.0	0	0.0
Alteration in Fluid Volume: Fluid Volume Excess	7	63.6	4	36.7
<i>ACTIVITY – REST</i>				
Respiratory, Risk for Impaired	13	84.6	6	15.4
Ineffective Tissue Perfusion-Specify (Peripheral)	9	40.2	13	59.8
Mobility, Impaired Physical	0	0.0	0	0.0
<i>ROLE RELATIONSHIPS</i>				
Family Process, Interrupted	8	88.8	1	11.2
Parent-Infant Attachment, Risk for Impaired	7	100.0	0	0.0
Breastfeeding, Interrupted	5	100.0	0	0.0
<i>COPING - STRESS TOLERANCE</i>				
Grieving	1	100.0	0	0.0
<i>SAFETY – SECURITY</i>				
Tissue Integrity, Alteration (Cornea)	0	0.0	0	0.0
Oral Mucous Membranes, Impaired	14	66.7	7	33.3
Skin Integrity, Impaired	19	53.8	7	46.2
Risk of Infection	18	94.7	1	5.3
Ineffective Airway Clearance	1	100.0	0	0.0
<i>GROWTH AND DEVELOPMENT</i>				
Growth and Development, Delayed	16	84.2	3	15.8

Table 3: Status of Students' Determination of Related Factors for the Identified Diagnostic Statements

All of the students who identified the diagnoses, “nutrition: altered, less than body requirements”, “parent-infant attachment, risk for impaired” and “breastfeeding, interrupted”, were able to correctly identify related factors (Table 3). The students had the most number of incorrect related factors for the nursing diagnosis, “ineffective tissue perfusion-specify (peripheral)”. This result may be explained by the complexity of tissue perfusion pathophysiology.

It was determined that the students confused descriptive characteristics with factors for the other nursing diagnoses that they identified, and that they used descriptive characteristics instead of related factors. This situation may be a result of their being able to identify diagnoses with physical signs and symptoms more easily and not being able to grasp the pathophysiology of the condition. Correctly determining related factors ensures the accurate planning of care.

Conclusions and Recommendations

At the conclusion of our research it was seen that our students were able to successfully use the NANDA classification system in the determination of and naming of problems related to patients and their families. It was also seen that nursing diagnoses which define the physical, psychological, social and spiritual needs of patients and their families have an important part in more systematic and accurate care being given as well as in the students' case management. The most important reason why students were not successful in making some diagnoses may be a result of the lack of use of NANDA diagnosis system in any of the students' clinical practice areas.

Since the 2005-2006 school year, nursing diagnoses have been integrated into the curriculum program to allow the students to assimilate their use better and the contents of all care and illness subjects have been changed based on nursing diagnoses. Today the students in the first two classes of our university nursing school have been educated according to this program.

It is recommended that:

- Nursing students use sample case studies directed at NANDA nursing diagnoses in their clinical practice;
- NANDA nursing diagnosis courses be arranged;
- Nurses in more clinical areas adopt the use of NANDA diagnostic system;
- Classification systems that are used internationally be adapted to our own culture.

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Contact

Associate Research Bedriye AK
Associate Research Figen İşik Esenay
Associate Professor Zümrüt Başbakkal

Ege University, School of Nursing
Pediatric Nursing Department
Bornova
İzmir
Turkey
phone: +90232 3881103
fax: +90232 3886374
e-mail: zumrut.basbakkal@ege.edu.tr
fesenay@yahoo.com
bedriyeak@yahoo.com

61. – Making things work! Improving clinical decision-making in nursing practice by education and implementing care plans.

By Jongeneel, G., Folsche, M., Lindhout, T., Kitzen, J. and Monster, H. (Netherlands)

Introduction

In July 2005 a working group of clinical nurse specialists and registered nurses started a project, entitled “Clinical decision-making in nursing practice”, on the medical oncology unit of the Erasmus MC - Daniel den Hoed Cancer Centre. The most important reason to start the project was to improve the quality of accurate decision-making. In the nursing records, decisions were not clear due to the lack of nurses’ knowledge about clinical decision-making.

To record patients’ problems, the reasoning of nurses had been based on patient signs and symptoms. A standard care plan was documented in the record if a symptom had occurred. Patients’ problems were not classified, thus, for example, when constipation and vomiting - two signs of a paralytic ileus - both occurred, they were not associated in the one care plan.

Since the year 2000, on the medical oncology unit, nursing care has been summarized in several standard care plans based on nursing diagnoses. These care plans have been based on the clinical experience of nurses and not on any national or international classifications.

The major barrier to implementing the care plans was the nurses’ resistance against standardization, as nurses believed a standard care plan would conflict with their own responsibility to make decisions. Nurses also cautioned against making care plans and nursing records more important than nursing care itself.

The working group of clinical nurse specialists and registered nurses set out two major goals of the project, namely: improving the quality of the standard care plans; and increasing nurses’ knowledge about clinical decision-making. To make things work, collaboration with the nursing team is very important because this helps to make the connection between the theoretical principles of clinical decision-making and the daily nursing practice.

Methods

At the beginning of the project the working group made an inventory of the standard care plans used most frequently in nursing records. They turned out to be the standard care plans for nausea and vomiting, pain, fever and anxiety. The group started to develop these four care plans. The diagnosis (problem, aetiology and signs), the goal of nursing care, the interventions and the evaluation were recorded in the standard care plans. Apart from the use of clinical experience, nursing classifications and research evidence were introduced, to improve the quality of the standard care plans.

Multidisciplinary interaction was necessary, because some diagnoses are both foci of nursing and of other health care disciplines. These common problems are often related to specific pathology or therapy (Bulechek and McCloskey, 1997). To control chemotherapy-induced nausea and vomiting, both nursing interventions (for example nutrition advice) and medical interventions (for example antiemetic prescription) are necessary. Because multidisciplinary interaction is important, the working group developed care plans in collaboration with medical-oncologists and the Department of Psychosocial Oncology.

Every three months one new standard care plan is introduced. During introductory preparation the clinical nurse specialists educate the nurses using a step-by-step plan for clinical decision-making. Questions that need to be answered relate to the identification of the patient’s

health problems; the causes of the problems; the patient's outcomes; and which nursing and multidisciplinary interventions benefit the patient's situation. Both the participation of the patient and multidisciplinary interaction are also discussed in relation to the process of decision-making. In January 2006 the first care plan concerning pain was introduced.

Another method to improve nurses' knowledge about clinical decision-making, and to bring continuous attention to that process of decision-making in care plans used in the nursing record, involves the discussion of a newly admitted patient. One of the points of discussion is the utilization of standard plans in the care of the individual patient. A standard is only a workable method if it is specified. It is then up to the nurses to mark which causes, symptoms and interventions are appropriate.

In a pilot study, in March 2006, the first data were collected from seven nursing records to evaluate the use of the pain care plan. This also allowed for testing of the developed questionnaire. In November 2006 the document research was repeated in relation to the pain care plan. Data were collected from fourteen nursing records. The main research questions asked if the process of clinical decision-making was clear in nursing records, and whether or not the nursing interventions were related to the aetiology and symptoms of the problem. Finally, it sought to ask if nursing care is evaluated.

Results

The November 2006 research demonstrated that in twelve (86%) records pain was been mentioned in the first 24 hours of the patient's admission. Decisions to start the pain care plan were based on pain intensity scores. Nurses asked patients to phrase pain using a pain intensity score on a visual analogue scale from zero to ten - the number zero being no pain and ten being very severe pain. In eleven (79%) records a pain intensity score of five or higher, with a median of seven, was identified as being the reason for initiating the plan. To specify the diagnosis, nurses wrote down the location of the pain on the care plan; for example pain in the right shoulder.

In all of the nursing records nurses documented that patients identified their pain, using some form of pain intensity score (table 1). In determining the patient's problems nurses start on the day of admission, by collecting data using Gordon's functional health patterns. As a result of the project, nurses connected data from the different health patterns. Nurses for example identified symptoms of pain as: physical inactivity, lack of appetite and sleep pattern disturbance (table 1).

Signs marked in pain care plans	Number of records: N=14
<i>Signs of pain</i>	
Phrase pain	14 (100%)
Physical inactivity	11 (79%)
Facial expression of pain	8 (57%)
Lack of appetite	4 (29%)
Sleep pattern disturbance	3 (21%)
Anxiety	2 (14%)

Table 1: Signs marked in pain care plans

In twelve (86%) records nurses wrote out the goal of nursing care. In eight (57%) records that goal was to decrease pain to an acceptable level. In seven records the acceptable level was further expressed, using a pain intensity score, as being from two to six, with a median score of five. In five (36%) records the Pain Education Program was marked as an intervention. In Table 2 the marked interventions of the pain care plans are described.

Interventions marked in pain care plans	Number of records: N=14
Support self-care	8 (57%)
Limit side effects of pain medication	6 (43%)
Pain Education Program	5 (36%)
Applying cold or warm treatment	2 (14%)
Interventions to increase appetite	2 (14%)

Table 2: *Marked interventions in pain care plans*

In eight records nurses documented the need for support in self-care, because pain caused physical inactivity. In thirteen (93%) records the pain intensity score was used as an indicator for daily evaluation of nursing care. Only six (43%) pain care plans were updated during patients' admission.

As mentioned earlier, the project led to an increase in nurses' knowledge resulting in connections between data from different functional health patterns. For example, a seventy-year-old woman was admitted with nausea, problems related to eating and loss of weight. Because of oesophageal cancer a stent was inserted in the oesophagus to make passage possible. To resolve the eating problems the standard care plan of malnutrition was started. After a while, the multidisciplinary team of nurses, medical-oncologists and a dietician realised that anxiety was the main cause of the problem. The patient was frightened that food would not be able to pass the stent. The standard care plan of malnutrition was specified, because anxiety was documented in the plan. Now it was possible to solve patients' malnutrition.

Discussion

The quality of standard care plans can be improved by integrating nursing classifications and research evidence. An example of research evidence is the use of a pain education program for increasing patients' knowledge and attitude regarding pain by assessment, education and instruction (De Wit et al 2001; Miaskowski et al 2004).

Care plans guide the process of step-by-step decision-making in nursing practice. The process of clinical decision-making is clear within the nursing records. At the beginning of this project, the nurses' reasoning was largely based on signs and symptoms. However, standard care plans in nursing records are limited to the main patients' problems, because data are more classified.

To improve a patients' situation, nursing interventions must be directed toward the aetiology and symptoms of pain. In most cases pain was caused by the location of the tumour and metastasis. Nursing care cannot change these problems. In order to control pain, decisions to select nursing interventions should be based upon symptoms, but this was not always what nurses did. For example, nursing interventions were directed to the lack of appetite but were not directed to anxiety and sleep pattern disturbance. In only five records did nurses mark the pain education program, even though teaching patients how to manage pain is an important nursing intervention. The dialogue with patients is also very important to evaluate to see if they are satisfied with the outcomes of care. Outcomes of nursing care were evaluated structurally.

At the start of the project nurses discussed the need for standardization, but after a while nurses became used to the method of accurate clinical decision-making. The introduction lessons and the discussions of standard care plans, used in a nursing record of an admitted patient, were important methods to bring continuous notice to decision-making. Results were also achieved because the working group used the usual working method of standard care plans, which was recognizable to nurses.

Data based on documentary research makes it possible to give feedback to the nursing team about the outcomes of the project. It is also possible to set out new goals for further improvement

of the results. In the next period, our working group will call attention to the selection of nursing interventions and also to the continuous process of clinical decision-making. The working group will also support nurses to adjust care and care plans to the continuous changing situation of patients. Finally, the multidisciplinary collaboration will need to be consolidated to improve patients' situation as best as possible.

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Contact

G. Jongeneel
Department of Medical Oncology
Erasmus MC -Daniel den Hoed Cancer Centre
P.O. box 5201
3008 AE Rotterdam. The Netherlands.
phone:+31 10 43 91 231
fax: +31 10 43 91 293
e-mail: g.vandenheuvel@erasmusmc.nl

62. – Challenges for multidisciplinary education in health informatics. (Keynote)

By Saranto, K. PhD, RN (*Finland*)

Information literacy, that is, information and communication technology knowledge and skills in health care, is integral to all areas of nursing care, from organizational management to the delivery of care. Competencies not yet granted for health professionals can be achieved through educational degrees. A lot of learning is also connected to in-service training at health care organizations when information systems are implemented (Saranto and Hovenga 2004). This presentation focuses on health informatics competencies and how they are able to achieve through different educational programmes. The expanding use of information and communication technology in health care has created internationally, needs to secure health professionals' knowledge and skills in health informatics. According to the International Association of Medical Informatics Special Group for Nursing (IMIA-NI) Nursing informatics (NI) is the integration of nursing, its information, and information management with information processing and communication technology, to support the health of people world wide. The definition of health informatics can be seen as analogous, that is, the integration of health care and information management. Many researchers have established studies where information and communication technology knowledge and skills have been defined (Carter and Axford 1993, Saranto and Leino-Kilpi 1997, Staggers et al 2001, 2002 and Jauhainen 2005). In many of these studies the Delphi-technique is used to reach consensus in the list of competencies. From the many lists of competencies frameworks for teaching health informatics have also been formulated, for instance following the internationally recognized degrees of competencies as introduced by Benner (1984) Novice, Advanced Beginner, Competent, Proficient, and Expert. A research-based master list of nursing informatics competencies for four levels of nurses was developed and published in the United States in 2001 and 2002 by Staggers et al. The levels are novice, experienced nurses, NI specialist and NI innovators. The Australian Health Informatics educational framework is based on three roles persons can take on in health informatics: users of IT and knowledge resources in health care; deployers of IT and knowledge resources in health care; or researchers and/or developers of IT and knowledge resources in health care (Hovenga 2004). The degree of competency can be understood as the depth of expertise/understanding required in one field.

According to Hovenga (2004) health informatics as a discipline is very specialized, complex, broad and versatile. Many different pathways can lead to a career as a Health Informatics Professional. Possible education for Health Informatics Professionals can be based on health degrees, informatics programs, and/or dedicated health informatics programs. Health informatics education learning objectives can be formulated on different knowledge and skills categories relevant to health informatics: specific health informatics knowledge/skills; information technology knowledge/skills; people and organisational knowledge/skills; clinical, medical and related knowledge/skills; and various knowledge/skills (Hovenga and Mantas 2004).

The activities of the IMIA working group for education (WG 1) have been highly recognized internationally in educational institutions. The working group launched the recommendations on education in health and medical informatics in the late 1990s. The educational needs are described as a three-dimensional framework. The dimensions are:

1. professionals in health care (physicians, nurses, HMI professionals, ...)
- 2 type of specialization in health and medical informatics (IT users, HMI specialists)
- 3 stage of career progression (bachelor, master, ...)

The recommendations include topic areas to be covered within each of three knowledge and skill domains and indicate the level of knowledge required in terms of "introductory", "intermediate"

or “advanced”. These should help to establish courses, course tracks or even complete programs in this field, to further develop existing educational activities in the various nations and to support international initiatives concerning education in health and medical informatics (HMI), particularly international activities in educating HMI specialists and the sharing of courseware (IMIA WG 1 2007). In Finland NI competencies are integrated into the education in nursing and health science degree programmes. According to a recent study focusing on IT competencies the three most important knowledge areas for nurse education were: nursing, information literacy and managing change (Jauhainen 2006). Thus besides nursing novice nurses should have fundamental NI skills when using information systems daily. These skills are obtained in the bachelor level of nursing education. Experienced nurses should be highly talented in using information systems which support their major area of practice. These competencies compile learning objectives for specialised nursing studies. NI specialist nurses focus on information needs of nursing which includes education, administration, research and practice. NI specialists’ practice is built on the integration and application of information science, computer science and nursing science. This specialization can be gained at masters’ level NI education. NI innovators are prepared to conduct NI research and to generate informatics theory for nursing. These nurses lead the advancement of NI practice. They have a future vision, and a keen sense of timing to make things happen. Innovators have doctoral degree education.

Foundations for using IT in health care organizations have been built on the competences of health care professionals. Sufficient amounts of computers, Internet access and good computer skills constitute the requirements necessary for further implementation of IT applications in health care settings. Furthermore, a lot of emphasizing is needed to develop eHealth services for consumers (Saranto et al 2006).

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Contact

Kaija Saranto PhD, RN
 Professor in Health and Human Services
 Informatics Department of Health Policy and Management,
 University of Kuopio.
 Finland.

63. – Clinical templates and archetypes: putting terminology to work

By Hoy, D. (Scotland), Hardiker, N. (England), Casey, A. (England) and Goossen, W. (Netherlands)

Despite considerable investment over the last 15 years, standardised terminologies remain part of the problem of Electronic Health Record implementation, rather than a solution. Even when terminologies achieve sufficient coverage of a clinical domain, systems use clinical expressions that are too complex to code, and data structures that must be developed without any support from the terminology itself.

To address this, there has been growing interest in developing standards to support archetypes (openEHR) and templates (HL7). The different approaches of the two standards groups have much in common and both are developing standardised domain concept models. These models cover any sensible clinical concept, from very atomic concepts, such as peripheral pulse, to larger concepts, such as pre-operative assessment. The larger models are composed of more detailed models to achieve consistency and re-use.

This paper will describe a project for the National Health Service in Scotland, titled ‘a National Library of Clinical Templates for Community Nursing in Scotland: a Feasibility Study’, however, we will describe this project and its findings in the context of international collaboration with developers in the Netherlands, Australia, England and the USA.

There is now a great effort to develop evidence-based practice, with guidelines and protocols, and practice development, especially in nursing, is often heavily protocol-driven. Multi-agency and multi-disciplinary team working promotes a demand for better clinical communication, while service changes seem to only increase the burden of data collection for health care workers.

All these demands have promoted a desire to standardise information tools, share development burden, rationalise, and base clinical documentation on best practice.

New system development tools are forms-based, and implementers need sources of forms to populate their screens. In Scotland, as in other countries, there are many ad hoc developments of information tools, even by national projects, but as yet, few processes for ensuring they contribute to standards development.

Implementing SNOMED-CT is a major challenge, and re-using coded templates to ensure consistency and save effort is very attractive.

The Scottish project started in November 2005, and will end in May 2007. It has been commissioned by the Scottish Executive Health Department, funded by the Primary Care Division, and sponsored by the Community Nursing Network and the Chief Nurse. The project comprises 3 phases: professional development, library management, and implementation.

The professional development phase is exploring options for supporting clinical involvement in the process of development and maintenance of national standard clinical information tools. The project has developed and is testing on-line collaboration for groups, using an approach based on the Open Source movement, at <http://www.clintemplate.org>.

The library management phase will collect the development outputs to produce clinical domain models, candidate templates/archetypes, and prototype tools and architectures for maintenance and electronic publishing.

The implementation phase will include evaluation of user experience with form-based systems at existing sites, for ‘professional’ acceptability. It will also consider issues around importing schema from the library and issues of localised form development and updating.

Contact

D. Hoy
Glasgow Caledonian University
Cowcaddens Road
Glasgow, UK
phone: +44 141 331 8231
e-mail: d.hoy@gcal.ac.uk

64. – Challenges and solutions in implementing a systems-wide assessment of patient outcomes by nurses

By Pringle, D., White, P. and Nagle, L. (Canada)

Background

In 1998 nursing in Ontario, the largest of the 10 Canadian provinces, was in serious trouble. After a series of interventions by the provincial government that resulted in mergers of hospitals, cuts to hospital beds and budgets, and substitution of casual for full-time positions, nurses felt disposable and unnecessary. Thousands left the province for the United States where full-time jobs were available, and both applications and admissions to schools of nursing dropped significantly. However, it was becoming clear that once the health care system stabilized after the reorganization (known as "reform"), there would be a need for more nurses than projections indicated would be available and respect for the nursing profession needed restoration if young people were to be attracted to it.

A new Minister of Health was appointed and she immediately established a Task Force to examine the issues confronting nursing and to make recommendations for their resolution. This Task Force reported in January 1999, and recommended, among many other initiatives, the development of a database with information that reflected nursing's contribution to patient care; specifically that it include patient outcomes. Canada has a socialized single-payer health care system and each province maintains a range of databases that are merged at the national level; however, nothing of what nurses do or patients' responses to the nursing care they receive is reflected in these databases.

The Nursing and Health Outcomes Project (NHOP) was established and funded by the Ministry of Health in September 1999 to respond to this recommendation. Little did we know that the initiative would take a decade of work to accomplish? The first challenge was to identify patient outcomes that are sensitive to input from nurses. An interdisciplinary expert panel explored the conceptual work that had been done in nursing through the 1990's and the research that had been conducted over that same period. We developed our own conceptual framework based on views of the Ontario health care system but were particularly influenced by the work of Dr. Pamela Mitchell and the American Academy of Nurses, (Mitchell et al 1998) Dr. Mary Lush and the nursing research unit of the Kaiser Permanente HMO of Northern California (Lush et al 1997), and the American Nurses Association's multiple initiatives to assess nurses' effect on patients' adverse outcomes (American Nurses Association 2000).

Nursing-Sensitive Patient Outcomes

The Expert Panel identified a shortlist of patient outcomes that, based on the analysis of work done to that date, held potential to be influenced by nursing. A critical appraisal of research on these outcomes was commissioned and undertaken by a team led by Dr. Diane Doran (Doran 2003). As well as appraising the results and quality of the research, this team examined the measures that had been used in order to be able to recommend reliable, valid and feasible measures for use by nurses in the course of daily practice.

Eight outcomes met the test: functional status (ADL and IADL), four symptoms, pain, nausea, dyspnoea and fatigue, falls, pressure ulcers and therapeutic self care (understanding of and ability to manage one's health situation). Subsequent to their identification, a large feasibility

study was undertaken, led by Dr. Diane Doran, and involving teams geographically dispersed across Ontario. Nurses in participating facilities assessed adult medical-surgical patients on admission and discharge for six months. The results showed that nurses could be taught to assess these outcomes reliably through short educational sessions that they valued the information the assessments produced, and that nurse leaders found the information valuable in determining the quality of care and worth the relatively small investment of time required to assess each patient entering the system on admission and discharge. One of the biggest changes NHOP introduced to the participating settings was a systematic discharge assessment. These results led to the recommendation to the provincial government that the NHOP suite of patient outcomes be systematically assessed by nurses in the four designated Ontario health care sectors and be abstracted on to databases that could be linked to other provincial databases.

Although the government had changed by this time (2004) and a different party was in power, the arguments in favour of establishing a database of nursing-sensitive patient outcomes was sufficiently compelling that the recommendation was adopted. The NHOP team was directed to begin the implementation of the systematic assessment of these patient outcomes in 2006 with a completion date of March 2009. Furthermore, NHOP was instructed to broaden its mandate and begin the identification of patient outcomes sensitive to pharmacy, and to occupational and physical therapy. This led to a name change from NHOP to HOBIC, Health Outcomes for Better Information and Care.

Implementation Challenges

The Implementation Team consists of a small core group: Dorothy Pringle as Executive Lead, Peggy White as Program Manager and Lynn Nagle as IT Implementation Lead supported by a team of IT experts. Subsequently, Sue Williams was added to the team to take responsibility for implementing the teaching of HOBIC outcomes in all schools of nursing in Ontario (32 college programs linked to 13 university schools that educate registered nurses and registered practical nurses).

Ontario has approximately 75,000 registered nurses and 20,000 registered practical nurses working in 155 (211 sites) acute and chronic care hospital corporations, 581 nursing homes, and 14 provincial home care organizations that contract with a large number of nurse provider agencies. All acute and chronic hospitals are not-for-profit and publicly administered, as are the home care organizations, known in Ontario as Community Care Access Centres, but the nursing homes and visiting nurse provider agencies include both for-profit and not-for-profit organizations.

The major challenges in implementation are the follows:

1. development of a plan by which HOBIC measures will be systematically implemented across four health care sectors in Ontario;
2. organization of the education of all nurses working in these sectors and assurance they can achieve and maintain reliable results in assessing patients;
3. organization and implementation of the education of all student nurses in the province so on graduation they are competent to assess patients using the HOBIC measures;
4. addressing the highly varied levels of information technology capacity within each organization and development of solutions for each organization so HOBIC assessments can be completed on-line;
5. budgeting for the implementation to occur across a three year time frame;
6. generation of excitement across Ontario nurses about the potential HOBIC brings to improve patient care so they will enthusiastically embrace it.

Health care systems are not static. As we developed the plans for implementing HOBIC, Ontario undertook a major reorganization of its system. Traditionally the government played major roles as both funder and manager of the system but in 2005, the Ministry undertook to regionalize services into 14 Local Health Integration Networks (LHINs). These were based on hospital referrals patterns and the plan is for the LHIN to work toward better integration of services across

health care sectors. In addition, these LHIN's will undertake to provide their regions with an integrated information management architecture. It is anticipated that information systems will play a major role in determining how services are delivered and subsequently organized.

The HOBIC implementation team made two significant decisions that have influenced everything else we have done:

1. to implement regionally across all four sectors simultaneously on the basis of the LHIN structure;
2. to implement using only computerized tools.

The former decision led to the decision that education of nurses and introduction of HOBIC into nursing school curricula would be done on a LHIN by LHIN basis. The latter decision meant that electronic solutions had to be developed for or adapted within each organization; the majority of which were still using paper-based nursing documentation tools.

The intention of the HOBIC initiative is to create a data repository of patient outcomes, but equally important, to put information into the hands of nurses in real time that will contribute to their decision-making. HOBIC has a report writing capacity that supports nurses' retrieval of information (numerically or in bar graph format) real-time that demonstrates how any one patient compares on admission to other patients of the same age, gender and admitting diagnosis admitted within specified time periods. They can also compare the demographics and discharge status of selected patient populations. Nurse managers and chief nursing officers can compare patient outcomes at a unit level and determine, for example, if some units are doing a better job than others of managing patients ' pain or preparing them for discharge. If we had agreed to use a paper-based solution for HOBIC, this capacity would have been lost and nurses might reasonably have questioned what value undertaking these assessments was to them.

LHINs' Implementation as an Organizing Framework

There is a HOBIC coordinator assigned to each LHIN and that individual works with each organization within the LHIN. A site coordinator from each organization is seconded to work with the LHIN coordinator and takes responsibility for educating all the nurses in his/her organization using a combination of face-to-face, DVD and web-based educational strategies and material. HOBIC funds two hours of education per nurse.

In the first two LHINs, organizations were invited to participate as early-adopter sites. Among these 25 sites are representatives of every type of organization that HOBIC will deal with across all the LHINs. Electronic solutions developed for these organizations will serve as the template for moving out to the other 12 LHINs over the next two years. These early adopters completed an on-line assessment of their organization's information technology (IT) access and capacity. After significant consultation with the IT team, each was placed into one of six categories. The top category includes organizations that already have on-line nursing documentation in place. For these organizations, HOBIC contracts with existing software vendors to incorporate HOBIC measures and a discharge assessment tool into the documentation. Several organizations have decided that HOBIC provides an opportunity to rethink their nursing admission assessments.

At the other extreme, category six includes organizations that have no computerized nursing documentation. For these organizations, a web-based solution was developed. Organizations were invited to rework their entire nursing admission assessment tool to include HOBIC; this was then programmed in its entirety for web access. Output of the web-based tools includes a printout of the assessment that can be placed in the patient's chart, as well as an upload of HOBIC measures to the central repository. Nurses using these tools also have access to the HOBIC reports on line.

Conclusions

Undertaking an implementation as large as HOBIC required that some fundamental decisions be made to assure success. For us, a systematic way of implementing simultaneously across

all systems was essential to build excitement of nurses and nurse executives in regions. Their individual excitement built momentum for the program. Secondly, the decision to utilize only online documentation systems was critical to demonstrate to nurses that HOBIC provided information to them that they could use in real time to plan their care and then see the benefits of those decisions when they undertook discharge assessments. HOBIC is well on its way to full implementation which will make Ontario the first jurisdiction in Canada where nursing is visible on the increasingly important provincial databases (White and Pringle 2005).

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Contact

e-mail: dorothy.pringle@utoronto.ca

65. – Implementing nursing diagnosis, interventions and outcomes in multidisciplinary practice: experiences in Finland.

By Ikonen, H., Tanttu, K., Hoffren, P. and Minna, M. (Finland)

Introduction

In Finland, the more or less unified paper-based health record has been widely used for more than 30 years. We have used electronic information systems, which include some sections of care documentation, but their structures are not unified. In 2003, the core data of the electronic health record was defined in Finland. The aim of the core information is to give an holistic view of the patient's health and disease history, and given care and instructions. The headings (main and subheadings) provide the context for the core data elements. The main headings identify the part of the care process in which the core data element is documented. The core data of nursing (Nursing Minimum Data Set) includes the nursing diagnoses, interventions, outcomes, intensity and epicrises. The data are gathered using a structured and classified documentation during the nursing process. The information is used in present and future care. Standardization of nursing terminology would contribute to communication within the nursing community and with other health care professionals. Furthermore, this activity would contribute to sharing and exchange of data for nursing education, practice and research.

Purpose

The main aim of the Finland's National Nursing Documentation Project is to develop a nationally unified and standardized nursing documentation by the year 2007. The nationally defined structured nursing documentation is piloted in 32 health care organizations during 2005–2007. The purpose of this paper is to describe the implementation of the standardized nursing documentation in EPR according to the national purposes and to share experiences of the implementation in Kuopio University Hospital, Joint Municipal Authority for Medical and Social Services in North Carelia and Turku Municipal Health Care Department.

Methods

Nursing classifications (FiCNI and FiCND) have been integrated into 8 electronic health record systems that are used in nursing care planning and for making daily notes. The Finnish Classification of Nursing Diagnosis (FiCND) and the Finnish Classification of Nursing Interventions (FiCNI) are based on the Clinical Care Classification (CCC), which is developed by Saba (1992). Classification for outcomes and the core data for nursing summary will be developed in the national project. FiCND and FiCNI are three-tiered hierachic classifications. FiCND (1.0) consisting of 18 components, 45 major categories and 101 subcategories of nursing diagnosis. FiCNI (1.2) consisting of 18 components, 114 major categories and 265 subcategories of interventions.

The electronic nursing care plan module includes nursing diagnosis, interventions and evaluation notes. FiCNI and FiCND, which have the same classification structure, are the basis for national development activities. Both classifications have same components. The components of FiCND and FiCNI are: Activity, Coping, Elimination, Fluid volume, Health behaviour, Health services, Life cycle, Medication, Nutrition, Physical regulation, Respiration, Role relationship, Safety, Self care, Psychological regulation, Sensory, Skin integrity, Continued treatment (Ensio 2001).

The education of nursing documentation includes theory of nursing process and implementation of nursing classification. Case studies in every specialty are one of the most important implementation strategies.

All nurses should have a basic understanding of standardized terminology. It is imperative that nurses who are expected to use terminology accurately and consistently receive a systematic introduction, an introduction designed to meet their educational needs. Their learning needs should be considered through well planned, comprehensive strategies. Learning a standardized terminology is similar to learning a new language. Both require hard work. Learners need to understand the "why", "how" and "when". Educators need to be sensitive to "just in time" opportunities; match their presentation, materials and schedules to diverse learning styles.

Case studies are one of the most important implementation strategies. The case study practice should be planned, it should proceed from simple to complex, it should be relevant to the daily experiences of the nurses and it should be fun. Rather several wards do not have a tradition for nursing care plan on paper is important when considering implementing a nursing care plan in EPR.

To these wards, the nursing care plan is hence a new approach; the key persons have to convince their colleagues why the patient should have a nursing care plan, engaging the discussion of useful content in the care plan and introduce functionality, which in reality supports a new approach to documentation. The key persons have to have vast command of the substance of nursing and good readiness for teaching and training, and adequate supplementary training in addition to basic training in nursing. Moreover, good cooperation between different interest groups and with the Project Leader has been important.

Results

Kuopio University Hospital

The project was initialized at the Kuopio University Hospital in 2005. Six units participated in the pilot project: the Psychiatric Reception, the Outpatient Ward of Dermatology, the Department of Gynaecology, the Department of Internal Medicine, Maternity Ward 1 (rooming-in), as well as Maternity Ward 2 (risk pregnancies). The units participating in the pilot project have a total of 164 personnel, of whom 129 are care personnel. Mentors have been appointed at the units, who support the personnel in the pilot project. The Project Coordinator has closely cooperated with the mentors.

The pilot project has required careful planning and preparation. Initializing structuralized documentation in the units require training of the personnel. Training is needed on the content of the nursing classifications the use thereof in care documentation. Training is needed on documentation of the nursing process (need of care, objectives, procedures and opinions). There have been regular classes in the units participating in the pilot project, where medical cases have been reviewed. There has been an increase in the professional discourse on care documentation. The nursing documentation is patient oriented, of high quality and comprehensive. Decision making within care has been brought forward and documentation of opinions have increased.

The pilot project has enabled development and imprinting of nursing activities based on evidence. The Project Coordinator has brought research information on nursing and documentation based on evidence to the units participating in the pilot project. The research has provided solid grounds for why nursing documentation has to be developed, where attention should be drawn and why structuralized documentation is important. Structuralized documentation has taken a lot of time during the first stage of the pilot project, but the use of time has diminished as the project has progressed and structuralized documentation has become a natural part of nursing. Every now and again there has arisen critique and even opposition, but constructive discourse and reasoning has always enabled the project to move forward.

Electronic documentation has modified the practices in the units. In some of the units participating in the pilot project video projectors have been taken into use, which are in interdisciplinary use

and also work as aids in reporting. The time of reporting has become shorter. On the physicians' and nurses' rounds there are now wireless networks, which have enabled real-time documentation of the care.

Nursing databases are formed and this enables acquisition of statistical data of the use of the nursing classifications. It has been possible to review the content of the nursing and thus the personnel have been motivated in pursuing the pilot project. The documentation method has been proven good and there is no wish to return to the old way of documenting.

Joint Municipal Authority for Medical and Social Services in North Carelia

Within the district of the Joint Municipal Authority for Medical and Social Services in North Carelia, 11 wards, 3 outpatient wards and 6 health care centres participate in the pilot project. The pilots within specialized health care are: 2 inpatient wards of internal medicine; a paediatric inpatient ward and intensive care unit; 5 wards of adult psychiatry; the Department of Neurology; as well as outpatient wards of internal medicine, surgery and paediatrics. 476 nurses are participating in the pilot project. The content of the nursing documentation has become increasingly more homogenous, more comprehensive and more holistic.

Documentation practice is changed by structuring the information and harmonized documentation methods, and they enable altering the functional processes, elimination of overlapping documentation, speeding up data searching and use, as well as ensuring real-time data finding and use. Structuralized and classified information on clinical care enable further processing of the information e.g. for statistics both for follow-up of the functional processes and the quality of the care. The statistics gained from the nursing classifications can be used as an aid in developing and managing nursing, as well as in specification of the need of personnel know-how.

Turku Municipal Health Care Department

From the Turku Municipal Health Care Department six units participate in the pilot project: within basic health care the orthopaedic rehabilitation unit of geriatric health care; unit of continued geriatric rehabilitation; unit of intensified home health care for discharged geriatric patients; unit of continued neurological rehabilitation; geriatric assessment unit; as well as within specialized health care the hospital at home. The pilot project began in stages between December 2005 and January 2007. 88 care personnel participate in the pilot project. One nurse has been freed from other duties in order to implement the initialization of the project, personnel training and practical follow-up. She is assisted by one nurse at each unit. Prior to the beginning of the pilot project the personnel of the units participated in theoretical training concerning the care process, legislation, as well as the care classifications, their content and use. Nursing documentation was practiced using medical cases.

Nursing documentation in accordance with the care process is done for all patients. All professional groups participating in the patient's care record the daily care in the case record, that is, the information pertaining to the patient's health is in one place. The experiences of the physicians, various therapists, social workers and nurses have shown this to be a very good method. The documentations made by various professional groups pertaining to the care of the patient are immediately accessible for all persons participating in the care while making care-related decisions, for instance during physician's rounds and rehabilitation meetings.

Planning the patient's care is a vital part of the mapping of the patient's overall situation. The nursing is now based on planning, the patient's problems/needs are clearly defined and a primary objective has been set for the patients care. The nursing process taught to the nurses in their studies is manifested in practice. Initially the care plan takes time, but it saves time in the documentation of how the care was implemented. The portion of free text has diminished. The care plan directs a more inexperienced nurse in taking into consideration the patient's problems/needs and to document relevant matters pertaining to the patient's care. With the categories of the nursing process the quality of the documentation has improved, relevant matters are documented

and nursing documentation is harmonized. Documentation development no longer exists on the unit level, but documentation is already developed on an organizational level. The content of the documentation is of a higher quality: the decision-making of the nursing and instructions to the patient/close relative and training are considered in nursing documentation, as they are incorporated into the functional care classifications.

Structuralized documentation inevitably changes documentation practice. There is no longer need for conventional oral reporting, which can take up to 1.5 hours per day. Oral information is given upon shift changes concerning acute and unfinished matters; everything else is clearly documented and readable in the case record.

As the pilot project progresses attention has been drawn to management of the nursing process. Definition of needs, setting of objectives and naming the planned care functions has now and again turned out to be difficult for the nurses. Getting used to using the classifications in the nursing process and the content initially took time for all the professional groups, but with time even the management of the classified content has become good. The change has been great from the care point of view. The pilot project requires continuous, benevolent supervision. All professional groups have been motivated. There has been very little opposition. Negative feedback has almost conclusively related to the usability of the case record.

In the entire organization it has been found that the standardized nursing documentation speeds up the recording and guides the contents of nursing documentation. The structured nursing documentation has demonstrated the following advantages: real-time information; effectiveness; continuity; and security of nursing care. Nursing documentation practices have become more uniform and patient oriented. Interdisciplinary collaboration has improved. Structuring has made it possible to influence the quality of the content of nursing documentation.

Conclusion

The introduction of standardized terminologies has the potential to promote evidence-based practice, and improve the quality of care that nurses and other health care providers offer their clients. The users have begun to see the benefits in classified process-recording. The model of recording has been experience as good and there is no desire to return to the old mode of recording.

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Contact

Helena Ikonen, RN, MSc Student
Project Manager/National Nursing Documentation Project
North Carelia Central Hospital
Tikkamäentie 16
FIN-80210 Joensuu
Finland.
mobile/cell: + 3585 043 83 607
e-mail: helena.ikonen@tyks.fi

Päivi Hoffren, RN, MSc
Project Coordinator/Kuopio University Hospital
Kuopio University Hospital
PL1777
FIN-70211 Kuopio
Finland.
mobile/cell: + 3584 471 74 421
e-mail: paivi.hoffren@kuh.fi

66. – Using the Care Dependency Scale for pressure ulcer risk screening

By Mertens, E., Dassen, T. and Halfens, R. (Germany)

Introduction

It is well recognised that nurses have to conduct standardized assessments for an increasing number of patient risks. Many of the assessment tools for risks, such as pressure ulcers and falls, have overlapping items, leading to redundant assessment procedures. Furthermore, some of these items, for example mobility, are similar to characteristics that are already evaluated during the general nursing assessment. To simplify assessment procedures, it would be beneficial to have one generic instrument.

The purpose of the entire study is to evaluate whether it is possible to simultaneously assess different risks along with care dependency, using the Care Dependency Scale (CDS). Analyses in 2005 showed that the CDS can be used for fall risk screening in hospitals. This current paper analyses, how the CDS can be used for pressure ulcer risk screening in nursing homes and hospitals.

Methodology

In a cross sectional study, in 2005, data about pressure ulcers, patient falls, continence and care dependency were collected on a nation-wide basis in 76 German hospitals and nursing homes. The care dependency was measured with the CDS. Pressure ulcer data were gathered by trained nurses who examined every study participant.

Quantitative data analyses were carried out in SPSS 11.0, using descriptive and explorative statistical models. The ability of the CDS to screen a pressure ulcer risk was determined by using the area under the receiver operator curve (AUC).

Results

The sample consisted of 3530 residents in 39 nursing homes and 7204 patients in 37 hospitals (N=10734). The mean age of all participants was 71.5 years and the majority were female (63.4 %).

In nursing homes, 8.4 % of residents at risk developed at least one pressure ulcer, whereas in hospitals, this applied to 21.3 % of the patients. The AUC for all participants was 0.73. Distinguishing between settings, the screening in hospitals (AUC 0.80) was slightly better than in nursing homes (AUC 0.63).

Conclusion

Initial analyses indicate that it is possible to use the CDS for pressure ulcer risk screening in hospitals and nursing homes with moderate results in nursing homes and good results in hospitals. Data analysis is ongoing and further results will be presented at the conference.

Contact

Elke Mertens, RN, MA
Department of Nursing Science
Charité – Universitätsmedizin Berlin
Centre for the Humanities and Health Sciences
Charitéplatz 1, 10117 Berlin
phone: +4930 450 52 90 74
fax.: +4930 450 52 99 00
e-mail: elke.mertens@charite.de

67. – Clinical testing of ePA-AC[©], a screening instrument to assess relevant signs and symptoms of nursing care dependency in acute care clinics.

By Hunstein, D., Fiebig, M., Sippel, B. and Dintelmann, Y. (Germany)

Background

Valid nursing diagnostics is ineffective without the use of assessment and/or screening instruments (Gordon 1994, Ehrenberg and Ehnfors 1999, Bartholomeyczik 2003). Appropriate instruments developed for acute care are still missing to date. Therefore, the Department for Nursing Research and Development at the Dr. Horst Schmidt Klinik in Wiesbaden (HSK), Germany, has developed a screening instrument referred to as ePA-AC[©] (ergebnisorientiertes PflegeAssessment AcuteCare/ outcome-oriented nursing assessment acute care), designed to assess nursing outcomes (Hunstein et al 2005). The ePA-AC[©] has been developed to record the essential aspects of nursing care requirements in the acute setting and to measure their degree of severity. In its function as a screening instrument, it collects signs and symptoms of nursing diagnoses and therefore supports the diagnostic nursing process, the measurement of selected nursing sensitive outcomes, and process control. Furthermore, ePA-AC[©] data can be used in terms of a NMDS (Nursing Minimum Data Set) as economic and epidemiological operating figures.

The ePA-AC[©] consists of 50 items in 10 categories (Table 1) and contains, with reference to the International Classification of Functioning, Disability and Health (ICF) (WHO 2001) data on activities and participation (N=17 items), body functions (N=16 items) body structures (N=1 item), and contextual information (N=16 items).

ePA-AC [©] categories
Mobility
Hygiene & Dressing
Nutrition
Elimination
Cognition & Awareness
Communication & Interaction
Sleep
Respiration
Pain
Pressure sore & Wounds

Table 1: ePA-AC[©] categories

In the first step, the items were theoretically developed. The developed ePA-AC[©] alpha was subsequently tested on two wards, for a period of two months. Using a structured confirmation process, suggestions for the improvement of the coding manual as well as the items were collected. The results were integrated in the alpha version and tested on another two wards. This change between a theoretical and a practical phase was continued on altogether 10 wards.

until data saturation was achieved. Based on the results of this process the ePA-AC[©] beta was developed. The final beta version of ePA-AC[©] was put to use in 19 wards at the HSK and at the Kanton Hospital Uri (Switzerland). From March to July 2006, the relevant data for the clinical test were collected. The development of ePA[©] 1.0 Acute Care will be completed when all data are analysed.

Aims

Using structured nursing data provided by scientifically tested instruments is a prerequisite for clinical decision making. Hence, the ePA-AC[©] was examined for the degree of compliance with the following quality criteria: interrater reliability, internal consistency, construct validity, predictive validity, and sensitivity to change.

Methods

The design of the study was quantitative, prospective, non-experimental and multi-centre. During March and June 2006, a comprehensive set of data was collected in a full sample of all patients in four wards of the HSK (cardiology, gastroenterology, accident and emergency and interdisciplinary intermediate care) and on two interdisciplinary wards of the Kanton Hospital Uri. The data came from both the anonymised ePA-AC[©] documentation as well as other data records of the electronic patient documentation. There is a sample comprising over 1,500 patients for the validity tests. For the testing of interrater reliability more than 230 ratings were carried out.

The construct validity was measured by hypothesis testing (Streiner and Norman 2003). The CaseManagementScore (CMS[©]), theoretically developed from 10 ePA-AC[©] items and designed to reveal both patient abilities (in terms of activity and participation) and the likelihood of a post-discharge care deficit, was tested for predictive validity. This involved a comparison of the CMS[©] value and the actual use of post-discharge nursing care services.

For the test of the inter-rater reliability the agreement of the 115 valid rating pairs was examined depending on the scale level (dichotomous or ordinal scaled) with the chance corrected Cohen's Kappa (κ) (Cohen 1960) respectively Cohen's quadratic weighted kappa (κ_{qw} , Cohen 1968). Due to its paradox characteristics (Feinstein and Cicchetti 1990), the (κ_{max}) (Sim and Wright 2005) and prevalence-adjusted, bias-adjusted Kappa (PABAK) (Byrt et al 1993) were calculated. The statistical significance of the κ values was checked with 95% confidence intervals (CI) (Gardner and Altman 1986). In doing so, the lower CI limit was determined as $\kappa > .4$, which has been defined as "acceptable" in accordance with the proposal of Landis and Koch (1977:165).

The procedure was examined by the Ethics' Commission of the University of Witten/Herdecke and declared to be ethically acceptable.

Results

Results have been calculated for the inter-rater reliability, as well as the construct validity and sensitivity to change. The calculations for internal consistency and predictive validity are not yet completed.

Two further quality criteria, feasibility and practicability, could be determined through the design of the instrument development by continuously changing between the theoretical development, the practical trial and the revision of the instrument. Through this approach content and face validity are assured.

Interrater reliability

The Kappa coefficient of the 22 dichotomous items is between .267 (characteristics of a changed sleep-wake cycle¹) and 1.0 (tracheostomy, nutritional tube) (Table 2). The proportion of the observed agreements ranges from 76.64% (ability to fall asleep) to 100.00% (tracheostomy, nutritional tube). Of the dichotomous items, 15 achieved, with 95% probability, a higher Kappa value than .400, N=12 even a $\kappa > .500$. For N=5 of the altogether N=7 items which don't achieve the targeted significance level, the maximally achievable (observer) prevalence was below 5%. With the weighted kappa-coefficient of the 26 scaled items ranges between .557 (state of awareness and vigilance) and .962 (ability to urinate), the proportion of observed agreements was between 71.17% (pain intensity) and 92.17% (state of awareness and vigilance). Only N=7 of the scaled items did not achieve the targeted significance level (lower limit of the 95%-CI $\kappa_{qw} > .4$).

The agreements of the two items, pressure sore and wounds, have not yet been evaluated.

Validity

Sampling: Complete sample of all patients from four wards of HSK, Dr. Horst Schmidt Klinik, Wiesbaden, Germany, (cardiology, gastroenterology, accident & emergency and interdisciplinary intermediate care) with N = 1,093 patients as well as three interdisciplinary wards of the Kanton Hospital Uri in Altdorf (Switzerland) with N = 439 patients. The data collection was carried out during March and June 2006.

Item	Kappa	PO (%)
Tracheostomy	1.000 (κ)	100.00
Self-care ability to perform own toileting activities – Urine	.962 (κ_{qw})	88.60
Self-care ability activity / locomotion (e.g. from bed to chair)	.920 (κ_{qw})	83.48
Self-care ability to perform dressing activities (upper part of the body)	.914 (κ_{qw})	79.13
Urinary continence	.908 (κ_{qw})	92.06
Self-care ability to perform dressing activities (lower part of the body)	.902 (κ_{qw})	76.52
Ability to orientate oneself	.898 (κ_{qw})	90.27
Self-care ability to eat	.886 (κ_{qw})	82.46
Self-care ability to drink	.886 (κ_{qw})	84.35
Self-care ability to perform personal hygiene activities (upper part of the body)	.881 (κ_{qw})	73.91
Self-care ability to perform personal hygiene activities (upper part of the body)	.870 (κ_{qw})	76.52
Self-care ability: mobility / change of positioning (in bed, chair etc.)	.840 (κ_{qw})	72.17
Signs and symptoms of acute dyspnoea	.798 (κ)	91.30
Self-initiated activities to promote wellness, recovery, and rehabilitation (Adherence)	.704 (κ)	90.18
Activities based on professional counselling to promote wellness, recovery, and rehabilitation (Compliance)	.671 (κ)	90.09
Signs and symptoms for an altered walking pattern	.663 (κ)	84.54

¹ For the interpretation of this K-value the asymmetrical unbalanced distribution and therefore the influence of the first kappa-paradox has to be considered (Feinstein & Cicchetti 1990).

Item	Kappa	PO (%)
Awareness/Vigilance	.557 (κqw)	92.17
Signs and symptoms for an altered ability to fall asleep / to sleep through	.402 (κ)	76.64
Signs and symptoms for an altered sleep-wake cycle	.267 (κ)	81.48

PO = Proportion of observed agreements

κ = unweighted kappa

κqw = quadratic weighted kappa

Table 2: Inter-rater reliability: κ and κqw of agreement (extract)

Construct validity

In order to measure construct validity, ePA-AC© score values were compared to other data which were assumed to be related to nursing care dependency (Streiner and Norman 2003).

Three examples are given below:

1. Convergent validity I: Patients who have cared for themselves at home show significantly higher (i.e. "better") values in the ePA-AC-CMS© (CaseManagementScore) than patients who were cared for at home (Kruskall-Wallis test H=225, df 3, p < .0001) (Figure 1).

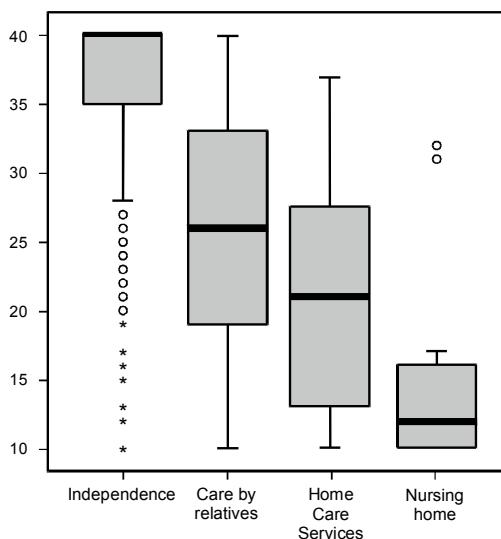


Figure 1: Correlation between care before hospital admission and nursing care dependency (ePA-AC-CMS©)

2. Convergent validity II: There is a significant correlation between the ePA-AC score values and the time expenditure for nursing interventions triggered by the nursing care dependency, for

example, giving support during food intake, giving support during dressing etc. (linear regression, $R^2 = .625$, R^2 adjusted = .625, Beta-coefficient = -8.261, 95% CI -8.611 to -7.912) (Figure 2). The time expenditure was collected through LEP Nursing 2.0, a workload measurement system from Switzerland (Brügger et al. 2002).

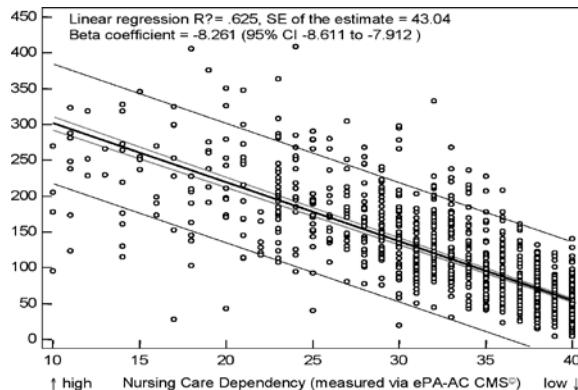


Figure 2: Time expenditure for nursing interventions triggered by the nursing care dependency vs. ePA-AC CMS©

3. Discriminant validity: There is little correlation between the ePA-AC score values and the time expenditure of the interventions triggered by medical diagnostics and therapy, e.g. care of an operation wound, replacement of surgical dressings, infusions etc. (linear regression, $R^2 = .020$, R^2 adjusted = .019, Beta-coeff. -.962, 95% CI -1.332 to -.593) (Figure 3).

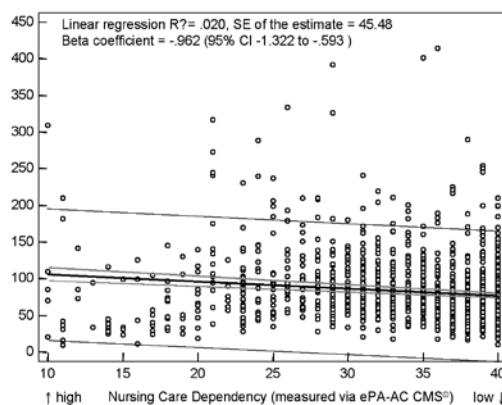


Figure 3: Time expenditure of interventions triggered by medical diagnostics and therapy vs. ePA-AC CMS©

Sensitivity to change

A valid screening instrument should be able to measure changes. Therefore, the following hypothesis was examined: a surgical operation (external criterion) impairs the self-care abilities. This is reflected by lower postoperative values of the CMS© which measures abilities in terms of activities and participation.

Result: The CMS© values of the first postoperative days are significantly lower than the pre-operative values (Wilcoxon-Ranksum test $z = -8.57$, $p < .0001$, $N = 155$), the values for the day of discharge are significantly higher than the postoperative values ($z = -9.63$, $p < .0001$, $N = 186$), (Table 3.)

CMS pre-op vs. post-op	N	Rank sum	N = 155	(95%-CI)
Pre-op > Post-op	104	6106	Pre-op	40 (40 to 40)
Pre-op < Post-op	8	221	Post-op	36 (34 to 37)
Pre-op = Post-op	43	–		
CMS post-OP vs. day of discharge	N	Rank sum	N = 182	CMS-Median (95%-CI)
Post-op < Discharge	127	8735	Post-op	34 (33 to 36)
Post-op > Discharge	6	175	Discharge	39 (39 to 40)
Post-op = Discharge	49	–		

Table 3: ePA-AC© - Sensitivity to change

Conclusion

Not all of the data has been analysed to date. However, if the first results stated here are considered to be a trend, it can be said that the ePA-AC© is a feasible and valid instrument which delivers reliable data for science and practice.

The intensive development phase of the ePA-AC© has shown that it is reasonable to test a new instrument in practice as soon as possible. This will ensure not only the scientific quality of an instrument but also its practicability and acceptance in nursing practice.

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Contact

e-mail: dirk.hunstein@@hsk-wiesbaden.de

e-mail: dirk.hunstein@web.de

68. – The use of the Resident Assessment Instrument for outcome measurement

By Stemmer, R. (Germany)

Background

Outcome measurement is crucial in the health-care sector, and outcome measurement using the Resident Assessment Instrument (RAI) is said to be expedient at both the resident and facility level. The Resident Assessment Instrument (RAI) was developed in 1987 as a means of improving the quality of care in nursing homes in the United States. RAI consists of a standardised assessment instrument called a Minimum Data Set (MDS), 18 specialised guidelines known as Resident Assessment Protocols and a user's manual. Its primary purpose is to assess nursing home residents and to support the development of individual care plans. Furthermore, it can be used to generate quality indicators (Hawes et al 1997).

Objective

The objective of this paper is to validate the usefulness of RAI for outcome measurement. It looks at the key areas of interest covered by RAI outcome indicators and asks what explanatory power they have.

Method

The methodological approach focused on a systematic review of literature. The Medline and CINAHL databases were searched for the period from January 1990 to August 2006 using the keyword combinations 'Resident Assessment Instrument' and 'outcome' and 'quality' as well as 'Minimum Data Set' plus 'outcome' and 'quality'. Electronic database research was also backed up by a manual search. Studies examining the validity or reliability of RAI were excluded.

Results

The findings can be broken down into several thematic groupings: development of outcome indicators; validity, reliability and feasibility of MDS-derived quality indicators; risk-adjustment; comparison between outcomes in nursing facilities in different countries; the relevance of organizational characteristics of nursing facilities for clinical quality, as well as the association between productive efficiency and clinical quality.

The Centre for Health Systems Research and Analysis of the University of Wisconsin-Madison (CHSRA) has developed 24 MDS-based quality indicators through clinical input, empirical analysis and field-testing, 16 of which are outcome oriented (Zimmerman 2003). Other research has led to the development of additional outcome indicators based on MDS-data, e.g. prevalence of pain (Cadogan et al 2004).

Zimmerman gives the common quality categories of nursing and care in nursing homes as medical/clinical care, functional care, psychosocial aspects of resident status and preservation of resident rights, such as dignity and privacy. The MDS-quality indicators cover the following domains: accidents; behavioural and emotional patterns; clinical management; cognitive functioning; elimination and continence; infection control; nutrition and eating; physical functioning; psychotropic drug use; quality of life; sensory function; communication; and skin care (Zimmerman 2003). Hence, there are many areas where themes overlap. Although the MDS

indicators actually go a step further than the common categories in that they incorporate the aspect of 'psychotropic drug use', they do not give any consideration to resident rights. Several studies examine the quality of single outcome indicators, like prevalence of pressure ulcers (Bates-Jensen et al 2003), depression (Simmons et al 2004) or weight loss (Simmons et al 2003).

Testing of MDS-derived quality indicators has shown that some indicators do need modifying. Independent assessments, for example, found a significantly higher prevalence of depressive symptoms than assessments based on the MDS quality indicator (Simmons et al 2004). Another preliminary study revealed that the presence of the quality indicator, depression without treatment, may not accurately reflect the number of clinically depressed, long-term care residents in need of mental health intervention (Zisselman et al 2002). Wu et al (2005a) examined the impact of residents' cognitive function on the quality of MDS pain data. Their results showed a negative correlation between the level of pain assessed and the level of cognitive impairment. In scenarios with high resident cognitive impairment, assessments revealed less frequent and less severe pain prevalence rates. The researchers thus recommend the use of specialized pain assessment instruments for residents suffering from cognitive impairment.

Some studies seek to determine whether nursing homes whose respective MDS-based prevalence scores differ also deliver different processes of care in order to generate these outcomes. For example, Bates-Jensen et al. examined the prevalence of bedfast residents in nursing homes. Their results show clear differences between the participating facilities in terms of the length of time the residents spend in bed but do not reflect differences in activity and mobility care, even though differences do exist (Bates-Jensen et al 2004).

Since Medicare/Medicaid-certified nursing homes in the United States are required to use MDS, a large database is available which can be harnessed to compare facilities (Zimmerman 2003). However, comparison presupposes risk adjustment. Attempts have already been undertaken to develop a risk-adjusted measure of quality based on single outcomes. Working with individual level data, Mukamel et al (2003) developed quality indicators on a facility level and compared improvement in urinary incontinence between 671 nursing homes. Although their work brought to light some substantial variations, they insist that this type of measurement requires further validation. Similarly, Wu et al (2005b) stated that the quality of pooled MDS data from multiple nursing homes has to be improved. In a study encompassing some 178 nursing homes, they show that facility characteristics, like hospice use or nursing-home location, are systematically associated with overrated/underrated pain and may bias pain quality indicator comparisons. Another study based on a sample of MDS quality indicators aimed to propose risk adjustments for future use in France. However, following stepwise analysis, six out of nine indicators were left unadjusted (Moty et al 2003).

MDS-based quality indicators are not only used to compare facilities within a state or country, but also to compare resident outcomes between several countries. For example, one study compared the prevalence, *inter-alia*, of resident weight loss, urinary tract infection and dehydration in long-term care facilities in Iceland; Ontario, Canada; and Missouri, United States. Since differences in clinical practices may account for differences in resident outcomes, MDS outcome indicators provide the kind of framework required to foster reciprocal learning from respective best practices, ultimately leading to improvements in the quality of care for older people in nursing homes in many countries (Jensdottir et al 2003).

MDS-derived outcome data are also useful when aiming to show a correlation between organizational characteristics and clinical quality. Lapane and Hughes (2004) studied the correlation between facility characteristics, such as structural, resource and staffing levels and the management of depression. The upshot is that MDS data would seem to be a good means of measuring the coherence between staffing and quality. However, the accuracy of this information requires further reliability and validity testing (Bostick et al 2006).

Efficiency studies also use several quality indicators based on the Resident Assessment Instrument, such as prevalence of pressure ulcers and depression with no treatment, to examine the link between productive efficiency and clinical quality (Laine et al 2005).

Conclusion

MDS-based quality indicators have been studied in a number of different use contexts where it would seem they provide a powerful aid for outcome measurement in nursing and care homes. However, further research is still needed to strengthen the quality indicators in qualitative terms and also to improve risk adjustment.

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Contact

Renate Stemmer
Catholic University of Applied Sciences
Saarstr. 3
D – 55122 Mainz, Germany.
phone: +496136850031
e-mail: stemmer@kfh-mainz.de

69. – A model for documenting unwanted events in nursing care

By Rajkovic, U., Sustersic, O. and Rajkovic, V. (Slovenia)

Reporting of unwanted events is a vital part of quality assurance in health care. The Ministry of Health of the Republic of Slovenia has set a goal to develop uniform different ways of documenting unwanted events in different health institutions as a key element of patients' safety.

This article describes a model for documenting nursing care, with emphasis on documenting unwanted events according to the minimal data set, and it is, as such, a contribution to integrated and standardised communication. A uniform document structure, based on nursing case elements, is presented. Different classifications as ICNP and NANDA can be used for understanding better the information that is exchanged between practitioners.

The research was carried out on the basis of a minimal data set and analysis of currently used reports in different health institutions. The result is a uniform report structure for documenting unwanted events that is an element of documenting nursing case practice. Together with a paper-based solution for describing unwanted events a computer based data model is proposed. The data model is described as a part of a larger information system for documenting nursing care.

In this way testing of a proposed model on paper and in an electronic version is enabled. Special attention is given to the users of this information who are primarily health team members.

Contact

V. Rajkovic
Faculty of Organizational Sciences
University of Maribor
Kidričeva cesta 55a, SI-4000 Kranj
Slovenia.
phone: +38641332515
fax: +38615421395
e-mail: vladislav.rajkovic@fov.uni-mb.si

70. – Family communications and diabetes.

By Babak Motamed (Iran)

Introduction

There is a growing recognition in medicine of the importance of the patients' social context and family communications in enabling them to manage their chronic illnesses effectively (Auslander and Corn 1996). Thus, several cross-sectional studies report that poor glycemic control is associated with poor family functioning (e.g. high conflict and/or low cohesion) (Anderson et al 1981, Auslander and Anderson 1990, Klemp and LaGreca 1987). Hanson et al (1989), working with adolescents, demonstrated the complexity of the relationship between family function and glycemic control.

When simple correlations were examined, it was found that good glycemic control was associated with high family cohesion, flexibility, and high marital satisfaction. However, when the duration of disease was controlled, these relationships decreased significantly and only held for patients with short disease duration.

There are only a few studies that have investigated the relationship between family environment and outcome for adults with diabetes, using the Family APGAR, measuring the patients' level of satisfaction with five components of family function (adaptation, partnership, growth, affection, and resolve). Schafer et al (1986) argued that measures assessing family behaviors specific to the diabetes self-care regimen would more likely relate to adherence and control.

Objectives

For the present study, we posed two questions: for adults with diabetes, do family system variables relate to the adequacy of metabolic control and/or do they relate to the adequacy of an individual's psychosocial adaptation to the illness?

Research design and methods

One hundred and fifty subjects were recruited from adults with diabetes being treated at two sites. Subjects were included if they were greater than 18 years of age, had been diagnosed with diabetes for more than 1 year, had no current psychiatric disorder, were able to read the forms and to provide written informed consent. Only subject's currently on an insulin regimen were included in order to minimize the potential effect of this type of treatment. A research assistant enlisted participation. The subjects completed questionnaires after their visit or at home and returned them by mail. Metabolic control was determined by measuring glycated haemoglobin levels (HbA1c), using the Abbott IMX glycated haemoglobin assay. HbA1c values reflect the average blood glucose over the preceding 3 months and are widely accepted as a reliable and valid index of metabolic control (Nathan et al 1984). This test was completed as a routine part of their clinic visit. Staff collecting the data were blind to other research data. Both sites used the Abbott assay and were staffed by the same physicians.

Family System Measures

Family Environment Scale (FES).

The 90-item FES, developed by Moos and Moos (1986) measures 10 dimensions of family interaction. The 18 items of the cohesion and conflict subscales were examined. The FES has been found to have acceptable test-retest reliabilities (0.68-0.86) with numerous studies supporting its construct and discriminant validity in various populations (Moos and Moos 1986). Research on medical patients with breast cancer (Bloom and Spiegel 1984), renal disease (Dimond 1979), and

lower back pain (Feuerstein et al 1985) has shown that family environments characterized by high cohesion and low conflict are associated with better psychosocial adaptation. In this scale, subjects indicate that statements are true or false about their families, such as "Family members really help and support one another" and "We fight a lot in our family".

Diabetes Family Behaviour Checklist (DFBC)

The 16-item DFBC, developed by Schafer et al (1986), measures supportive and non supportive family behaviours specific to diabetes. Subjects rate how often a particular family member will, for example, "praise you for following your diet" and "criticize you for not exercising regularly." They report test-retest values of 0.95 and 0.77, 2-month stability from 0.84 to 0.69, and evidence of convergent validity, in that both positive and negative scores were related to the questionnaire scores of family members. Higher negative scores were associated with poorer adherence but not with glycemic control.

Psychosocial adaptation measures

Diabetes Quality of Life (DQOL) scale

The 46-item DQOL, developed by Jacobson et al (1988), assesses four aspects of quality of life specific to diabetes: diabetes satisfaction, impact and worry, and social worry, with the two worry subscales combined to yield an overall worry score of 5. For example, subjects rate how satisfied they are "with the amount of time it takes to manage your diabetes" and how often they worry "about whether you will miss work." Cronbach alphas reported for the scales range from 0.67 to 0.92, with 1-week test-retest reliabilities of 0.80 to 0.90 and good convergent validity demonstrated with evidence of significant correlation of the DQOL with Other quality-of-life measures (Jacobsen et al 1994).

Medical Outcomes Study Health Survey (SF-36)

The 36-item SF-36 (Ware and Sherbourne 1992) assesses six domains of functional health status: physical functioning, role functioning - physical, bodily pain, general health, vitality, social functioning and role functioning - emotional. It has been studied with chronic illness populations (e.g. arthritis, heart disease, diabetes) (Stewart et al 1989, McHorney et al 1993). Internal consistency reliabilities range from 0.81 to 0.88, and good correlations with other general quality of-life measures support its validity (McHorney et al 1994).

Well-Being Questionnaire (WBQ)

Subjects completed the 12 items of the anxiety and depression subscales of the WBQ, a measure of affect, developed by Bradley (1994) that omits somatic items that might be attributable to the disease. Satisfactory scale internal consistencies (0.67-0.74) are noted. Studies of individuals with diabetes have provided evidence for construct validity by demonstrating predicted relationships with other relevant variables (for example, number of complications, glycemic control, and being overweight) (Bradley et al 1990). Subjects rate how frequently, for example, they "feel that I am useful and needed" and have felt "nervous and anxious."

Appraisal of Diabetes Scale (ADS).

The seven-item ADS, developed by Carey et al. (28), measures the individual's appraisal of the illness in terms of his or her thoughts about diabetes. For example, subjects rate, "How effective are you in coping with your diabetes?" and "How much control over your diabetes do you have?" Acceptable internal consistency (Cronbach's alpha = 0.73) and 1-week test-retest reliability ($r = 0.85$, $P < 0.001$) are reported. Strong relationships between the ADS and measures of anxiety, anger, and diabetes-related hassles and a modest relationship with adherence and control support its validity.

Methodology

Demographic information

The patients' medical charts provided information on age, sex, type of diabetes, duration of diabetes, and number of diabetes related medical complications (eye problems/retinopathy, kidney disease, foot infections, amputations, heart problems, stroke, and numbness/neuropathy).

Statistical analysis

Data analysis was completed in stages. Descriptive statistics provided information on all variables. The development of models to explore the interrelationships of the variables employed forward stepwise regression techniques. Variables were entered into the model if they met a 0.1500 significance level. F values were computed for differences among the groups. Data was analysed using SAS version 6.04 for Windows. All analyses were established a priori at $p<0.05$ for acceptance. Multiple comparisons corrections were used.

Results

There were 84 men (56%) and 66 women (44%) participating in the study. Ages ranged from 20 to 79 years with a mean age of 51.3 ± 15.5 years (Table 1).

Social and demographic characteristics of subjects

	n	150
Age (years)		51.3±15.5
Sex		
Male		84 (56)
Female		66 (64)
Marital Status		
Married		93 (62.4)
Divorced		19 (12.8)
Single		31 (20.8)
Widowed		6 (4.0)
Education (years)		13.6 ± 2.8
Diabetes type		
Type 1		81 (54.4)
Type 2		68 (45.6)
Diabetes Complications		1.96 ± 1.53

(eye problems / retinopathy / kidney disease / foot infections / amputations / heart problem / stroke / neuropathy)

Table 1: Social and demographic characteristics of subjects

The vast majority of subjects were married (62.4%). The average duration of diabetes was 15.6 ± 11.1 years, with 81 (54.4%) type I and 68 (45.6%) type 2 diabetic subjects. In terms of glycemic control, 44% were good, 25.5% were acceptable, and 30.5% were poor. Good glycemic control was defined as being <7.4% (normal, <6.4%), based on the levels achieved in the Diabetes Control and Complications Trial (DCCT) (DCCT 1993). Acceptable control was defined as an HbA1c value of 7.5-8.4%, based on the DCCT findings demonstrating that the risk of significant micro vascular complications dramatically increases when levels are >8.4%. Poor control was defined as HbA1c levels >8.4%. Recognizing the stringency of these criteria (e.g. 56% needed improved control) highlights the fact that intensive psychosocial intervention was necessary to achieve good control in the DCCT.

Glycemic control

The first analyses examined the power of the relevant variables to predict glycemic control, as measured by values of the dependent variable, HbA_{1c}, treated as a continuous variable (Table 2).

Glycemic Control (HbA_{1c} levels) of subjects

Good (< 7.4)	62 (44.0%)
Acceptable (7.5 – 8.4)	36 (25.5 %)
Poor (> 8.4)	43 (30.5%)

**Good glycemic control was defined as <7.4%
(normal, <6.4%)**

Table 2: Glycemic control of subjects

Of the demographic variables, only age and duration of diabetes were found to be significant predictors of HbA_{1c} values and were entered into subsequent analyses as covariates. Since I did not find a relationship between anxiety or depression and glycemic control, WBQ scores were dropped from further analyses. Controlling for age and duration of diabetes, the FES cohesion and FES conflict scores did not predict HbA_{1c} values. Neither the DFBC negative nor the DFBC

Positive scores were significant predictors of HbA_{1c}. The ADS was a strong predictor of HbA_{1c} ($F=10.31$, $P<0.001$). We also examined whether glycemic control was associated with measures of adaptation and found significant relationships between the DQOL and HbA_{1c}, (satisfaction: $F=9.84$, $P<0.002$; impact: $F=5.38$, $P<0.022$; worry: $F=6.17$, $P<0.014$), but no significant relationships between HbA_{1c} and any of the SF-36 sub-scales.

Psychosocial adaptation

The second series of stepwise multiple regression analyses examined the power of relevant variables to predict an individual's psychosocial adaptation to diabetes, as measured by subscales of the DQOL and the SF-36. A recent study (Dimond 1979) notes that despite some overlap, the DQOL and the SF-36 examine quality of life from complementary perspectives and the authors recommend using them in combination. Examining the DQOL, age was a strong predictor of diabetes worry ($F=30.46$, $P<0.0001$), with a trend noted for the number of complications ($F=2.86$, $P<0.09$). The number of complications was a significant predictor of diabetes impact ($F=16.94$, $P<0.0001$), as was the duration of diabetes ($F=7.13$, $P<0.009$). Sex ($F=9.42$, $P<0.003$), duration of diabetes ($F=3.83$, $P<0.052$), and the number of complications ($F=6.50$, $P<0.012$) were significant predictors of DQOL satisfaction scores. Therefore, the variables age, sex, duration of diabetes, and the number of complications were entered into subsequent analyses. When these variables were controlled, both positive and negative DFBC scores were significant predictors of diabetes satisfaction (positive: $F=20.54$, $P<0.0001$; negative: $F=4.04$, $P<0.046$) (Table 3). There was a trend for the DFBC to predict diabetes impact (positive: $F=3.55$, $P<0.06$; negative: $F=3.61$, $P<0.06$). Diabetes worry scores were not related to family system variables. The FES conflict and cohesion scores did not predict scores on any DQOL subscale. Scores on the ADS predicted scores on all three DQOL subscales ($P<0.0001$). Examining the SF-36, age, duration of diabetes, sex, and the number of complications each played some role in predicting various subscale scores.

For example, both age and duration of diabetes predicted sub-scale scores measuring physical function, role functioning-physical and role functioning-emotional, and bodily pain. Therefore, these variables were included in all subsequent analyses. Diabetes type (1 vs. 2) was not a

significant predictor variable. Controlling for these factors (Table 4), DFBC positive scores predicted bodily pain ($F=20.73$, $P<0.0001$) and role functioning-emotional ($F=4.25$, $P<0.01$). DFBC negative scores predicted overall mental health ($F=5.90$, $P<0.017$).

Stepwise regression analyses examining the effect of family environment and individual appraisal on glycemic control (HbA_{1C})

Independent		Probability	
Variable	Model R ²	F	> F
DFBC positive	0.0527	2.38	0.1258
DFBC negative	–	–	–
FES cohesion	0.0216	2.74	0.1006
FES conflict	–	–	–
ADS	0.0715	10.31	0.0017 *

*Significant at $P < 0.05$, not significant at the 0.1500 level to permit entry into the model .

Model R² occur when the relevant independent variable (e.g. DFBC positive) is added to the model. Which Includes age and duration of diabetes . F test and Significant level are independent variable is added to the model .

Table 3: Stepwise regression analyses examining the effect of family environment and individual appraisal on glycemic control.

FES cohesion scores predicted physical function ($F=5.95$, $P<0.016$), bodily pain ($F=11.61$, $P<0.0009$), and role function-emotional ($F=7.65$, $P<0.006$), with a trend noted for role function-physical ($F=3.22$, $P<0.075$). The ADS predicted role function-physical ($P<0.0009$) and role function-emotional ($P<0.0072$) and bodily pain ($P<0.0005$).

Stepwise regression analyses examining the effect of family environment and individual appraisal on psychosocial adaptation (DQOL.)

Independent	Diabetes Satisfaction		Diabetes Impact		Diabetes Worry	
	Variable	Model R ²	F	Model R ²	F	Model R ²
DFBC Positive	0.1472	20.55+	0.2002	3.55	0.2281	2.40
DFBC Negative	0.0778	4.04 *	0.1852	3.61	–	–
FES cohesion	–	–	–	–	–	–
FES conflict	–	–	0.1720	2.92	–	–
ADS	0.3462	70.43+	0.4713	115.01+	0.3893	41.90+

–, not Significant at the 0.1500 level to permit entry into the model * $P<0.05$, + $P<0.001$. Model R² occurs when the relevant independent variable (e.g. DFBC positive) is added to the model , which includes age , duration of diabetes , sex , and number of complication . F test and significant level are indicated for the change in variance when the index is added to the model .

Table 4: Stepwise regression analyses examining the effect of family environment and individual appraisal on psychosocial adaptation.

Conclusion

My first question was whether glycemic control is related to family system variables in adults with diabetes. No direct relationship was demonstrated from our data. Whether I assessed family behaviours that support or sabotage the diabetes regimen or family cohesion and conflict, the results were the same. Earlier research that found a relationship did not control for age, disease duration, or diabetes type, which weakens their conclusions in light of this study and others that show that older age and longer disease duration do predict control (Cardenas et al 1987, Eaton and Menge 1992, Konen et al 1993). The study highlights the importance of controlling for these variables in psychosocial research. My second question was whether psychosocial adaptation is related to family-system variables in adults with diabetes. The data indicate that when family members behave in ways that support the diabetes regimen, the individual with diabetes is more satisfied with varied aspects of their own adaptation to the illness (e.g. treatment, appearance, activities) and when family members are not supportive the individual with diabetes is less satisfied. A trend for positive and negative diabetes-specific family behaviours to affect impact is also noteworthy. Similarly more positive family behaviours and higher family cohesion predicted less effect of pain and better emotional role function (i.e. the extent to which an individual's emotional problems, for example, depression and anxiety, interfere with regular activities' while non supportive family behaviours predicted poorer overall mental health). Finally, individuals who perceived their families as more cohesive reported higher level of physical function. Given the numerous factors that affect glycemic control (degree of insulin deficiency, insulin resistance, diet etc), the effect of any one psychosocial variable, such as family support, may be difficult to assess or may play to minor a role. The finding that control relates to diabetes-specific, but not general adaptation highlights the importance of assessing these domains in quality-of-life research. However, if we look at successful adaptation, psychosocial factors are more relevant. Emotional adjustment to diabetes, level of function, and illness impact are important specific quality-of-life outcomes that appear to relate to control. Counselling family members to support the individual with diabetes may ease emotional distress and improve functioning, certainly significant outcomes, and may also contribute to better control.

Demographic data show that older individuals report poorer physical and role function and greater impact of pain, and those who had diabetes longer reported more disease impact. Sex also emerged in some analyses, with women reporting a higher level of satisfaction with various diabetes-related aspects of their lives (e.g. treatment, diet, body appearance, life activities, more vitality). To my knowledge, this is the first study identifying sex differences in aspects of psychosocial adaptation. There have been several studies exploring eating disorders (Rodin 1986) and problems with sexuality (LeMone 1996). In women with diabetes, Jacobson et al (1990) reported that sex did not correlate with adolescents' regimen adherence, but sex has received little attention as a variable that might affect regimen adherence, glycemic control, or psychosocial adaptation. If differences are supported in future research, there may be implications for different interventions for men and women. The finding that individuals with fewer complications reported more impact and more worry, despite the greater impact on overall function as complications increase, was unexpected. However, as many patients ignore their illness before complications develop (Jacobsen et al 1996), those with no complications may not report much impact or worry since the disease can still be ignored. The development of the first complication is the point at which they start trying to manage the diabetes, when the disease begins to more greatly impact the individual and the worry becomes evident.

A limitation of the study is that it was cross-sectional; therefore, causality could not be determined. We cannot say that family support causes improved adaptation. It may be that individuals who are successfully adapting perceive their families as more supportive because of a more generally positive view of the world. Only longitudinal studies can address the issue of causality. This work used the ADS, which was found to strongly predict both glycemic control and diabetes-related quality of life. What is most likely is that negative appraisal is one aspect of poor quality of life analogous to satisfaction or worry. The significance is that the data points

to the ADS as a potentially useful tool for screening. To identify individuals who may be at risk for, or currently experiencing, a poor quality of life. This brief, readily accepted, and easily scored measure has clear advantages over longer more complex tools with complicated scoring protocols.

The ADS is a potential first-line screening instrument likely to be useful in a clinical setting.

In summary, this research indicates that family system variables are not directly related to glycemic control. However, when an individual with diabetes perceives his or her family as being more cohesive and supportive of the diabetic care regimen, he or she is more likely to report a better psychosocial adaptation with less emotional distress and higher levels of functioning. Both the DFBC and the FES cohesion sub scale may be good tools to use clinically with individual families.

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Contact

Babak Motamed, RN, MScN, DNSc
Faculty of Nursing, Islamic Azad University, Dehaghan Branch
Esfahan Province, Dehaghan, IRAN
phone: +98 322 262 40 51
fax: +98 322 262 22 40
e-mail: ba_mot2003@yahoo.com

71. – Analysis of nursing documentation in nursing homes

By Muurinen, M. and Voutilainen, P. (Finland)

Introduction

Every client of social or health care services in Finland must have their care documented (Ministry of Social Affairs and Health 2001). Good documentation is also a basis for good quality care (Björkvell 2000). Written nursing documents including care plans and daily notes reveal if the care is comprehensive, rehabilitative or goal-oriented.

Studies about the quality of nursing documentation are quite rare in Finland. There are some studies concerning acute care settings (Junttila 2005) but only a few researchers have studied nursing documentation in institutional care for the elderly (Isola and Voutilainen 1998, Isola et al 2001, Voutilainen et al 2004). While in the international literature a few studies deal with the content of documentation in elderly care (Ehrenberg and Ehnfors 1999, Hansebo et al 1999).

The nursing process (Ehrenberg and Ehnfors 1999) is very often used as a basis for planning and performing nursing care. The first step in the process is to define the resident's need for care. Then achievable goals should be set and interventions be chosen. Continued evaluation of the goals and the performance should be recorded regularly. A nursing care plan that includes all these steps is a good base for performing good quality care.

In order to develop the quality of care in the nursing homes owned by the city of Helsinki, a project on developing the nursing documentation was started. An electronic resident record system of documentation had been implemented between 2000 and 2001. A study on nursing documentation (audit) was made right after the change. The current study was designed to gain information on the quality of nursing care based on an analysis of nursing documents in nursing homes.

Aims of the study

The aims of the study were to describe the up-to-dateness of nursing documents and to examine the content of nursing documents.

Methods

All of the nursing documents ($N=1036$) in the nursing homes were analysed deductively, while a sample ($n=332$) of documents was analysed inductively. The main categories for the data collection were drawn up from earlier studies (deductive analysis):

1. The up-to-dateness of nursing care plans;
2. The content of nursing care plans;
3. The frequency of daily notes;
4. The connection of the daily notes with nursing care plans.

Subcategories were formed inductively and the nursing process was also used as a base in analysing the data. The subcategory titles are written in italics in the text.

The nursing care plan was judged up-to-date if it was based on the current condition of the resident and if it had been checked during the previous six months. In other cases, the plan was out-dated. The content of the nursing care plan was judged as good when the needs of the resident and the goals, means and evaluation of nursing care were recorded on an individual basis. The content of the plan was moderate when some part of a resident's basic needs was missing or the

goals or means were not exact or when the evaluation was missing. The content was poor when the needs of a resident were documented to a very limited degree. (Ehrenberg and Ehnfors 1999, Isola and Voutilainen 1998, Martin et al. 1999, Souder and Sullivan 2000, Stokke and Kahlfoss 1999). The frequency of daily notes was divided into two classes, daily and more seldom (Ehrenberg and Ehnfors 1999, Isola and Voutilainen 1998, Isola et al 2001). The connection of daily notes with the nursing care plan (sample) was judged as good when the daily notes were based on the goals recorded in the nursing care plan. Daily notes judged as moderate were only partly based on the nursing care plan and those judged as poor were not at all based on care plans. (Ehrenberg and Ehnfors 1999, Isola and Voutilainen 1998).

The ambiguous notes in the nursing documents in the sample ($n=332$) were documented for inductive analysis. The ambiguous data were grouped into subcategories (Field and Morse 1988) with the most important groups being presented.

Results

The up-to-dateness of nursing care plans

Seventy-three percent of the nursing home residents had an up-to-date nursing care plan. The rest of the residents (27%) did not have a nursing care plan at all or the plan was out-dated (Table 1).

The content of nursing care plans

In half (51%) of the up-to-date nursing care,plans, the content was good. The content was poor in 8% and moderate in the rest (41%) of the plans (Table 1).

In the needs assessment of residents, measures of functional capability such as the Resident Assessment Instrument (Finne-Soveri 2005) or the Mini Mental Examination test (Folstein et al 1975) were used for a few residents on every ward. Some of the measurement results were out-of-date and therefore not useful for care planning. The physical needs of residents were mainly assessed in a comprehensive way. Psychosocial topics were documented less often than the physical needs. Psychic symptoms and challenging behaviour and social needs were not always taken into account. The assessing of spiritual needs was very rare.

Inadequacies in the documenting of individualistic goals and interventions for care were frequent. Typically the goals and especially the interventions were expressed in too abstract a way. The evaluation of the goal achievement concerned mostly single goals of the activities of daily living. It was often impossible to get information about the change in the functional status of the residents during their stay in the nursing home.

The frequency of making daily notes

Notes about residents' state or care were written down daily in 21% of the nursing documents. For the rest of documents, notes were made more seldom, most often at intervals of a few days, but on some wards only a few times a month or even a year (Table 1).

The connection of daily notes with nursing care plans

The connection of daily notes with up-to-date nursing care plans ($n=257$) was good or moderate in 60% and poor in 40% of nursing documents in the sample (Table 1). The most common problem was that only the items concerning resident's physical needs were documented even though the discussion of residents needs was comprehensive.

Categories	%	n
<i>Up-to-date nursing care plan</i>		(N=1036)
Yes	73	
No	27	
<i>Content of up-to-date nursing care plan</i>		(n=758)
Good	51	
Reasonable	41	
Poor	8	
<i>Frequency of daily notes</i>		(N=1036)
Daily	21	
More seldom	79	
<i>Connection of daily notes with nursing care plan (sample)</i>		(n=257)
Good	24	
Reasonable	36	
Poor	40	

Table 1: The up-to-dateness and the content of the nursing care plans, the frequency of making daily notes and the connection of daily notes with the nursing care plans.

The ambiguous notes

The cognitive status was not always assessed and the goals and the means in nursing care plans were often very identical for those residents who did and those who did not suffer from dementia. In the follow-up of resident's physical condition, blood pressure, pulse and blood sugar were measured regularly according to the need of a resident on some wards, but on many wards the measurement seemed to be occasional. On many wards the documents showed that pain was sufficiently treated. For example a resident who could not express himself verbal received painkillers according to his facial expressions. There were also insufficient and unclear notes on pain control. For example when a resident had had a continuous painkiller since the 1994, it was no longer certain if the resident still needed the medicine or if the preparation or dose was adequate in 2000.

Conclusions

Given that 27% of residents did not have an up-to-date nursing care plan, it can be assumed that nursing care was not always being directed by up-to-date information on the resident. The contents of nursing care plans were mostly good or reasonable, but more exact documentation of planning is needed about the psychosocial needs of the residents. The goals and the means for care were not always concrete or individually based and they therefore didn't direct the care of a resident. Daily notes were mostly regularly documented but the connection of daily notes with the nursing care plan was poor in almost half of the documents. The notes on the follow-up of a resident's condition were sometimes inadequate and inexact.

Recommendations for developing the care documentation were presented after the study. A handbook for documentation was also drawn up. Educational sessions for the staff were arranged and a mentor for each nursing home was selected and trained.

The change from manual documentation to electronic was considered to be very fruitful. Now every nurse used the same basis for documentation. The audit after the change especially supported the development of the content in the documentation and at the same time the quality of care, although the time immediately following the change may have affected the results.

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Contact

Muurinen Seija, PhD, Voutilainen Päivi, PhD, Adjunct Professor
National Research and Development Centre for Welfare and Health,
P.O. Box 220, 00531
Helsinki, Finland.
phone: +358400407114
e-mail: seija.muurinen@stakes.fi

72. – Nursing documentation project in Finland: developing a nationally standardized electronic nursing documentation by 2007.

By Tanttu, K. and Rusi, R. (Finland)

Introduction

Implementation of a national electronic health record is one of the key areas in the effort to reform and restructure health care in Finland. The Council of State made a decision in 2002 that Finland should have a nationally interoperable electronic patient record (EPR) by 2007. The Ministry of Social Affairs and Health was charged with the implementation of this decision and the specification of the EPR solution. The specification activities have led to the conclusion that, in Finland, with a population base of 5.3 million inhabitants, the EPR access should be organised at the national level.

A central issue in the implementation is, for two reasons, going to be migration. First, nearly all public and private healthcare providers today already deploy patient information systems. These need to be adapted and modified by vendors to be interoperable with the national solution. Second, the Ministry of Social Affairs and Health has made funding available to healthcare providers for IT projects seeking to further collaboration on a regional basis. The development of an electronic health record also requires consensus about its structure and content. Finland is also planning a nationally uniform data system architecture. National solutions enable the long-term storage of digital patient records, as well as a secure national access to the patient records by health care professionals, patients and other persons to whom the legislation prescribes the right of access.

According to the national plans, the challenge in Finland is also to unify and standardize nationally electronic nursing documentation, and to connect it with the nationally recommended multi-professional core documentation of the patient history and the national code server.

Aims of the Finnish nursing documentation project

The main aim of the nursing documentation project is to develop a nationally unified, structured, classified and standardized nursing documentation, and to integrate the nursing documentation with the multi-professional patient record. The second aim is to use the standardized nursing data to manage and assess the quality of the nursing process. The final purpose is to create a model on how nurses document, collect and manage data, process data into information and knowledge, make evidence-based decisions and inferences for patient care, and enhance the quality of their professional practice.

Methods

The nationally defined structured nursing documentation integrated into the multiprofessional patient record is being piloted in 33 health care organizations during 2005–2007 by the support of the Ministry of Social Affairs and Health. The pilot project covers special care, primary care, homecare and elderly care. The pilot project began on October 1st 2005 and ends on September 30th 2007.

The structure of the national nursing documentation

The structure of the national nursing documentation is based on the decision-making process of nursing (Table 1). Nursing documentation is integrated with the multi-professional main headings: the admission; the planning; the delivery; and the outcomes of care. The main and subheadings

provide the context for the core data elements and identify the part of the care process within which the core data elements are documented. The aim of the core information is to give an holistic view of the patient's health and disease history, and the given care and instructions. Standardization of nursing terminology contributes to interdisciplinary communication, sharing and the exchange of data for nursing practice, education and research.

Nursing decision making process

Nursing Process	Care plan				Interventions and Outcomes		
	1a Data collection and analysis*	1b Definition of needs / diagnosis	1c Aims	1d Planned interventions	2 Interventions	3. Assessment and Outcomes	4. Summary
FiCND (version 1.0)	-	Classification and assessment scales	Classification	-	-	Classification and assessment scales	Nursing process data (using FiCND, FiCNI and assessment scales)
FiCNI (version 1.2)	-	-	-	Classification	Classification	**	
Nursing core data	Multiprofessional core data	Nursing needs/ diagnosis	Nursing outcomes	Nursing interventions	Nursing interventions	Nursing outcomes	Patient care intensity **

* EPR core data needed in nursing

** OPC = Oulu Patient Intensity Classification

Table 1: The structure and classification of the national nursing documentation in Finland

The Nursing Minimum Data Set (the core data) includes information on nursing diagnoses/needs, interventions, outcomes, patient care intensity and discharge summary. The Finnish Nursing Classification (FiCNI), based on CCC (Clinical Care Classification) developed in the United States by Dr. Virginia Saba (Ensio 2001, Saba 1992), is used for describing nursing needs (FiCND) and interventions (FiCNI). The components of the classification are:

Activity:	Physical regulation
Coping:	Respiration
Elimination:	Role relationship
Fluid volume:	Safety
Health behaviour:	Self care
Health services:	Psychological regulation
Medication:	Sensory
Nutrition:	Skin integrity
Continued treatment:	Life cycle

Oulu Patient Classification (OPC) is used to measure the patient care intensity. The Roper, Logan and Tierney model for nursing, quality assurance programme and value basis of the neurology clinic, as characterized by a humanistic view of man, and current research results concerning patients' expectations of good care, formed the basis and guidelines for the development of the new nursing care intensity instrument. The OPC is built on the basis of the following areas of needs: 1) planning and co-ordination of care; 2) breathing, blood circulation and symptoms of disease; 3) nutrition and medication; 4) personal hygiene and secretion; 5) activity/movement,

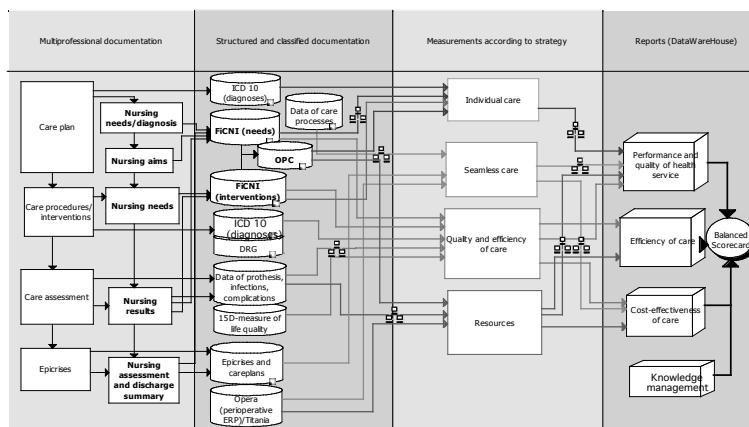
sleep and rest; and 6) teaching and instruction in care/follow-up care and emotional support (Kaustinen 1995, Onnela and Svenström 1998). For each area the nursing care intensity can vary from A (1 point), B (2 points) and C (3 points) to D (=4 points). The points are added up and the classification results entered into four nursing care intensity categories - category I (minimal need for care, 6–8 points), category II (average need for care, 9–12 points), category III (more than average need for care, 13–15 points), category IV (high need for care, 16–20 points) and category V (maximal need for care, 20–24 points) (OHL 2004).

The National Nursing Management Minimum Data Set (NMMDS)

The Nursing Management Minimum Data Set (NMMDS) is the research-based management data set which meets the need of the nurse executives for a specific nursing management data capture system that will produce accurate, reliable, and useful data for decision making. This will be developed by ten nursing management experts. The workgroup started its work in May 2006. In Finland the health care strategies and management are usually based on a Balanced Scorecard, in which NMMDS will also be focused on. Figure 1 describes the nursing documentation and the use of nursing data in orthopedic patient care.

Evaluation

The multi-professional testing of structured and classified care documentation will be evaluated. The process of clinical care, its electronic documentation and the location of information is described and will be evaluated from a multi-professional point of view with the help of the user-driven implementation method to integrate patient information system to the practices. The method is based on looking at the information system as a process, which has an impact on all the elements within the organisation. The method is developed for describing the implementation, applying and evaluation of an information system (Nurminen et al 2002).



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Figure 1: The use of nursing data in patient care management

(A) Actor, (B) Tool, and (C) Work task are used to describe the organizational context, where the information system is implemented (Figure 2). The phases of the implementation process are

1. Description;
2. Training;
3. Use.

The actor, the tool and the work task are used to describe the organizational context, where the information system is implemented and to which the implementation processes are related. The phases of the implementation process are description, training and use.

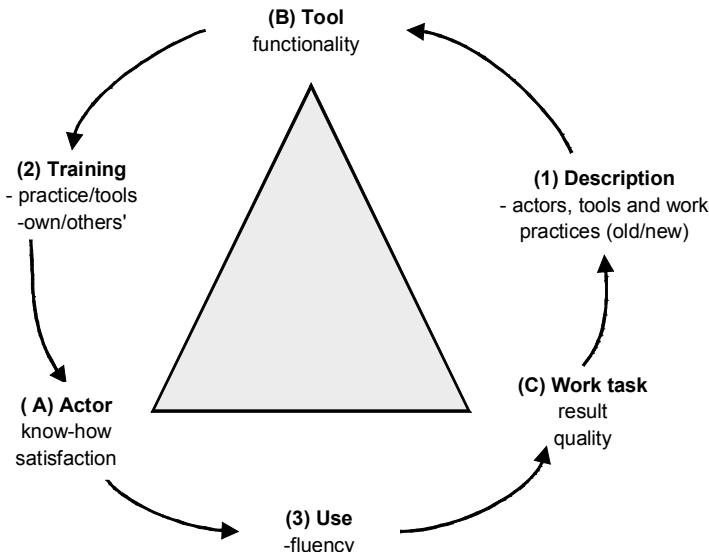


Figure 2: A schematic description of the implementation method.

The evaluation will be carried out by questionnaires, continuous observation and patient case studies. The evaluation focuses on multi-professional documentation, care processes and on the content of Finnish nursing classifications.

Results so far

Implementations of the structured and classified documentation model have been carried out in patient information systems by 6 vendors. Piloting is going in 3 university hospitals, 9 district hospitals and 17 health care centres.

A standardized and unified nursing documentation makes the information more accessible and usable and is of benefit during the whole nursing process.

The use of the nursing core data in documentation:

1. Enables a multiprofessional search for information and use of this information e.g. in decision-making;
2. Enables the making of summaries for various uses;
3. Gives information about the progress of the nursing process (also in relation to the medical diagnosis);
4. Provides statistics and reports for the management, planning of nursing, and for quality assessment.

Conclusions

An electronic health record includes information regarding the needs of the patients during episodes of care provided by different health care professionals. A unified content and structure of an interdisciplinary electronic health record determined by health care professionals facilitates the use of patient data between professionals and organizations and supports seamless patient care. The amount and quality of information available has an impact on both outcomes of patient care and continuity of care.

The experiences of the piloting and the results of the evaluations will be presented during 2007. The final results and report of the National Nursing Documentation Project in Finland will be published 2008.

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Contact:

Kaarina Tanttu, Lic.Sc, MNSc, RN
Project Leader
National Nursing Documentation Project
South-West Hospital District of Finland
Turku University Hospital
Kiinamyllynkatu 4-8
Box 52
20521 Turku
Finland
mobile/cell: + 358407406613
e-mail: kaarina.tanttu@tyks.fi

73. – Patients' satisfaction of standardized versus non standardized nursing care in abdominal surgery: a controlled trial

By *De Marinis, MG., Tartaglini, D., Barros, C., Piredda, M., Spiga, F., Gianotti, L., Pasarella, MC. and Petitti, T. (Italy)*

Introduction

Standardized care plans provide a structured approach to the nursing process of care. They aim to achieve the best outcomes of care and utilize consistent processes and activities, selected on the basis of the best available evidence, for similar problems (Motta 2002). Standardization has often been perceived as opposite to individualization; however they should not be seen as irreconcilable. The provision of evidence-based care as recommended by guidelines or standards of care could be compatible with a care tailored with individual patient needs (Motta 2002).

The fundamental tools of standardization are guidelines, protocols and procedures (Ilott et al 2006). They are important in reducing inappropriate variations in clinical practice and ensure higher quality of care (Moiset and Vanzetti 2006). Clinical guidelines have been shown to improve the quality of medical care through rigorously conducted evaluations (Grimshaw and Russell 1993). Similar evaluation of the effects of clinical guidelines in nursing and professions allied to medicine provided some evidence that guideline-driven care can be effective in changing the process and outcome of care (Thomas et al 2000). However, potential limitations and negative consequences of clinical guidelines have also been highlighted (Woolf et al 1999). For instance, clinical guidelines could be flawed because of poor scientific evidence, or could be too rigid and not take into account individual patient circumstances and preferences.

Quality analysis carried out by Ovretveit (1992) highlighted patients' perspectives on quality as one of its central dimensions; namely managerial, professional and client-based. Consistently, IOM's definition of quality as "the degree to which health services for individuals and populations increase the likelihood of desired health outcomes and are consistent with current professional knowledge" (IOM 1996) includes, besides the concept of subjectivity, for instance, from the patient's point of view, the evidence-based approach to care. Moreover, target 16, "Managing for quality of care", set by the WHO Regional Office for Europe in order to achieve "Health for all in the 21st Century", recommends the importance of systematic measurement of health outcomes and suggests the utilization of surveys on patients' satisfaction with the quality of services received as a way to evaluate health improvement.

Client perception of the care received has been traditionally collected through patient satisfaction surveys. However, satisfaction is a subjective feature that can mean different things to different people; moreover, many patient satisfaction surveys show consistently high grades of satisfaction (French 1981, Walsh and Walsh 1999) and fail to reveal variations between different standards of care (McColl 1996).

Nurses' increasing accountability requires valid and reliable measures of the quality of nursing care. Patients' satisfaction with nursing care is judged as the most important predictor of patients' overall satisfaction with hospital care (Mahon 1997) and is a frequently used measure of nursing quality (Richards and Lambert 1985). In order to use patient satisfaction as a good measure of quality it is crucial to employ a valid and reliable tool which has been proved useful in detecting differences between varying ways of delivering care.

Objectives

While several studies found a positive relationship between individualised care and patient satisfaction (Coyle and Williams 2001, Little et al 2001, Dana and Wambach 2003, Frich 2003, Ruggeri et al 2003, Suhonen et al 2005), to date no research has explored patient satisfaction of nursing standardized versus non standardized care. This study aims to investigate whether standardization of care results in higher levels of patients satisfaction about nursing than non standardized care.

Methodology

This study is part of a bigger multidisciplinary project aimed at evaluating clinical, nursing and economic outcomes of care standardization in patients undergoing abdominal surgery, through the use of a randomized clinical trial.

Non-standardized nursing care, usually given in the hospital where the study is performed, implies care activities shared among nurses verbally. Uniformity of activities is not checked upon and these activities are not based upon systematic literature reviews of scientific literature. In addition, a continuous evaluation of patient care needs based on Henderson's theory, broadened to include also general psychological and social needs, is usually carried out in the hospital.

Standardization of care will include predefined procedures and standardized language. Standard nursing care plans will be identified through systematic literature reviews and through discussions among nurses, researchers and surgical ward nurses during a consensus conference. Ward nurses' participation has been deemed necessary to ensure effective application of care protocols.

Instrument

The Newcastle Satisfaction with Nursing Scales (NSNS), developed by Thomas et al (1996) in order to measure experiences of and satisfaction with nursing in acute care, will be utilized to elicit patients' views of nursing care. The development of these scales was informed by patients' views of good or bad nursing care obtained through qualitative interviews and focus groups (Thomas et al 1995). Patients' involvement as expert informants made sure that the item content was important and relevant to their experience of nursing care so warranting content validity. Well known psychometric techniques were used to guide item reduction (Streiner and Norman 1989). The NSNS have been tested on 2078 patients in 20 wards, across 5 hospitals, and have been found to be valid, reliable and able to detect differences between wards and hospitals (Thomas et al 1996). The scales are integrated into a self-completion questionnaire which includes three sections: experiences of nursing care scale (26 items); satisfaction with nursing care scale (19 items); and demographic information.

Translation

For the purpose of this study the tool was translated into Italian following a thorough process of forward and backward translation. The translation from English into Italian, was performed by three independent translators (one of which a professional translator). A common version was finally produced by a fourth translator. Then another independent professional translator performed the back translation of the Italian version into English. The backward translation was reviewed by one of the developers (E. McColl) of the original instrument, whose suggestions were incorporated in the definitive Italian version, so that it conveyed the original meaning of each item.

Pilot test

The translated scales were validated with a small sample of patients by performing independent qualitative testing (cognitive interviews) (Willis 1999) after administering the scale, to ensure that the respondents were interpreting the items as intended. Five patients admitted to the same ward where the study was to be performed, and who were hospitalized for at least 2 days, were interviewed.

Variability in terms of age, education and sex was sought. Three interviewed patients were male, and two female. Age ranged from 47 to 83, while education ranged from 13 to 20 years.

The rewording of some questions, as suggested by data from qualitative interviews, was discussed with one of the developers of the scale (McColl); only minor modifications were performed to the questionnaire, while preserving the original meaning and making them more understandable to our respondents, and thus helping to ensure data quality.

A preliminary study to check out the psychometric properties of validity and reliability of the scale would have been recommended, but constraints of time made it impossible to perform this separate study. Therefore, it was decided to assess the reliability and validity of collected data before reporting on them.

Sample

Patients admitted in a teaching hospital in order to undergo abdominal surgery will be recruited for the study and randomized in two groups. One group, admitted from August 2006 to January 2007 received non-standardized nursing care, while the other group, admitted from February to June 2007 is receiving standardized nursing care.

Patients are excluded from the study in case they present, at the end of the intervention, with clinical conditions that require their admission in the Intensive Care Unit.

Sample size

Calculations of power and response rates based on the original NSNS manual suggest the recruitment of 100 patients per group. In fact, a difference of at least 5 points (on a scale of 0 to 100) between groups in average scores on the “experience of nursing” scale is believed by the developers of NSNS to indicate a difference in nursing care quality. Sample size calculations advise the achievement of a sample of 80 patients per group in order to detect a difference of this magnitude with 80% power. The NSNS typical response rates are of the order of 80%, so, it was estimated that, in order to achieve a sample of 80 patients, at least 100 patients should be recruited.

After obtaining ethical approval for the study, patients aged 18 years or older, who underwent abdominal surgery, spent two or more nights in the hospital, are in the point of discharge and are not so confused or ill than they can not complete the questionnaire, are being recruited. They are approached by researchers not involved with their care, and are informed about the study and asked to fill in the questionnaire, and put it in a sealed envelope and return it before discharge.

Results

The project is under way.

Author's Note:

We would like to thank the NSNS team at Newcastle University for their permission to use the NSNS questionnaire in this study.

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Contact

Prof. Maria Grazia De Marinis
 Presidente del Corso di Laurea in Infermieristica
 Università Campus Bio-Medico di Roma
 Via Emilio Longoni, 83 - 00155 Roma
 phone: +39 06 22541331
 fax: +39 06 22541456
 e-mail: m.demarinis@unicampus.it

74. – Are redundant data in an EPR an indication of lacking interdisciplinarity between health professionals?

By Svensmark, G., Lundgreen, A., Hesselbo, B., Kolvig-Raun Voss, C., Isaksen, D. and Roesbjerg, T. (Denmark)

Introduction

The Danish National IT-Strategy for the Health Sector states that the future electronic patient record (EPR) must be interdisciplinary in order to soften up demarcations between professions and eliminate data redundancy. Redundant data in Denmark are usually defined as overlap between nursing and medical documentation and generally interpreted as a lack of interdisciplinarity.

To investigate the correlation between redundancy and interdisciplinarity, an interdisciplinary EPR in a paediatric department was investigated. The paediatric EPR was chosen due to the department's claim of a high level of interdisciplinarity between the health professions.

Research question

“What is the correlation between interdisciplinarity and data redundancy in a paediatric EPR?”

Methodology

Triangulation was used to obtain quantitative and qualitative data by means of an audit of 7 patient records, 2 field studies and 2 focus group interviews. The field study and audit were used to investigate the extent of redundancy in the EPR and to observe artefacts like, for example, professional behaviour in the department. The results of audit and observations subsequently provided a basis for in depth focus group interviews with nurses and doctors.

Results

The prevalence of redundant data in the EPR was very limited: 2.4 occurrences of data redundancy per record (e.g. diagnosis). The field study, however, exposed extensive DATA redundancy between bedside paper charts and EPR, especially nursing observations that subsequently were transferred from paper to EPR. The reason for this was simple: the EPR could only be accessed at the nurses' station. Thus, EPR does not support daily clinical practice.

The conclusion is that redundant data are a necessity if EPR does not support clinical practice. It cannot and should not be interpreted as poor cooperation and lack of interdisciplinarity between the professions.

Discussion

Doctors and nurses have different understandings of interdisciplinarity, and their respective need to exchange data differs: Doctors generally need objective data and observations such as vital signs taken by nurses, whereas nurses need most of the medical record in order to get a general overview and to plan nursing care. It has yet to be defined which data are relevant for both professions.

When developing the future EPR, it has to be taken into consideration that nurses and doctors do not need and want the same presentation of data. In an EPR that just presents doctors' and nurses' entries chronologically, doctors inevitably will ask for a "nursing filter", whereas the nurses have easy access to all the information they need. In this case, nurses profit more than doctors from an interdisciplinary EPR.

Contact

Gunilla Svensmark, Consultant RN MPA
Danish Nurses' Organization
Sankt Annæ Plads 30
Postboks 1084
DK-1008 Copenhagen K
DENMARK
fax: +45331471 68
e-mail: gs@dsr.dk

75. – Nursing diagnoses within critical pathways

By Spatzker, S., Fritzsche, L. (Germany)

Introduction

Since summer 2005, the Charité (Berlin) has been establishing critical pathways within a quality-project. This project focuses on improving quality of care, efficiency of documentation and cutting costs and hospital stay by providing unambiguous directives to caregivers and transparency to all involved personnel.

Aims

By fixing the diagnoses as a part of a critical pathway, they reduce time that is normally needed for documentation – and support in their complexity and a common language the professionalism of nurses. Together with the (para)medical part(s) of a critical pathway, nursing diagnoses help to come to a complete map of the patient's needs and the steps to be taken within a fixed time-scale, and in this way support the improvement of multidisciplinary working. Moreover, nursing diagnoses in combination with critical pathways can reduce costs by avoiding unclear descriptions of care and decisions that depend on the nurse's individual experiences and focus of care.

Methods

Critical pathways are developed in multidisciplinary teams, including all professionals that are involved in the care of patients with a special diagnose or a difficult situation of life s/he is in. First of all, a group of patients is identified where a reduction of costs and/or length of stay may be possible or where a department wants to improve their delivery. After having written down the process and the medical needs, the paramedical professionals are asked to define the treatment from their professional perspective. To focus on the patient's needs within (partly) standardized planning of nursing care in a consistent way, nursing diagnoses (NANDA) are used to get a comprehensive overview over the patient's needs during his stay in the hospital and up to discharge. The aims and resources within the nursing diagnoses are used also for other professionals as daily aims of the treatment: What level of rehabilitation should the patient achieve at what time? The aims and resources help all involved professionals to shift the focus from general procedure-oriented to day-by-day result-oriented treatment, to tailor treatment to what is really necessary and to get a multi-professional view on the patient's needs. These objectives are defined as quality-aims, included in the custom-made pathway chart. They have to be checked and signed daily – by the physician and the nurse in charge.

Scales and criteria provided for a specific nursing diagnosis help to find a common language in measuring and noting changes in the patient's status – these are also fixed in the pathway and used by all involved professionals in the same manner.

Results

Nursing diagnoses focus on the general needs of the patient as well as on the specific problems and resources of the patient who is "on the path". They give the nursing staff a helpful view on the complexity of care by structuring the full range of needs without reducing the patient to a sum of physical and/or mental problems. Nursing diagnoses can be put in a time-task-matrix and are flexible enough to be adapted to the progress of the patient's condition. Inclusion of nursing diagnoses in critical pathways is feasible and well accepted by all involved professional groups.

They provide the basis for daily quality aims and lead to a common multi-professional language. In our hospital, including nursing diagnoses in the definition of critical pathways has definitely increased physician awareness for nursing aims and interventions.

Conclusion

By deriving a package of measures from nursing diagnoses, with criteria and scales, and defining the aims as multi-professional quality aims, quality of pathway-guided care can be defined and measured and the concerted treatment of the patient can be improved on a verifiable day-by-day-basis.

Contact

Silke Spatzker
Charité
Quality Management / Medical Directorate
Charitéplatz 1
10117 Berlin
Germany
phone: +49-(0)30-450.570.346
fax: +49-(0)30-450.570.941
e-mail: silke.spatzker@charite.de

PD Dr. Lutz Fritsche MBA
Deputy Medical Director Charité
Charitéplatz 1
10098 Berlin
Germany
phone: +49-30-450-570151
fax: +49-30-450-570941

76. – Describing nursing practice for the top-ten DRGs at Queen Savang Vadhana Memorial Hospital.

By Yekian, C. RN., M.N.S. and Baramee, J. RN., Ph.D. (Thailand)

Background

In 2002, the Ministry of Public Health developed the Thai DRG as a basis for perspective payment and established a policy to standardize clinical data. Nursing care data, however, were not included in the required data base. In almost every country nurses experience the reality of “powerlessness” due to an “invisibility” of nursing in the information systems used for making decisions regarding health policy and resource allocation (Clark 1998).

To be accepted as a profession influencing health of the population, it is necessary for nursing to communicate what it does and what the outcomes of nursing practices are (Yekian and Baramee 2003). Nurses need to be able to demonstrate the impact of their care on the cost and length of stay of each DRG in order to maintain adequate funding for the nursing component of a DRG (Long and Mann 1998).

Queen Savang Vadhana Memorial Hospital, the Thai Red Cross Society hospital located at Chon Buri province, the eastern part of Thailand is a 500 bed general hospital, with 18 inpatient units and more than 359 nurses providing care for 22,000 inpatients per year. As with other hospitals in Thailand, Queen Savang Vadhana Memorial Hospital was faced with the DRG data requirement to develop computerized clinical information system. This provided an opportunity for the nurses to implement a nursing information system to improve nursing data validity (Larabee et al 2001). In 2004, nurses at Queen Savang Vadhana Memorial Hospital developed inpatient structured worksheets to document patient data and nursing practice. The nursing process, the American Nurse Association's (ANA) Nursing Minimum Data Set (NMDS) and the International Classification for Nursing Practice (ICNP) were used for guiding the development of the worksheets. They included a checklist of patients' problems, common interventions, as well as a blank sheet for describing details of nursing care provided.

A retrospective descriptive research study was conducted to describe nursing practice in inpatients diagnosed with the top-ten DRGs (Thai DRG Version 3.0) at Queen Savang Vadhana Memorial Hospital. The study also delineated benefits, obstacles and limitations of using ICNP to describe nursing practice.

Material and Method

Samples derived from 300 medical records of patients admitted to Queen Savang Vadhana Memorial Hospital in 2005. These were randomly selected according to the top-ten DRGs with 30 records per DRG. Data pertaining to nursing care category of the ANA's NMDS were extracted from the patient records. Nursing diagnoses, interventions and outcomes as well as intensity of nursing care were coded into the data collection worksheet. According to ICNP® Beta version, at least two axes of the nursing phenomena and nursing outcomes (Axis A, and Axes B or G), and nursing interventions (Axis A, and Axes B or C) are required to identify for a complete nursing care category. Each nursing care element was, therefore, also coded as “incomplete” and “incomplete data”. The assumption was that the nurses recorded all what they had done. The repeated nursing diagnoses were not counted.

The Warstler's classification system was used to determine the intensity of nursing care in terms of hours of care each patient needed per day. Five levels of care were identified: self care

(1.5 hours); minimal care (3.5 hours); immediate care (5.5 hours); and intensive care (12 hours). Data were analyzed and compared with the 2002 data. The reliability of the instrument was tested by analyzing 30 medical records twice at 2 weeks apart and the percent agreements of intensity of nursing care and ICNP coding were 83.3 and 94.4, respectively.

Result and Discussion

In 2005, the top-ten DRGs at Queen Savang Vadhana Memorial Hospital were: 1) vaginal delivery without complicating diagnosis (Code: 14500); 2) antenatal condition without complicating diagnosis (Code: 14520); 3) caesarean delivery no complicating diagnosis (Code: 14010); 4) appendectomy no complications, no co-morbidity (CC)(Code: 06070); 5) kidney and urinary tract infection, no CC (Code: 11540); 6) respiratory infection/inflammation, no CC (Code: 04520); 7) vaginal delivery with complicated O.R. procedure (Code: 14029); 8) false labour pain (Code: 14569); 9) major lens procedures, no CC (Code: 02060); 10) oesophagitis, gastroenteritis age > 9, no CC (Code: 06570).

Nursing care elements per patient record	Min	Max	X	s.d.
Nursing phenomena	1.0	10.0	5.0	1.2
Nursing interventions	7.0	91.0	43.3	12.7
Nursing outcomes	0.0	10.0	4.9	1.3
Intensity of nursing care hours	3.5	58.5	18.4	7.8

Table 1: The average () and standard deviation (s.d.) of the number of nursing diagnoses, interventions and outcomes per patient record

The average number of nursing diagnoses, interventions and outcomes per patient record was 5.0, 43.3 and 4.9 respectively. These were at least 3 times higher than the findings in 2003's or those than prior to the development of the structured worksheets (Yeekian and Baramee 2003).

The percentage of 'complete' nursing diagnoses, interventions and outcomes (at least two axes), identified by ICNP® terms, was 96.0%, 93.3% and 96.0% respectively. Examples of nursing diagnoses unrelated to patient problems and which accounted for the 'incomplete' data elements were "risk for complication" and "chance for accident." The incomplete items also included the terms not listed in ICNP® beta version but which were in ICNP® version 1 such as "hypo- or hyper-glycemia" and "hypo- or hyper-kalemia."

The average hours of intensity of nursing care measured by the Warstler's classification system were congruent with the relative weights (RW) and length of stays (LOS) for 8 out of the top-ten DRGs. The two incongruent DRGs were "Appendectomy, no CC" (Coded: 06070) and "Major lens procedures, no CC" (Coded: 02060), which have high relative weights with low average hours of intensity of nursing care and low LOS.

In order to describe nursing practice, the total number of nursing phenomena and nursing interventions for each DRG were counted. Frequency of occurrence for each nursing phenomena was also counted. Only nursing phenomena having high frequency ($\geq 90\%$ of occurrence) are presented in Table 2.

Vaginal delivery, with complicated O.R. procedures, had least total number of nursing phenomena (total number=8), meaning that there was less variation of problems for this DRG. Patients diagnosed with kidney and urinary tract infection - no CC, or oesophagitis, age>9 - no CC, had diverse clinical problems (total number=24 and 22 respectively). An explanation for diverse problems was that these DRGs could happen across all age ranges. A 100% frequency of occurrence of nursing phenomena was found for patients diagnosed with vaginal delivery with complicated O.R. procedure, vaginal delivery without complicating diagnosis, and antenatal

condition without complicating diagnosis. Three DRGs had no nursing phenomena with an occurrence of greater than 90%. The highest frequency for these DRGs was 60-70 %.

The total number of nursing interventions for each of the top-ten DRGs ranged from 964 to 1,889, with an average of 1,211 (Table 3). Regarding to five ICNP categories of interventions, the most frequently occurring category reported by nurses was “informing” (39.5%), with less frequent “attending”, “observing”, “managing”, and “performing” (23.1%, 15.5%, 14.2% and 7.7% respectively). The results were consistent for almost all DRGs, except “false labor pain” in which “informing” and “attending” categories were almost equally reported.

DRG Code	Description	Nursing phenomena/outcomes		
		Total number	Description	percent
14500	Vaginal delivery – no complicating diagnosis	16	1. Haemorrhaging, risk for/not risk for 2. Infection, risk for/not risk for 3. Wound pain, yes/no 4. Anxiety, yes/no	100.0 96.7 96.7 93.3
14520	Antenatal condition - no complicating diagnosis	14	1. Haemorrhaging, risk for/not risk for 2. Infection, risk for/not risk for 3. Wound pain, yes/no 4. Anxiety, yes/no 5. Management of therapeutic regimen, yes 6. Knowledge, not adequate/adequate	100.0 100.0 100.0 100.0 100.0 93.3
14010	Caesarean delivery - no complicating diagnosis	18	1. Management of therapeutic regimen, yes 2. Knowledge, not adequate/adequate 3. Infection, risk for/not risk for 4. Wound pain, yes/no	96.7 93.3 90.0 90.0
14029	Vaginal delivery with complicated OR procedure	8	1. Infection, risk for/not risk for 2. Anxiety, yes/no 3. Wound pain, yes/no 4. Management of therapeutic regimen, yes/no 5. Haemorrhaging, risk for/not risk for	100.0 100.0 100.0 93.3 90.0
14569	False labour pain	11	1. Labour pain, yes/no 2. Management of therapeutic regimen, yes	100.0 93.3
11540	Kidney and urinary tract infection - no CC	24	Management of therapeutic regimen, yes/no	93.3

DRG Code	Description	Nursing phenomena/outcomes		
		Total number	Description	percent
04520	Respiratory infection/ inflammation - no CC	17	Anxiety, yes/no	90.0
02060	Major lens procedures - no CC	12	-	
06070	Appendectomy - no CC	17	-	
06570	Oesophagitis, gastro- enteritis age>9 - no CC	22	-	

Table 2: Total number and >90 % frequency of nursing phenomena/outcomes reported for each top-ten DRGs

DRG no.	Description	Total number	Nursing interventions (%)				
			Observing	Managing	Performing	Attending	Informing
14500	Vaginal delivery - no complicated diagnosis	1,777	20.0	13.2	8.3	20.5	37.9
14520	Antenatal condition – no complicated diagnosis	1,889	17.5	12.6	9.9	20.4	39.7
14010	Caesarean delivery - no complicated diagnosis	1,804	15.7	11.6	9.0	21.0	42.7
06070	Appendectomy - no CC	1,014	15.5	14.3	6.9	26.8	36.5
11540	Kidney and urinary tract infection - no CC	1,015	7.8	16.0	6.4	26.1	43.7
04520	Respiratory infection /inflammation - no CC	964	13.8	18.2	8.8	24.0	35.3
14029	Vaginal delivery with comp. OR procedure	1,864	17.7	12.5	6.8	22.0	41.1
14569	False labour pain	910	14.1	14.8	3.5	34.0	33.6
02060	Major lens procedures - no CC	1,009	11.8	13.8	5.3	23.7	45.5
06570	Esophagitis, gastro-enteritis. age>9 - no CC	1,076	13.7	20.5	9.2	21.1	35.6
Average		1,211	15.5	14.2	7.7	23.1	39.5

Table 3 Total number and percentage of nursing interventions for each top-ten DRG

Nursing interventions for each nursing phenomenon were also analyzed. Only one example of results was presented here. Table 4 presents nursing interventions for three nursing phenomena occurred in patients diagnosed with appendectomy, no CC. Findings offered more precise description of nursing practice than those in Table 3. Nurses provided “observing” and “attending” categories of interventions for wound pain more than other categories, whereas providing “informing” and “attending” categories for anxiety.

Nursing interventions	Nursing phenomena		
	Wound pain, yes (N=299)	Visceral pain, yes (N=166)	Anxiety, yes (N=154)
Observing	28.1	21.1	0.0
Managing	15.1	32.5	0.6
Performing	9.7	9.0	0.0
Attending	29.1	26.5	37.7
Informing	18.1	10.8	61.7

Table 4 Percentage of nursing interventions for each nursing phenomenon in appendectomy no CC

Conclusion

The nursing care elements collected by ICNP identified nursing practice clearly (Larabee et al 2001). Standard nursing language enhanced validity of nursing data. Knowledge of nursing information management is necessary to make of nursing practice visible and to improve quality of care. Furthermore, the wisdom from nursing information could increase the value of nurses and nursing profession.

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Contact

e-mail: jayeekian88@hotmail.com

77. – Strategies for an organisational change.

By Von Kaenel, L. (Switzerland)

From a survey made within one of the biggest French speaking hospitals, this presentation analyzes the strategies encouraging the introduction of a nursing workload measurement tool including a nomenclature and a quantification of nursing interventions, the LEP® method. Our ambition is therefore to present different means susceptible to encourage the change. We used a psychosocial and functional approach, while interesting us as much to the decision-makers and to the promoters of the change than to the recipients of care. Taking in account the Swiss sanitary context, we will start with a presentation of the methodology used in our survey. Following it, we present the four levers (communication, formation, actors of the change, management by objective) that stimulate the adoption and the setting up of the LEP® tool. Finally, we propose a procedure permitting to encourage the organizational change.

Contact

Loïc Von Kaenel
39, Retana
3973 Venthône
Switzerland
e-mail: loic.vonkaenel@unine.ch

78. – Measuring risk for falls – a comparison of the care dependency scale and the Hendrich Fall Risk Model.

By Heinze, C. and Dassen, T. (Germany)

Background

Falls of older patients are a common problem in hospitals. Valid and reliable measurement tools for falls risk are needed.

Aims

The purpose of this study was to compare the predictive validity regarding falls of the Hendrich Fall Risk Model, a specific fall risk assessment tool, and the Care Dependency Scale, a generic measurement tool for care dependency. Additionally, internal consistency as an aspect of reliability of the instruments was investigated.

Method

The study was conducted in a German geriatric hospital using a prospective design. The sample consisted of 560 patients who all gave their informed consent to participate in the study. Nurses filled in the Hendrich Fall Risk Model and the Care Dependency Scale at the time of hospital admission and patients falls were followed up during hospital stay.

Results

The Care Dependency Scale (cut off point ≤ 54) had a sensitivity of 75% (47 out of 63 fallers) and a specificity of 46% (227 out of 497 non-fallers). The Hendrich Fall Risk Model (cut off point ≥ 11) had a sensitivity of 75% (47 out of 63 fallers) and a specificity of 47% (237 out of 497 non-fallers). The Care Dependency Scale represented high (Cronbach's Alpha= 0.96) and the Hendrich Fall Risk Model low internal consistency (Kuder Richardson= 0.30).

Conclusion

This study shows that both instruments did not differ regarding the prediction of falls. As the Care Dependency Scale is more reliable and a more general instrument the use of this tool is preferred to measure risk for falls.

Contact

Cornelia Heinze
Charité Universitätsmedizin Berlin
Department of Nursing Science
Charitéplatz 1
10117 Berlin
Germany
phone: +4930450529075
fax: +4930450529900
e-mail: cornelia.heinze@charite.de

79. – The Reliability and Validity of the Mini Nutritional Assessment (MNA)

By Hardenacke, D., Halek, M. and Bartholomeyczik, S. (Germany)

Introduction

The prevention of malnutrition is a central task of nurses in long term care. The utilization of adequate nutritional assessments can help to identify elderly people at risk of malnutrition and enables early nutritional intervention when needed.

The Mini Nutritional Assessment (MNA) is an instrument recommended by the German controlling agency on behalf of the Long Term Care Insurance (MDS) to assess the nutritional status of elderly people in need of care (Brüggemann et al 2003). It was initially developed by Guigoz et al (1994) in 1991, and Rubenstein et al (2001) revised it at the end of the twentieth century. For an instrument to be of value it should be scientifically proven concerning its reliability and validity.

Aim

This review aims to systematically capture and evaluate published literature which has investigated the reliability and validity of the Mini Nutritional Assessment.

Methodology

The literature search was performed in Medline and Cinahl (1991- August 2005) using the following key words: mini nutritional assessment; MNA; nutritional assessment; assessment; screening; malnutrition; undernutrition; and geriatric nutrition. In addition, the World Wide Web was searched resulting in the identification of 109 articles. After a selection process 11 articles remained, with 2 studies investigating the reliability and 9 studies assessing the validity of the MNA. Each study was analysed in relation to details of its design, subject of investigation, sample, setting, golden standard, method of data collection and data analysis.

Findings and Discussion

The findings indicate methodological limitations in all studies. These limitations can be summarised in the following:

Subject of investigation

In carrying out an investigation about the scientific value of an instrument, it is of great importance that the instrument is used in its unchanged version to reduce bias. The analysis shows a multitude of studies which made modifications on the MNA (Murphy et al 2000, Visvanathan et al 2004, Thorsdottir et al 2005). Three studies used a different number of cut-off points than the MNA originally contained. A revision of the scores of the MNA's cut-off points can also be recognized in two further studies.

External criterion

In addition to the above, the categories of the external criterion (golden standard) used for assessing an instrument's criterion validity should agree in form and content with the instrument to be tested. A study performed by Azad et al (1999) has limitations in that the category 'slightly malnourished' of the golden standard was used as a reference for the category 'being at risk of

malnutrition' of the MNA. A similar difference within the content of the categories can be noticed in a study conducted by Ranhoff et al (2005).

Sample

The sample which is employed in a study can be seen as another important factor affecting generalizability of the findings. Ideally, studies are carried out on random samples and sample size is calculated based on hypothesis about expected results. All reviewed studies, except one (Thorsdottir et al 2005), were performed on the basis of convenience samples without calculating optimal sample size.

Data collection

The interrater reliability of the MNA was investigated by Bleda et al (2002) in a long term care setting. For that purpose they used the test-retest method with the time between the first and the second data collection varying between 10- 55 days. Within this protracted period of time the patients' nutritional status could have changed. Thus, differences in the results might only indicate a different nutritional status.

De Groot et al (1998) assessed the sensitivity and the specificity of the MNA. For this purpose, they used data from a previous study. As a consequence of this, three questions of the MNA could not be answered with these data. In addition, 13 questions of the assessment used in the previous study did not agree with the questions of the MNA. These restrictions in data collection might have caused bias in the findings of the studies.

Reliability

Two studies investigated the reliability of the MNA. Gazzotti et al (1997) reported a moderate interrater reliability for the total MNA when used in a hospital in Belgium (total $\kappa=0.51$). A higher agreement was assessed in a study performed by Bleda et al (2002) in a Spanish long term care setting. The results reported a total κ of 0.83 and an internal consistency of 0.74. As these two studies could not be compared because of their different designs and the methodological limitations of the studies mentioned before, it is almost impossible to state, whether the MNA is reliable or not.

Validity

Making a statement on the validity of the MNA also seems to be difficult because of the variety of methodological restrictions observed in the reviewed studies. Despite this, while the MNA seems to have a higher sensitivity than specificity, the majority of the studies (Christensson et al 2002, Domini et al 2002, Visvanathan et al 2004, Thorsdottir et al 2005) can only restrictedly be compared because of their differences in designs.

No study has either investigated the reliability or the validity of the MNA in Germany within the parameters of this literature research.

Conclusion

The MNA makes an important contribution to the discussion of adequate nutrition of elderly people. The studies which are analysed in this literature review, however, do not seem to be suitable for making a statement on the reliability and validity of the MNA. Moreover, the MNA has not been tested in Germany until now. Thus the assumption and implementation of the MNA into nursing practice, especially in Germany, cannot be recommended scientifically at the moment. Nevertheless, the application of the MNA may be of practical value, although its content has to be critically reviewed for the use in nursing care (Nationale Assessmentgruppe Deutschland et al 2005). Further investigations concerning the scientific quality and psychometric property of the MNA are required. These investigations should be carried out in the setting in which the assessment will be used.

Author's note

This literature study was carried out in the context of the BScN Thesis of Daniela Hardenacke (2006). It was supervised by MScN Halek and Prof. Dr. Bartholomeyczik, Institute of Nursing Science, University of Witten/ Herdecke, Germany.

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Contact

Daniela Hardenacke
 Institute of Nursing Science
 University of Witten/Herdecke
 Stockumer Str. 12
 D- 58453 Witten,
 Germany.
 e-mail: dhardenacke@uni-wh.de

80. – Context as a basis for the derivation of nursing diagnoses from interventions in a study of intellectual disability nursing.

By Sheerin, F. (Ireland)

Aims

This paper explores the potential for the development of cross-linkages between nursing interventions and diagnoses through an examination of the context within which the interventions were performed.

Methodology

The study, which is the first in-depth examination of the contribution of nursing to intellectual disability care, employed a multi-method approach to identify the interventions that are unique to that profession. Standardised nursing language formed the medium through which this was facilitated. The identified nursing interventions were explored in the light of focus groups and interviews which provided a contextual basis for their employment. These contexts further permitted the identification of the foci upon which the interventions were focused. Such interventional foci have been previously suggested by the author to be synonymous with nursing diagnoses.

A comparison of the identified interventions and diagnoses is made with reference to the North American Nursing Diagnosis Association and Nursing Interventions Classifications.

Findings

The context within which the interventions were carried out formed a useful basis for identifying the key defining characteristics of the problems which elicited those interventions. As such, it allowed for the nursing diagnoses to be explicated and, in doing so, provided confirmatory evidence for the suggested linkages between NANDA diagnoses and NIC interventions.

Contact

Dr. Fintan K. Sheerin
Lecturer
School of Nursing and Midwifery Studies
University of Dublin
Trinity College
Dublin 2. Ireland.
phone: +35318964072
e-mail: sheerinf@tcd.ie

81. – The critical need for accuracy of diagnosing human responses to achieve patient safety and quality-based services

By Lunney, M. (USA)

Abstract

Research evidence accumulated over five decades indicates that there are wide variations in accuracy of nurses' diagnoses of human responses. This should be a serious concern for language developers and users because nursing interventions and outcomes are based on initial and ongoing interpretations of patient data. Although some variations in accuracy are generally expected with the complexity of diagnosing health-related behavior, a lack of attention to accuracy compounds the problem, yielding lower levels of accuracy than acceptable for patient safety and quality-based care. Low accuracy contributes to:

- a. harm to patients and families,
- b. wasted time and energy,
- c. absence of positive outcomes,
- d. patient and family dissatisfaction.

Up to now, the discipline of nursing has not assumed adequate responsibility to address accuracy. For example, there is very little discussion of accuracy in any literature sources. The current emphasis on evidence-based nursing requires that we use research evidence to design systems in which accuracy of diagnosing human responses is the foundation.

Purpose

The purpose of this paper is to explain the need to address accuracy of nurses' diagnoses in all projects related to standardize nursing languages and to suggest strategies to address accuracy of diagnosing human responses.

Content

The critical need to address accuracy is supported by sufficient research evidence that accuracy varies widely across settings and localities. Some of the research evidence for this premise will be presented.

The strategies that will be presented include:

- a. examine accuracy issues and research at every conference related to standardized languages;
- b. promote accuracy of diagnosing human responses as the basis for use of nursing classification systems;
- c. design electronic health records so accuracy can be systematically investigated on a regular basis;
- d. assess for system-wide factors, including policies, that hinder accuracy (e.g., expecting diagnoses to be charted before sufficient data are available), and make associated changes;
- e. include the importance of accuracy and strategies for increasing accuracy in educational programs;
- f. emphasize patient-nurse partnerships to attain valid and reliable data and high accuracy data interpretations;
- g. conduct research studies of the effects of high and low accuracy on patient outcomes.

Implications

With implementation of electronic health records, data will be aggregated to describe nursing services and for organizational and unit-based decision making. Data that are based on low accuracy diagnoses, however, will be useless for these purposes. Now that widespread implementation of electronic health records is imminent, nursing language developers and users need to include attention to accuracy in all related projects, promote high accuracy, and measure accuracy in clinical settings.

Contact

Lunney, M.

College of Staten Island, City University of New York, Department of Nursing
2800 Victory Boulevard, Staten Island, NY 10314

phone: 718 982 38 23

fax: 718 982 41 24

email: lunney@mail.csi.cuny.edu

82. – Nursing diagnosis formulations for multidisciplinary communication in emergency preparedness and disaster response

By Speraw, S., Persell, DJ., Fiske, B. and Lee, JL. (USA)

Introduction

Disasters provide unique and previously undeveloped opportunities to apply nursing diagnosis. Standard nursing diagnoses are grounded in the concept of individuals as "persons" with discrete major and minor characteristics. They lack the community, national and international focus that disaster nursing care demands. Impaired communication has consistently been identified as a serious flaw in disaster response, making it imperative that nursing develop new ways of formulating diagnoses so that they accurately convey the nature and scope of identified problems and effectively serve as a basis for developing plans of care. The purpose of this paper is to offer an expanded nursing diagnosis of impaired communication that:

1. uses nursing theory and a systems approach to expand the definition of person from "individual" to include community, national and international systems;
2. suggests how the nursing diagnosis of impaired communication can be applied and modified for disaster situations;
3. identifies additional nursing diagnoses that would be applicable to disasters if the diagnoses were redefined;
4. incorporates a multidisciplinary focus;
5. provide real life situations in which such nursing diagnosis could have been utilized.

Neuman's System's Model

Neuman utilizes a holistic approach to nursing care that allows the definition of patient or client to include individuals, families, groups and/or the communities, states, regions or nations in which people live (Hinds 1990, Ross and Bourbannais 1985). This is a particularly useful definition for disaster response. All of these client categories have a central core comprised of basic survival behaviours that take on critical significance in disasters. Circles of defence surround the central core. If there is a break in the lines of defence, the individual, community or nation is subject to injury or illness. The first line of defence is resistance (Hinds 1990, Ross and Bourbannais 1985). It is important to know where the person, community or nation is on the wellness/illness continuum before disaster strikes. Chances of survival are greater when wellness versus illness is exhibited. In disaster situations normal lines of defence include problem-solving abilities, coping abilities, and intellectual abilities acquired over time by the individual, family, community, state, region or nation. If injuries or disabilities occur in the disaster, their normal lines of defence are lost. Flexible lines of defence constitute the community's potential for change and can include protective behaviours (Ross and Bourbannais 1985). All client categories should have well developed disaster plans, including the capacity to respond. Environment is unique to each client category and constitutes the client's perceptions of their surroundings. Internal environment, the physiologic or psychological response to stressors, is likely to be assessed on an individual basis while the external environment will encompass the larger client categories. Interventions can be classified as primary, secondary or tertiary. The nursing process is applied at each level of intervention (Ross and Bourbannais 1985). Primary intervention occurs by strengthening the client's flexible lines of defence. Examples include mitigation activities to reduce or eliminate injury, or planning

in advance to become a shelter or to provide child care. Secondary interventions are aimed at strengthening normal lines of defence and occur by maximizing resources in the environment or reversing the effects of stress. Examples of secondary interventions include moving to high ground or designated shelters in anticipation of a flood or hurricane. Strengthening the lines of resistance is tertiary intervention and is demonstrated in the following examples: installation of temporary roofing, mudding-out or seeking alternative housing, employment or health care.

Impaired Communication

Utilizing Neuman's expanded definition of client, the context of communication in emergency response includes international disaster efforts. Communication becomes the actual pattern of interaction that take place between professionals from many disciplines, or from different regions of the world. When communication is impaired, the disaster response is disadvantaged and prolonged. We believe it is necessary to modify the definition of impaired communication in disasters to include the state in which an individual, community, region, nation or world experiences, or is at risk to experience, difficulty exchanging thoughts, ideas, wants or needs with others during a disaster. A modified definition will impact all parameters of the diagnosis. Major characteristics of a system's approach to impaired communication in these circumstances include inappropriate or absent exchange of ideas between interfacing systems or professionals. Loss of communications systems, language barriers between countries, misunderstandings originating in cultural bias will have grave consequences. Related factors also become modified and include the nature of the emergency (chemical, biological, radiological, nuclear, or explosive incidents, natural disasters or accidental emergencies). Sub-categories such as the type of emergency, political or cultural variants, location in developed vs. developing countries, resources, health care personnel, and response plans further define the nature of the problem. When communication is impaired during disaster, recommended interventions must be developed within the context of political systems and cultural resources, and meet the needs of the entire population. Basic infrastructures must be restored or provided if a coordinated regional or international response is required. Bridges between family members, and also between governments with unique and varied leadership structures, must be created. Marginalized groups can provide varied communication challenges requiring innovative but practical communication strategies. Indeed, situational and maturational influences in disasters will contribute to the need for additional nursing knowledge and intervention.

Additional Nursing Diagnosis to be Modified Related to Disaster Response

We foresee that many nursing diagnoses will be modified should a major disaster occur. The same rationale and explanation for impaired communication can be utilized for these additional nursing diagnoses. Decisional conflict and powerlessness have special relevance to emergency response. Depending on the scope of the client category, the related, situational and maturational influences, these two diagnoses will be significant in disaster response as lines of defence and interventions are developed. Similar modifications to impaired communication are required for these two diagnoses.

All potential disasters, including terrorist attacks with chemical, biological, radiological, nuclear or explosive agents, will include clients with nursing needs much as any other emergency. Therefore, the potential exists that every known nursing diagnosis may be utilized in a disaster. Not all will apply to the masses, but if mass casualties exist, not all components of a single nursing diagnosis may be utilized. Available resources may impact which interventions are employed for the masses for impaired gas exchange, anxiety, anxiety related to death and so on. It is prudent to examine the current nursing diagnoses to determine a priori which ones may present the most challenges to nursing care in mass casualty incidents.

Hurricane Katrina, Sago Mine Disaster and the Pakistani Earthquake

There is no shortage of examples in which the nursing diagnosis of impaired communication, expanded to disaster care, would have been utilized. Events can range from isolated disasters affecting a single community to a multinational event. When coal miners were trapped following an explosion at the Sago Mine in West Virginia, United States, communication was impaired between survivors and mine administrators as well as among first responders, families, government and media. No system was in place to communicate directly with the miners to determine their location within the mine or even whether they had survived the explosion. Sadly, at the height of the crisis impaired communication resulted in a situation where families were wrongly told their loved ones had survived, and the general public was privy to privileged information (Breakdown at Sago Mine 2006; Koch and Cauchon 2006, U.S. Department of Labor Mine Safety Health Administration 2006).

In the United States, during Hurricane Katrina even normally efficient communication methods were ineffective or not working. Victims and those responding both experienced difficulty exchanging thoughts, ideas, wants and needs. Indeed, many of the standard communication systems were also ineffective and did not work. Evacuees as well as hurricane victims were relocated to nearly every state in the United States, necessitating extensive communication systems. Rescue and response teams throughout the United States and other countries participated in the disaster response. The shear magnitude of both the hurricane damage as well as the response effort necessary to combat this damage overwhelmed the capacity of communication systems contributing to inefficiency and ineffectiveness in response (U.S. House of Representatives 2006, U.S. White House 2006).

When the devastating earthquake occurred in rural areas of Pakistan, 2005, it took extraordinary means to reach the location: a place that did not possess the modern communication most of us rely on. For what seemed like unending time communication was beyond impaired; it was absent. There was incompatibility between what was, what was usual and what was needed (Action Aid International 2006).

Conclusion

With an expanded definition of client as potentially being the world, nursing must consider whether our common language, nursing diagnosis, is sufficient to communicate effectively with other disciplines as we work in concert to provide care in a mass casualty incident. Our client cannot wait for us to see if communication in the next disaster is better. We need to be pre-emptive and pro-active and refine our diagnostic language now. We need to assure that our diagnostic language has relevance for our times, in our contemporary world.

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Contact

e-mail: ssperaw@utk.edu

83. – International experts' perspectives on the state of the nurse staffing and patient outcomes literature: results of a Delphi survey

By Van den Heede, K., Sermeus, W., Vleugels, A., Clarke, SP. and Aiken, L. (Belgium)

Background

The literature provides substantial evidence confirming an association between hospital nurse staffing and patient outcomes, both within and across countries with differently organized and financed health care systems (Clarke and Aiken, 2006) However, controversy remains about the variables used to investigate the relationship between nurse staffing and patient outcomes (Seago et al 2006)

Study objective

The purpose of this paper is to describe the process used to develop a comprehensive set of variables that should be considered when setting up a study that investigates the relationship between nurse staffing and patient outcomes.

Methodology

Three types of variables will be discussed: patient outcome variables potentially sensitive to nursing care; nurse staffing variables (number & skill mix); and background variables. A background variable is specified as a variable that has a potential impact on the relationship between nurse staffing and patient outcomes. These three types of variables were listed through a literature review using a four stage search strategy. Firstly, it rests on 5 existing reviews (Doran et al 2003, Hickam et al 2003, Lang et al 2004, Lankshear et al 2005, McGillis et al 2005) covering the literature from 1997 through March 2004. Secondly, a systematic search was conducted using MEDLINE® for the years 2004-2005. Thirdly, a targeted search of selected web sites (AHRQ 2003, CALNOC 2005, National Quality Forum 2005) was performed. Finally, the list was completed with references found in initial sources or through professional contacts.

The initial lists of variables resulting from the literature were assessed by a Delphi panel. Panelists were recruited based on their illustrated (published literature and/or research grants) expertise as scientists or their field expertise as nurse directors (nominated by the European Nursing Directors Association). Twenty-four scientists and eight nurse directors from 10 different countries agreed to participate. The Delphi-study entailed three e-mail surveys. In round 1 panelists could indicate the usefulness of each variable on a 4-point rating scale and suggest additional variables. In round 2 feedback was given about the group responses and individual ratings. It was asked if they wanted to review their scores in light of their colleagues responses. Round 3 was a general feedback round. The consensus level was set at 85% at the outset of the study.

Results

The review illustrated that evidence support a relationship between nursing and patient outcomes. However, the clarity of such evidence was not as prominent for all patient outcomes. What's more several patient outcomes are suggested but not yet studied.

The response rates in Delphi-round 1 & 2 were respectively 90.6% and 87.5%. The Delphi-technique decreased the number of 39 patient outcome variables, 14 nurse staffing variables and 31 background variables that resulted from the literature to 29, 9 and 22 variables respectively. The panel suggested including additional variables: 3 patient outcome variables, 1 nurse staffing variable and 7 background variables.

Conclusion

This study does not provide an exhaustive list of variables, as the literature on this study subject is constantly evolving, but it was useful in gaining opinions of experts on variables that should be included in research investigating the relationship between nurse staffing and patient outcomes. It helps researchers and hospital policy makers to prioritise variables for future measurement.

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Contact

K. Van den Heede, W. Sermeus, A. Vleugels, S.P. Clarke, L. Aiken
 Centre for Health Services Research
 Catholic University of Leuven
 Kapucijnenvoer 35/4
 B-3000 Leuven
 Belgium
 phone: +32 163 370 20
 fax: +32 163 369 70
 e-mail: Koen.VandenHeede@med.kuleuven.be

84. – The process of choosing a structured nursing language for nursing practice.

By Kossaibati, S. and Berthou, A. (Switzerland)

Introduction

While the use of structured nursing languages is accepted by the majority of nursing specialists there is less agreement about the language itself that should be used. Finding oneself in the situation to choose the right structured nursing language, for example, NANDA, ICNP®, ENP®, for a defined purpose, such as documentation of the nursing process or calculation of nursing charge, in given circumstances, such as limited budget or limited personal resources, is not an easy task.

Faced with the need for a structured nursing language for the integration of nursing documentation in an electronic patient record a committee consisting of public health stakeholders of a Swiss canton decided to lance an evaluation project. The object was to evaluate the usability of a structured nursing language in practice in order to provide information to the stakeholders for their decision making. The project ended after one year in June 2006.

The FITT theory (Fit between Individual, Task and Technology) of Elske Ammenwerth (2003) served as a structure for the organization of the project in general and for the development of evaluation criteria in detail.

Methods

The structured nursing language was tested under real conditions in four different hospitals/clinics, on six wards (one each of surgical, medical, oncological, geriatric, orthopaedic and psychiatric). According to the FITT theory, the evaluation criteria included variables concerning the nurses (Individual) on the wards where the nursing language was tested, the “process of documenting a nursing care plan with/without a structured nursing language” (Task), the structured nursing language itself (Technology) and its integration in a software application (Technology). Additionally, some information concerning the environment (for example, technical infrastructure and support) has been collected. The evaluation was divided into three phases: before, during and after the test of the structured nursing language. Evaluation instruments were used according to each phase. The methods used were interviews, observation, questionnaires and document analysis. All persons directly concerned by the use of the structured nursing language have been integrated in the collection of evaluation data in order to consider their different perspectives.

Results

Individual – ward nurses:

The comparison of data concerning the ward nurses of the participating institutions revealed significant differences in “their attitude towards the documentation of the nursing process in general and the use of structured nursing languages in detail”. Furthermore, the “feeling of security” in the use of “information technology” and the estimated “benefit of it” differed also between the nurses of the participating wards. These results were used both in a descriptive manor and for the interpretation of findings concerning the nurses’ evaluation of the structured nursing language. An impact of the user perceptions on their judgement of the structured nursing language could be stated.

Task – process of documenting a nursing care plan:

The “process of documenting a nursing care plan” was described before and during the test of the structured nursing language. Organizational differences were found according to: the definition of the content of a nursing care plan and the level of detail of the information, the use of various software applications and functionalities, the integration of the documenting process in the work flow of the nurses. These differences were taken into account in the analysis of the users’ perceptions of the structured nursing language.

Technology – structured nursing language:

The evaluation of the structured nursing language included variables concerning its comprehensibility, completeness, granularity, conformity with the nursing philosophy of the participating wards in general and its usability. The first four criteria were directly linked to the structured nursing language whereas the “usability” mainly depended on its “user-friendly” and “task – supporting” integration in the software application. Even though the software application was not intended to be evaluated, its impact was undeniable and it often confounded the users’ perceptions of the structured nursing language.

Discussion

Generally speaking, the various data collected responded to the stakeholders’ need for information to choose a structured nursing language for the nursing practice. The results lead to the conclusion that exclusive information about the quality of a structured nursing language cannot provide as a sufficient basis for the decision making. Additional information is needed concerning its integration in a software application, the process which should be supported/ replaced and about the users’ competences in dealing with and perception of a structured nursing language. Furthermore, the organizational impact concerning for instance the work flow on the ward and the technical infrastructure has to be taken into consideration. The FITT theory helped to differentiate between the various factors influencing the users’ perception of the structured nursing language. It was possible to begin with the description of each aspect - the ward nurses (Individual), the process of documenting a nursing care plan (Task) and the structured nursing language (Technology) – followed by an analysis of their interaction. Thus, a confusion of these aspects could be avoided.

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Contact

Salwa Kossaibati
Institute for Health and Economics,
Chemin de Croset 7
1024 Ecublens
Switzerland
phone: +41 21 641 05 82
e-mail: salwa.kossaibati@isesuisse.ch

85. – Accuracy of nursing diagnoses using the Functional Health Pattern Assessment Screening Tool.

By Herdman, TH., Jones, D., Kulju, L. and Foster, F. (USA)

Introduction

The FHPAST was developed to screen the functional health patterns of patients and minimize nursing assessment time, while increasing the utilization of a nursing assessment framework (Jones and Barrett 1996, Barrett and Jones 1997). It is based on the Functional Health Pattern Framework in which information is organized into eleven common functional patterns that contribute to health, quality of life and the maximizing of human potential (Gordon 1982). The FHPAST screens all eleven functional health patterns. The instrument is completed by the patient and response to each item is organized on a four point Likert scale. The psychometric properties of the FHPAST have been well established in previous studies by the tool's developers.

Objective

The objective of the current study is to determine whether use of the Functional Health Pattern Assessment Screening Tool (FHPAST) in clinical settings by nursing students is able to generate tentative nursing diagnoses and successful in decreasing their assessment time by using an assessment tool that screens each functional health pattern assessments. A sample of junior level nursing students in a baccalaureate program had their clinical patients complete the FHPAST. This was followed by a complete health assessment of those clinical patients, in which nursing diagnoses were identified.

Results

Results were then reviewed to determine accuracy of nursing diagnoses by the students; the correlation between the use of the FHPAST and the generation of tentative dysfunctional health, and assigned nursing diagnoses with those diagnoses obtained using a full assessment. Additionally, students were surveyed to obtain their perception as to helpfulness of the FHPAST in directing their assessments and the impact of time required to complete the screening and full assessment.

Conclusion and recommendations

Accuracy of the FHPAST was then determined by reviewing the assessment data (cues) used by the students to support both a tentative and final nursing diagnosis. The use of the FHPAST to direct nursing assessment has not yet been tested. This pilot study provides information as to its usefulness in screening the functional health patterns of patients and minimizing nursing assessment time. Recommendations for use within educational settings and clinical practice will be shared.

Contact

e-mail: hherdman@matousekandassociates.com
e-mail: heather.herdman@bcon.edu

86. – Quality of data collection in first stage of nursing process

By Tothova, V. (*Czech Republic*)

Summary

The purpose of this paper is to point out the level of information obtaining in the first stage in the nursing process in health care and health and social care institutions in the Czech Republic. The research was implemented in the scope of solving the grant research task of the Ministry of Health of the Czech Republic. We present the results of questions related to implementation of evaluation of the patient's/client's (hereafter referred to as patient) health condition after his reception and to evaluation of satisfaction of his needs.

Introduction

The nurse starts the nursing process by evaluating the client's/patient's health condition. The aim of this first stage - of evaluation of the health condition - is obtaining the necessary information required for efficient and planned care for that specific patient. Our activities in this stage are oriented on obtaining the nursing history and performing the physical assessment of the patient by the nurse. The nursing history should be performed as soon as possible after the patient's reception. The database is established on the base of the patient's answers or responses to health problems or the illness with regard to his needs of nursing care. The patient's answers concern the everyday life sphere; therefore the nurse needs information concerning his physical, psychical and social functions (Alfaro-LeFevre 2006). Under use of holistic approach to the patient, it means that the nurse obtains information from the sphere of his biological, emotional, spiritual, social and cognitive needs.

We should use all data sources, including both primary and secondary, to obtain information. The patient himself is the source of primary data, unless he is in a very serious condition or confused and unable to provide us with the information needed. We can obtain important information from secondary sources as well, which are other members of the health care team, family members or the closest persons of the patient, health records or other records or reports, but particularly the patient's health documentation (Farkašová 2006). The family members can provide us with very useful and necessary information during hospitalization, because they know the patient the best – they know his habits, customs, behaviour and his reaction to certain situations (Oláh 2006). Unfortunately, nurses use this information source very little so far, because they are not aware that the contacts with the patient's family and friends are very important, not only as an information source, but also as psychical support and cooperation source during nursing care, rehabilitation and preparation of the patient for return into the home environment.

Material and methodology

On the basis of the results of the first stage of research, in which it was found out that, out of 282 institutions participating in that research, the nursing process is implemented in 184 institutions, the station nurses of those nursing units in which nursing process is implemented were asked to fill out the second questionnaire. The questionnaire included 45 questions in total – 40 questions were focused on finding out the nursing process quality and the last 5 questions were focused on identification data of the relevant institution. We used data from 2057 completed questionnaires for data processing.

Results

2057 station nurses were addressed in the questionnaire research. Of these, 1567 (76.2%) work in state institutions and 490 (23.8%) in non-state institutions. 1996 (97.1%) nurses work in health-care institutions and 60 (2.9%) in health and social care institutions. 413 (20.1%) station nurses work in units having up to 14 beds for patients, while 572 (27.8%) nurses are station nurses in wards having 15-24 beds for patients. The largest number of station nurses, 708 (34.4%), work in wards with capacity of 25-34 beds. The lowest representation of station nurses, 364 (17.7%), was from wards having 35 or more beds for patients.

The station nurses were asked about the completed education of the nursing staff in their units in the scope of the research. Bachelor nurses work only in 368 (17.8%) nursing units of the research set, in a number of 493 in total. Master nurses constitute a group of 98 nurses, 91 (4.4%) from them working in nursing units of health care institutions incorporated into the research. Two nurses with PhD academic degrees work in the addressed institutions.

The group of nursing staff also includes nurses with higher professional education. Their representation in the health care institutions of the research set was as follows: in nursing units of health care institutions, the number of nurses with such education amounts to 3412, and in nursing units of health and social care institutions, to 41. The biggest number of nurses consist of nurses with high school education - 16 903 in nursing units of health care institutions and 302 in nursing units of health and social care institutions. Their number in individual nursing units differs according to the characteristics/orientation of the respective nursing unit. In 1505 (73.2%) nursing units, which constitute almost three quarters of the set observed, the number of nurses varies from 6-11. The results of the first two questions, which were focused on evaluation of quality of nursing process, show that health condition evaluation is always performed in 1872 (93.7%) nursing units of health care institutions. The research compared answers of nurses working in state and non-state institutions. Analyses showed a statistically significant difference between groups. This systematic evaluation is performed always within 8 hours of the patient's reception in 1684 (84.3%) nursing units. Comparing groups by education, showed that, in a group where there is one nurse with bachelor degree university education, 79.5% nurses answered that they perform the client's evaluation always within 8 hours. This is a statistically significant difference, in comparison with the total average of positive questions of 84.2%.

Two questions mapped whether the nurses ascertain how the patient perceives his health condition and wellness, and how he cares for his health. How the patient perceives his life values is ascertained in 1544 (77.3%) nursing units, but in only 938 (46.9%) nursing units, the nurses ascertain at the same time how the patient cares for his health. In case of health and social care institutions, the following results were obtained: how the patient perceives his health condition is ascertained by nurses in 54 (88.5%) nursing units, and how he cares for his health is ascertained by nurses in 47 (78.3%) nursing units.

Table 1 shows the results of the questions that surveyed whether the nurses ascertained from the patient information on alimentation, liquid intake, excreting, sleep and whether they performed evaluation of status of skin and additional skin organs.

	alimentation		liquid intake		skin defects		hair and nail condition		excreting		sleep	
	ZSZ1	ZZ2	ZSZ	ZZ	ZSZ	ZZ	ZSZ	ZZ	ZSZ	ZZ	ZSZ	ZZ
Yes	57	1605	51	1364	60	1927	52	1333	55	1842	48	1407
	95.0%	80.4%	85.0%	68.3%	100%	96.5%	86.6%	66.7%	91.7%	92.2%	80.0%	70.5%
No	3	343	6	552	0	8	2	198	0	26	9	498
	5.0%	17.2%	10.0%	27.6%	0%	0.4%	3.4%	9.9%	0%	1.3%	15%	25.0%
sometimes	0	49	3	81	0	62	6	466	5	129	3	88
	0%	2.4%	5.0%	4.1%	0%	3.1%	10.0%	23.4%	8.3%	6.5%	5%	4.5%

Table 1: Ascertainment of information of needs and skin evaluation (1-health and social care institutions; 2 – health care institutions)

Information of self-sufficiency of the patient in self-care is also very important for planning of the nursing care. In the set examined, the patient's self-sufficiency in self-care is assessed in 2009 (97.7%) nursing units; 1949 (97.6%) nursing units from that number are situated in health care institutions and 60 (100%) in health and social care institutions. The nurses most frequently use the following measuring techniques to measure self-sufficiency: assessment of nursing load is used in 58 nursing units of health and social care institutions and in 1907 nursing units of health care institutions; the Barthel test of basic skills is used by nurses in 31 nursing units of health and social care institutions and in 1672 nursing units of health care institutions; and the assessment of instrumental everyday activities is applied in 59 nursing units of health and social care institutions and in 1948 nursing units of health care institutions. At the same time it was found out that nurses in 51 (85.0%) nursing units of health and social care institutions and in 1726 (86.4%) nursing units of health care institutions record also factors preventing the individual from self-care in the documentation.

The results of the questions which focused on nurses' assessment of the quality of sensory perception, use of compensation aids and nonverbal displays of the patient, and whether they speak with the patient about mastering stress situations, are stated in detail in Table 2 according to type of individual institutions.

	Quality of sensory perception		Use of compensation aids		Following of nonverbal displays		Way of mastering of stress situations	
	ZSZ	ZZ	ZSZ	ZZ	ZSZ	ZZ	ZSZ	ZZ
Yes/always	58	1884	60	1935	54	1478	22	601
	96.6%	94.4%	100%	96.9%	90.0%	74.0%	36.7%	30.0%
No	0	22	0	16	1	68	2	174
	(0%)	1.1%	0%	0.8%	1.7%	3.4%	3.3%	8.8%
Sometimes / with some	2	89	0	46	5	451	60	1222
	3.4%	4.5%	0%	2.3%	8.3%	22.6%	10.0%	61.2%

Table No. 2 Ascertainment of other data for the patient database

Systematic nursing evaluation includes also evaluation of the sphere of interpersonal relations and life values. The nurses talk with the patient about relations in the family always in 37 (61.7%), but only sometimes in 21 (35.0%) of nursing units, and they do not talk about these relations at all in 2 nursing units of health and social care institutions. In health care institutions, attention is paid to

getting this information in 951 (47.6%) nursing units; nurses do it only sometimes in 964 (48.3%) nursing units and this information is not obtained at all by nurses in 82 nursing units. This sphere includes also the results of another question in which the nurses were asked whether they ascertain from the patient who the important person is in his life and who gives him support. Nurses ascertain this information in 1531 (76.7%) nursing units of health care institutions, they do not ascertain it in 100 (5.0%) nursing units and they do it only sometimes in 365 (18.3%) nursing units of health care institutions. The answer to this question was marked unclearly in one questionnaire from health care institutions. In case of health and social care institutions, the following results were obtained: this information is ascertained by nurses in 54 nursing units; it is not ascertained in 1 nursing unit; and nurses in 5 nursing units ascertain this information only sometimes. How the patient perceives his life values - life quality, faith, expectancies related to health, is ascertained by the nurses only in 609 (30.5%) nursing units of health care institutions and in 41 (68.3%) nursing units of health and social care institutions. Nurses do not ascertain it in 319 (16.0%) nursing units of health care institutions and they do it only sometimes in 1068 (53.5%) nursing units of these institutions. In case of health and social care institutions, nurses do not ascertain this information in 6 nursing units and they ascertain it only sometimes in 13 nursing units.

In the first stage of nursing process, the nurses should perform general screening examination – objective assessment of basic body functions indispensable for satisfaction of daily vital needs of man and of the patient's reactions to his current health situation. It is possible to state according to the results that this evaluation is carried out by the nurses in 1360 (68.1%) nursing units of health care institutions, in 228 not at all and in 408 only sometimes. One questionnaire contained an immeasurable answer to this question as well. From the health and social care institutions which were part of the research set, the following results were obtained: nurses pay attention to objective evaluation of basic body functions in 45 (66.6%) nursing units; they do not in 9; and they do it only sometimes in 6 nursing units.

Discussion

On the base of the results of the institution-identification questions, it is possible to describe further characteristics of the nursing units incorporated into the second research stage. From the total number of nursing units, 23.8% were in non-state institutions and 76.5% in state institutions; it was found out from the first research stage that 4.6% were state institutions and 51.4% were non-state institutions. The results show that, when working with patients, nurses in nursing units of state institutions use the nursing process to higher extent than nurses working in nursing units of non-state institutions.

The results obtained from the question focused on the nurses' education levels show quite clearly that bachelor nurses are only in a very low number in nursing units; these nurses are not represented at all in 82.0% of nursing units of health care institutions and in 86.7% of nursing units of health and social care institutions, although the nurses have had the possibility to educate themselves in their discipline at academic institutions in our country since 1993. It is obvious on the basis of the data that, principally, nurses working in the sphere of management and education were interested in increasing their education level. Nevertheless, the fact that transformation of qualification preparation of nurses took place, will quite surely change this situation in a short time, because the bachelor study in the discipline of general nurse runs simultaneously at several universities and colleges in our country, which clearly will result in a relatively fast increase in the number of nurses with bachelor education in Czech health care in near future.

The results of the questions focused on evaluation of basic needs show that in nursing units of health care institutions, the nurses pay most attention to the ascertainment of information concerning regularity of excreting (92.2%), use of laxatives, difficulties or disorders of evacuation. In health and social care institutions, the nurses pay most attention to the ascertainment of information concerning alimentation of patients (95.5%). We found similar or slightly higher results to the question in which we asked the nurses whether they performed evaluation of skin

condition, skin defects and lesions. On the basis of the results of this question, it can be seen that the nurses are aware that this information is important for assessment of the alimentation and organism metabolism. Regarding the results of further questions stated in Table 1, it cannot be said that these values are low, but with regard to the fact that they are related to basic needs, they are insufficient because nursing care should be focused on satisfaction of needs.

The results of questions related to higher needs were a little lower, about 50% in average, but in spite of that, they prove already that nurses are starting to become aware of the scope of application of nursing process and that they cannot perceive the individual as a set of parts or processes, but that they should, rather, deal with the human as with a whole, a holistic being. It is therefore paramount that the nurses become aware that respecting of modern approach to nursing and all essential changes taking place in nursing in last years are, both in nurses' education and in implementation of nursing care, focused on improvement of quality of nursing care, the centre of which should be the patient as a holistic being (Kilíková, 2002).

Conclusion

The results obtained from the answers to questions related to the first stage of nursing process show that nurses pay more attention to ascertainment of some problems in individual spheres and less attention to others. We would like to stress here that it is indispensable that the nurses pay sufficient attention to all spheres, all needs and that they respect unconditionally the elements of holistic approach in the first stage of nursing process. We know that the nurses' approach to the first stage of nursing process will influence the quality of the patient database established. We perceive very positively the finding that the nurses are aware that the first stage of nursing process is not equal only to getting the nursing history, but that this stage includes also the identification of the current status of the patient's needs.

The first stage of nursing process will contribute to the possibility that the nurse learns to know the patient well on the basis of the information collected and that she can plan and provide high-quality adequate nursing care on that basis (Carpetino-Moyet 2007). It is necessary to note that all nurses become aware that the knowledge of nursing process is unconditionally important for their everyday work. It is however necessary to become aware also that the quality of everyday work is influenced by knowledge and skills of nurses from other disciplines. The American expert from the sphere of nursing theory, Hildegard Peplau, wrote in her publication printed in 1952 that the nurse must continuously improve her knowledge, keep up with the development and modify continuously the knowledge obtained (Sedláčková 2003). It is true that this idea was expressed half a century ago, but it keeps being important in the nurses' work today.

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Contact

Prof. Dr. Valerie Tothova, Ph.D., R.N.
University of South Bohemia, Ceske Budejovice
Fakulty of Health and Social Studies
Department of Nursing care
Czech Republic
e-mail: tothova@zsf.jcu.cz

87. – Teaching nursing diagnoses to increase utilization in clinical practice. (Workshop)

By Carpenito-Moyet, LJ. (USA)

Although nursing diagnoses are taught in most nursing education programs, many clinical nurses do not utilize them after graduation. This presentation will focus on curriculum integration of nursing diagnosis. Strategies will focus on curriculum leveling of diagnoses from simple to complex. Focused classroom interactive activities and course assignments will be described. Students will experience a transition from excessive writing of care plans to professional, realistic documentation consistent with multidiscipline practice.

The use of nursing diagnosis by nurse practitioners and nurse midwives will be explored. Discipline expertise of nurses, nurse practitioners, nurse midwives, physicians and other members of the multidisciplinary team will be examined. Classifications systems to describe the expertise of all members of the multidisciplinary team will be presented. Examples of multidisciplinary clinical documentation will be presented.

Contact

Lynda Juall Carpenito-Moyet
48 West Wolfert Station Road
Mickleton, N.J. 08056
U.S.A.
e-mail : Juall46@msn.com
cell/mob: 609 617 32 75

88. – ICNP® catalogues

By Bartz, C. (USA), Coenen, A. (USA), Hardiker, N. (UK), and Jansen, K. (USA)

Introduction

The International Council of Nurses (ICN) launched the International Classification for Nursing Practice (ICNP®) Version 1.0 in 2005 (ICN, 2005). As a unified nursing language, ICNP® functions as a reference terminology that supports mapping between terminologies and as a resource for the development of ICNP® catalogues.

ICNP® Version 1.0 is a complex, comprehensive tool, including thousands of terms and definitions. ICNP® catalogues are subsets of the terminology, specifically nursing diagnosis, outcome, and intervention statements for selected nursing phenomena, specialties, practice areas, or client conditions. Catalogues make ICNP® useable in clinical nursing practice, supporting nurses working in different healthcare areas in the integration of the terminology into their care setting. The development and implementation of catalogues will expand ICNP® as new diagnoses and interventions extend the nursing domain content in the terminology. Early ICNP® catalogues are anticipated in the topics of ambulatory oncology care, self-care, pain, palliative care, woman's health, and HIV/AIDS care. ICN will publish guidelines for ICNP® catalogues for consistency of products worldwide.

Catalogue development

The purpose of this paper is to describe the development of ICNP® catalogues. The worldwide enthusiasm for ICNP®, coupled with increasing nursing documentation in electronic health records, supports nurse experts and informatics specialists in using ICNP® as a reference terminology and also in adding ICNP® diagnosis, intervention and outcome statements to electronic health records (EHRs). Simultaneous with the use of ICNP® worldwide, one of ICN's strategies for the development and dissemination of ICNP® was to publish a catalogue prototype in an area that would be useful by itself or merged into a larger catalogue. The topic chosen for the catalogue prototype was the phenomenon of adherence, which is recognized as relevant to nursing practice worldwide. Nurses constantly partner with clients and families to improve their adherence to treatment regimens.

Catalogue framework

ICN's first step in the development of a catalogue prototype was to establish a framework that would guide nurse developers and users worldwide. The framework included two major aspects: client and topic. Client was defined as an individual, family or group which receives nursing care (e.g. patient, client's family, adolescents, or community). Topics in the framework were in the areas of nursing phenomena (e.g., adherence, self-care), care specialty or setting (e.g., oncology, woman's health), and health conditions (e.g., HIV/AIDS). The client-topic framework provides a consistent structure for indexing catalogues as they are disseminated electronically (e.g., via the ICNP® website) or as printed publications.

ICN's prototype catalogue identified the client as 'clients and families.' The topic area was the nursing phenomena of adherence, more specifically described as 'promoting adherence to treatment.' Diagnosis and intervention statement lists were developed in the categories of physical, mental and behavioral, socio-cultural and environmental, and spiritual aspects of adherence. The lists were comprehensive but by no means exhaustive of the topic or ICNP®'s capacity for

supporting statement generation.

Since catalogues are meant to support nursing documentation at the point of care, the major aspects and the locally selected sub-areas of the framework allow maximum flexibility for nurses working with individuals, families and groups. Nursing documentation would be guided using sets of nursing diagnosis and intervention statements that would be available in the electronic health record or in paper systems. For example, pre-coordinated sets of nursing diagnoses for working with a client having pain (nursing phenomena), in an ambulatory cancer clinic (care setting), with a medical diagnosis of breast cancer (health condition) could all be made accessible to the nurse to assist in documenting the appropriate diagnoses, outcomes and interventions following assessment of the client.

The critical components of the catalogue will be the relevant nursing diagnoses, outcomes, and interventions. Nursing outcomes in ICNP® are the measure or status of a nursing diagnosis at points of time after a nursing intervention (ICN, 2001). Outcomes and diagnoses are both used to represent the health status of the client. In one case a concept (adherence to medication regimen) may be a diagnoses while the same concept may also be used to represent an outcome in another case.

Catalogue need and context

Another step in catalogue development was to demonstrate how to communicate to ICNP® users worldwide why a particular catalogue is needed and how the catalogue content helps to articulate the domain of nursing. Catalogue developers would establish the need for the topic with a brief description of the significance of the topic for care recipients and care providers. This could include essential literature references and current standards and guidelines for clinical practice in the selected topic. The documentation of the catalogue topic's significance takes on added importance as nurses worldwide consider the catalogue for their care setting.

The context for the catalogue's diagnosis, outcome, and intervention statements can be described and enhanced by including case studies, care plans, assessment guidelines, and references for the selected catalogue client and topic. As nurses use catalogues developed in another country, understanding of the catalogues and their application to practice will be improved with supporting narrative material. The use of catalogues across settings and countries will provide opportunities to expand content within catalogue topic areas and will assist in identifying areas needing further testing and validation.

A brief statement of the significance of adherence in nursing and healthcare was developed for ICN's prototype catalogue. The context was further established by providing an assessment tool to assist nurses in assessing client needs for assistance with adherence to their treatment. The significance statement and assessment tool, together with two case studies that included examples of nursing diagnoses and interventions, provided potential catalogue users examples about using the diagnosis, outcome, and intervention lists in practice.

Catalogue Validity

Clinical nurse experts are first-level developers of catalogue content since the clients in their care areas should benefit from systematic documentation using ICNP®. These experts would work with informatics experts and technicians to install the catalogue in the EHR or to make it available in print. In addition, nurse experts in other capacities (e.g., educators, administrators, academics, researchers) serve in valuable consultative roles in catalogue content development and in establishing catalogue validity before its publication, dissemination, and application.

The clinical development team works with content experts to articulate the significance of the topic for nursing and healthcare. The documentation of the catalogue topic's significance takes on added importance as nurses worldwide consider the catalogue for their care setting. Content validity, at a minimum, should be established by the catalogue developers and consultants.

A formal review of the ICN prototype catalogue was accomplished by sending the draft to

nurse experts around the world. Included with the draft was a short survey that asked about the logical flow of the material and also the content clarity, level, and amount. Reviewers were also encouraged to make additional comments about the material. The expert reviews of the catalogue prototypes provided valuable information that was used for revisions.

Conclusion

Nurse experts in clinical settings are using ICNP® to develop nursing diagnosis, outcome, and intervention statements for use with EHRs. These data sets, together with the supporting narrative material, will be important exemplars of ICNP ® catalogues. ICNP ® catalogues will support worldwide, systematic documentation of nursing practice, with the generation of data sets that can be used to improve clinical practice, decision-making, research and healthcare policy.

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Contact

Claudia Bartz, PhD, RN, FAAN
Coordinator, ICNP® Programme
International Council of Nurses
University of Wisconsin - Milwaukee
College of Nursing
PO Box 413 Milwaukee WI 53201
e-mail: cbartz@uwm.edu

89. – Using open source technologies to perform an ICNP® Version 1.0 into German language.

By Portenier, L., Tackenberg, P., Koenig, P., Widmer, R., Schrader, U., Portenier, L., Perhab, F. and the German speaking ICNP User Group (Germany/Switzerland/Austria)

Introduction

The release of ICNP® Version 1.0 in summer 2005 (ICN 2005) requires a new translation and an reworking of the German ICNP® Beta2 Version (Hinz et al 2003). Recognizing the ICNP® classification as a construction formed by nursing concepts and terminologies out of multiple mother languages and their transfers into English language, high demands will have to be met to reach an adequate context-specific and user friendly translation. It is intended that this translation will be used by German speaking nursing communities in Austria, Germany and Switzerland as well as in other German speaking regions.

Methods

The translation of ICNP® Version 1.0 into German language is set up as an official ICNP® Development Project. It is carried out under the responsibility of the ICN Accredited Research and Development Centre: Deutschsprachige ICNP Nutzergruppe (German-Speaking ICNP® User Group). Core members of the ICNP® User Group met to prepare the translation of ICNP® 1.0 in 2005 and 2006. A work schedule has been developed to perform a unifying and agreed translation by usage of a defined ballot approach. A public relation strategy has been planned to edit the official translation of ICNP® Version 1.0 accompanied by German speaking nursing associations.

The work is organized with open source technologies, namely a PhpWiki platform (Open Source Technology Group 2006) and a MySQL database. The technologies are well known and accepted as time and cost saving resources with high acceptance in terms of use. This approach is unique in nursing communities.

The PhpWiki platform is aimed to serve an interested group of nursing experts and associated disciplines to contribute to translation work. Further information on login procedure and registration is still available at the ICNP® User Group homepage: www.icnp.info. The PhpWiki platform serves as communication tool and provides registered users with many features like guidelines for translation, protocols of resolved problems, discussion boards and web-based resources like dictionaries, terminology tools, a list of useful links, a ready to use mailing list and video conferencing option, and more.

The translation work has been realised based on a MySQL database. The core application has been performed with XML data files of the ICNP® web browsers version 1.0 with lexically mapped ICNP® beta translations. It serves as a tool for translation and discussion. It provides the user group with the original ICNP® Version 1.0 and gives the possibility to produce as many translations of terms and definitions as possible. Many features are integrated to support search, sort and filter functions, to work on translation, to comment currently realized steps of work (results) and to discuss issues of interests. In general this tool is useable in all languages and as a multilingual tool, too. Currently (12/2006) it is planned to integrate the tool to the official ICNP® translation approach of ICN. A benefit of the tool is that it provides several options to filter data which alleviates orientation within the ICNP® classification. A transparency of currently available results of translation work is possible. For new users it is possible to contribute to the translation at several starting points, too. Translators are able to evaluate the translation. A function to provide remarks and recommendations supports terminology related discussions. Visualisation

of consented translations as well as rejected terms has been realised, too.

An expert committee is able to verify and to validate the translations through a ballot (similar to HL7-ballots) (Health Level Seven 2004) to reach a consent on preferred terms, synonyms and more or less untranslatable terminologies. Currently (12/2006) no ICN-guideline is available to support translation work. As soon as ICN releases more information these standards will be mentioned, too. Based on ICIDH-2 Beta-2 field trial study one guideline (WHO 1999) an ICNP® User Group internal guideline has been developed. The internal guideline is obligatory for translation work. The general aim is defined as following: the translation should capture the conceptual equivalence (not word-by-word translation or etymological equivalence only).

Three types of results should be produced during translation work:

1. Preferred Term: each translated concept of the source language meets a translated main concept in the target language only. This crucial process will be supported by the ballot approach;
2. Synonyms: for each translated concept of the source language as many synonyms as adequate could be proposed for the source language. Exception: synonyms are not allowed to change the meaning of the concept. Final decisions for synonyms will be accomplished with the ballot approach;
3. Suggestion making as options for proposed translations: each translator will be able to provide options for translations of concepts (as many as s/he likes).

Group discussions and a ballot approach will support decision making. All translations will be evaluated through these moderated approaches. The evaluation should recommend the quality of translation whether:

- a. Concept is equivalent within target language and source language;
- b. Concept has a reduced meaning in the target language;
- c. Concept has an expanded meaning in the target language;
- d. Concept causes different terms within target language (e.g. it differs between German language in Swiss and Austria);
- e. The distinction between two concepts get lost in the target language;
- f. Concept is translatable into target language, but differs from source language;
- g. Concept is untranslatable, no equivalence in target language available.

Results

The translation work has been started in May 2006. It is expected that first results will be presentable in spring 2007. The work is planned to be finished during 2007. A feedback report referring to recommendation on ICNP® terminology addressed to ICN will be provided. Several interesting field tests could be performed: acceptance of web technologies in nursing; ballot procedures to gain consensus on core concepts in nursing terminologies; cross-border usage of nursing terminologies in one language family and last but not least to test the feasibility of the MySQL database as a recommended translation tool for use in many countries.

Acknowledgements

Coordination of translation work is supported by administrative and financial resources of the German Nurses Association - DBfK, the Swiss Nurses Associations - SBK/ASI, and the Austrian Nurses Association - OEGKV. Without having sound initiatives and support from members of the German speaking ICNP® User Group realisation and performance of the project would not be possible.

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Contact

Peter Tackenberg, RN, MScN
German Nurses Association - DBfK
Salzufer 6
10587 Berlin
e-mail: tackenberg@dbfk.de

90. – Nursing information systems, ICNP and electronic patient records: from attitude to practice

By Caldeira, C., Reis, F., Andrade, M., Pedro, M. and Freitas, R. (Portugal)

Introduction

The importance given to information is increasing due to the need to control costs, improve efficiency, optimise management and mainly to promote the quality of care. We live in an era in which it is logical for nursing not to persist in indifference towards technological development, but to step forward to electronic documentation.

The General Health Department (2002), by recognizing the importance of “information” for the definition of health politics, declares that:

“Never as now, has the necessity of adequate information for service providing been so urgently experienced. The way in which this information is provided and used has changed rapidly with the development of specific applications for diagnoses support and treatment, and still, due to the pressure created by the need of cost-effectiveness in function of health costs.”

This reality, along with the regional project of “Nursing Information Systems and Electronic Patient Records” developed presently in Madeira with the purpose of implementing electronic patient records, led to our project: “Nursing Information Systems, ICNP and Electronic Patient Records: from attitude to practice”. This project is intended to evaluate the attitudes and practices of nurses in Madeira, towards the nursing information system, ICNP and electronic patient records, before and after an education programme and the implementation of the electronic patient records.

To develop our study we sought out information from various authors, connoisseurs of Nursing Information Systems, ICNP and Electronic Patient Records, namely: Goossen et al(1997), Goossen (2000), Pereira (2001), Silva (2001), Torres an Reis (2002), Teixeira and Cardoso (2003), Marin (2004) and Jesus (2005, 2006). For the methodological construct of our project we used mainly Gil (1991), Polit and Hungler (1995) and Fortin’s (1999) theoretical grounds.

There is a wide variety of literature that describes “attitude”. However there isn’t a linear way to define it, as these definitions are all complementary in the effort of maintaining the essence of the concept. In 1998 Mireya et al stated that “to talk about attitudes is to talk about something that predisposes the individual to respond, in a positive or negative fashion, to a certain stimulus. The attitude indicates, therefore, how the person takes place before himself/herself, the others and the things that surround him/her”. Sanmartí (1985) asserts that attitude is “a mental predisposition, acquired and durable, which incites the person to behave in a certain way, before a certain health subject”. Thus, the author characterises attitude in three components: cognitive, affective and conative. These components include indicators that helped us elaborate the data collection instrument. These indicators are: knowledge, opinions and beliefs; feelings and emotions; intentions and decisions, correspondingly. Regarding the concept of nurses’ practices we weren’t able to establish any author of reference in our bibliographic research since the definitions encountered weren’t adequate to the context of our study. Hence we defined practices as being the actions that an individual executes in his daily performance before a specific phenomenon. The regarding components established were: education/training, resources and utilization.

Methods

In order to develop our exploratory-descriptive and longitudinal study we determined the following research questions:

1. What knowledge do nurses have about nursing information systems, ICNP and electronic patient records?
2. What feelings do nurses express when dealing with patient records computerisation?
3. Are nurses aware of the need to develop capabilities to implement these new technologies in nursing practice?
4. Which actions do nurses carry out concerning the ICNP?

Therefore our investigation's main concern is: "Which are the attitudes and the practices of nurses towards the nursing information systems, ICNP and the electronic patient records?"

This investigation is a three-phased project with three distinct data collection moments. The first two occur with the application of a questionnaire and the latter with an interview.

- 1st phase: prior to the education programme - participating nurses are those whom have not yet attended the Electronic Patient Records and ICNP education programme;
- 2nd phase: post education programme - for the nurses whom have already attended the Electronic Patient Records and ICNP programme;
- 3rd phase: post-implementation of the Electronic Patient Records - to be put into practice after the nursing information system with electronic patient records is implemented in the Regional Health Service.

In the 1st and 2nd phases, data collection instruments included questions regarding the population's characterization and questions related to practices. Attitudes were evaluated by a section of statements with an adaptation of the Likert scale. Each statement presented four possible answers, each one of these with a different score, as follows: I totally agree (4); I agree (3); I disagree (2); and I totally disagree (1). In these phases, the participating nurses were selected with the non-probabilistic accidental stratified sampling method. Inclusion criteria were: being a nurse working for the Regional Health Service and not belonging to the group responsible for the education programme.

Results 1st phase

The first data collection took place from the 15th of October until the 15th of November of 2005 in all health care units of the Regional Health Service. In the 1st phase we applied 675 questionnaires from which 631 were considered valid.

Characterization of the population

Findings showed that 41.84% of the population were aged 21 to 30 years, predominately female (84.79%) and mostly with less than 10 years of practice (55.47%); 53.57% had bachelors degree and 59.90% graduation.

Variable practices

The data analysis withholds results regarding the dimensions: resources, education/training and utilization. Therefore, as to resources, we verified that 90.50% of the population owns a computer and that 80.03% has access to the ICNP. Additionally, 56.24% have access to the ICNP at work, 30.30% own one and 13.46% own one and has one available at work.

We believe that it is quite positive that 30% of nurses have their own ICNP for the reason that it demonstrates interest and motivation towards the implementation of this nursing classification. Concerning the dimension education/training 64.82% nurses have received schooling in informatics and 59.59% have attended programmes related to the ICNP. Furthermore 58.82% consider that these programmes were very useful. These results illustrate the greater importance that informatics has gained in our days. Nursing hasn't dwelled in indifference and at present (in Portugal since 1989) informatics is a basic discipline in the course of Nursing and is an indispensable requisite for the activity of nurses in our various areas of performance, namely nursing practice, education, administration and investigation.

With reference to the dimension utilization, we observed that 63.23% of the population is at ease to work with computers and that 57.84% regularly uses informatics programmes on a daily basis. As to the ICNP, 27.89% of the population admit to have never applied this classification. As a justification the inquired claimed the fact that the ICNP had not yet been implemented in the health care unit; absence and/or lack of formation to use it; little time; lack of interest and the fact that they had not yet needed to do so.

On the other hand, the 72.11% of nurses that have already applied the ICNP state that it was in the health care unit (41.50%), during the course (19.54%), during the graduation programme (19.28%), during formations in the health care unit (14.72%) and formation outside the health care unit (4.3%).

Although there still are a significant percentage of individuals who have not yet applied the ICNP we believe that it is possible to overcome the difficulties mentioned, in order to successfully implement electronic patient records with the ICNP in the Regional Health Service. In fact, the education programme which is currently in practice is an important step to do so, as we may remind that the participating nurses in this first phase were those whom had not yet attended the ICNP and Electronic Patients Records education programme.

Variable attitude

Data analysis revealed findings according to the three components we initially determined for this variable. As to the cognitive dimension (regarding knowledge, opinions and beliefs) results show a favourable attitude towards the implementation of Nursing Information Systems, as shown in Figure 1.

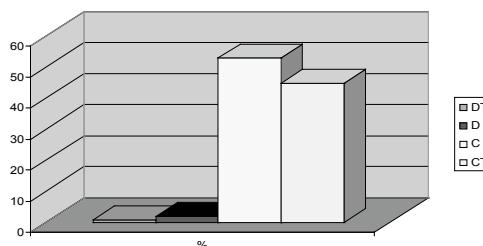


Figure 1: Distribution of nurses' opinions according to the degree of agreeability with the statement: "The implementation of new nursing information systems will help develop Nursing."

Legend: DT – I disagree totally; D – I disagree; C – I agree; CT – I agree totally.

According to Figure 1, almost all nurses (97.47%) agree with the fact that new information systems will help develop nursing and only 2.53% believe that it will not be so. These findings support Goossen's (2000) belief that the Nursing Information Systems will offer more information for nurses, of a multidisciplinary nature and much more rapidly, and therefore he/she will have more work conditions to provide personalized care, as well as more time to do so.

For the affective dimension of attitude (includes feelings and emotions) the scores are presented in the graphic below (Figure 2). We realized that most nurses (95,56%) find the concept to be a favourable one, although 4,47% do not think so. Nevertheless, the majority is in unison with the viewpoint of the General Health Department (2002): "never as now, has the necessity of adequate information for service providing been so urgently experienced. The way in which this information is provided and used has changed rapidly (...) due to the pressure created by the need of cost-effectiveness in function of health costs."

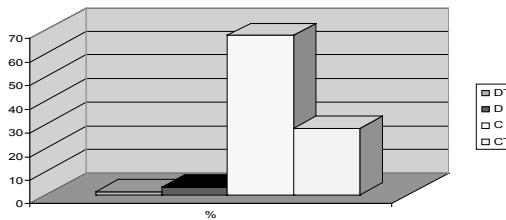


Figure 2: Distribution of nurses' opinions according to the degree of agreeability with the statement: "To me it is pleasing the idea of contributing, by means of the electronic patient records, for the development of health indicators which are sensitive to nursing care, improving health politics."

Legend: DT – I disagree totally; D – I disagree; C – I agree; CT – I agree totally.

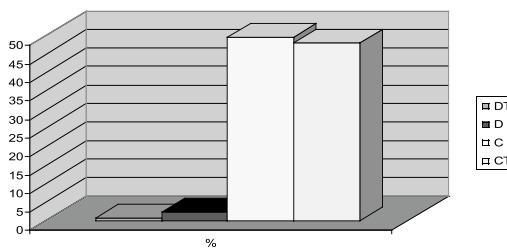


Figure 3: Distribution of nurses' opinions according to the degree of agreeability with the statement: "I intend to expand my knowledge about nursing information systems/ICNP/electronic patient records."

Legend: DT – I disagree totally; D – I disagree; C – I agree; CT – I agree totally.

We may corroborate that a majority of nurses agree with the statement (97.15%), although 2.85% of the population tend to disagree or disagree totally. This aspect is in agreement with Jardim and Jardim's (2001) findings about nurses' knowledge concerning the benefits of the introduction of information and communication technologies in the health care units. These authors verified that 55.3% of nurses have a very positive knowledge about this reality, as opposed to the 2% of nurses whom believe these technologies will not bring benefits for the health care units.

According to Goossen (1997), if nursing has to show its value nurses will have to have the knowledge and the ability to adequately and cunningly manage information and apply information and communication technologies in their activity of care providing.

A global view of the variable attitude is shown in Figure 4.

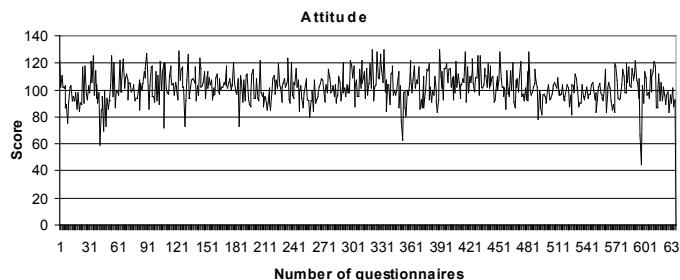


Figure 4 - Distribution of nurses' scores according to the variable Attitude

Bearing in mind that the average score expected for the variable attitude is 88, it is possible to verify that the nurses' attitude towards nursing information systems, ICNP and electronic patient records is primarily a favourable one ($X=101.76$). This indicates a large acceptance of the Nursing Information Systems, ICNP and Electronic Patient Records by nurses.

Results 2nd phase

The second data collection occurred between the 24th of July and the 8th of August of 2006. We applied 681 questionnaires in all the health units from the Regional Health Service, having received 641 valid ones. Data analysis is currently in progress. To organize and analyse data we are using the content analysis method and the computer program Statistics 7.0. The findings of the 2nd phase of the investigation shall be presented in the ACENDIO Conference.

Conclusion

In view of our opening research questions and regarding the 1st phase of our investigation, we may substantiate that, in general, nurses in the Regional Health Service of Madeira reveal a favourable attitude towards Nursing Information Systems, the ICNP and Electronic Patient Records. These findings are supported by other researcher's results, namely those regarding quality improvement and superior efficiency in nursing practice, among others.

We find it relevant to mention that nurses feel that the implementation of electronic patient records will allow a larger visibility of the contribution that nursing care has upon the health benefits of the population.

Analysis pertaining to nurses' practices also discloses that the population has actively engaged in actions that involve education/training and utilization of resources regarding the Nursing Information Systems, ICNP and Electronic Patient Records.

We believe that these aspects are very positive, providing important information regarding the conditions necessary for the success of the regional project in progress and will favour a tranquil implementation of the Nursing Electronic Patient Records in the Regional Health Service.

Authors' Note

Élvio H. Jesus is project coordinator for this study.

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Contact

e-mail: reis.mena1010@gmail.com

91. – Consistency in classification of nursing language: a comparison of the Nursing Interventions Classification 4th edition and the Belgian Nursing Minimum Data Set II.

By Bollen, L., Sermeus, W., Michiels, D. and Van der Mussele, H. (Belgium)

Objective

AZ Sint-Augustinus, Antwerp, Belgium is a hospital with a capacity of 598 beds and is one of few Belgian hospitals where an Electronic Patient Record (EPR) is used in practice, as part of the order communication system, “Patient Care System” (PCS), that is in place in the hospital since 1990. In an EPR, it is recommended that a standard or local nursing language should be used in order to encode the data of patients in an uniform and unambiguous way. This information is stored in a local care catalogue (LCC).

For the migration to a new EPR AZ, Sint-Augustinus wants to map its current LCC to the Nursing Interventions Classification 4th edition (NIC 4th edition) and to Nursing Minimum Data Set II (NMDS II) in order enhance benchmarking and to extract automatically and continuously Nursing Minimum Data Set II (B-NMDS-II), a data registration tool that is mandated by the Belgian government. Furthermore, the hospital management wants to facilitate the development of care and exchange of data in order to enhance the internal communication and the planning and documentation of the care process.

The goal of the project is to explore the relation between the local nursing language, NIC 4th edition and NMDS II.

Methodology

All activities in the LCC were mapped to NIC 4th edition and NMDS II. The research project took place between February 15, 2006 and March 17, 2006. The team of raters consisted of the research assistant (LB), the R&D team of AZ Sint-Augustinus and seven NMDS II experts from several Flemish hospitals. In total, 573 activities of the LCC are mapped from the local nursing language to NIC 4th edition and NMDS II by four independent raters.

Results

69% of the LCC is represented in NIC 4th edition and 64% in NMDS II. In total 118 activities (21%) of the LCC are mapped with 100% consistency to an interventions of NIC 4th edition. 276 activities (48%) of the LCC are mapped with 100% consistency to an item of NMDS II. In total 135 interventions of NIC 4th edition (26%) are mapped to one or more activities of the LCC with a consistency > 50%. 46 items of NMDS II (51%) are mapped to one or more activities of the LCC with a consistency > 50%. 48% of the activities of the LCC are mapped to NIC 4th edition and NMDS II. 12% couldn't be mapped to NIC 4th edition neither to NMDS II. 93 interventions of NIC 4th edition (18%) are mapped between 90 and 100% to a same item of NMDS II. Only 7 items of NMDS II (8%) are mapped between 90 and 100% to a same intervention of NIC 4th edition.

Conclusion

In the scope of the actualisation of NMDS II AZ Sint-Augustinus adapts its EPR in order to extract automatically and continuously NMDS II data. The LCC is more extensive than the NMDS II. Only 51% of the activities in the care catalogue are unambiguously mapped to NMDS II. Therefore manual coding by a nurse will remain necessary. As the LCC is not completely represented in NIC 4th edition, the use of NIC 4th edition is not fully helpful.

Contact

e-mail: bollenlieve@hotmail.com

92. – Can nursing domain knowledge be reflected by nursing diagnoses and interventions?

By Thoroddsen, A. (Iceland)

Abstract

Transformation of nursing data into information and nursing knowledge increases in complexity of each step and requires intellectual activity on behalf of nurses. As health care providers nurses are more and more recognised as knowledge workers.

Background

Research results show that structured documentation (for example, nursing assessments and care plans) improve completeness of nursing documentation (Daly et al 2002, Darmer et al 2006) and provide better continuity of care (Keenan and Yakel 2005). Research results also show that structured documentation and knowledge and use of standardized languages provide more reliable and meaningful nursing data (Dochterman et al. 2005, Keenan et al 2003). Keenan and co-workers (2003) emphasized the importance of nurses understanding in depth the meaning of nursing concepts to be able to use nursing diagnoses, outcomes and interventions in a reliable and valid way. The literature also emphasizes the importance of nurses' knowledge of linkages between nursing diagnoses, outcomes and interventions (Dochterman et al 2005, Keenan et al 2003, Maas and Delaney 2004) and that the linkages are retained to reflect clinical judgments by nurses (ANA 2003). In doing so knowledge domains in nursing can also be built.

Methodology

A project with the overall aim to improve the nursing documentation through educational effort was introduced at Landspítali University Hospital in Iceland (LUH). A survey was done in nine different divisions in the hospital of nursing records of patients who had been admitted for at least two days (n=304 in 2005). One of the research questions was: is domain knowledge reflected in clinical nursing data through use of standardized nursing languages?

Results

Different types of nursing interventions were documented for the same nursing diagnosis in surgical wards, internal medicine wards and rehabilitation. Pain was, for example, frequently used in these divisions but the documented nursing interventions varied in frequency (10, 7 and 6 respectively) and types. Sleep enhancement and Relaxation was only documented to be used in rehabilitation wards, whilst Medication Management: Intrathecal was only documented in the surgical wards and Heat Application and Behavior Modification was documented to be used in the medical wards. More examples of domain knowledge will be given.

Discussion

The various factors of nursing documentation can create the knowledge base for clinical nursing and research. Results from this study indicate that domain knowledge can be reflected through documented data with standardized languages and nursing knowledge. With more data, linkage of nursing diagnoses, interventions and outcomes to more specific patient population could be done.

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Contact

A.Thoroddsson
Landspítali University Hospital and Faculty of Nursing
And Örebro University, Department of Caring Sciences, Sweden
Eirberg, Eiriksgata 34
101 Reykjavík
Iceland
e-mail: astat@hi.is

93. – Electronic clinical case study documentation as a tool for multidisciplinary nursing communication: development of clinical and university setting specific NANDA/NIC/NOC classification and database system in geriatric nursing care

By Horvat, D., Trobec, I., Žvanut, B. and Plazar, N. (Slovenia)

One of the main pedagogical goals set for nursing care students at College of Health Care Izola, University of Primorska, Slovenia is to develop professional need and necessary skills for multidisciplinary practice, including advanced communication skills for a student and later a professional nurse to be able to understand and participate in holistic patient care as an equal partner.

One aspect of successful nursing communication in multidisciplinary practice represents the use of modern information and communication technologies (ICT) in and beyond health care, which has become mandatory according to the 2010 e-Health Strategy and European e-Health Area action plan. Services and technologies such as e-learning, nursing care databases, and tele-operating nursing care can provide health care professionals with access to the latest knowledge and help them in their work.

A modular learning system was developed, based on Henderson's nursing care theory, the Technology Acceptance Model and the Innovation Diffusion Theory that simulates a possible live multidisciplinary approach in the field of ICT and NANDA/NIC/NOC systems and in vivo patient interaction. It was tested between March and June 2006 on a test group of 60 1st year undergraduate nursing care students with the goal of defining possibilities of ICT in the field of clinical case study, relating to nursing care process definition, NANDA nursing diagnosis testing, and NOC outcomes/NIC interventions tailored in accordance with Slovenian nursing care list of registered nurse competences.

The results of the project included functional e-clinical case study student documentation in the field of geriatric nursing care, and belonging electronic database that enabled in depth research of geriatric patients on the basis of in vivo collected data resulting in definition of statistically important geriatric nursing diagnoses outcomes and interventions, and consequently didactic geriatric nursing care e-materials supported by research data. A functional horizontal interdisciplinary communication system between student teams caring for patients developed in terms of relaying critical information that enabled the continuing nursing care. Students described it as intuitive systematic in relation to clinical case study, less time consuming, "all inclusive", visually appealing, and cost effective. Furthermore, efficient vertical multidisciplinary nursing communication was established where short teacher to student response time, up-to-date integration of new professional developments, daily growing research database, and on-click student progress monitoring was valued by the teachers. Although certain fears existed that the use of ICT would standardize nursing communication to a degree where live communication would be compromised to a degree that would be damaging to human relations and work efficiency (thus actually being counterproductive) the opposite was observed.

Future development includes the development of interactive student tele-nursing data set system with functional geriatric NANDA / NIC /NOC nursing classification tailored to Slovenian nursing care professional specifics that could be also used as a student log book.

Contact

Dean Horvat
Univerza na Primorskem
Visoka šola za zdravstvo Izola
Polje 42
6310, Izola
Slovenia - SI
phone: +386 5 6626 475
fax: +386 5 6626 480
e-mail: dean.horvat@vszi.upr.si

94. – Preparing undergraduate nursing students for communicating in multidisciplinary practice: a focus on clinical reasoning and clinical decision-making skills.

By Lyte, GMC., Waterman, H. and Rees, J. (England)

Introduction

This paper presents the findings from a three-year research project which has been exploring the development and early employment of undergraduate, pre-registration nursing students in the United Kingdom (UK), with a focus on their clinical reasoning and clinical decision-making skills. Graduate nurses in the UK have previously been perceived as being under-skilled at the point of qualification (Lyte 2004). However, earlier research has tended to focus on operational, technical skills only and findings are conflictive. In contrast, recent research from the United States has, for the first time, shown a link between education levels of nurses and patient outcomes (Aiken et al 2003).

Methods

A qualitative case study design was used, because case studies focus, in-depth, on the particularity and complexity of a phenomenon (Stake 1995). Fifty-seven students were observed over a two-year period. Twelve of these students, their university teachers and clinical mentors were also observed and interviewed in more depth. In addition, senior education personnel in the university, senior stakeholders in local National Health Service (NHS) Trusts and education commissioners were interviewed. Finally, documentary reviews of students' portfolios, assessed work and curriculum documents were examined.

Findings and discussion

Findings reveal that graduate nurses are now highly sought after in the UK's NHS, in particular because of their problem-solving skills, questioning approaches and their willingness to learn and underpin care with sound knowledge. In this study, a major indicator of graduate nurses' employability was their ability to work collaboratively with other disciplines in assessment, diagnostic reasoning and clinical decision-making. This employability factor was regarded as a priority among chief nurses, education commissioners, lecturers, clinical educators and representatives of the Royal College of Nursing, because it is in keeping with priorities in UK health policy for multidisciplinary working. Data from the students and their clinical mentors shows that the students had developed a lot of confidence in their ability to interpret, communicate and act upon assessment data, with support, towards the end of their programme. This paper presents data from the research which reveals the significance of clinical reasoning and clinical decision-making skills to prepare graduate nurses for communicating in multidisciplinary practice in the UK.

Conclusions

The research in this paper highlights the importance of developing sound clinical decision-making skills prior to registration as a nurse. In the UK, these skills are refined further for advanced practice roles, where the concept of nursing diagnosis, for example, is more easily recognised.

Recommendations include incorporating more shared learning and working with students from other disciplines, particularly in areas that develop critical analysis, clinical problem-solving and multidisciplinary working. In addition, it is recommended that nursing diagnosis, interventions and outcomes are included as a more transparent focus for pre-registration nursing curricula in the UK.

Contact:

Geraldine MC Lyte
14 St Johns Road
Heaton Mersey
Stockport
Cheshire SK4 3BR
United Kingdom
phone: +441614425389
cell/mobile: +447799664838
fax: +441612757566
e-mail: Geraldine.Lyte@manchester.ac.uk

95. – Developing a learning environment to improve communication in clinical practice using nursing data set.

By Patiraki, E., Leventelis, Ch., Kampitsi, A. Dimoni, Ch., Govina, O. and Chatzopoulou, M. (Greece)

Background

Despite great difficulties faced in clinical practice Greek nurse educators are striving to improve clinical instrumentation and to promote students nurses' critical thinking and communication in multidisciplinary practice.

Aims

This study reports on an educational clinical practice programme which aimed to promote effective communication in clinical settings using a structured nursing data set.

Methods

The project was initially introduced to the second year nursing students at the University of Athens, during the spring semester in 2006. Following the theoretical and workshop preparation the nursing students ($N=165$) collected data, during their compulsory clinical practice, in the form of field notes from 165 patients. These involved an assessment sheet based on 11 of Gordon's functional health patterns, a sheet with NANDA nursing diagnoses, translated into Greek and a nursing care framework comprising the phases of the nursing process. Each student monitored his/her own patient for one week, assessing needs, recording nursing diagnoses and outcomes and planning interventions. Moreover they attempted to implement the interventions and evaluate the effectiveness of nursing care.

Results

Despite the difficult working nursing conditions in most hospital settings all students were in a position to identify the problematic patterns and to use the NANDA nursing diagnoses. Students themselves reported that they were forced to look beyond the medical diagnosis and were assisted with concrete thinking and relationship building. Moreover they indicated that they were helped to question their assumptions and the implications of the care they provided. The majority was satisfied with this written systematic nursing care and acknowledged the importance of the nursing data set and its practical implication.

Conclusions

It is obvious that structured documentation encourages nurses to start thinking critically and to take a different approach in patient care in a country where the nursing process is still not well implemented, mainly due to a huge nursing shortage. However, although most of feedback was positive, with recommendations for their continued use, students did express concerns around how time would be restrictive for implementation in real clinical circumstances.

Contact

Elisabeth Patiraki
Faculty of Nursing
University of Athens
123 Papadiamantopoulou Street
GR-11527 Athens
Greece.
phone: +30 210 746 14 64
fax: +30 210 746 14 76
e-mail: epatiraki@nurs.uoa.gr

96. – The legal and professional impact of nursing culture on effective documentation.

By Chiarella, M. (Australia)

In case law there are numerous examples of instances when nurses have been disadvantaged because doctors have given evidence about nursing matters. However, there have also been occasions when medical and nursing evidence was in conflict and the courts have accepted both at face value (Staunton and Chiarella, 2003).

Sometimes this has advantaged nurses in regard to both verbal (Savoie v Bouchard 1982, Corley v North West Hertfordshire Health Authority 1997) and written (Briffet v Gander and District Hospital Board et al 1992) evidence. However, on numerous occasions the poor quality of the nursing records has meant that the courts have (understandably) taken them literally and found their depiction of nursing care wanting. Perhaps because nursing has an oral tradition (Lumby 1991, Street 1992), the nursing records have never been the major focus of authenticity for nurses. Greater reliance has traditionally been vested in the oral nursing handover (Parker 1994).

This does not excuse poor recording practices, but it goes some way to explaining them. Clearly this is problematic for nurses who wish their records to be accorded the same authority as those of medical practitioners. Especially when witnesses have poor recollection of events, judges rely on written evidence, meaning that nurses who do not produce accurate records will find it difficult to have their story heard (Chiarella 2002). When nurses' charts and times have been tendered in courts and tribunals, they have been found to be inaccurate, and the nurse witness's credibility has suffered as a consequence (Laidlaw v Lion's Gate Hospital et al 1969). This (fairly common) inaccuracy elicits considerable irritation in the judgments (Joseph Brant Memorial Hospital v Koziol et al 1977, Inquest touching the death of MWF 1993, Farrell v Cant et al 1992, Inquest touching the death of CWCK(T) 1994, Hill v West Lancashire HA 1997). Although medical records have also been the objects of judicial criticism, there is a stronger written culture in medicine and thus a tendency to greater accuracy (Breen v Williams 1996). This has enabled their records, and thus their evidence, to carry more weight than those of nurses.

This paper will explore the legal and professional impact of communication culture amongst nurses with particular emphasis on written documentation. The need for rigorous and careful documentation is a critical issue in all aspects of health care (Kerridge et al 2005), and an area of particular concern for the author (Chiarella 2006).

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Contact

M. Chiarella
Centre for Health Services Management
11A The Terraces, University of Technology, Sydney
BROADWAY NSW 2007
Australia.
phone: +612 951 498 44
fax: +612 951 498 46
e-mail: mary.chiarella@uts.edu.au

97. – Nursing language in a global perspective (Keynote)

By Prof. Barbara Parfitt (UK)

Introduction

Good afternoon everyone. It is a great pleasure to be here with you and before I embark on my presentation I will introduce myself. Until recently, and for the past 11 years, I was the Dean of the School of Nursing & Midwifery at Glasgow Caledonian University. My new role is Director of Global Development in Health, spearheading a new international health initiative for the University. My nursing background is international health and contrary to today's programmes provided for those working overseas, when I undertook an MSc in International Health in the 1970's we were not allowed to use any technology apart from rather primitive calculators. The rationale was that when working in developing countries such technology would not be available and so everything had to be done in a non-technological manner, and that included all the statistical calculations that had to be done with a paper and pencil. This has proved to be a wrong judgement as technology is now a critical part of development and providing technological solutions to health problems at an international level is extremely important. Reading the future is important for future planning and today's investment of time and energy.

The School of Nursing, Midwifery and Community health (NMCH) at Glasgow Caledonian University is a World Health Organisation Collaborating Centre and currently hosts the Secretariat for the WHOCC Global Network. Glasgow Caledonian University is a new University with strong links to health and development. We have also recently been elected to the International Medical Informatics Association. We have a strong representation in a variety of other relevant organisations such as the British Computer Society - the Nursing Profession's Information Group, and within our research programmes there are a number of e-Health & Informatics research projects. These include Derek Hoy's 'Templates' project (in the programme) and the virtual college. We provide some undergraduate and post graduate education in the field of informatics and we are developing more. On a consultancy basis we provide expert teaching to senior staff of NHS 24 and informatics expertise to both the English and Scottish National Health Service and to developments locally within Glasgow.

Currently we have an exciting new project underway within the School of Nursing, Midwifery & Community Health to simulate the knowledge context of clinical practice within our Clinical Simulation Laboratory. We are relatively new to this field and have yet to make a significant impact; however, we are making strong progress on a number of fronts.

Nursing as a Common Value System

We are now nearing the closure of this very full and invigorating conference and I would like to thank you for giving me the chance to speak to you on the topic of nursing language in a global perspective. It is a great privilege to be part of this conference, the standard of the papers and presentations has been exceptional, highlighting amongst other things the importance of information technology, systems that utilise information health data and the development of common symbols and language so that we can communicate more effectively through technology. Our keynote speakers have challenged us to think critically, to work in an interdisciplinary way using integrated patient care and they have suggested ways to provide multi-disciplinary education in informatics. My paper is the final keynote and the topic is fitting for the close of the conference. Whatever our field of expertise we cannot ignore the context in which it is applied. Nursing is an

activity that contributes to health care and the nature of nursing practice will be determined by the predominant health needs evident within a given situation. If the service provided does not meet the local needs then it is inappropriate. In today's world we face a very different set of health challenges than did our predecessors and our professional expertise; skills and tools must reflect these differences. It is doubtful if there is such a thing as universal nursing, yet we are bound together by a common set of values. Much of what we recognise as professional nursing in today's world has arisen from a western medical model of care that has been adopted by most countries, albeit in some countries it is intertwined with indigenous medicine. Yet within the framework of modern medicine there still lie great differences and the range of skills, expertise and the characteristics that define the nurse are very variable across the world. Competencies cannot necessarily be transferred from one place to another. Expectations are different and standards are applied and not finite.

Almost two decades ago I explored the activities of nurses worldwide in an effort to identify some of the underpinning values and beliefs that nurses held internationally. I illustrated the findings on a continuum showing that nursing cannot be defined by activities, tasks and protocols but that it is rather about a shared value system with caring as the predominant value. The key difference in many cases between the doctor and the nurse, apart from educational preparation, was and still is that caring underpins the core activities of the nurse while diagnosis, treatment and cure are the predominant concern of the medical profession. This is not to suggest that the medical profession is not caring, or that nurses do not diagnose and treat, it is rather to define the different framework in which they operate. In some countries where the caring component is missing, the activities carried out by these individuals are better described as those not of a nurse but of a medical technician.

If we accept then that nursing has a common value system we must also recognise that a key characteristic of the nurse is the range of competencies that make up their portfolio of activities, it is unlimited and determined largely by the context in which they work and the level of decision making that they employ in that work. Therefore how do we identify a common language for this wide range of activities? Or rather, is the focus on the decision making and the standards to be achieved rather than the actual activity? This is your challenge, but perhaps it is worth remembering that a common nursing language can promote communication and facilitate common standard setting but it also may create an exclusivity of the professional language leading to a separation between nurses and other health care providers, so preventing interdisciplinary and multi-professional working. Should we be reinforcing our common language in nursing? Or rather, should we integrate our language with that of other health professionals so as to allow for a common understanding across professional groups?

Nursing language within a Global Context

Whatever your response to this question it is necessary to recognise the importance of the contextual and global situation in which nursing and its language currently sits. It has been suggested that in 20 years there will not be nurses as we know them today. Are we prepared for this change? Do we understand it? Is what we are developing in technology going to be fit for purpose in 20 years? We cannot, as has been said graphically, spend a lot a lot of time moving deckchairs on a sinking pleasure liner when we should be addressing the main problem of the hole in the hull.

What I hope to do in the remainder of this presentation is to set your work in the context of the issues that face nursing world wide. In this way I will attempt to put the proceedings of the past few days into their proper perspective. But just to remind us again of the importance of language let me recall with you an ancient story, it is one I think you will know well.

'Once, at the beginning of time, people spoke the same language, they all understood each other and could communicate with each other. But they grew proud and started to build a city with a tall tower. God did not like this at all as he felt that because the people all spoke the same language they were proud and felt that there was nothing that was impossible for them. So to

remind them of their own humanity he scattered them across the world and made it so they could not understand each others language, and this took away their pride and helped them realise the limitations of human kind.'

The moral of this story for us is I believe, that we must not become too proud and believe that because we have technology and can enable people to speak to each other across languages and cultures we can solve the real and deep problems of the world. It is not so, and we must humbly recognise that there are many big issues out there and technology does not have all the answers. It can however make a valuable contribution, and the challenge we must accept is to identify where maximum benefit can be gained and least harm done.

Language is a symbol of culture, it is the supreme cultural symbol as it reflects the values and beliefs of any given society or group. Without language everything remains undifferentiated and only observable. Saussure (1974) founded the discipline of Semiology where language is viewed as a self-contained system rather than a philosophical problem or social tool. He described two theoretical entities in language, one the signifier or the sound image and two the signified or the concept and the expression of the idea. It is often easy to locate the signifier with symbols and sounds but less easy to transmit the signified which is the idea behind the symbol. Those underpinning values and beliefs that I spoke of are critical to understand if we are to transmit through our technology both signifier and signified. Ethnoscience which uses Saussure's theories is the systematic study of a way of life used by anthropologists, it is understood through the process of ethno semantic analysis or the study of meaning in language, or to put it more simply we can understand something of the reality of another persons experience from the way they talk about it rather than simply the words that are used. We know that communication is essential for efficient effective and safe health care. Yet we also know that increasingly where nurses and other disciplines are from different cultures and countries communication is difficult. When communication becomes less assured the efficiency, effectiveness and safety of health care delivery can be compromised. The increasing prevalence of communication technologies and telemedicine within cross cultural health care makes this an even greater risk.

It is suggested that these situations can be improved with the use of standardised and coded communications systems. ICD 10, for example, so allowing for international data on diseases to be shared, aggregated, and compared. But despite our best efforts we do not have an equivalent nursing system that is equally useful for recording direct care and for secondary purposes such as gauging the effectiveness of interventions, or indeed for making international comparisons. This remains a challenge to nursing and it has been gratifying in the past few days to see all the work currently underway to meet these challenges.

Issues in Global Health

What is the current Global situation for Nursing and Health Care in which technology will play an increasingly large part? What are the key international issues that influence what we hope to develop? The Millennium Goals adopted by the United Nations and other international organisations set out the key areas that have to be tackled in order to improve health and well being worldwide. The primary goal is to reduce poverty, for with the reduction of poverty other great improvements, including improved health, will emerge. Globalisation is the means by which many believe that the Millennium Goals will be achieved. It is expected that the benefits will be seen in terms of a reduction of poverty, re-distribution of wealth, improved health status and the global management of disease and ill health. A pooling of resources with improved levels of education and increased tolerance of cultural and religious differences. Globalization is also expected to encourage positive results from migration that lead to the sharing of expertise across nations in addition to improved technology and communications. The negative consequences of globalization might well be described as an upsurge in sectarianism with global unrest and terrorism, a widening gap between rich and poor and migration that leads to the rapid spread of disease, especially communicable diseases such as HIV/AIDS. It is also proposed that

globalization will give rise to a free trade situation, leading not only to an economic boom but also to an increase in the availability of cigarettes, drugs and pornography.

Globalization is a development process that is centered on the premise that a global economy will lead to positive economic benefits for all nations rich or poor. The evidence to date is that globalization alone will not achieve such a desirable outcome. This will only be achieved with a positive commitment from the rich countries towards key development strategies that support the achievement of the goals.

The reality is that globalization brings both benefits and disadvantages that are matched against each other. Hence the reason why Governments need to engage with the agenda, in order to put in place strategies to maximize the benefits and reduce the risks. A combination of the failure of Governments to engage with the UN agenda and the inherent poor governance that exists in so many developing countries, coupled with poor finances and a lack of commitment from the wealthy countries, reinforces a situation that with the political will could be resolved.

Two Key Issues

There are two key issues in health care that underpin many of the current problems that we are faced with internationally these are a shortage of health care professionals and a failure of health care systems to serve their purpose.

I. Human Resource Issues

Currently the development of health care globally is in crisis. This includes both developing and developed countries in the North and the South. This crisis is shown most graphically in the general worldwide shortage of health professionals to deliver the service. The WHO has stated that the future health crisis of this next millennium is not a disease but the lack of human resources to deliver the necessary health care services (WHO 2005). A further critical factor is the provision of funding to support projects at a local level that will assist in the achievement of the millennium goals

In order to address this problem at a global level and in particular in developing countries, it is argued that it is critical that human resource issues of education and professional expertise be addressed.

Human resource supply in many developing countries has faced years of national and international neglect. The low density of health workforce globally is put down to four key reasons:

Insufficient training opportunities; the deteriorating health of the workforce, particularly in Africa as a result of HIV/Aid's; rural imbalance and the brain drain. (WHO Abuja 2004)

II Changing Health Systems.

A second key issue in health care development is the need for health care systems that serve their purpose (World Bank 1993).

Little reference is made to Alma Ata declaration these days with its aim to provide a primary health care led service. Health reform is now largely about financial and economic strategies to support new organisational structures rather than philosophical statements relating to community participation and accessibility of services. Health reform has decentralisation and reduced public spending as its main elements. It also includes basic packages of care, financing through increased cost sharing or privatisation and improved information systems (Hearst & Blas 2001).

What is often missing in the new health reform policies is the incorporation of a cultural context to the proposed reforms. The failure to consider the key dimensions of culture when implementing new health systems, particularly those that primarily focus on financial and economic outcomes,

was emphasised by Hofstede (1991) and Atkinson (2002) who both stated that key dimensions of culture are essential to consider in any reform programme. Some of the key cultural values that they describe focus on relationships with people, community organisation, decision making and the differing balance of power within the system. The influence of masculinity, collectivism and individualism are also highlighted.

Although not focusing on the community centred policies of Alma Ata and 'Health for All' it must be acknowledged that there is in the health reform approach an inherent component that focuses on Investment in People (World Bank 1993, World Bank 1995).

The World Bank development reports of 1993 and 1995 set out objectives to improve the health and nutrition and population outcomes of the poor through the enhanced performance of health care systems. They argue that in order to do this it is necessary to secure sustainable health financing. Without adequate financing no system will achieve the outcomes it strives for whatever the philosophical underpinning. Conversely the effectiveness of any health care system, however well financed, needs to be measured in terms of its overall impact on the health of the community. The key impact factor that should be considered is whether the health sector services are able to support people throughout their life cycle. Simplistic vertical medical interventions often fail because they do not take account of behavioural changes of individuals and communities over time.

The introduction of new health systems that are directed towards achieving positive health outcomes also often fail. The literature shows that there are a number of reasons for such failures (Penchas 2000). Arrangements for implementation of new health services are often diffuse and not consistent. The reforms themselves are often intensely political driven, rather than by the health need of the society. Any new health system will require institutional change and frequently there is huge resistance to that change from institutions. The high cost of illness requires financial models that are often sophisticated and out with the capacity of Governments who have other demands on limited funds. The private sector is becoming increasingly significant but with continued high levels of market failure. Many Governments have an important role but weak institutional capacity (Beyer, Preker, Feachem, 2000).

What is clear is that there is a need for international collaboration and partnership with Governments to bring about the health reforms required.

To change these systemic problems countries have identified the following needs: External financial resources; a broad global perspective and inter-sect oral expertise; long-term commitment - since even small changes can take as long as 10-15 years to realise; and an understanding of local circumstances, economic, political, social and institutional. (Beyer, Preker, Feachem, 2000).

Global Nursing issues

But let us come closer to home and look for a moment at those issues that face nursing.

As I have mentioned previously the health challenges that we face in today's world are different than those experienced before. That is not to say that basic human needs are any different, we still want to be cared for when we are sick. We still need someone who will meet our needs on a very basic level. What is different is our expectations.

In the Western world we believe that we have a right to be well. Illness and ill-health are something we don't deserve. We expect advances in medicine to cure us and if they don't we want to blame someone. Technology allows us to discover everything about our problems and the respect that doctors and nurses were given for their unique knowledge is no longer evident, for we believe we can all access the knowledge we need when and how we want it. (Perhaps the story of the Tower of Babel has meaning here!)

The reality is that globally we are facing the major challenge of chronic disease as well as a rise in acute infectious diseases that no longer respond to antibiotics. In Scotland there has been a new emphasis in Government policy to focus on the delivery of primary care services, with care being provided in the community. Contrary to what some people might think the demand for

technology in this situation is great, with a real need for systems to talk to each other as patients move rapidly through acute service to long-term care at home. Community nurses need to be able to download patient notes that are centralised and accessible on to blackberries that are linked with a main terminal. Governments have to recognise the need for the development of electronic health records.

There is also an increasing recognition in the developed world of the economic and financial burden that changing health needs place upon society. Health needs continue to expand and ever more sophisticated treatment regimes are required to meet the growing expectations of Northern societies. Large scale uneconomic systems have evolved with inefficient processes and procedures that all cry out for technological solutions. Human resource issues in this situation are paramount with multiple professional groups each guarding their own boundaries. So exacerbating the complexity of the provision and giving rise to a greater possibility for a breakdown in communication To improve this situation professional silos need to be challenged and health professionals need to expand their range of skills, their knowledge base and their communication. The need to work in integrated multi professional teams becomes imperative.

Within the UK we are faced with a major challenge to engage more nurses in informatics and e-Health developments. (RCN 2004) Royal College of Nursing, Nurses and NHS research reveals that this is a problem and many nurses are resistant to developing these new skills. Nurses have a fear that the electronic nursing records being developed do not meet the needs for nursing communications in a paperless environment. There may be some truth in this but that must not prevent the development of such records, rather inspire their improvement. Part of the solution to this must be education. Informatics concepts need to be included into undergrad & post-grad curricula. The need for this was recently highlighted in the Scottish nursing response to the Kerr report, bringing for the first time a political driver to support such developments. Even with this support and encouragement at the policy level the reality is that there is a lack of expertise in teaching nursing informatics, a lack of nursing informatics roles and role models, and a lack of a general infrastructure within which informatics can be successfully delivered. However, what is more crucial is the way that nurses conceptualise their practice, which needs to be more disciplined and controlled in order that the articulation of this is precise and accurate (the signified rather than the signifier alone). This is a pre-requisite to effective communication, whether verbal, written, or electronic, and is within the gift of all nurses to influence. However it is given little prominence within current curricula, and the profusion of nursing models that generally don't work in practice contrasts starkly with the single medical model that does work. This could explain our relative weakness but also highlights the dilemma we have that I indicated earlier in this paper, that nursing is not a single set of activities but rather an agreed value set that underpins a wide spectrum of activities that nurses carry out. Whether it is possible to reduce these activities to a more concise form is not clear. It can be argued that standardised terminologies remain part of the problem of Electronic Health Record implementation, rather than a solution, systems appear to use clinical expressions that are too complex to code, and data structures that must be developed without any support from the terminology itself. To address this, there has been growing interest in developing standards to support archetypes (openEHR) and templates (HL7). The different approaches of the two standards groups have much in common and both are developing standardised domain concept models. There is now a great effort to develop evidence-based practice, with guidelines and protocols, and practice development, especially in nursing, is often heavily protocol-driven. Multi-agency and multi-disciplinary team working promotes a demand for better clinical communication, while service changes seem to only increase the burden of data collection for health care workers.

In Scotland, as in other countries, there are many ad hoc developments of information tools, even by national projects, but as yet few processes for ensuring they contribute to standards development.

In the developing or Southern countries of the world the situation is very different. Health systems are strained to the limit with poor communications, vast distances and poverty undermining the

best will of many health providers. In Africa, there are 3 million health care professionals are needed to deliver the current service. Urbanisation, overcrowding, poor infrastructure and low levels of education, especially for women, all contribute to unsatisfactory health care delivery and consequent high levels of morbidity and mortality. Where does technology fit into this environment? Is it possible to make a technological leap from the analogue radio that exists in most village communities to sophisticated health technology? With limited resources, poor manpower and challenging ethical and professional standards what contribution can you make? One of the major areas for development is in education, and examples of technological outreach can be found where students receive basic equipment that allows them to access information via DVD. Health promotion and health education will also benefit from the use of technology. The provision of generators in remote areas to enable electronic information systems to function is increasingly seen as a key investment for development. Giving the opportunity for health professionals in these countries to reach out to colleagues and learn from them, just as they teach us something, is critical if we are to develop a sense of universal standards and retain the idea of a common professional identity.

In the new industrialised countries technology has become part of the life of everyone. In China, Japan, Malaysia, Thailand and other newly industrialised nations, advances in technology supersede those of us in the West. The issue is how we can make it work to improve nursing care services.

The Future World of Nursing and Health Care:

So where will the future lie for e-health and health informatics in this Global environment?

The health world that we face will be multi-professional with alternative modes of the delivery of healthcare, patients and clients who are more knowledgeable and able to access knowledge through technology for themselves and guide their own care. Patient client empowerment will be central to care, with the role of nurses and doctors changing to accommodate this. The traditional role of the nurse will be different, perhaps unrecognisable. There will be differences within and between countries; differences in nursing as an activity and as a profession. New boundaries in practice will arise while old ones will crumble with the development of the knowledge base for professional practice. Measuring the contribution of nursing to patient outcomes in these multidisciplinary cross cultural contexts will give rise to many imperatives and challenges.

However I feel that the biggest issue that we have to face in today's world is not the challenge of modern technology but rather answering the question as to what is our purpose as a society or a community. We need to confront this question because we are increasingly aware that our way of life today is unsustainable. Our health systems reflect the society of which we are part. The central purpose of society is to improve the health, well being and quality of life of individuals and the population at large. In particular those for whom it is the lowest. The pre-requisites for health, as stated in the Ottawa charter of 1986, are peace, food, shelter, education, income, a stable eco system, sustainable resources, social justice and equity. Without these, whatever we do will be to no avail. We have to tackle poverty, we must address inequality. If you can contribute to this agenda through the use of your technology then what you are doing is worthwhile, if not you are simply building a tower like the men at Babel.

References to add

Professor *Barbara Parfitt CBE PhD RGN RM FNP*
Glasgow Caledonian University

Poster 1. – Nursing language multilingual – translation works in the context of ENP®

By: Daniela Wagner (Germany)

This poster focuses on current efforts to translate the standardised nursing language ENP® (European Nursing care Pathways) into several European languages and adapt it to different cultural uses. Like NANDA, NIC, NOC, ICNP® and other classification systems ENP® represents a nursing language, which is conceived for international usage. The target of the translation work is to ensure the implementation of the nursing language in intercultural working environments and to provide nursing data collection for quantitative evaluations. Therefore, the translation has to meet the feel for language of the foreign-language nurses, yet consider the standardisation of the nursing language. The latter gains additionally in importance, if the quantitative evaluation is to be carried out multilingually. It is therefore rewarding not only to develop best-practice models for a specific hospital or a country, but to analyse cultural differences. In doing so, questions of international benchmarking are of great interest as well as the identification of cultural nursing phenomena.

In translating the nursing language ENP®, the first step has to be the analysis of cultural differences, followed by defining the terminology and, subsequently, the translation of real texts. The translation will finally be evaluated together with an institutional partner to ensure acceptance of the translated nursing language in practice. The evaluation process, however, doesn't begin with the "finished" product, but is understood as a constant process starting from the terminology works to the technical supply.

As our target is to accomplish a translation which can deliver data for international comparisons, our challenge is to translate as close as possible to the intended German contents, but at the same time to achieve acceptance of the translation, which implies an ideal closeness to the target culture. As an extensive usage of the translated nursing language in practice is the basis for data evaluation. It is essential to find a compromise especially for those nursing pathways which are subject to the influences previously mentioned from the healthcare system.

Besides these questions, some considerations on the use of already existing nursing terminology on the basis of real experiences with cooperation partners abroad will serve for discussion. Whereas theoretical nursing terminology can rather easily be taken over, the use of termini of existing classification systems may result in licensing problems and restrictions regarding the originality of the own nursing language. It can further be assumed that house catalogues and house standards influence the nursing language used in practice, and play an important role in the evaluation through the institutions as does the educational level of the evaluated nursing personnel.

Contact

Daniela Wagner
Heideweg 73
34131 Kassel
Germany
Tel.: +49(0)561 921 94 03
Fax: +49(0)561 921 94 04
E-mail: mail@daniela-wagner.de

Poster 2. – Data quality of nursing process documentation in electronic patient data

By: Pia Wieteck & Simon Berger (Germany)

Introduction

Economically, the nursing field is a big cost factor for the hospital sector. The personnel costs represent a large share with approx. 66 % of the total hospital costs. However, services delivered by the nursing profession remain unseen and can therefore not be evaluated (Friesacher, 2001, Kollak; Georg, 2001). This results in the necessity to illustrate nursing services and the outcome quality as well as the demand of scientifically based nursing interventions (Isfort; Klug; Weidner, 2002). Data is required to carry out personnel calculation, cost calculation, quality, expenditure and work evaluations and to rate nursing pathways.

Question

The standardised nursing language ENP® (European Nursing care Pathways) has been implemented in several hospitals for nursing process documentation in the software program RECOM®-GriPS. Using the nursing language ENP® the nursing care plan consisting of nursing diagnoses, characteristics, etiologies, resources and intervention formulations is set up. In RECOM®-GriPS, the following features are additionally used: positioning plan, medication tool, nursing history, record of vital signs, fluid balance charts and several assessment instruments for documentation of nursing services performed as well as patient values and data.

This paper discusses questions on whether services performed for patients are reflected by nursing process documentation using ENP® and the documentation options of the above mentioned patient data. This paper aims to examine the documentation quality on the level of performance documentation of real cases. All nursing services associated with a patient will be considered. Thus, the research questions are as follows:

F1 How is the quality of the documentation of performed services carried out by the nurse within the framework of the nursing process documentation?

F2 Are there services delivered by nurses, which cannot be documented by the software program?

Method/Design

The crossmapping carried out is a descriptive cross section analysis. For evaluating the documentation quality the parallel test method is applied to determine the interrater reliability between the two rater groups. Rater 1 are the nurses who document nursing services performed in the software RECOM®-GriPS using the nursing language ENP® and several records (i.e. vital signs charts, nursing report, mobilisation plan, medication sheet). Rater 2 are experts of the ENP® team who record performed nursing services using an open, semi-structured and nonparticipating observation approach. Random samples were carried out in several institutions.

Findings

The results established to date show acceptable agreement. However, the study has not yet been completed and a further 30 cases are still to be analysed. Further results from a data collection from a project in Switzerland will also be presented and discussed.

Discussion

Discussion of the complete results is currently not possible, as this depends on further data collection. At this point, some questions can be outlined which could serve for further debate:

- Which services should nurses document in future? (detailing grade)
- What importance do the results have for data evaluation?
- How can the quality of the documentation be further improved?

Contact

Pia Wieteck
Falterstr. 17
85107 Baar-Ebenhausen
Germany
Phone: 0049 (0) 8453 33 27 16
Fax: 0049 (0) 8453-33 27 17
E-mail: Pia.Wieteck@t-online.de

Poster 3. – Implementation of nursing process in Malaysia – How to do it ?

By: Aishah Ali (Malasia)

Malaysia is a developing country that is most developed among other developing countries. The Nursing profession is also developing but at a very slow phase. Tertiary nursing education started 13 years ago with post registration diploma nurses being up graded to bachelor degree. Master and doctorate program is still in the pipe line. Thus, nurses in Malaysia still adopt the western style of nursing education through the use of concepts developed by the west but modified them to suit the Malaysian's need. Nursing process is taught to all students. However implementations are difficult. Among the factors contributing to this difficulty are the shortages of nurses and the lack of knowledge nursing academicians in regards to nursing process. This paper is presented to learn and understand how others deal with implementation of nursing process in the described situations

Contact

Dr. Aishah Ali
Deputy Dean (Academic)
Kulliyyah of Nursing
International Islamic University Malaysia
P.O. Box 141, 25710, Kuantan, Pahang
MALAYSIA
E-mail: aishahali@iiu.edu.my
Fax: 609 5133615

Poster 4. – Study of NMDS in inpatient departments and implementation if ICNP® in nursing information system of Queen Savang Vadhana Memorial Hospital, Sriracha district, Thailand

By: Chuenrutai Yekian & Julalax Baramee (Thailand)

Background

In 2002, Nursing care data were not included in the Thai health required data base. To be accepted as a profession that influences the health of population, it is necessary for nurses to communicate what they do and the outcome of these practice. Since 2000, The Thai nurses' association translated ICNP. However, it has not been used in practice setting, except for some research. While all nurses have been learned nursing process but nursing data included in patient records were in different formats and may not be complete to show the value of nursing practice.

Objective

This research had 2 phases.

The 1st phase was a retrospective descriptive research that aimed to study nursing data elements based on the American Nurses Association's NMDS. The researcher used ICNP to collect nursing care elements. Specific aims of the 1st phase were to study the completeness of NMDS and the capability of ICNP to collect nursing care elements and to identify the most frequency of the nursing diagnosis and nursing intervention. The 2nd phase evaluated the use of the nursing documents which developed based on the 1st phase results to practice at point of care and to study the nurses' opinion about using NMDS and ICNP in nursing practice.

Material and Method

The 1st phase

The samples were 377 medical records, a random sampling form 18,565 discharge records in the year 2002. The NMDS were collected in the data collection sheet. The researcher used ICNP to code or collect nursing care elements by reading and analyzing the typical nursing care plan. The researcher test the reliability by coding 30 discharge records twice at 2 weeks apart and the result was 94.4 percent agreement.

The 2nd phase

The NMDS were applied in the nursing assessment form which consisted of ANA's NMDS, included the NMDS of the Thai nurses' opinion and the most frequent nursing diagnosis of the 1st phase results. The ICNP terms were implemented in the standard nursing care plans with both Thai and English languages for the most frequent nursing diagnosis. The evaluation has done 3 months later after using at point of care. To study the nurses' opinion; the 7 topics questionnaire with 1 to 5 Likert's scale was distributed to 126 nurses, a random sampling from 187 nurses.

Result and discussion

The 1st phase:

The findings show a high incomplete NMDS with 99.2 percent. The service category was highest incomplete with 98.1 percent due to no referral place and source of payer. The patient demographic category was incomplete with 60.5 percent due to no identification number. The nursing care category was incomplete only 6.1 percent due to no nursing outcomes.

The high percentage of incomplete NMDS because prior to 2003, the hospital policy did not required some elements of NMDS in the medical data set such as referral place and source of payer. The high percentage of complete nursing care category may due to a clearly nursing process policy and training regarding the use of nursing process. Therefore the nurses have positive attitude and aware of the importance of the nursing process.

The average number of nursing care elements per record analysis showed that the average number of nursing diagnosis per record was 1.8. The average number of nursing interventions per record was 7.7. The average number of nursing outcomes per record was 1.5.

The low average number of nursing care elements per record because this research collected nursing care elements from the written nursing care plan which the nurses spent times to record, concerned about urgent problems more than documentation as well as not have enough skill for nursing diagnosis.

The capability of ICNP to collect nursing diagnosis was 86.2 percent. The rest amount of 13.8 percent was the extensive nursing diagnosis which not specific patient problem and no ICNP terms to identify such as "Risk for complication" "Chance for accident".

The capability of ICNP to collect the nursing interventions was 99.2 percent.

The nursing outcome was recorded 80.5 percent of all nursing diagnosis. The improvement and stability of the nursing outcome were 99.3 and 0.7 percent respectively.

The most frequency of nursing diagnosis and nursing intervention were identified.

The 2nd phase:

The nurses' opinion indicated that the developed nursing documents were convenient and easy to use with average of 3.97 out of 5 scores, no repeated nursing data with average of 3.35 scores, spent less time to record with average of 3.97 scores. Further the standard nursing care plan could be a guideline for planning.

The nursing assessment form indicated assessing process with average of 3.51 scores.

The standard nursing care plan indicated planning process with average of 3.66 scores.

The ICNP terms communicated nursing practice with average of 3.73 scores, help the nurses to record obviously with average of 3.74 scores.

Conclusion

The study showed that the nurses had concerned to record nursing care elements. However the narrative writing method with no specific guideline might cause the incompleteness of nursing data. However with the nurses' positive towards the use of ICNP, the success of implementation of ICNP in practice could be warranted.

Suggestion

Evidence regarding the impact of nursing information that was developed from nursing data is necessary for the nurses to have positive attitude and to implement nursing information technology. The nurses must experience these evidences themselves.

Although ICNP terms obviously communicate nursing practice but still need improvement to update for new clinical technology.

Contact

e-mail: jayeekian88@hotmail.com

Poster 5.– Context as a basis for the derivation of nursing diagnoses from interventions in a study of intellectual disability nursing

By: Fintan K. Sheerin (Ireland)

This poster explores the potential for the development of cross-linkages between nursing interventions and diagnoses through an examination of the context within which the interventions were performed.

The study, which is the first in-depth examination of the contribution of nursing to intellectual disability care, employed a multi-method approach to identify the interventions that are unique to that profession. Standardised nursing language formed the medium through which this was facilitated. The identified nursing interventions were explored in the light of focus groups and interviews which provided a contextual basis for their employment. These contexts further permitted the identification of the foci upon which the interventions were focused. Such interventional foci have been previously suggested by the author to be synonymous with nursing diagnoses.

A comparison of the identified interventions and diagnoses is made with reference to the North American Nursing Diagnosis Association and Nursing Interventions Classifications

Contact

e-mail: Fintan.Sheerin@ucd.ie
e-mail: fintansheerin@eircom.net

Poster 6. – Nursing communication and nursing relationship in endoscopy unit

By: Giancarlo Cicolini, S. Di Girolamo & L. Di Labio (Italy)

Background

The endoscopic examinations are usually performed in ambulatory and often, they're able to replace the traditional surgical interventions. The patients, above all, if are submitted for the first time to such a procedure, are frequently timorous, frightened and anxious. This condition doesn't favour the proper execution of the investigation.

This problem could be caused by incorrect management of the nurse-patients relationship before the intervention with dissatisfaction of the information needed.

In the "G.d'Annunzio" University of Chieti-Italy we have studied the effects of a communicative intervention aiming to satisfy the information need, to reduce the levels of anxiety and pain before and after endoscopic investigations.

Aim

Reduction anxiety and bother

Evaluation of satisfaction degree about nursing

Materials and methods

The study has been conducted between January and June 2006: 200 patients were subjected to endoscopic examinations such as oesofagogastroduodenoscopy (EGDS) and colonoscopy (RSCS). Patients were selected randomly: the patients were alternatively assigned to the control group and the experimental group by the day of booking for the examination. The operators of the booking center didn't have the knowledge of the study. Characteristics of the groups: experimental group, mean age 55,71 (SD 15,54 Rs 13-83), 56 males and 44 females, control group mean age 54,90 (SD 16,32 Rs 13-83), 53 males and 47 females. 48% of the experimental champion and 58% some champion of control subjected to endoscopic examination for the first time. The experimental group 63% of patients underwent to EGDS and 37% to RSCS against 58% of EGDS and 42% of RSCS of control group. In the experimental intervention it was necessary the continuous presence of the nurse in the first 30 minutes before the intervention. In this time range, the nurse explained all procedure phases and answered to the patient's questions. The evaluation has been effected through the use of a questionnaire composed of 12 questions submitted in the two following hours of endoscopic investigation.

Results

The results showed only 3% of experimental group considered very tidies examination against 25% of control group;

1% of experimental group has declared to have faced the examination with anxiety, against 32% of control group. Nurse satisfaction was very high: 99% of patients were satisfied in the experimental group against 39% of control group and 98% of patients belonging to experimental group were satisfied of the informations received against 30% of control group.

Conclusions

The results showed that an individual nursing care with an effective communication, is able to reduce the anxiety and tidiness in patients who underwent endoscopy examinations. The patients submitted to the experimental treatment, in comparison to the control group, showed notably inferior anxiety levels (1% vs 32%), tidies levels (3% vs 25%) and, high level of satisfaction concerning nursing performance (99% experimental group).

Contact

Giancarlo Cicolini,
Centre for Clinical Reserch – CeSI
“G. D’Annunzio” Fondation – Chieti
Via Colle dell’Ara
66013 – Chieti Scalo – Italy
Tel. 0871 54 13 55 (PM)
Fax. 0871 54 13 36
E-mail: g.cicolini@unich.it

Poster 7. – Unité de développement et d'expertise – UDE

By: Jean-François Cardis & Catherine Jacot (Switzerland)

Institution

Les Etablissements Hospitaliers du Nord Vaudois (eHnv) unissent 5 hôpitaux. Ils offrent des prestations de soins aigus, de réadaptation et soins palliatifs ainsi que d'hébergement de personnes âgées. Leur capacité d'accueil est de plus de 530 lits et 1'600 collaborateurs (800 collaborateurs dans le secteur soins) y travaillent.

Objectif du poster

Les auteurs souhaitent démontrer les avantages tant pour les patients que pour les professionnels d'une bonne compréhension multidisciplinaire dans l'exercice des soins. Cette compréhension s'est obtenue par l'utilisation d'un vocabulaire adopté en séances multidisciplinaires, lors de la création des documents des transmissions ciblées.

Descriptif du poster

Le poster sera conçu avec le concours d'un graphiste et sera adapté aux dimensions proposées par les organisateurs du congrès.

Il mettra en mouvement un dialogue entre les mots clés appelés cibles ou dimensions et ceux appelés actions ou interventions. Ces mots clés figureront en français et en anglais. Les mots clés indiqués dans le dialogue seront également visibles sur des documents représentés sur le poster. Cette mise en scène sera entourée par un slogan indiquant qu'il est nécessaire de bien se comprendre pour bien soigner. Ce slogan sera écrit en français et en anglais.

Contact

Jean-François Cardis
eHnv site de St-Loup
CH-1318 POMPAPLES
Suisse.
Tél : +41 21 866 51 32
Fax : +41 21 866 52 02
E-mail : jeanfrancois.cardis@ehnv.ch

Poster 8. – Research and development of practice applications of caring based nursing language in multidisciplinary community practice

By: Marylin Parker, D.Noel, A.Pandya & S.Beidler (USA)

Overview of the Research

Nursing faculty of a state university has developed purposes, activities and outcomes for multidisciplinary care in four community wellness centers serving multicultural underserved communities. Services are guided by a unique Community Nursing Practice Model reflecting the caring based mission and philosophy of the college of nursing and contributing to the overall mission of the university. Care is provided by advanced practice nurses, social workers, physicians and pharmacists; research, education and policy development are integral with practice.

In addition, these centers, staffed by university faculty and care providers, are members of a local network of clinics focused on care of similar populations provided by volunteer physicians and nurses. The network of clinics and centers is developing a shared computer data base of client demographics and health care records using software based on a medical model. The distinctive practice of nursing is not recorded nor reported.

A research team of university faculty and wellness center providers from nursing, engineering, computer science, software program design and data management has joined to study, create, use and evaluate nursing language that reflects concepts of the Community Nursing Practice Model in hopes of assuring the distinctive voice of the discipline and practice of nursing. Overall research objectives are to develop computer models and software for reporting community nursing practice grounded in concepts of the Community Practice Model: respect, caring, wholeness and connections as these are practiced in transitional and enhancing care. A major outcome of the research will be developing and evaluating communication among various practice disciplines demonstrating value of the new nursing language software in comprehensive multidisciplinary practice.

Poster Presentation

This poster presentation will offer a description of the research and findings from analysis of the reports of care provided, of the provider network and of shared health record data. Also presented will be quantitative and qualitative analysis of reported nursing situations resulting in descriptions and categories of nursing practice according to values and major concepts of the Community Nursing Practice Model. Examples of these findings describing the essence and actions of nursing practice are: offering presence, listening and hearing the story, validating what's important, deciding together among choices and jointly writing the visit narrative, and the environment of the person, family and community. The poster will include illustrations of use of structured nursing data in clinical decision making and for effective multidisciplinary communication. A design for evaluating changes in reporting nursing and health care for clients served and of effectiveness of multidisciplinary care of clients and communities will be presented.

Contact

Marilyn Parker, PhD, RN, FAAN

Quantum Foundation Center for Innovation in School and Community Well Being

Christine E. Lynn College of Nursing

Florida Atlantic University

777 Glades Road

Boca Raton, FL 33431-0991

mparker@fau.edu

Phone: 561 29 73 376 FAX: 561 29 73 447

Poster 9. – A model for nursing governance: from the resources to the outcomes

By: Loreta Lancia, C.Petrucci & R.Alvaro (Italy)

For nursing governance the most important objectives are the achievement of adequate levels of organizational and clinical appropriateness. The organizational and clinical appropriateness regard respectively the correct use of the resources and process in relationship to the wished outcomes. In a generic model of nursing care supply, are well distinguishable the elements which compose the resources (input), the elements which compose the processes and the elements which compose the results (outcomes). In this model, the outcomes represent the consequence of the results produced by nursing activities (output) in terms of treatment of the human responses to the health problems. Generally they concern the patient health state level. The international scientific community widely showed that the nursing care is able to weigh positively upon these outcomes through interventions which reduce the mortality, prevent the illnesses, improve the "self-care" and the life quality. This is possible both for a direct caring activity, which, through the systematic identification of the health problems susceptible of nursing care (nursing process), allows the satisfaction of the needs induced by illness or some vital processes, and for an indirect caring activity, which, through a patient continuous vigilance action (nursing vigilance), allows to prevent many adverse events. It is clear that also the medical support nursing activities (cure activity) contribute to the health outcomes improvement.

The achievement of a nursing care gold standard, for an acceptable level of health supply, depends both from amount and quality of the used resources, and from the adequacy of the developed processes. The resources in this model are represented by the number and the expertise of the nurses, the support staffing and the structural and technological helps able to provide the nurses a concrete aid in the daily clinical practice.

The processes which regulate the meeting between the patient variable and the nurse variable must be based on the continuous and systematic application of the nursing process in a favourable environment for patient needs satisfaction and for nursing care development.

The definition, through the research, of adequate nursing care standards, as regards the resources, processes and outcomes, can contribute to the development of health care system really based on the principles of efficiency, effectiveness, universalities, solidarity and equity.

Finally, an indicators system able to measure the levels of clinical and organizational appropriateness is hoped.

Contact

Prof. Loreto Lancia, MNS, RN
Dipartimento di Medicina Interna e Sanità Pubblica
Università degli Studi dell'Aquila
67100 L'Aquila (Italia)
Tel. +39 08 62 434 641
Fax +39 08 62 432 858
E-mail: loreto.lancia@cc.univaq.it

Poster 10. – A multidisciplinary collaborative model for implementing new therapies that improve patient outcomes

By: Susan McCauley & M.Karpowicz (USA)

Project Objectives:

1. Use an interdisciplinary collaborative process to review and implement an alternative proning therapy that improves patient and caregiver safety.
2. Develop patient criteria and a multidisciplinary protocol for implementing and maintaining this new therapy.

Strong collaboration and communication among multidisciplinary team members within a trauma intensive care unit (ICU) have been critical to the consistent achievement of excellent patient outcomes. Collaborative practice is inherent in the patient-centered culture of our organization, an 800-bed Magnet tertiary care facility. This presentation will demonstrate this collaborative practice model by detailing how the collaboration between nurses and respiratory therapists drove the successful implementation of a new therapy that significantly improved outcomes for respiratory compromised patients. The role of effective communication skills in nursing collaborations with other disciplines and with vendors is also discussed. Nursing and respiratory therapy colleagues within our ICU struggled with the difficulties of placing a patient in the prone position to improve oxygenation and ventilation and to facilitate pulmonary drainage. Despite the benefits of proning reported in the literature, use of manual proning had been limited because it is labor intensive and associated with potential risks to both caregiver and patient. Manual proning is further limited in the intensive care setting due to the multiple tubes, catheters, and equipment used in the care of the critically ill patient. A task force that included nurses and respiratory therapists was formed to explore the benefits of automated proning devices and systems and to select a product that would best meet the needs of patients and multidisciplinary caregivers. Following a detailed review of available products, the group elected to trial the KCI RotoProne® therapy system that incorporated both proning and kinetic therapies. Our staff worked closely with the vendor's clinical representatives to communicate the needs of both our patients and our staff. Communication between staff and vendor representatives was ongoing during the product trial. Feedback from caregivers from multiple disciplines was an essential component of the evaluation process and in the ultimate selection of a product by the task force. Multidisciplinary collaboration was also critical in the development of criteria and protocols for initiating and maintaining automated proning therapy. Early initiation of the therapy for patients with pulmonary injury and adult respiratory distress syndrome has resulted in positive clinical outcomes, including decreased length of ICU stay and reduced incidence of ventilator acquired pneumonia and nosocomial pressure ulcers. Effective collaboration and communication of all members of the trauma team are responsible for the successful implementation and optimal use of this new therapy technique for all patients who meet the criteria and the positive clinical outcomes associated with the therapy.

Contact

S. McCauley

3246 Oakland Square Drive

Bethlehem, Pennsylvania, 18020

United States

Phone: 610 868 56 07

Email: susan.mccauley@rcn.com

Organizational Affiliation: Lehigh Valley Hospital and Health Network

Poster 11. – Nurse-patient communication during consultation preceding chemotherapy: are older cancer patients' needs met by nurses?

By: Julia van Weert, J.Jansen, S. van Dulmen, T.Heeren & J.Bensing (Netherlands)

Background

As the population is aging, the number of older cancer patients will further increase. When people get older the chances of physical and cognitive problems increase, and life 'tasks' change. The combination of normal age related changes and disease related stressors, deserve special attention in patients with cancer, especially in challenging times like during cancer treatment. To provide high quality care, it is important to know older patients needs. Fulfilling patients' (informational) needs is an important factor in reducing anxiety and assisting recovery. Although considerable research has been devoted to the needs of cancer patients in general, there is only limited knowledge about the special needs of older patients with cancer. Nurses play an important role in providing cancer patients with information and support surrounding treatment. Nurse-patient communication is most effective when it corresponds to the patients' wishes and needs and his or her psychosocial context. However, patients often feel that their needs are not met during consultations. Little research has been conducted to study older cancer patients needs, and even less is known about whether the actual information and emotional support provided by oncology nurses are tailored to their needs.

Aim

This study aims to evaluate, through the eyes of older cancer patients, which aspects are important in preparing for chemotherapy. Next, the extent to which nurses attend to the (spoken) needs of patients during actual consultations is investigated.

Methods

Older cancer patients needs were assessed using an adaptation of the QUOTE-communication questionnaire (QUality Of care Through the patients' Eyes) in which patients rate the importance of 68 aspects of patient education preceding chemotherapy. Independent observers assessed whether nurses actually implemented these 68 issues of patient education during 50 video-taped consultations with patients (aged 65 or above) receiving chemotherapy for the first time.

In addition, nurses' actual communication was examined by analysing 50 videotaped encounters in preparing patients for chemotherapy using the Medical Interview Aural Rating Scale (MIARS). The scheme measures patient disclosure and the number of cues and those caregivers' behaviours that are related to patient disclosure.

Results

The actual communicative behaviour and the congruence between the importance and performance of communication aspects are now being analyzed. As this will be finished in a few months, the results of the study can be presented at the conference. In addition, the practical consequences of these findings will be discussed. The findings of this study will provide a sound basis to improve communication with older cancer patients.

Conclusion

The findings will provide knowledge about the extent to which nurse-patient communication in preparation for chemotherapy is tailored to older cancer patients' need. Furthermore, insight will be given in the subjective and objective role of emotional support and information during communication with older cancer patients.

Contact

Julia van Weert
NIVEL (Netherlands Institute for Health Services Research)
P.O. Box 1568
3500 BN UTRECHT
The Netherlands
e-mail: j.vanweert@nivel.nl
phone: +31 (0) 30 27 29 828
fax : +31 (0) 30 27 29 729

Poster 12. – The activities of Japan science of nursing diagnosis

By: R.Fujimura, T.Nakajima, K.Hongo, Y.Ikematsu, K.Egawa & A.Emoto (Japan)

The Japan Nursing Society of Nursing Diagnosis (JSND) was started as Japan Nursing Diagnosis Research Group in 1991, JSND was founded as National Nursing Academic Society in 1995, and the Science Council of Japan accepted the JSND as a member of the Science Council of Japan in 1995 based on its large size of membership and its financial establishment. Since 1995, JSND has been supporting the dissemination of nursing professional standardized language by providing conference annually to promote and advance the integration of nursing diagnosis into daily patient care in multidisciplinary practice.

The International Communication Committee was established at the 4th Annual JSND Conference in 1998 aiming to facilitate our international communication and sharing our research findings at international conferences.

Following our foundation in 1995, we have had successful twelve annual conferences. We had the 12th JSND Conference in Nagoya International Conference Center, Japan on June 24th and 25th this year. This particular conference focused on the integration of nursing diagnosis into computerized patient care system. Over two thousand six hundreds nurses attended to this conference and we exchanged our research findings regarding implementation of nursing diagnosis and opinions on the usefulness of terminologies and classifications, the use of nursing diagnosis, interventions and outcomes for nursing practice.

We, members of the International Communication Committee analyzed and presented at the 12th Annual JSND Conference by poster, the content of last twelve conferences focused especially on the content of key note speeches given by oversea speakers. The findings showed the constant progress of nursing science in Japan due to the effort of development of standardized nursing terminology, that is nursing diagnosis, interventions and outcomes.

In 2001, the Ministry of Health and Labor of Japan promulgated the new ordinance which ordered that computerized patient data system electronically must be set up by large hospitals over 400 beds by 2006.

JSND has been contributing to present the standardized nursing terminology which is effective to the ever changing Japanese health care society through sharing important information obtained through communication with International Nurse Informatics' Society and faculty of Center for Nursing Classification & Clinical Effectiveness. We would like to present the history and progress of JSND and the present condition how we are accomplishing our professional goal through dissemination of the standardized nursing terminology.

Contact

Ms.Kumiko Hongo RN, MNs
Chair of School of Nursing
Saniku Gakuin College
1500 Kugahara, Isumi-Gun, Chiba-pref
298-0297 Japan
E-mail address: hongo@saniku.jp
Phone number:0470-84-0111
FAX number:0470-84-0076

Poster 13. – Nursing process – opinion of nurse technicians and aides

By: Vanessa Kenne Longaray, Paula de Cezaro & Miriam de Abreu Almeida (Brazil)

Introduction

The Nursing Process (NP) is a specific methodological instrument, systematized and humanized, that makes possible to organize the nursing actions. It is inserted in the education of the Nursing School of the Universidade Federal do Rio Grande do Sul (UFRGS) and in the Hospital de Clínicas de Porto Alegre (HCPA), since the 1970's. In 2002, it was implanted the informatization of the Nursing Diagnosis (ND) stages and of the nursing prescription in the HCPA. The nursing technicians and aides participate mainly in the execution of the nursing prescription.

Objective

To analyze the opinions of nursing technicians and aides from the HCPA about the NP carried through in the Institution.

Methodology

It is about an exploratory-descriptive qualitative research, whose subjects were 11 nursing technicians and aides from 7 different Units, representing the 3 working shifts. The collection of information happened by means of semi-structured interviews and the data analysis followed the orientation of Bardin (2004). The project was approved by the HCPA's Ethic Research Committee.

Results

From the analysis of the interviews, there were identified two categories: Positive Points and Aspects to be improved on in the Nursing Process. Under the Positive Points category, it stands out the approval of the NP and the knowledge that the informants have about it, and also the dialogue that happens within the nursing staff about NP items and the continuity of cares that is favored by the process. Under the Aspects to be improved on in the Nursing Process category, there surfaced communication problems in the nursing staff and elements of the nursing prescription.

Final considerations

With the ending of the study it was understood the importance of the communication within the nursing staff, and it was noticed how the nursing technicians and aides can contribute for the development of the NP.

Contact

Miriam de Abreu Almeida, PhD, RN
Professor
School of Nursing
Universidade Federal do Rio Grande do Sul
Rua São Manoel, 963 – ZIP 90620-110
Porto Alegre – RS – Brazil
E-mail: miriam.abreu@terra.com.br

Poster 14. – Construction of a nursing care and diagnosis instrument for the trauma intensive therapy unit

By: Paula de Cezaro, Vanessa Kenne Longaray & Miriam de Abreu Almeida (Brazil)

Introduction

In the current practice, the nursing comes constantly across with terms such as assistance systemization, nursing diagnosis, standardization and care classification systems, among others. These denominations are, of some sort, related to the Nursing Process, which is a systematized and individualized installment of cares method, composed of five stages. The diagnosis stage is less known and used, being its denomination the result of a clinical reasoning process and consists in the identification of the current and potential problems that will be obtained by the analysis and synthesis of the collected information in the Investigation, being the care prescription the basis for the plan.

Objectives

to construct a nursing records instrument containing the most frequent nursing diagnosis and the respective cares for patients of a different Intensive Care Unit (ICU) of Trauma.

Methodology

Exploratory-descriptive qualitative study developed at the ICU of Trauma at the Hospital de Pronto Socorro, from the south of Brazil. The sample was composed of 38 patients and 5 nurses. The data collection was developed in three stages: 1. Search for signs and symptoms of the patients in records; 2. Identification of the nursing cares through interviews with nurses; 3. Construction of the instrument containing nursing diagnosis and cares. The data analysis was comprised of the sample characterization (descriptive statistics); elaboration of the nursing diagnosis (frequency charts); description of the nursing cares and construction of the instrument.

Results

It was verified the predominance of male patients (79,04%). The most frequent age group was that of 30 to 39 years old (23,68%), followed by clients of 20 to 29 years old (21,05%) and 40 to 49 years old (21,05%), and the prevailing trauma was traffic accident (34,21%), followed by firearm wound (26,31%) and running over (18,42%). 11 Nursing Diagnosis were elaborated according to the Taxonomy II of the North American Nursing Diagnosis Association (NANDA) distributed in 4 domains and 7 classes. The respective cares were reported by the nurses and complemented by the activities contained in the Nursing Interventions Classifications (NIC). The constructed instrument contains patient's identification data, the identified diagnosis with the care prescriptions and the nursing evolutions that were carried through by the nurses.

Final Considerations

We expect to have contributed to facilitate the nursing actions, allowing the data retrieval and qualifying the assistance. And also to arouse the nurses' interest in the search for knowledge and acquisition of skills to make use of this practice in their work routine. It is suggested the development of other researches that give continuity to this work, testing and validating the instrument constructed in the clinic practice.

Contact

Miriam de Abreu Almeida, PhD, RN
Professor
School of Nursing
Universidade Federal do Rio Grande do Sul
Rua São Manoel, 963 – ZIP 90620-110
Porto Alegre – RS – Brazil
E-mail: miriam.abreu@terra.com.br

Poster 15. – The nursing process in classification, communication and review: unambiguous and complete

By: Jenny de Groot-Hendriks & J. Weijers-Verhaeg (Netherlands)

Introduction

In January 2006 is in the Atrium Medical Center started with the development of a nursing file, that is based on the nursing care by health problems of patients that makes admission in a hospital necessary. The continuity in the care before, during and after the treatment in the hospital are important in all the situations. A uniform and unambiguous nursing language for all the nurses in the hospital makes continuity possible. Standardization and systematic nursing acting are necessary in that case.

Objective

The nursing process in the care of a patient is perceptible in planning, goal, performance and evaluation. Thereby is the nursing process systematic documented in the nursing part of the patients file.

Starting-points

- The eleven nursing topics of Marjory Gordon are used.
- The nursing diagnosis are based on the NANDA-diagnosis.
- The care-results are out of the NOC.
- The nursing interventions are arranged by the Neuman Systems Model and based on the NIC.
- Guiding are the collected data from the preclinical period of the patient, the standard nursing plans and the protocols.

Development

There are founded four groups of wardnurses, who in steps have analysed the useful indications for admission of patients in their specialization and have worked out the standard nursing care by patients with either examination, this treatment or an operation by NANDA, NIC en NOC.

A group of students examined the way of collecting data for the nursing diagnosis. The question of the research was: is in the phase of nursing diagnosis, all the information available to give a complete image of the questions of care of the patient, to arrange it in the functional health patterns and to formulate the nursing diagnosis.

Results

- More than 100 indications of admission are developed.
- Collecting data for the nursing diagnosis starts at the first contact with the patient, after the medical decision that admission in the hospital is indicated.
- Patients, with a higher risk for complications, get preventive screened and interventions on prevention are worked out.
- Multidisciplinary problems are formulated in terms of impairments of treatment.
- In case of multidisciplinary problems nursing interventions are documented in the nursing file.
- The interventions are described in measurable results indicators.

Continuation

First will the nurses develop in competencies for these nursing language. This standard method will also be teached. If this way of nursing reporting is implemented, it will delever a lot of input for datamanagement infomation about nursing care and results.

Contact

J.de Groot
Stafbureau Onderzoek & Innovatie
Atrium Medisch Centrum Parkstad
Postbus 4446
6401 CX Heerlen
The Netherlands
e-mail: J.degroot@atriummc.nl

Poster 16. – Project Patient, System and Information (PSI) meets project 2003

By: Markus Kern & Christian Ablasser (Austria)

Introduction:

The aim of this study was to implement two projects (P.S.I and 2003) to increase the patient's satisfaction (quality of nursing) in the liver transplantation program.

Methods:

Project P.S.I stands for: 1. Patient, 2. System (intramural) and 3. Information (patient-system-patient). The main goal of this project was to raise the information flow between the system and the patient. It showed a significant reduction of fear pre-operatively before a liver transplantation. The patient's history and status was evaluated at the ICU 9D of the General Hospital of Vienna during an extensive visit of the patient.

Patients' data were evaluated with a questionnaire. We showed that pre-operative contact with the patient increased their satisfaction with the nursing staff.

Project 2003 focused on the social environment of the patient. Relatives of the patients were involved and could visit the ICU. During that visit an extensive evaluation of the relatives was performed with a questionnaire. This study could show that they were very satisfied with the nursing staff and just satisfied with the medical staff.

The combination of these 2 projects at the General Hospital of Vienna showed a significant increase in patients and relatives satisfaction. It also showed that the increase of the information flow in a multi-professional team has a positive impact on the quality of nursing and the appropriate and effective use of the resources (patient, relative and hospital).

Results:

The implementation of these two project is golden standard in the General Hospital of Vienna.

Contact

KERN Markus
9D – General Hospital Vienna
Währinger Gürtel 18 – 20
1090 Wien
Austria
Markus.Kern@akhwien.at
Fax:++43/1/40400/6882

ABLASSER Christian
9D – General Hospital Vienna
Währinger Gürtel 18 – 20
1090 Wien
Austria
Christian.Ablasser@akhwien.at
Fax:++43/1/40400/6882

Poster 17. – Enhancement of patient care: the students' evaluation

By: Elisabeth Patiraki, M.Chatzopoulou, Ch.Karlou, M.Harharidou, S.Katsaragakis & Ch.Leventelis (Greece)

Background

Nursing education is constantly challenged to promote and develop a learning environment that fosters critical thinking and promotes nursing communication in multidisciplinary practice.

Aims

This poster presents the development and the evaluation of an educational program which aimed to facilitate meaningful learning during clinical practice through developing students' questioning approach in the classroom environment using structured nursing data set prior their entrance in the real clinical world.

Materials

Prior to their compulsory clinical practice the second year nursing students at the University of Athens (N=165) introduced and practiced standard data set in the classroom using a real clinical scenario. The total number of students divided in subgroups of 5-6 students participated in compulsory weekly workshops that followed the theoretical lecture. Every meeting focused on different phases of nursing process. The structured nursing data set included a) an assessment sheet for patient's needs based on Gordons' 11 functional patterns, b) NANDA taxonomy II translated in Greek c) the theoretical framework of purpose, intervention and outcomes

The use of this set of this instrumentation gave the students the opportunity to go from data, to diagnosis using a nursing classification system and provided terms how to describe all relevant aspects of human functioning. At the end of the semester all the students were asked to complete a study process questionnaire, prepared to explore the usefulness of the education program for nursing practice.

Results

Overall, the workshops have provided valuable insights how nursing classification system could be effectively used in patient safety, effective communication in multidisciplinary practice and in clinical decision making. Given the importance of undergraduate education, the structured nursing data set has been considered a "good standard" for use and mapping of nursing classifications. Although all workgroups reported some difficulties such as the lack of enough time and confidence due to limited experience in assessing patient status, students mainly gave positive evaluations. It was commented that using this set could contribute to a more complete insight into a patient's functioning and on different elements of the care process such as assessment and multidisciplinary communication.

Conclusions:

Students concluded that the education program although not perfect yet in every aspect, can definitely improve clear communication between care providers and patients.

Contact

Elisabeth Patiraki

Faculty of Nursing, University of Athens

123 Papadiamantopoulou street, GR-11527, Athens, Greece

Telephone number: 0030 210 74 61 464 - Fax number: 0030 210 74 61 476

E-mail: epatiraki@nurs.uoa.gr

Poster 18. – Multiprofessional collaboration promoting functional capacity of elderly home care clients: perspectives of elderly clients

By: *Sini Eloranta, P.Routasalo & S.Arve (Finland)*

Background

When promoting elderly home care clients' functional capacity one must take notice of remaining physiological, psychological and social resources. One professional cannot do all this alone. Many different special skills are needed, which are possible to reach in collaboration with other professionals. Broad-viewed understanding about the remaining capacity can be achieved only through multiprofessional teamwork of various professionals. Elderly home care clients' are expert in their own lives and each member of the team brings his/her own expertise to the team. Multiprofessional collaboration occurs between professionals but at the same time in collaboration with an aged client and with his/her family member if it is needed.

Aim and objectives

The aim of the study was to describe experiences of elderly home care clients' (75+ yrs) concerning the multiprofessional collaboration promoting their functional capacity. The objectives of this study were to describe: 1) How do elderly home care clients' describe multiprofessional collaboration and 2) How do elderly home care clients' experience multiprofessional team members in promoting their functional capacity?

Methods

The data was collected by unstructured, qualitative interviews with 21 elderly home care clients. Their mean age was 83.5 years and there were seventeen women and four men. A qualitative inductive content analysis was used to analyse the data.

Results

The findings show that multiprofessional collaboration was participated by home care workers, home nurses and physicians. The interviewees described the professionals' work as a task-oriented and each expert took care of his/her own part of the work. The clients' did not recognise participants working as a team. Some of the professionals noticed elderly home care clients' own remaining resources. Then the functional capacity of the client was supported from the client's perspective. Often given support came out as a concrete help to the clients everyday life, but clients did not feel they had been really heard.

Contact

Sini Eloranta

Department of Nursing Science, University of Turku/Finland,
20014 University of Turku, Finland
e-mail: sini.eloranta@tyks.fi
Tel: +358 40 722 10 79, Fax: +358 2 313 22 84

Poster 19. – Stroke patients with eating difficulties – findings from an audit of multi-disciplinary patient records

By: Eva Carlsson, A.Ehrenberg & M.Ehnfors (Sweden)

Introduction

Stroke patients constitute a large group in hospitals and nursing homes. A considerable number of stroke patients experience eating difficulties due to i.e. hemiparesis or dysphagia. Common consequences of eating difficulties are malnutrition, slow recovery, low quality of life, and dependence. For the safety of the patient in the continuum of care, good quality documentation in the patient record is needed, including assessment, planning, and evaluation of interventions. As multi-disciplinary teamwork is an evidence-based model for effective stroke care, accurate documentation is essential for safe communication between staff and different care providers,

Aim

To describe how the care process for stroke patients with eating difficulties was expressed in the multi-disciplinary patient record, and to describe the information related to eating difficulties that was transferred to the next care provider at discharge.

Method

A record audit using an instrument developed for this study. Data were analysed using descriptive statistics and content analysis.

Material

The sample was consecutive and consisted of all patient records (n=106) from patients discharged from a Stroke unit at a Swedish hospital during the period January to June 2003.

Results

Eating difficulties were recorded in 38% of the records. RN's documented assessments of swallowing function for 75% of the patients, but there was no information on how this assessment was performed. RN's expressed patients' swallowing difficulties in an unspecific and non-professional terminology. Occupational therapists used a standardized terminology while speech-language therapists described the problems in a multi-faceted way. Nurses had documented body weight for 86% of the patients, at least once during the care episode, but the more comprehensive Body Mass Index measure was never documented. Neither nutritional status, nor any explicit assessment of functional eating was recorded.

Patients with severe manifestations of stroke, such as hemiparesis, had multi-disciplinary care plans. These plans were, however, unstructured and only a few contained planned interventions for training or compensation for eating difficulties. Evaluations of these interventions were documented by RN's and were not explicit, i.e. expressed as "Patient eating better today". Interventions were seldom documented, and if so, they were expressed in a general and vague way by the RNs, i.e. "Patient needs supervision when eating" (RN).

Special discharge forms were used for transferring information to the next care provider. Those documents contained mostly information on the current status of the patient. Limited information was found on interventions related to eating performed during hospital stay. There was no information on eating difficulties that had been observed during the care episode. No risks related to eating were documented and there were no care plans regarding eating in the discharge notes.

Conclusion

This study shows that recorded information about stroke care that was transferred at hospital discharge was unspecific. Nursing interventions and care plans were expressed in a non-professional terminology by the RNs. Documentation by other professionals regarding eating was scarce. This could be an expression of low quality care. The lack of documentation could also be interpreted as an expression of eating as a taken-for-granted activity that was not prioritised.

Contact

Carlsson E.
Department of Health Sciences, Örebro University
SE 701 82 Örebro, Sweden
Eva.carlsson@hi.oru.se
tel:+467 02 30 66 93, fax: +465 81 85 018

Poster 20. – Differences in the actual nursing records and the perceived use of nursing diagnoses and interventions in surgical unit nurses in Seoul, Korea

By: H.A.Park, Smi Choi-Kwon & H.J.Lee (Korea)

Background and Purpose

Actual (Narrative) nursing recording of nursing diagnosis and intervention (action) may differ from the perceived use in clinical settings. The purpose of this study was to elucidate the differences between the perceived use of nursing diagnosis and intervention and the actual nursing records of nurses working in surgical units.

Methods

Forty- two nurses from two tertiary hospitals in Seoul, Korea participated in the study between September and November 2005. The questionnaires were distributed and returned on the same date to the working nurses who had been in that unit for at least six months. The questionnaire was sent along with a consent form and the participants were asked to return them to one of researchers if they agreed to participate. The questionnaire consisted of a list of 74 nursing diagnosis and 133 nursing intervention. The subjects were told to respond on a 5-point scale ranging from "the highest use (5)" to "the lowest use (1)". Responses to each nursing diagnosis and intervention were used to calculate rank scores, reflecting each use of a specific nursing diagnosis and intervention. The questionnaire also covered the respondent's demographic information and working experiences in the hospital. For the narrative nursing records, a total of 120 days of 20 surgery patient records including pre, peri, and post surgery nursing records from the same hospitals were collected for the analysis.

Results

The age of the subjects ranged from 22 to 43 years (mean age, 26 years). The mean number of years of experience after graduation was 4.8 years and 3.3 years in surgical units. Regarding individual diagnosis , items such as 'infection, risk for,' 'pain,' 'tissue perfusion, ineffective: brain,' 'comfort, altered,' and 'airway clearance, ineffective' had higher frequency in nursing records, whereas perceived use in nursing diagnosis demonstrated a higher ranking to items such as 'aspiration, risk for,' 'infection, risk for,' 'nausea,' 'pain,' 'transfer ability, impaired,' 'skin integrity, impaired,' and 'injury, risk for' in descending order. For the perceived use of nursing intervention, 'administer prescribed medications and solutions' received the highest ranking followed by 'confirm & identify before the operative or invasive procedure,' 'implement aseptic technique,' and 'monitor respiratory changes' in descending order. However, the most frequently recorded nursing intervention was 'elevate left leg above heart level' followed by 'education on admission care', 'support left leg with pillows', and 'educate the prevention of falls', 'educate not to scratch an itching place', encourage elevation of left arm', and 'encourage to sleep.

Conclusions

Our study clearly illustrates that there was quite a difference in the perceived use and the actual recording of nursing diagnosis and intervention in surgical units, suggesting that there is a considerable gap between the perceived use and actual recording in clinical settings. The reasons for discrepancy between the actual recording and perception of use should be identified in the future to enhance better patient care by promoting the proper recording of nursing diagnosis and intervention in the hospital.

Contact

Smi Choi-Kwon, PhD,RN
College of Nursing
Seoul National University
Yongun Dong 28, Chong ro Gu
Seoul 110-799, South Korea
Tel) 822 740 88 30
Fax) 822 765 41 03
E-mail) smi@snu.ac.kr

Poster 21. – Evaluation of the diagnosis of constipation in elderly nursing home residents

By: *Gülendam Hakverdioglu, L.Khorshid, I.Eşer & G. Türk (Turkey)*

Introduction and purpose:

The purpose of this study was to determine the incidence and characteristics of the nursing diagnosis Constipation / Risk for Constipation in elderly nursing home residents.

Method:

This is a continuing study and conducted at Basin Sitesi Nursing Home. The sample of this study include the 129 elderly people who reside in the nursing home. So far, data from 82 elderly people (with a mean age of 76) have been collected. Data were collected using a list that includes the defining characteristics and risk factors of the NANDA diagnosis Constipation and Risk for Constipation through one-to-one interviews.

Findings:

According to findings gathered until now, only three of the elderly has not showed any of the signs and symptoms (defining characteristics) for the diagnosis of Constipation or Risk for Constipation. There were five or more defining characteristics for this diagnosis in 45 of the elderly (54.8%) and 11-14 in 11 elderly people. The most frequently observed defining characteristics were general fatigue, severe flatus, straining with defecation, dry, hard formed stool, decreased volume of stool, decreased frequency in defecation and abdominal distention. The most frequently defined risk factors were insufficient physical activity, insufficient fiber intake, recent environmental changes and irregular defecation habits.

Contact

Gülendam HAKVERDIOGLU
Research Assistant
Ege University - School of Nursing
Bornova
35100 Izmir /TURKEY
E-mail: gulendam.hakverdioglu@ege.edu.tr / gulendamh@yahoo.com
Tel: 0 90 232 38 81 103 / 137
Fax: 0 90 232 38 86 374

Poster 22. – Examination of nursing records of cerebral infarction patients

By: *Gülengün Türk, L.Khorshid, I.Eşer & G.Hakverdioglu (Turkey)*

Introduction and purpose:

The purpose of this study is to examine the nursing records of patients who have had a cerebral infarction.

Method:

This retrospective and ongoing descriptive study was conducted on the Neurology ward of Ege University Hospital. The study sample is comprised of all available medical records for all adult patients who are admitted to the Neurology service between July 1 and October 30, 2006 with the diagnosis of cerebral infarction.

A list of nursing interventions that are necessary for patients who have experienced a cerebral infarction was developed by the researchers by reviewing the literature and is being used for data collection. The data for the study are collected by examining patient records through screening the record archives. The nursing interventions that are recorded on a patient observation form are evaluated by two nurse researchers.

Findings:

So far the nursing interventions recorded in 20 patients' medical recorded have been examined. In the reviewed records the interventions recorded by nurses have included: vital sign monitoring, administration of requested medications, air mattress inspection, patient massage, raising the side rails of the bed, changing the patient's position, doing postural drainage, mouth care, nose care, hand-face care, monitoring nutrition, monitoring fluid intake and output, urinary catheter care and decubitus ulcer care.

Contact

Gülengün TÜRK
Research Assistant
Ege University - School of Nursing
Bornova
35100 Izmir /TURKEY
E-mail: gulengun_turk@yahoo.com
Tel: 0 90 232 38 81 103 / 137
Fax: 0 90 232 38 86 374

Poster 23. – Multicentre study on the use and usefulness of Nursing Taxonomies in psychiatric hospitalisations units

By: Mercedes Ugalde Apalaguetui, Teresa Lluch Canut, Rosa Gonzales Gutierrez Solana, Alicia Sanchez Linares, Marta Sierra Garcia, Judith Balaguer Sancho & Isabel Alonso Durana (Spain)

Introduction

This paper will report on a multicentre study conducted in Spain with the aim of assessing the use and usefulness of nursing taxonomies in psychiatric hospitalisation units. The following goals were set up based on records of nursing care plans of psychiatric inpatients:

- a. Identification of the kinds of nursing taxonomies in use;
- b. Detection of the most widely used nursing taxonomy;
- c. Establishment of the most prevalent nursing labels (North American Nursing Diagnosis Association – NANDA, Nursing Outcomes Classification – NOC, and Nursing Interventions Classification – NIC) in the different groups of psychiatric conditions;
- d. Analysis of the correlation between the NANDA diagnostic labels identified for the different types of psychiatric conditions, the interventions (NIC) carried out and the results (NOC) achieved.

Material and Methods

A descriptive and correlational design was implemented and monitored by the Nursing School at the University of Barcelona. Five health care centres with psychiatric units, belonging to three autonomous communities (Catalonia, Galicia and the Basque Country), took part in the study. The sample was based on nursing care plan records of patients admitted to psychiatric hospitalisation units over the last six months of 2005. The following variables were considered: type of institution, types of taxonomies used, groups of psychiatric pathologies, GDR, and taxonomic labels. The data was analysed with SPSS X 12.0 software.

The results of this study are under analysis and will be submitted at the Conference.

Project financed for

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Poster 24. – (Im)possible interview families experience heart failure (in minutes) to minimize suffering: how to apply measurement tools facilitating nursing diagnoses, interventions and outcomes evaluation

By: Ana Alexandra da Cunha Pinto (Portugal)

The statement and belief “I don’t have time to interview families” is the most common reason offered by nurses for not routinely involving families in their practice. With major changes in the delivery of health care services through managed care, budgetary constraints, increased acuity and staff cutbacks, time is of the essence in nursing practice.

To involve families experiencing heart failure, nurses need to possess sound knowledge of family assessment and intervention models, interviewing skills, mobilising therapeutic questions and commendations. Family nursing knowledge can be applied effectively even in a very briefly meet with families experiencing chronic illness if, health care professionals encounter purposeful, effective, informative and even healing strategies to minimize suffering.

To create a unique interview, it was used the Illness Beliefs Model and applied to the reality of the Cardiology Unit Care of heart failure. A qualitative approach investigation aimed to identify, first, the profile of constraining and facilitating beliefs of patients and families that are involved in the process of living along side chronic illness; and second, therapeutic questions and commendations to alleviate suffering, obtained from constraining beliefs as “truth’s” to challenge or facilitating beliefs has strengths to valorise. It was respected the ethical guidelines of investigation when applied the instrument to 9 participants (6 patients and 3 families). The semi-structured interview used offered data that was treated within Bardin findings.

Consequently we offer this interventive questions to put to patient and family members experience heart failure regarding to their constraining beliefs: As a patient/family member what is your biggest fear towards death?; As a patient/family member what strategies can you find to help managing your illness?; As a family member do you feel that the patient could contribute in a different way to the appearance of this illness?. Towards commendations we can offer some examples for nurses to use with patient experience heart failure and his family based on facilitating beliefs: It’s important to the client to recognise the benefit of being implicated with its treatment!; It’s excellent to know that as a family, you are making a good effort to help the patient living along side its illness!; It’s positive that the patient feels that his families look him as a person instead as a illness!.

Interviewing briefly families with heart failure is possible, when consider some key ingredients: manners to engage or reengage family members to the purpose of a brief encounter; therapeutic conversations to assess key areas of internal and external structure and function; family genogram and ecomap; and especially therapeutic questions obtained from the patient beliefs; and finally commending the patient and family on strengths.

The use of this work instrument give nurses the possibility to encounter patients experience heart failure and families in a unique spot. Their practices are focus for the excellence of care in just a few minutes, which requires good management of time and expertises.

Contact

Ana Alexandra da Cunha Pinto

Rua Alfredo Roque Gameiro n.º 4, 3.º R – 2675-277 Odivelas, Portugal

Mobile phone number: (00 351) 91 828 99 95

E-mail: cunhapintoana@sapo.pt

Poster 25. – Patient classification as a tool for nursing management at children and adolescents outpatient department

By: Pia Saajanto, Pirjo Kaakinen & Liisa Ukkola (Finland)

Based on a target and action plan for the years 2004–2007 of the Ministry of Social Affairs and Health, good management practices are critical success factors in nursing. The focus of nursing management is improvement of nursing effectiveness by improving evidence-based activity. A nursing manager needs advanced electric follow-up and reporting systems in order to be able to indicate and evaluate quality, effectiveness and costs of nursing.

At the Oulu University Hospital (OUH) is developed the Oulu Patient Classification (OPC) for optimal resourcing of nursing personnel and cost accounting. Despite of the patients' similar medical diagnoses, patient care intensity may vary significantly. The OPC is currently being used in numerous hospitals and wards either as an independent indicator or as a part of the Rafaela™ system. Reliability of the OPC has been examined in several studies and user-experiences are extensive. Patient care intensity classification is one of the essential pieces of nursing core data belonging to the structural data of an electronic patient record supported by the Ministry of Social Affairs and Health.

When the OPC developed further, a need for measuring outpatient nursing became apparent as well. In the years 2001–2003, a project called POLIHOI was initiated at seven outpatient departments, where applicability of the OPC indicator was tested. The subsections of the OPC indicator were defined more closely to fulfil the needs of outpatient nursing.

Flexible and rapid use of patient care intensity classification data as a tool for personnel planning requires quick availability of information. Since the beginning of 2005, new web-based recording software for OPC data has been used as a part of the electronic patient record EskoSofie care plan at the OUH. Patients are classified based on a day plan by evaluating care during each shift. The realised nurse recourse information is entered every shift and possible remarks concerning the staff are documented. Statistical information of patient classification can be viewed by using special statistics software and that gives an opportunity to see real-time patient classification information. Standard reports of a unit including summaries of several wards (clinics) are available as basic statistics. All this enables a more comprehensive evaluation of activity and planning of optimal staffing both at clinic and ward levels. Patient classification POLIHOI as a tool for nursing management is an everyday activity in the outpatient departments of the OUH and information is reported every four months.

At the Children and adolescents outpatient department, the number of classified patients varies from 700 to 900 each month. Nursing recourse, who participates in patient care, implements this classification. The function points vary between 8.000 and 10.000 points; the most burdening days are the first days of the weeks. At the Children and adolescents outpatient department, the optimal nursing care intensity level based on PAONCIL method is 48 points. In the spring 2006, there were two to four days in a month below this optimal intensity level and 14–17 days exceeded the optimal number. In outpatient nursing of children and adolescent POLIHOI classification was mainly divided into classes two and three (average need for care). Classes one (minimum need for care) and five (maximal need for care) are rarely seen. Subsections of care planning and coordination; health status including further treatment and emotional support emphasise in outpatient nursing.

Contact

Pia Saajanto
PPSHP, OYS
Hallintokeskus
P.O.BOX 10
FIN - 90029 OYS
FINLAND
Telephone: +358 - 8- 3154169 or +358408655063
Telefax: +358-8-3154499
E-mail: pia.saajanto@ppshp.fi

Poster 26. – The implementation of a special nursing station for people with dementia

By: Christian Imhof, C.T.Töpfer, S.S.Strobel, T.K.Kreggielski, F.M.Messerschmidt, J.S.Sörgel, S.W.Witzel, A.S.Schwarz, A.K.Kneiske & J.V.Vogel (Germany)

Our target is the Implementation of a special nursing station for people with dementia in a public home for the elders in Wiesbaden Germany. We are going to show that there is a significant relationship between the nursing station including its environment and the behaviour of the patients as well as their cognition handicaps. For proving this hypothesis we use different testing methods of quantitative and qualitative research as well as a physical treatment. A pre- post study design is used to test the effects on the patients that we believe will be a higher sense of confidence, a lower level of agitation and a better handling of the cognition handicaps.

In may 2006 (t0) we started with embedded supervision on two nursing stations from where the future patients for the special nursing station should be elected. We worked with the 40 patients for six weeks. The main subjects we wanted to look at were the cognitive structure, the behaviour during the different meals, communication and their reactions on the body caring act. Our results were documented in a standard form for every patient. After that time each student tested three patients with the following test methods: Cohen-Mansfield Agitation Scale, Noscar test, Mini Mental Status Test, Mini Nutritional Test and the BESD (a test to detect pain on people with dementia).

We tested 30 patients, because three denied the testing through a physician and seven didn't react on our Inviting to the tests. The 30 patients were put into two groups, which code for their present nursing station. The control group is built with patients from Station two, while patients on Station one, the new specialized, are our intervention group.

For minimizing the risk of bias the students were trained on the testing methods and tested only one test a day per patient. After these steps the students worked in groups with different subjects to improve the nursing process, the architecture and biography work on the station. The group improving the biographies of the patients used questionnaires which should be fulfilled by the family. Architecture was screened on handicaps for people with dementia and adapted in a group of architects, specialists for bathrooms and students of nursing science. The employed nurses, ergo therapists, the housekeeping and cleaning personal were embedded to the work groups to present their point of view and experience. The multidisciplinary work, also with the physicians of the patients and a psychiatric ambulance, built a main point of the work because studies proved that patients with dementia need a strong network of all employees.

We finished a concept with proposals for improving the upper topics and planned to come back in March 2007 (t1), when the approvals were put into reality, and retest the 30 patients.

Contact:

Christian Imhof
Ulmenweg 12
36037 Fulda
GERMANY

Poster 27. – Adherence to therapeutic regimen in hypertensive patients

By: Inês Cruz (Portugal)

The work that we present is about a focus of nursing practice: adherence to therapeutic regimen by patients suffering of chronic diseases. The theme emerged from the attention it has received from the scientific community, with the aim of helping nurses in the diagnostic process faced by situations of non-adherence to the therapeutic regimen.

In fact, the problematic of adherence/non-adherence to treatment is of primordial importance, since it greatly influences the treatments' effectiveness, the illness control, the quality of life and the costs related with health. Adherence is a primary determinant of the treatments' effectiveness, while non-adherence is an important impediment to the effectiveness of health interventions.

In an attempt to delimit our study, we confined this focus of attention to people with high blood pressure, because of the concern that this pathology and its repercussions have generated around the scientific community.

In effect, people are faced with health problems during their life span that require nursing care. However, nurses can only respond to the care needs of people if they identify them correctly. The diagnostic precision is crucial for the success of the nursing care, because of the consequent interventions' adequacy.

In this perspective, the goal of this study was to construct a measurement instrument for evaluating the level of adherence to the therapeutic regimen, including lifestyles modification and pharmacological therapy, in patients with hypertension. This useful instrument may be used in clinical context with the purpose of helping nurses in the non-adherence diagnostic process.

In order to construct the adherence scale, we looked at national and international guidelines that recommend changes in lifestyles and pharmacological therapy to the management of hypertension. Therefore, the scale is comprised of five dimensions: dietary restrictions (7 items), physical activity (1 item), alcohol intake (2 items), smoking (1 item) and medication regimen (1 item).

The psychometrics characteristics of a measurement instrument that provide quantitative data, more specifically validity and reliability, are the main criteria to assess its quality. With the purpose of verifying the content validity of the instrument, we looked at the literature and discussed with clinical experts (nurses, doctors and nutritionists), who worked with hypertensive patients and had been studying the adherence of chronically ill people. With the aim of analysing the internal consistency of the adherence scale, which was comprised of 12 items, the Cronbach's coefficient alpha was calculated. The obtained results pointed out an alpha value of 0,5953, which was probably caused by the small variation of the answers and the sample size.

In spite of the value of Cronbach's coefficient alpha, we think that this study may constitute a starting point to other methodological studies aiming at improving the measurement instrument's reliability. This is especially important because measurement instruments for evaluating adherence lack in this knowledge area.

The results show that physical activity and dietary regimen have the lower levels of adherence. Alcohol intake, smoking and medication regimen have higher levels of adherence. The highest adherence level was found in the medication regimen.

Contact

Inês Cruz
São João College of Nursing
Rua Dr. António Bernardino Almeida, 4200-072 Porto, Portugal
Phone: +351 225 073 500, Fax: +351 225 337 096
E-mail: inescruz@esenf.pt

Poster 28. – Nursing students communication skills in clinical practice

By: Mateja Lorber, Barbara Donik, Barbara Perič, Milena Pišlar & Miha Kaučič (Slovenia)

The quality of the relationship between a patient and nursing students depends upon ability of quality communicating that must nursing students know and use. Effective communication with patients in nursing includes verbal and nonverbal communication, therapeutic contact, empathies, consideration of individualities, privacy and confidences.

Purpose and Aims

The purpose of this study was to describe the current state of communication skills of student in University College of Nursing Studies in University of Maribor. The study aims were to:

- Present different communications skills in nursing practice,
- Find out how and whether at all, nursing students are using communications skills which were taught during lectures,
- Assess nursing students communications skills in clinical practice,
- Find out whether nursing students are aware that for gathering patient's data about his problems and needs it is necessary to establish good interpersonal relationship and communication.

Method

We will gather data with quantitative technique and with questionnaire. We will use descriptive method of research for empirical demonstration of research problem. The research will be done in new academic year 2006/2007. We will interview 200 nursing students in University College of Nursing Studies from University of Maribor in November 2006.

Findings

The results will be presented at conference.

Conclusions

We are aware, that communication skills can be improved with training and education. Students must learn communication skills and also know how to precisely observe the patients, think critically, precisely gather, interpret and analyse patient's data, formulate nursing diagnosis, outcomes and plan the interventions of nursing care.

Contact

Lorber M.

University of Maribor, University College of Nursing Studies

Žitna ul. 15, 2000 Maribor, Slovenia

E-mail: mateja.lorber@uni-mb.si

Poster 29. – Nursing Outcomes Classification – study of the reliability in a Brazilian University Hospital

By: Miriam de Abreu Almeida, Deborah Hein Segnafredo, Adele Kuckatz Pergher, Margarita Ana Rubin Unicovsky, Débora Francisco do Canto, Sofia Louise Santin Barilli, Débora Vianna Eckert, Vanessa Kenne Longaray, Paula de Cezaro & Valérie Giordani Araújo (Brazil)

Introduction

The Classification Systems is a standardized terminologies used in the different stages of the Nursing Process. The Hospital de Clínicas de Porto Alegre (HCPA), which is an important university hospital from the south of Brazil, computerized the nursing diagnosis stage by using the North American Nursing Diagnosis Association's (NANDA) Taxonomy I and the Basic Human Needs Theory. The nursing interventions and outcomes do not follow standardized terminology. The Nursing Outcomes Classification (NOC) comprises the results that describe the state, behaviors, reactions and feelings of the patient in response to the care given. Each result has a title, a definition and a list of indicators that describe the client, care giver or family.

Objective

To study the viability of the NOC Classification use in orthopaedical patients hospitalized with Nursing Diagnosis Self-care Deficit: Bathing and/or Hygiene; to validate by expert nurses, the results indicators Self-care: Bath, Self-care: Hygiene, Self-care: Activities of the Daily Life; Self-care: Oral Hygiene selected from NOC.

Methodology

It is about a descriptive, transversal and quantitative study with expert nurses from HCPA that work with adult orthopaedical patients submitted to Total Hip and/or Knee Replacement, according to the Fehring (1987) model. For the validation, the results indicators from NOC will be punctuated in the Likert scale (1= not relevant; 2= little relevant; 3= relevant; 4= very relevant; 5= extremely relevant) by the experts. The ethical aspects will be observed.

Final considerations

We hope with this research to contribute to the likely implant of the NOC in the computerized Nursing Process of the HCPA. The importance of working with the classification that measures results is to allow the identification of the impact and of the cost of the nursing interventions in the patient care.

Contact

Miriam de Abreu Almeida, RN, PhD
School of Nursing
Universidade Federal do Rio Grande do Sul
Rua São Manoel, 963 – ZIP 90620-110
Porto Alegre – RS – Brazil
E-mail: miriam.abreu@terra.com.br

Poster 30. – Content validation of the defining characteristics of the ineffective protection nursing diagnosis

By: Claudia Capellari & Miriam de Abreu Almeida (Brazil)

Introduction

The nursing process, understood as the development of a methodology for the nursing practice, organizes the place of work; known as a strategic action, it is an instrument for the accomplishment of the nursing care. This process encloses five interdependent and inter-related steps that compose a continuous circle of thought and action. Between them, there's the nursing diagnosis whose classification development has based on the search for true science and standardization of actions and ways of speaking of this profession. According to the North American Nursing Diagnosis Association – NANDA (2005), the nursing diagnosis is the clinic judgment of a person, family or community. The hemodialysis patient would have many nursing diagnosis and because of the patient's fragility, it was chosen to study the defining characteristics of the Ineffective Protection nursing diagnosis in these persons.

Objective

To validate the defining characteristics of the Ineffective Protection nursing diagnosis among nurses of the dialysis centers from the state of Rio Grande do Sul, Brazil, registered in the Nephrology Brazilian Society.

Methods

It is about a quantitative, transversal and prospective study based on the Diagnosis Content Validation Pattern (Fehring, 1987). The population is going to be made of nurses from 72 of the dialysis centers of Rio Grande do Sul. For this sample, nurses who answer to pre-defined criteria, modified of Fehring (1987), will be chosen. The data collection is going to be made through a frequency scale (Lickert) in which the nurses will point from 1 to 5 the defining characteristics of this nursing diagnosis, judging less or more characteristics, depending on the health of the subject in hemodialysis, meaning:

1. not characteristic,
2. little characteristic,
3. somehow characteristic,
4. considerably characteristic,
5. much characteristic.

The data analysis will have frequency calculation, average and standard deviation. It's through this analysis that will be obtained the main and second index that will define such diagnosis. The ethic aspects of survey with human beings are very well understood and considered.

Final considerations

It is believed that this study will help on reflecting on such diagnosis in patients with chronic kidney diseases as well as on its application on the nursing care and assistance practice.

Contact

Miriam de Abreu Almeida, RN, PhD
School of Nursing
Universidade Federal do Rio Grande do Sul
Rua São Manoel, 963 – Zip 90620-110
Porto Alegre – RS – Brazil
E-mail: miriam.abreu@terra.com.br

Poster 31. – Facilitation of standardized nursing communication

By: Katarina Lokar, T.Gec, J.Jost, A.Karlovcec, M.Klancnik-Gruden, R.Kobentar, A.Mihelic Zajec, M.Pajnkihar, D.Rebec, I.Trobec, M.Vidensek & R.Vujica (Slovenia)

Introduction

At the 2nd Slovenian conference for nursing diagnoses in September 2005, the need to facilitate the use of common standardized nursing language in Slovenian nursing practice became clear. At the Conference it became obvious that a lot of work and development, especially with nursing diagnoses, was going on in different areas of nursing practice but because of the lack of communication between these areas the nursing language in practice was inconsistent. To overcome these obstacles a National committee for nursing diagnoses was established. Clinicians, educators and researches from different areas of nursing practice were appointed as the Committee members.

Material and methods

The first project of the Committee was to investigate the usage of nursing diagnoses in nursing practice and in teaching nursing students. In March 2006, a survey was conducted in all Slovenian health care organizations and nursing schools. Research data were collected with questionnaires that were distributed to unit nursing managers and were analyzed with descriptive statistical method.

Results

The total number of returned questionnaires was 290. Thirty one percent of questionnaires were responded by community nurses, 26.2 % by general hospital wards, 14.8 % by clinical wards, 7.6 % by outpatient units, 8.3 % by social health care units, 5.9 % by nursing colleges, 0.7 % by secondary nursing schools, and 5.5 % by other units.

The results showed that 34 % of units used nursing diagnoses (ND) regularly in all patients, 6.5 % used ND regularly in certain number of patients, 11 % used ND periodically in specific patients, 18 % used ND only in pedagogic work with students, 24 % did not use ND at all, and 4.8 % stated different times when they used ND for professional communication. Almost third of respondents who used ND (27.3 %) had been using ND for more than 10 years, 17.3 % used ND from 5 to 10 years, 15.4 % from 3 to 5 years, 16 % from 2 to 3 years, 7.7 % from 1 to 2 years, and 7.7% less than a year. The majority of the respondents (93.6 %) who used ND in their practice formulated ND with the help of different nursing literature and classification systems.

Almost half of the respondents (43.4%) felt the need to use ND in their practice, 3.8% did not, and the others did not answer the question. Respondents named following obstacles in using ND: nursing shortage (43.7%), lack of knowledge (33.5%), lack of nursing management support (4.7%), and other obstacles (18.1%).

Two thirds of respondents (70.4%) expressed their expectations related to the role of the National committee for nursing diagnoses. Thirty four percent expected from the Committee formulation of national guidelines for development and verification of ND, facilitation of standardized ND, help in application of ND to nursing practice, 20.4% expected education about ND, 8.2% promotion of ND, 7.2 % literature on ND, 6 % computerization of nursing information, and 14.6% solution of problems related to nursing shortage and management.

Conclusion

Nursing is an information-intensive profession but, the language that nurses in Slovenia use to describe the nursing process and document nursing is not consistent. We all need to describe nursing care the same way because it facilitates continuity of patient care. It also facilitates communication among nurses and between nurses and other health care providers and makes it possible to organize information in a manner that can be computerized.

Contact

Katarina Lokar
Institute of Oncology Ljubljana
Zaloska 2
1000 Ljubljana
Slovenia
E-mail: klokar@onko-i.si
Phone / fax: + 386 1 5879 625 / + 386 1 5879

Poster 32. – Comparison of Statistic Tools for the Esteem of Inter Observer-Reliability in the Identification of the Nursing Diagnoses according to the NANDA Taxonomy

By: Claudio De Pieri (Italy)

Objective

To compare adequacy and likeness of different statistic tools in the esteem of interobserver reliability of nursing diagnoses.

Introduction

Despite interobserver reliability is a critical problems in the evaluation of a diagnostic instrument, few are the studies conducted on this topic with regard to the nursing diagnoses.

Moreover, the best-known tool for measuring interobserver-reliability, the K of Cohen, is currently under criticism by many.

Rationale

A problem of many human intellectual activities, concerns the homogeneity of judgment among different raters, also in presence of common tools for the evaluation, because of the different sensibilities, experiences, values and knowledge. The NANDA taxonomy contains over 170 Nursing Diagnoses. The diagnoses spread from easily estimable problems (physiological) to problems that are more complex (psychological and social). Unlike physicians' diagnostic statements, nurse can contemporarily identifies several nursing diagnoses for each patient. The structure of a NANDA diagnosis contemplates a set of defining characteristics and risk factors. Only the knowledge about a theoretical diagnostic frame and a good critical reasoning bear a good NANDA diagnosis out. No scales or standardized instruments are available. These factors increase enormously the possibility of disagreement among different raters.

Having no scales or standardized instruments, the only way one has to evaluate reliability is to compare agreements of different raters, or raters>experts. One can use proportions, but part of the agreement, in the proportion, depends on chance. So, if one needs to know if there is a good agreement between the nurses of a ward in defining diagnoses, or if the students learn well diagnostic methodology, or, finally, whether the end-point of a RCT, stated as a nursing diagnosis, is well measured, he need appropriate statistic tools, adjusted by chance, to compare qualitative variables. The K-Cohen is a well-known estimator of such a type, but, in our experience, it shows problems.

Cichetti/Feinsten, at first and Kundall e Gwet after, pointed out, that K is not a very good estimator, for its dependency on trait prevalence and marginal homogeneity. Furthermore, one can use the K-Cohen statistic for situations in which two raters have to choose between two or more (weighted K Cohen) modalities of a variable. However, if one have to compare more raters and two or more expression of a variable, K-Cohen does not fit.

Methods and materials

We revisited database and results of two studies on interobserver reliability, we carried out previously and analyzed with Mc-Nemar test and K-Cohen. In the first, diagnoses were expressed

on n. 90 hospital inpatients, by 15 couple of students>10 couples of experts. In the second, diagnoses were defined on n.10 psychiatric inpatients, by 10 nurses>3 experts the second. We used AC statistic algorithm in comparison with Kappa and McNemar test.

Results

The analysis of the materials is still in progress, We are re-analyzing former studies with attention on methodology too. We will provide examples about the comparison of the different methodologies of statistic analysis and suggestions based on our experience to improve well-designed interobserver reliability studies.

Poster 33. – Nursing Communication - Implementation of the VIPS model in the paediatrics unit of Aalborg Hospital

By: Ulla Sloth, Elsebeth Poulsen & Lise Kirkegaard Lyngholm (Denmark)

Background

In May 2004 the VIPS-model were introduced into Aalborg Hospital, and consequently also into the pediatrics unit, to prepare for the electronic patient journal EPJ. The VIPS model was developed in Sweden by the three Swedish nurses and nursing researchers Margaretha Ehnfors, Anna Ehrenberg and Ingrid Thorell-Ekstrand. The model has been developed through comprehensive literature studies (metaanalysis) and tests in the clinical nursing practice.

The VIPS-model was chosen as the basis of the nursing records at Aalborg Hospital, as it is structured in the way data are gathered and documented. The VIPS-model is seen as a file system where data are put in the right drawers, so that data can be retrieved. Furthermore it is possible to build in standards and guiding nursing plans with a view to evidence basing, and it is possible to measure the quality of the documented nursing.

The nursing records present an important tool for the nursing staff in their daily work. It is a tool for documentation, communication and management. The nursing records can:

- show nursing of a high professional quality
- prevent neglect, mistakes and unjust measures
- facilitate relevant, understandable and identical information
- show planning and coordination of individual episodes of care
- make visible expected and actual results of nursing actions
- make possible professional development and increased knowledge production
- create continuity in interdisciplinary and intersectorial work

A documentation model does not in itself assure the quality of the nursing, but it does increase the probability of a good result.

Nursing – communication and implementation

The implementation of the VIPS-model has been adopted by the hospital management of Aalborg Hospital, and the chief nurse is responsible for the project management. In the units the head nurse bears the responsibility for the project. For the implementation of the project, a project organization has been established with a responsible project manager, a steering committee, and a working party. In parallel to this, a cross-disciplinary implementation group has been organized, and in each unit a local VIPS group has been established.

In the pediatrics unit the development nurse, the overall key person, has been in charge of instruction and implementation of the VIPS- model for VIPS key persons in the pediatrics sections. The pediatrics unit, Aalborg Hospital, consists of 4 pediatrics sections, each with 2 or 3 key persons. In co-operation with the development nurse and VIPS key persons in the sections, the nursing staff of all the sections have been given the relevant instruction.

The instruction has been in small groups of 10-12 persons, where the VIPS nursing records have been presented, and where all have had the opportunity to discuss the professional contents of the nursing records. At the same time emphasis has been put on allowing all to test the model

on the basis of a prepared case. The nursing-related documentation has been discussed in groups, and each group has had an opportunity to express advantages and disadvantages in connection with the implementation of the model.

As a follow-up to the initial instruction, all sections have had ongoing instruction focusing on e.g. the admission-related conversation and its importance for involvement of children's and parents' problems, planning of nursing intervention and result, preparation of nursing diagnoses, goals and nursing actions, as well as the experienced quality of the documented nursing.

Results

To support quality assurance of the nursing-related documentation, an internal audit has been made once a month in 2004 and 2005 by the development nurse, VIPS key persons and senior staff nurse and head nurse in the individual sections. At Aalborg Hospital there have been external audits in November 2004 and 2005.

Internal and external audits show that the nursing-related documentation focuses on anamnesis, nursing status at arrival and the actual nursing status. To a lesser extent on documentation of the analysing and forward-pointing part of the nursing plan. Special efforts are still necessary concerning the application and documentation of nursing diagnoses, nursing goals, and the delegated and independent nursing actions.

Measurement of the nursing-related quality by introducing a nursing standard for children needing CPAP treatment.

To make nursing actions visible and at the same time implement nursing diagnoses and goals, a standard has been worked out for children with respiratory problems needing CPAP treatment. The standard has been worked out in the spring of 2006 and has been discussed and implemented in the pediatrics unit 301, and is to be implemented from the autumn of 2006. There will be an evaluation in March 2007, where the effect of the introduction of the standard will be assessed. Is it possible to adapt nursing to the special needs of each individual child, when a standard forms the basis of the nursing? Will we be able to see that the nurse spends more time with the patient when a standard is available?

Contact

Ulla Sloth, udviklingssygeplejerske, MCN
Elsebeth Poulsen, sygeplejerske
Lise Kirkegaard Lyngholm, sygeplejerske Børneafdelingen
Aalborg Sygehus afsnit Nord
Reberbansgade
9000 Aalborg
Danmark

Poster 34. – The role of e-representing of International Classification for Nursing Practice (ICNP®) in health care education

By: O. Sustersic, U. Rajkovic, V. Rajkovic & D. Cibic (Slovenia)

Teaching about classifications plays an important role also in nursing education. ICNP® is a unified professional language devoted to nurses, other health workers and broader.

The thesaurus is presented with a database. On it's base we have developed several browsers which enable users to browse the classification on personal computer, internet and hand held computer. Fruitful combination of these versions significantly contributes toward successful education in health care

Contact:

University of Ljubljana, College of Health Studies, Poljanska cesta 26a, SI-1000 Ljubljana
olga.sustersic@vsz.uni-lj.si

phone: +386 41 67 20 33

fax: +386 1 542 13 95

Poster 35. – Quality insurance with the applied indicates and protocols

By: Papp Katalin, Törő Viktória & Vince Mihályné (Hungary)

We would like to present one topic what is very important in the health system in our country which is Hungary. The quality insurance is a big and new challenge nowadays. That institutes able to function what the health service can give most effectively and economically and the service can give with the best quality for the patients/population. We present and emphasize the using and necessary of the protocols and indicates. The developing of the protocols could get bigger and bigger position in the patient care mainly in the nursing documentation. The patient care has to organise that it promote the continuously and co-ordinately service and increase the quality of service. The quality insurance means in the nursing the evidence based nursing. For this is very important to attend the scientific character of the nursing. The nursing could be very complicated and variable definable act.

Research

We shared in a hospital 100 questioners for the patients and 25 questioners for the nurses. Our research based on the analysing of these answers.

Hypotheses:

We wanted to know could be more effectively the patients' care after the applying of the nursing protocols. The patients would be more satisfied with the nursing after the applying of the protocols.

Results

The based on the answered we can say the health workers use the nursing protocols with pleasure. They can spend more time with the patients. The developed and used "nursing protocol of the new patient in charge" has resulted the visible change during the in charging of new patient. The philosophy of the continuously developing can be a sign for the health profession and it can look for the possibility for better practice. If we commit our self to helping the more effective nursing.

Summarizing

1. With our research we could prove that the applying of the nursing protocols is very important in the nursing.
2. These are well used in the present modern management nursing and these are influence of the cost-benefit financial system.
3. We have suggested that have to develop suitable nursing protocols for every nursing intervention; these give safe for the health workers. But these protocols could be different a little bit on each hospital word.

Poster 36. – The use of NANDA nursing diagnoses to structure the nursing documentation – a pragmatic approach

By: B. Hürlimann, T. Graber, M. Kuttnig, R. Paul, C. Schwanekamp, T. Srampical & R. Wüthrich (Switzerland)

In 2005, a survey of nursing quality on three wards of the Department of Gastrointestinal, Liver and Lung Disease of the University Hospital Berne, Switzerland, showed that the nursing process was not visible in the nursing documentation. A lot of information was documented in the daily nursing report but did not appear in the nursing plan.

Lead by a Clinical Nurse Specialist, a workgroup of six nurses, representing all wards in the department, was established to restructure the nursing documentation. Taking into account that an electronic nursing documentation is due to be implemented within the next few years, the workgroup decided to take the NANDA Nursing Diagnoses as framework for the new structure. In an expert report, NANDA Nursing Diagnoses have been identified as the best choice to base an electronic nursing documentation upon (Baumberger, 2004). Another basic principle was to choose as much a pragmatic approach as possible in order not to overtax the nurses on the wards with too theoretical an approach.

First, eleven nursing reports were analysed to identify the most typical diagnoses in the department. For these, a handbook was written according to the PES-Format: definition, etiology and symptoms (slightly shortened and adapted to the situation in the department). In this phase, one chosen diagnosis was rejected and replaced by two more specific ones and two diagnoses more were selected, which the workgroup identified as typical from their professional background, but which did not appear in the analysis of the documentations. In the end, the handbook contained sixteen different diagnoses.

In the next step, the existing nursing documentation was adapted that a diagnosis can be marked and documented in all the steps of the nursing process: the anamneses, the nursing plan and the nursing report and evaluation. Thus, it will be easier for the nurses to point out all the steps of the nursing process and the documentation gains in clarity and gets more comprehensible.

The workgroup then tested the new documentation, using it for an actual patient situation on their respective wards. "Activity Intolerance" was rejected in this step, as the distinction to "Impaired Physical Mobility" was not clear enough to introduce both in a first step in daily practice.

As results of the project, until now the newly structured nursing documentation and the handbook are available. In April 2007, we hope to present also first results of the pilot test of the new documentation as well as a first evaluation of the "pragmatic approach".

Contact

Barbara Hürlimann
Clinical Nurse Specialist
DMLL, Q 146
Inselspital
3010 Bern
Switzerland
Tel. +41 (0)31 632 95 24
Email: barbara.huerlimann@insel.ch

Poster 37. – Measuring the outcomes of nursing and midwifery interventions in Ireland

By: Christine Hughes (Ireland)

The national health strategy requires that the quality of care in the Irish health system meet agreed standards, that this is regularly evaluated against the agreed standards and that the delivery of services will be evidence-based. By identifying their interventions and measuring the outcomes, nurses can articulate and clarify to what extent their interventions contribute to the quality of service provision. The international literature provides clear definitions of nursing and healthcare interventions and evidence that nurses and midwives have researched the outcomes of their interventions; it also shows the benefits of standardised nursing language and of electronic documentation systems.

A project was conducted which aimed to evaluate the extent to which nurses and midwives in Ireland are measuring the outcomes of their interventions and to develop a resource pack for selecting interventions and measuring their outcomes.

Following a wide-ranging review of relevant literature, a mixed methodology approach was adopted. 449 questionnaires were distributed to a purposive sample of nurses and midwives working a variety of settings (valid responses = 158, 35.6%). Focus group discussions were held with nursing and midwifery practitioners and teachers using a semi-structured interview schedule to explore the findings from the survey and to inform the development of a resource pack for the selection and measurement of interventions.

A preliminary analysis of the data gathered from the survey revealed themes and topics requiring more in-depth exploration with focus groups. The quantitative data was analysed using SPSS and Excel, and the qualitative data was analysed using content analysis procedures.

Some results from the survey were as follows:

- The majority of respondents indicated that they used either instruments, scales or assessment tools to measure the outcomes of nursing, midwifery, multidisciplinary/interdisciplinary or other interventions (n=129/158, 81.7%); 532 (55.4) were described as nursing and/or midwifery interventions only and 476 (39.7) as nursing, midwifery and multidisciplinary interventions.
- 942 instruments, scales and assessment tools (or their target area) were identified by the respondents as being used in the documentation of nursing and midwifery interventions.
- 791 (84.0%) instruments, scales or assessment tools were completed in writing only, 67 (7.1%) electronically only, and 50 (5.3%) both in writing and electronically; no completion method was mentioned for 34 items (3.6%).

Conclusions:

- Nurses and midwives working in different types of setting in the Irish healthcare system have experience of using instruments, scales and assessment tools to guide and document their interventions.
- Instruments may not be widely used or are used selectively in accordance with specific priorities.
- In relation to multidisciplinary healthcare interventions many of the instruments identified were originally developed by other health and social care professionals.
- Support should be provided and expanded for the initiation, continued use and development of nursing interventions by nurses working at all levels within the health system and in collaboration with the multidisciplinary team.

- As the health services in Ireland move towards increased electronic communication, nurses and midwives must ensure that they can continue to document their interventions within any future patient and client care record system.
- Nurses and midwives should also ensure that the system to be used will enable to them to identify the outcomes of their clinical interventions as well as those relating to non-clinical quality improvement interventions.

Contact

Christine Hughes
Professional Development Officer
National Council for the Professional Development of Nursing and Midwifery
Dublin
e-mail: chughes@ncnm.ie

Poster 38. – Information systems use among Ohio registered nurses: testing validity and reliability of nursing information systems use measurements and its outcomes

By: Amany Abdrbo & Chritine A. Hudak (USA)

Introduction and Specific Aims

Health care organizations spend approximately 4.6% of their health care budgets on information technology. Nurses constitute more than 50% of hospital operating budgets, and they are urged to use information technologies to improve patient safety and quality. It is important to evaluate the benefits and satisfaction derived from those technologies. Additionally, the new field of nursing informatics needs to establish its instruments. This pilot study proposes to test the validity and reliability of informatics measurements among nurses for a larger study.

Theoretical Framework

This study was guided by the outcomes model for health care research. Design: It had a descriptive correlational design with a survey methodology.

Sample

A convenience sample of 62 nurses who were working in hospitals and enrolled in advanced nursing courses and who spent at least 50% of their time providing direct patient care and used at least one information system (IS) was recruited to fill the study questionnaire.

Instruments

IS use was measured using 7 items from an investigator developed instrument stemmed from utilization of IS to accomplish nursing tasks that represent the integration of the nursing process. IS benefits were measured using an investigator-developed comprehensive list which encompass IS benefits that are generally related to nurses and their practice and derived from instrumentations measuring IS benefits which have been used in previous studies. Content validity is supported because many items on the instrument have already been included in measurements that have been shown to be valid and reliable. However, because this list was collected from different studies that measured benefits of specific IS in specific settings validity and reliability was measured in this study. Satisfaction was measured using a single-item measure from previous studies.

Results

Nurses average age was 33.14 ($SD= 8.91$) years, with 4 ($SD= 3.93$) years of experience. Eighty-two percent were female; most had a BSN ($n= 45$, 72.6 %), and 66% worked full time. These nurses worked 32 hours/week, had 4.5 ($SD 1.3$) years of computer experience, and 50% of them worked in critical care units. Validity was assessed by testing the hypothesized relationships and construct validity. As hypothesized, there were significant correlations between IS use (process); and outcomes: benefits and satisfaction) ($r=.38$ and $r=.46$ respectively, $P = 0.01$) and high reliabilities (Cronbach's alpha was .85 for IS use and .97 for benefits).

Conclusion and Implications

In this preliminary study in nursing informatics, instruments show psychometric evidence which will be beneficial to the larger study. Continued refinement of these measurements will facilitate identifying nurses' IS use and its outcomes.

Contact

Amany Abdrbo, RN, MSN, PhD C.

Case Western Reserve University, Frances Payne School of Nursing

Post-mail address: 2920 South Moreland Apt#20, Cleveland OH, 44120 USA

E-mail address: aamanyahmed@hotmail.com

E-mail address: amany.abdrbo@case.edu

Phone number: (216) 752 32 74

"Nursing Communication in Multidisciplinary Practice"

This book of proceedings brings together the one hundred and thirty-five contributions on the subject of nursing language and informatics, which were presented in Amsterdam at the 6th Biennial Conference of the Association for Common European Nursing Diagnoses, Interventions and Outcomes. A book such as this is rare, as it represents a truly worldwide account of the status of nursing language development and informatics in 2007, with authors being drawn from Europe, Asia, North and South America and Australia.

The theme of the conference, and of this book, is "Nursing Communication in Multidisciplinary Practice". Increasing recognition of the importance of such communication is strongly reflected in this book, demonstrating the leadership role that nursing is playing in the development of integrated patient-centred healthcare. While this is a book for 2007, it is anticipated that it will be relevant to healthcare practice far into the future.

Nico Oud

Fintan Sheerin

Margareta Ehnfors

Walter Sermeus