

From the Department of Nursing,
Karolinska Institutet, Stockholm, Sweden

Nursing Documentation in Clinical Practice

*Instrument development and evaluation of a
comprehensive intervention programme*

Catrin Björvell



Stockholm 2002

Nursing Documentation in Clinical Practice
Instrument development and effects of a comprehensive education programme
By: Catrin Björvell
Cover layout: Tommy Säflund
Printed at: ReproPrint AB, Stockholm

ISBN 91-7349-297-3

There is nothing more difficult to carry out,
nor more doubtful of success,
nor more dangerous to handle
than to initiate a new order of thing.

Machiavelli, The Prince

Nursing documentation in clinical practice

Instrument development and evaluation of a comprehensive intervention programme

Catrin Björvell, Department of Nursing, Karolinska Institutet,
Stockholm, Sweden

Abstract

The purpose of this study was to describe and analyse effects of a two-year comprehensive intervention concerning nursing documentation in patient records when using the VIPS model - a model designed to structure nursing documentation.

Registered Nurses (RNs) from three acute care hospital wards participated in a two-year intervention programme, in addition, a fourth ward was used for comparison. The intervention consisted of education about nursing documentation in accordance with the VIPS model and organisational changes.

To evaluate effects of the intervention patient records (n=269) were audited on three occasions: before the intervention, immediately after the intervention and three years after the intervention. For this purpose, a patient record audit instrument, the Cat-ch-Ing, was constructed and tested. The instrument aims at measuring both quantitatively and qualitatively to what extent the content of the nursing process is documented in the patient record. Inter-rater reliability, content validity, criterion-related validity, construct validity and internal consistency of the instrument were found to be satisfactory.

A questionnaire was answered by 34 RNs to measure effects of the intervention. Their answer score was compared with the answer score of 343 RNs from other hospitals who had received a three-day course on nursing documentation based on the VIPS model.

The questionnaire consisted of statements describing prerequisites and consequences about nursing documentation.

Twenty RNs who had participated in the intervention programme also participated in focus group discussions on the effects of the intervention. The purpose was to describe their perceptions of and attitudes towards the effects of the intervention and to generate hypotheses for future research.

The findings indicated a significant audit score increase in both quantity and quality of nursing documentation in the intervention wards immediately and three years after the intervention.

The RNs who answered the questionnaire were largely in agreement about most of the specified consequences and prerequisites of nursing documentation. They perceived their documentation to increase patients' safety and to be beneficial to RNs in their daily work. The use of the VIPS model was considered a facilitator of the documentation process.

Statements in the focus group discussions were that the structured way of documenting nursing care made the RNs 'think more' and 'think in a different way' about their work with their patients. Two types of role changing for the RNs were reported: change from a medical technical focus to a more nursing expertise orientation and change from a "hands on clinician" to more of an administrator.

This study demonstrates that training RNs to use a structured documentation system improves their record-keeping and care planning skills, however, such a system is not sufficient. There are likely other factors in the organisation of the clinical practice that influence the action of documenting nursing care in addition to lack of knowledge and practice.

Keywords: Nursing documentation, record audit instrument, attitude, barriers to documentation, facilitators of documentation, focus groups, quality assurance

ORIGINAL PAPERS

This thesis is based on the following papers, which will be referred to by their Roman numerals:

- I** *Development of an audit instrument for nursing care plans in the patient record.*
Björvell C, Thorell-Ekstrand I, Wredling R. *Quality in Health Care* 2000,9,6-13.
- II** *Long-term increase in quality of nursing documentation: effects of a comprehensive intervention.*
Björvell C, Wredling R, Thorell-Ekstrand I. *Scandinavian Journal of Caring Sciences* 2002,16,34-42.
- III** *Prerequisites and consequences of nursing documentation in the patient record as perceived by a group of registered nurses.*
Björvell C, Wredling R, Thorell-Ekstrand I. Accepted for publication in *Journal of Clinical Nursing*, 2002.
- IV** *Registered nurses' experiences of a comprehensive intervention using the VIPS-model for nursing documentation: results of a focus group study.*
Björvell C, Wredling R, Thorell-Ekstrand I. Submitted, 2002.

Reprints were made with the kind permission of the publishers.

CONTENTS

ABBREVIATIONS	8
INTRODUCTION	9
BACKGROUND	10
Nursing documentation – a history	10
Administrative changes within nursing	12
Changes within the acute health care system	13
Benefits of nursing documentation	14
Barriers to nursing documentation	15
Laws and regulations in Sweden	16
Auditing patient records	17
Previously existing audit instruments	18
CONCEPTUAL FRAMEWORK	18
The nursing process model and nursing care plans	18
Critique of the nursing process model	19
Nursing diagnosis	20
The patient care plan	21
Nursing informatics and the VIPS model	22
Attitude and change	24
AIMS	26
MATERIAL AND METHODS	27
Research setting	27
Design	27
Ethical approval	27
Samples	28
Paper I-II	28
Paper III	29
Paper IV	30
Instruments for data collection	30
Paper I	30
Paper II-III	31

Paper IV _____	32
Intervention _____	32
Papers II-IV _____	32
Procedure _____	33
Paper I-II _____	33
Paper III-IV _____	34
Statistical methods and analysis _____	34
Papers I-III _____	34
Paper IV _____	35
RESULTS _____	36
Nursing process and nursing care plans – Papers I-III, thesis _____	36
Nursing diagnosis – Papers II-IV _____	39
The VIPS model - Papers III-IV _____	39
Benefits and barriers of nursing documentation – Papers III-IV, thesis _____	40
DISCUSSION _____	43
Methodological considerations _____	43
Internal validity - Papers I-III _____	43
External validity - Papers I-III _____	44
Reliability - Papers I-III _____	45
Credibility / Authenticity – Paper IV _____	46
Fittingness / Transferability – Paper IV _____	46
Dependability / Auditability – Paper IV _____	47
General discussion _____	47
Instrument development _____	47
Nursing diagnoses and patient care plans _____	49
Benefits and barriers to nursing documentation _____	50
CONCLUSIONS _____	52
CLINICAL IMPLICATIONS _____	53
Future research _____	53
ACKNOWLEDGEMENTS _____	55
REFERENCES _____	56
Paper I – IV	
APPENDIX (the Cat-ch-Ing audit instrument in Swedish)	

ABBREVIATIONS

CP	=	care plan
GTS	=	General Systems Theory
HHCC	=	Home Health Care Classification System
ICN	=	International Council of Nurses
ICNP	=	International Classification of Nursing Practice
I-NMDS	=	International Nursing Minimum Data Set
ICP	=	individual care plan
IVP	=	individuell vårdplan (individual care plan)
NANDA	=	North American Nursing Diagnoses Association
NIC	=	Nursing Intervention Classification
NILT	=	Nursing Intervention Lexicon and Taxonomy
NMDS	=	Nursing Minimum Data Set
NMDSN	=	Nursing Minimum Data Set Netherlands
NOC	=	Nursing Outcome Classification
SOSFS	=	Socialstyrelsens författningssamling (Swedish National Board of Health and Welfare's regulations)
SCP	=	standardised care plan
VIPS	=	Välbefinnande, Integritet, Prevention, Säkerhet (Well-being, Integrity, Prevention, Security)

INTRODUCTION

There is currently considerable interest throughout the world within the health care sector to increase the quality of nursing documentation and nursing terminology. This is being accomplished through creating new systems, re-evaluating old systems and analysing reasons for poor compliance with legislation stipulating registered nurses' (RNs') obligation to document. One reason for the emphasis on nursing documentation may be the increasing need for secure and accurate transfer of patient-related information between different caregivers (Socialstyrelsen, 2000). The patient record is a principal source of information in which the nursing documentation of patient care is an essential component.

This thesis originates from a need to prospectively analyse the effects of an intervention in an acute care setting concerning nursing documentation by the use of the VIPS model. This model, developed in 1991 by Ehnfors et al. is described in detail below.

BACKGROUND

Nursing documentation – a history

In the past few decades the nursing profession has witnessed a change toward a more independent practice with explicit knowledge of nursing care. With the change has come the obligation to document not only the performed interventions - medical and nursing - but also the decision process, explaining why a specific nursing action has been prompted.

During the 1980s and the early 1990s, major health-related organisations and some western countries began to develop standards, laws and regulations expressing that the nursing process (see below) should be used in nursing documentation. The World Health Organisation (1982), the International Council of Nursing (Clark, 1994), the American Joint Commission on Accreditation of Hospital Nursing Service Standards (1991) and the United Kingdom Central Council (1993) all promoted the use of the nursing process in nursing care. The Swedish law on this subject was passed in 1986 (SF 1985:562) and was further clarified specifically for nursing by the National Board of Health and Welfare in 1993 (SOSFS 1993:17).

However, audit studies invariably describe evidence indicating that RNs have problems integrating the nursing process and care planning into their daily record keeping. In a review of 42 patient records, for instance, Davis et al. (1994) discovered that the assessment was poorly documented as were details of interventions. Moreover, psychological and social areas were not addressed and there were insufficient re-assessment and updating. In a study where RNs' description of their nursing activities were compared with the content in the patient records (n=16) Hale et al. (1997) concluded that the records did not provide a complete picture of three important aspects of record keeping: patients' needs for nursing intervention, interventions provided and effects of the interventions when compared with the patient's report. When investigating post-operative pain assessment, Briggs & Dean (1998) reported that it was poorly documented and that the nursing record differed from the patient's report. In a recent study, Martin et al. (1999) reviewed 80 patient records from a long-term care setting. The authors observed that while as many as 94% of the records included some kind of nursing assessment, the time in which the assessment had been completed in the records varied up to weeks and even months. Souder & O'Sullivan (2000) found no nursing documentation on patients'

cognitive status in 42 patient records, despite that a substantial number of the patients to whom the records referred were shown to have cognitive impairment when tested by standardised assessment tools.

In Sweden, the development of written care plans has been slow and RNs have only recently begun to produce a more structured nursing documentation in the patient record. Although colleges of nursing in Sweden have prepared nursing students since the 1980s in how to prepare and use nursing care plans (see below) based on the nursing process, little of this knowledge is applied in the students' clinical training on the wards. It has been suggested that nursing students are not sufficiently supported in their clinical practice when it comes to writing and using care plans (Thorell-Ekstrand & Björvell, 1994). One reason for this lack of support may be that clinicians with earlier education are not trained to give care from a conscious nursing process model or to write care plans prospectively. Because the nursing education was prolonged and integrated into the university system as late as 1993, problem solving skills and systematic thinking may be in general clinical use in the future.

Rather than documenting the prospective planning of nursing care, the tradition among RNs is still to document the given care retrospectively, which is primarily the medical care ordered by the physician. Ehnfors & Smedby (1993) showed that 90% of the audited patient records (n=106) lacked identified nursing problems, goals and nursing discharge notes. In two thirds of the records, planned interventions were missing. In 1996, Nordström & Gardulf asserted that the nursing assessment was insufficiently described in 60% of the audited records (n=380); only 10% contained identified nursing problems and goals and less than 45% of the records contained planned nursing interventions. Still in 1999, Ehrenberg & Ehnfors (1999a) showed that only one of 120 patient records contained a comprehensive description of a patient problem, as prescribed by Swedish law.

Several Swedish studies described nursing record content with regard to specific risk assessments. Gunningberg et al. (2000), for example, described that only two of ten records on patients admitted for hospital care with pressure ulcer comprised notes on pressure ulcers recorded on admission to the ward. Gunningberg et al. (2001) later described that none of the records referring to 55 orthopaedic patients admitted with hip fracture and with a mean age of 82 years contained information on risk assessment for pressure ulcer: skin observation, food and fluid intake, shear and friction, hygiene and moisture or patient education). Udén et al. (1999) showed that after an intervention aimed to improve the documentation of risk factors concerning patient falls, the recording of assessments of risk factors increased to include 96%

of the patient records (n=319), though only 10% were re-assessed. Before the intervention, there was no documentation regarding risk factors. In an audit study (Wärn-Hede et al, unpublished data) on documentation of nutritional risk factors in geriatric patients, 49 of 52 records contained less than 50% of information considered necessary for adequate documentation. Whether assessments have been made and simply not documented is another research issue.

However, there are also studies demonstrating increasingly good nursing documentation. Fagrell et al. (1998) found that 119 (71%) of 163 nursing home records included an individual care plan.

In other parts of Scandinavia, Stokke & Kalfoss (1999) reported from a Norwegian audit study comprising 55 patient records that 62% had a nursing care plan with nursing diagnoses and a goal and only 18% lacked nursing diagnoses and planned interventions. Still, the authors conclude that the Norwegian Board of Health guidelines are not fully met. In Denmark, Adamsen & Tewes (2000) found that the nurse documented in the patient record only 31% of the problems experienced by the patients.

One further reason for the slow development and improvement of nursing documentation and care planning in Sweden in addition to traditions is probably the previous lack of a uniform and unambiguous system.

Administrative changes within nursing

During the 1960s and 1970s, the healthcare system in Sweden experienced a period of expansion. The major change was that the industrial principals of assembly lines influenced the organisation of nursing care on the hospital wards and the task allocation system was introduced (Gardell et al.,1979). This meant that each RN focused on her tasks and not on individual patients. One RN would deliver medication to all patients while another RN would give all injections, etc. This way each patient would have a number of short encounters with a large number of persons and the patient became "a gallbladder", "a blood-pressure check", "an iv drip ", and so on. It became difficult for the RNs to obtain a complete picture of the individual patient's situation and his or her possible reasons for specific nursing needs.

In the early 1970s, the kardex system was introduced in all hospital wards across Sweden. It was a means for temporary documentation, with the purpose of providing a quick overview of the patients admitted to the ward and the fragmented care that was delivered within the task allocation system. The advantage with the kardex system was the good overview it provided.

The disadvantage was that the documentation did not give a complete picture of the patient's nursing needs because the notes were written in pencil and erased when the intervention was completed or the patient's condition had improved. During the 1980s, the structure of the kardex system changed. The text was now written in ink, the papers were archived as a permanent record and the papers were repeatedly adjusted to allow documentation by the nursing process (Thorell-Ekstrand & Wallstedt, 1986).

However, the clinical experience evidenced that the papers rarely were used the way they were constructed to be used because of the RNs' lack of tradition to work using the nursing process. The kardex system also necessitated the use of local abbreviations because of lack of space, with the subsequent risk of misunderstanding and individual interpretations by the persons reading the text.

In connection with the new legal requirements in 1986 and the arrival of the VIPS model (Ehnfors et al., 1991), it became evident that the kardex system no longer fulfilled the requirements of a patient record paper. New paper systems, with space for documenting a complete patient situation, became common and the nursing papers were moved from the kardex and joined with the rest of the patient record to further increase the complete picture of the patient's needs of treatment and care.

Changes within the acute health care system

Over the past years the Swedish health care system has experienced general changes as a result of cost cuttings and reorganisations (Socialstyrelsen, 2000; Kajermo et al., 2000; Needleman et al., 2002). Between 1992 and 2000, the mean patient length of stay in hospital decreased by 21% and the patient turnover rate increased. Although the number of hospital beds decreased by 45%, the number of hospital days only decreased by 30%. This means that the bed occupancy rate increased by 30% while at the same time staffing was cut by 24% (Pettersson, 1997; Lanstingsförbundet, 2002). Furthermore, the increase in medical technology adds new tasks and new demands on all health care professionals.

A work environment with high patient turnover and where patients and nurses are moved constantly between settings makes it difficult for the RNs to make necessary assessments and to keep care plans up-to-date (Davis et al., 1994; O'Connell, 1998).

It is possible that the shorter the patient's hospital stay, the more difficult it becomes for the RN to identify the process of care. If the RN then is not trained, or rather, if it is not part of

her professional tradition to use systematic, problem- and goal-oriented thinking, the risk is eminent that she will miss important aspects of the patient's needs because the time he or she has to observe the patient is too short.

Benefits of nursing documentation

The RN has a paramount responsibility to forward information about the patient's needs and treatment to other health care professionals. Traditionally, this has been done verbally. However, today the information on the patient's condition, care and treatment has become more complex and the amount of individuals in need of this information has increased. Information technology has made its entrance into the health care system whereby verbal transfer of information is becoming obsolete.

The main benefit of documentation is improvement of the structured communication between healthcare professionals to ensure the continuity of individually planned patient care. Without an individualised care plan that is closely followed, nursing care tends to become fragmentary, being based predominantly on institutional routine and schedules. The care plan defines the focus of nursing care not only to the nursing staff but also to the patients and their relatives (Carpenito, 1997). By documenting the agreement between patients and RNs, an opportunity is provided for the patients to participate in the decision-making process of their own care (Kramer, 1972; Jairath, 1994). Moreover, the documentation of expert nursing provides an important source of knowledge to the novice RN and a potential motivating force for the further development of nursing theory (Meleis, 1997). The care plan yields criteria for reviewing and evaluating care, as well as financial reimbursement (Carpenito, 1997) and staffing.

In an investigation of dimensions of nursing practice (Bradley, 1982), 137 RNs were asked to rate 28 items describing nursing actions on a four-point scale ranging from essential to slightly important. Results showed that the action of 'Designing care plans in collaboration with the patient...' received a mean score of 3.25, which ranked as the ninth most important nursing action. The action 'Use the nursing process as a basis for interventions...' received a mean score of 3.24, which ranked eleventh.

Barriers to nursing documentation

RNs' perception of facilitating and inhibiting factors in relation to their nursing documentation has been described in some articles internationally as well as in Sweden.

Tapp (1990) interviewed 14 RNs with the aim of identifying RNs' perception of inhibitors and facilitators to their documentation. The participants in the study indicated that the lack of a distinct professional identity and language in nursing and a redundancy of forms result in inaccurate and devalued documentation of nursing care. Tapp also reported other inhibitors, such as lack of time, space and place. Facilitating issues described were the use of a theoretical framework, positive reinforcement by supervisors and change in the condition of the patient. Howse & Bailey (1992) performed a qualitative case study where four RNs were interviewed about underlying causes of antipathy toward documentation. The authors reported several barriers to documentation, including inadequate charting systems, lack of value and use for record entries, environmental disruptions, inaccessibility of the record, lack of time to document, a work group norm of a negative attitude to documentation and the perceived difficulty in phrasing correctly.

Heartfield (1996) presented a discourse analysis on nursing and its documentation in which she noted that RNs have a resistance to becoming visible with their knowledge. Hence, their documentation consists of passive descriptions of observations and responses, unlike other professions who write about their judgement and examinations. This, Heartfield claimed, removes the RN from visibility and therefore from examination and comparison, a process that helps to conserve the prevailing mythical image of the nurse-patient relationship. Allen (1998) presented results from an ethnographic study with 10 months fieldwork and 57 interviews. She concluded that the RNs' attitudes were contradictory in the sense that they valued the nursing process as a means of professionalism, but that they found it difficult to bring it to terms with their work on the wards. She raised the argument that the nursing process is based on a model of a one-to-one nurse-patient relationship, whereas RNs in most hospital realities have multiple patient assignments.

The findings concur with five Swedish studies, three of which were scientifically published. In a questionnaire study (Ehnfors, 1993), different areas of barriers to documentation were identified in 138 open answers. In all, seven areas were distinguished: ward in a process of change, lack of crucial content, lack of knowledge, lack of interest, lack of time and resources, lack of a uniform documentation structure and short care episodes. An interview with nine RNs (Jerlock & Segesten, 1994) identified, among other things, lack of knowledge of the nursing process, a negative attitude toward change, inability to see the

benefits of nursing documentation and difficulty in formulating thoughts and what to write. In another study, a number of inhibitors like lack of knowledge, lack of time, lack of consistent record systems, lack of continuity and lack of motivation to write) were described in open answer questions from 31 RNs (Larsen et al., 1995). Törnkvist et al.(1997) reported on the opinions held by 164 district nurses regarding their documentation and barriers they experienced. The nurses described such barriers as lack of a consistent record system and routines, lack of time, lack of knowledge about what should be documented, environmentally related conditions such as inadequate computers, interruptions and lack of support from supervisors and colleagues. In yet another study, Ehrenberg (2001) asked 165 RNs in nursing homes about factors that they felt constrain nursing documentation. The author described lack of time, lack of knowledge, organisational obstacles, difficulty in writing and inappropriate forms.

Difficulties are described on the individual level as well as on the administrative-organisational level.

Laws and regulations in Sweden

The purpose of the patient record is stipulated in the Patient Record Act (SFS 1985:562). First and foremost, the purpose of the record is to be a tool of reference for healthcare professionals, as well as a possible source of information to the patient. Second, it should be an instrument for quality assurance and a reference for legal purposes, and third, the patient record should be a possible source for research and development.

The act specifies the need to structure the content in the patient record, which implicitly has been interpreted by the Swedish National Board of Health and Welfare (SOSF 1993:17) as an application of the nursing process: assessment and collection of patient data, analysis and definition of goal, planning, prioritisation and implementation of interventions and evaluation of effects.

When the Patient Record Act (SFS 1985:562) came into effect, it implied a major change for RNs, who now became obligated by law to document nursing care. In the years to follow, the Swedish National Board of Health and Welfare accentuated this obligation in their regulations concerning nursing in somatic and primary healthcare (SOSFS 1993:17) and stated more precise directions in their clarification of the law (SOSFS 1993:20). Further instructions on the importance of accurate and careful record keeping were prescribed in their

regulations concerning quality assurance in healthcare (SOSFS 1996:24) and in their regulations on transfer of information between healthcare institutions (SOSFS 1996:32).

Poor documentation is an indication that further investigations are needed to judge whether the given care is less than optimal. Audit instruments for patient records are therefore needed to identify the quality of assessment, the structure and the plan for the patient's care. Instruments are also needed to evaluate the effects of interventions aimed to improve the documentation.

Auditing patient records

The audit of patient records is performed for several reasons. The most common reason is that the audit is part of an ongoing process of quality improvement. A clinic may have agreed to document in a certain way, possibly with a minimum data set as a standard, or it wants to evaluate specific criteria for quality healthcare (Shaw, 1990; Honnas & Zlotnick, 1995; Griffiths & Hutchings, 1999).

There is evidence that a continuously performed audit of patient records, combined with discussions about improvements, is one way to improve the quality of the records and to change certain behaviours of healthcare professionals (Gabbay et al., 1990; Heath, 1999; Mashru & Lant, 1997). Another reason for auditing documentation is that it makes comparisons possible over time and between wards or hospitals, provided that a reliable audit instrument is used to put a numerical value on the written content (Fagrell et al., 1998; Hansebo et al., 1999). The audit is also used to evaluate the effects of quality management (Webb & Pontin, 1997) by identifying the professional strengths to be maintained and the weaknesses to be addressed and corrected. Craig (1987) reported that RNs were able to obtain a better understanding of what was expected of them when using their audit tool in recording and patient care, as well as in the areas on which they specifically needed to concentrate for improvement.

It is of importance to differentiate between record auditing for the sake of measuring the quality of record keeping and record auditing for the sake of measuring the quality of given care. The patient records do not necessarily reflect the reality of the given care, an issue that has received some criticism in the literature (Sparrow & Robinson, 1992; McElroy et al., 1995). However, well written records may be seen as a step toward a process of quality assurance in the sense that it functions as a structured element in nursing care. Donabedian (1988) carefully stressed that good structure only increases the likelihood of a good process in

the actual care given and that the correlation between process and outcome has yet to be shown. Whether better documentation can also influence and improve patient care is another question, but is beyond the scope of this thesis.

Previously existing audit instruments

A review of the literature indicates that two Swedish audit instruments have been developed earlier, one by Ehnfors & Smedby, (1993) and the other by Gardulf & Nordström (1996). Both instruments are based on the nursing process and evaluate the record in its quantitative aspect: is there documentation for each function or not? In addition, Ehnfors & Smedby, (1993) evaluates for each patient problem the flow of information in accordance with the nursing process. Consequently, neither of the instruments includes a qualitative evaluation of the written content in the sense of the amount of information, wording, pertinence, etc. A number of other audit instruments described in international journals (Vandelt & Ager, 1974; Ventura, 1980; Goldstone et al., 1983; Manfredi, 1986; Harvey, 1991; Sparrow & Robinson, 1992) were also not optimal with respect to the quality and quantity aspects of auditing Swedish patient records.

CONCEPTUAL FRAMEWORK

The nursing process model and patient care plans

The nursing process model has its roots in general systems theory (GST) (Andersson-Segesten, 1989; Barnum, 1994), which became the basis for scientific inquiry in the 1950s and 1960s after it had been introduced by von Bertalanffy (1968). The nursing process model was first described by Orlando in 1961 (in Meleis, 1997, p. 344) and later by Yura & Walsh in 1967 (1988) as a structured, problem-solving approach to nursing practice and nursing documentation. The model originally consisted of four steps: assessment, planning, implementation and evaluation. In a later version, a fifth step, nursing diagnosis, was added. Today, these five steps are the commonly accepted components of the model (McFarland & McFarlane, 1993). Judging from the nursing literature, it is evident that the nursing process model is a central and widely accepted concept, both for nursing practice and for nursing documentation (Meleis, 1997).

The nursing process is an orderly, systematic manner of determining the client's health status, specifying problems defined as alterations in human needs fulfilment, making plans to solve them, initiating and

implementing the plan, and evaluating the extent to which the plan was effective in promoting optimum wellness and resolving the problems identified (Yura & Walsh, 1988, p.1).

Although the model is based on a scientific method of investigation and goal-oriented actions, it is considerably more than just a systematic problem solving technique. The primary purpose of the model is to secure individualised nursing care to the individual patient as opposed to generalised care based on routines. The nursing process is described as a confirming interaction where the caregiver confirms, in the encounter with the patient, what he or she perceives to be the patient's care needs (Yura & Walsh, 1988).

One purpose with the nursing process is to help patients become actively involved in their own care and to create a platform for the RN to collect information about the patients' individual need of care.

A conclusion drawn from the WHO project (Ashworth et al., 1987) was that it takes more than the medical diagnosis system to describe the patient's needs for nursing care. The patient's medical record contains important information; however, it is not sufficient to provide the RN with the data needed to give individually based nursing care.

Critique of the nursing process model

Although the nursing process model permeates nursing internationally, critique has been raised over the years. White (1993), for instance, refers to a number of reports and studies indicating that the nursing process, having a scientific reductionistic approach and depicting a male way of analysing problems, is ill-fitted for a profession that, by tradition, is mainly intuitive and subjective and predominantly female. White also raised the point that the nursing process cannot stand by itself. Rather, it is a tool to be used to implement a nursing model or philosophy into practice. The RN must also have a belief or philosophy that directs his or her assessment, planning and delivery of care.

Kirkevold (2000) confirmed that the model has been criticised for being a scientific model that lacks consideration of the intuitive aspects of nursing, reducing the patient to a set of problems. She also noted that the model is now gaining ground again because of the systematic and logical structures that the electronic patient record demands.

Mason & Attree (1997) concluded from their literature review that through the research on nursing diagnosis, the nursing process has been re-established as a primarily clinical rather than educational process. In the future, the nursing process may be considered a grand theory

for nursing, provided that all parts of the process continue to be theoretically developed in line with the nursing diagnosis development.

This is now seen in the extensive international development and testing of nursing data and classification systems (see below).

Nursing diagnosis

The term nursing diagnosis was first mentioned nearly 50 years ago (Fry, 1953) in relation to the nursing process model. Since then, it has become an internationally used concept for identifying the specific nursing needs of the individual patient, needs that provide a focus for the planning and implementation of nursing care (Carnevali & Thomas, 1993; Gordon, 1994). The taxonomy of nursing diagnoses developed by the North American Nursing Diagnosis Association (NANDA) is explained as a system of concepts describing nursing sensitive phenomena. Nursing diagnosis was defined by the General Assembly of NANDA at the Ninth Conference in 1990 as follows:

...a clinical judgement about individual, family or community responses to actual or potential health problems/life processes. Nursing diagnoses provide the basis for the selection of nursing interventions to achieve outcomes for which the RN is accountable (NANDA, 1990).

According to Gordon (1994), a nursing diagnosis is composed of three essential components: problem (or risk), related factors and defining characteristics. Today, there is intense worldwide research attempting to validate specific nursing diagnoses (Lunney, 1990; Lunney et al., 1997; Parker & Lunney, 1998). Still, further research is needed to study validation of diagnoses (Parker & Lunney, 1998; Whitley, 1999), knowledge about factors influencing decision-making (Hamers et al., 1994) and the effect on direct patient care when valid nursing diagnoses are or are not used.

There are most commonly two ways of expressing a nursing diagnosis in documentation. One way is the use of a specific terms such as any of the tested classification systems e.g. NANDA. The other way is the use of free text formulated by the RN in her practice. In an audit study of 140 Swedish patient records, 410 patient problems or nursing diagnoses were found. They were all described in free text, mainly on a general rather than specific level (Ehnfors, 1994).

The patient care plan

The purpose of the nursing care plan is to have an accessible reference in the clinical setting that describes the patient's needs and the nursing interventions that have been agreed upon for the patient. A nursing care plan is a written structured plan-of-action for patient care based on an assessment of patient needs, identification of specific patient problems and the development of a plan of action for their solution (Karshmer, 1991). The plan is a vehicle for communication, a record of care given and is an essential tool in the daily delivery of care. The structure for a care plan is provided by the model of nursing upon which it is based; hence, there is a wide range of formats for the nursing care plan (Mason, 1999).

In this study the nursing care plan is a document containing the three nuclear components of the nursing process model: a nursing diagnosis - describing the problem or need - the aim of the nursing care and the interventions that have been planned to achieve the aim. In Sweden, the nursing care plan is part of the permanent patient record.

An *individualised* care plan (ICP) (in Swedish *individuell vårdplan*, IVP) is produced for a specific patient and valid for that patient only. A *standardised* care plan (in Swedish *standardvårdplan*) is produced for an identified group of patients with identical needs and valid for all patients with the same need.

There are a couple of articles that claim that there is no evidence from randomised controlled studies showing that individual care plans have any effect – good or bad – on patient care (Moloney & Maggs, 1999; Asplund et al., 2000). However, Hamrin & Lindmark (1990) concluded in their study of two groups of stroke patients, one with ICP and one without, that although no statistically significant differences were shown in patient functionality, the ICP seemed to be of great importance in promoting communication between staff and in helping to understand the patient from a psychological and physical perspective. Lindgren et al. (1992) showed in a case study of one patient that a severely demented patient became less vocally disruptive when the nursing staff followed the individually planned care. However, when the staff terminated the plan, the disruptive behaviour increased. In another study of the sickness-related life situation of HIV patients (Hansen et al., 1993), it was concluded that because the range of individual differences between patients was so wide, individually planned care would be necessary. Edberg et al. (1996) found that the nurse-patient cooperation in dementia care improved significantly in the group of patients that had an ICP as compared with the group without such a plan.

Nursing informatics and the VIPS model

Already Florence Nightingale recognised the need to collect data for the care of the individual, as well as to collect data systematically about care for larger groups of patients and to analyse these data statistically (Nightingale, 1860; 1863). Both types of data collection and registration are important in order to be able to communicate information about the health status of the patient with other RNs, physicians, hospital managers and policy makers. The clinical data collected by RNs support the care processes of clinicians and the aggregated data support the decisions of hospital managers, researchers, educators and policy makers (Goossen, 2002).

Wearly & Lang (1988) proposed a Nursing Minimum Data Set (NMDS) that contains four nursing elements: nursing diagnosis, nursing interventions, nursing outcome and nursing intensity. During the past decade, there has been increased attention throughout the world on the development of a uniform nursing language and classification of nursing practice. This increase has been parallel to the development of scientifically based nursing by the expansion of international communication and exchange of professional knowledge (Bakken, 1995; Ehnfors et al., 2002). The introduction of electronic patient records has further accentuated the need for finding concepts that describe nursing practice systematically (Moen et al., 1999).

A number of minimum nursing data sets and classification systems have been developed across the world: Nursing Minimum Data Set – NMDS (Werley & Lang, 1988), North American Nursing Diagnosis Association – NANDA (NANDA, 1990), Home Health Care Classification system – HHCC (Saba, 1992), Omaha Community Health System (Martin & Scheet, 1992), Nursing Intervention Lexicon and Taxonomy – NILT (Grobe & Hughes, 1993; Grobe, 1996), Nursing Intervention Classification - NIC (McCloskey & Bulechek, 2000), Nursing sensitive outcome classification - NOC (Johnson et al., 2000), International Classification of Nursing Practice – ICNP (Clark, 1994; ICN, 1999), International Nursing Minimum Data Set - I-NMDS (Goossen et al., 1998) and Nursing Minimum Data Set Netherlands – NMDSN (Goossen et al., 2000).

In 1991, a new documentation model was developed and tested in Sweden by Ehnfors, Thorell-Ekstrand and Ehrenberg. The model is entitled VIPS, an acronym formed from the Swedish words for *well-being*, *integrity*, *prevention* and *security*, all of which are seen as major goals of nursing care (Figure 1). This model is designed to be used in nursing documentation following the nursing process and therefore includes a nursing care plan. The model also includes a nursing discharge note. The purpose of the model is to guide the RN in

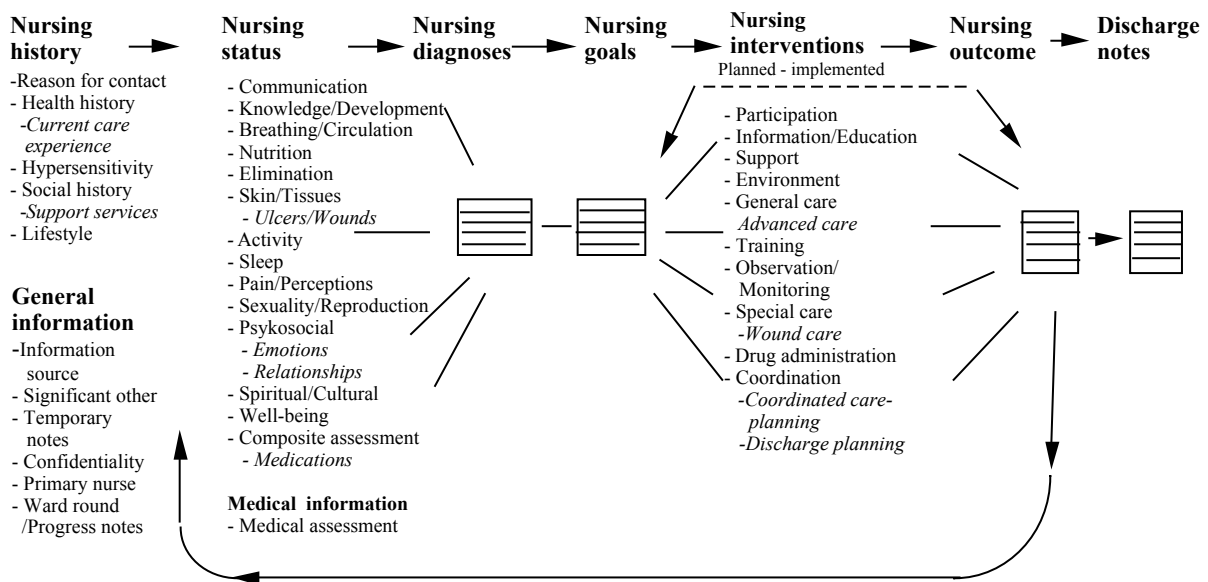
the sequences of assessment, problem identification, aim, planning of interventions, implementation and evaluation of results and thereby to make nursing documentation structured, adequate and easy to use in clinical care.

In the VIPS model, 14 keywords are used for classifying patient related information collected by the RN into categories e.g., communication, nutrition and psychosocial status. Ten keywords classify nursing interventions into categories such as information, support and environment.

The use of keywords simplifies information retrieval; however, to retrieve the information asked for, a consensus regarding definitions of categories must be reached (Grobe & Hughes, 1993). The VIPS model provides such a lexicon in which each category, labelled by a keyword, has a definition, a description and prototypical examples given in a manual and described with scientific base and references. Keywords may be seen as a first step toward a unified nursing language in patient care.

The VIPS model has been received with great interest and appreciation by RNs in Sweden and is now the most commonly taught and used model for nursing documentation in hospitals and primary health care (Ehrenberg et al., 1996).

The model is tested and described elsewhere (Ehnfors et al., 1991; Ehrenberg et al., 1996). Although this model has been accepted and recognised as a standard for what to document, difficulties have been reported as to how to use it in daily practice (Ehrenberg & Ehnfors, 1999b).



Flowsheet of the VIPS-model
Ehnfors, Thorell-Ekstrand & Ehrenberg 1997

Figure 1. Flow sheet of the VIPS model (reproduced with permission).

Attitude and change

According to the “theory of reasoned action” (Ajzen & Fishbein, 1980), a person’s intention to behave in a certain way is determined by his or her attitude toward the behaviour and the subjective norm or the person’s perception of social pressure to behave in a particular way. In general, a person will intend to behave in a particular way when the behaviour is evaluated as positive and it is perceived as important that other people think it should be performed.

Groenman et al. (1992) described attitude as an enduring cluster of beliefs, feelings and behavioural tendencies relating to any person, object or issue. People will have positive or negative feelings or emotions about a person, object or issue. These feelings and beliefs will influence the behaviour directed at the person or object. Norms and values also play an important role in the concept of attitude.

In the light of these definitions a change in behaviour, as in this case nursing documentation behaviour, needs to involve a change in attitudes toward documentation. The attitudes in question include those of the RNs as well as the attitudes of other health professionals.

Lewin (1973) calls the first stage in a changing process in which attitudes and habits are addressed the ‘unfreezing’ stage and deems this to be decisive of whether or not the change will last. The unfreezing stage needs to be given time for the next stage to occur. The next stage is called the ‘moving’ stage, when the actual change from one level to another takes place; in the third stage ‘refreezing’ occurs, which involves the stabilisation of the new form. Bridges (1996) submitted that individual, psychological change is the most difficult and time consuming aspect of change; he calls this the transition part, describing it as including a first face of ‘ending’-- letting go of old habits and roles in order to accept new ones. Resistance to change has to do with fear of leaving what is known, predictable and safe, i.e. a sense of competence and control. The second face, called ‘the neutral zone’ is characterised by a sense of emptiness because of having lost the known order and not yet feeling comfortable with the new one. To move on to the third face, ‘the new beginning’, Bridges claims that communication between leaders and workers is essential, with repeated meetings and discussions. Also Bridges emphasises that successful change takes time.

Argyris & Schön (1996) described the complex interaction between individual and organisational change, where the culture of the organisation is the carrier of knowledge, attitudes and values. The values, actions and assumptions of the organisation make up its theory-in-use, which includes norms for corporate performance, communication and control.

It rewards and punishes individual performance and instructs new members in the ways of the organisation. The theory that is explicitly promoted by the organisation and formally expressed in documents and policy statements may not match the implicit theory-in-use. As long as this discrepancy remains intact and unravelled, any lasting change is difficult to achieve.

AIMS

The overall aim of this study was to describe and analyse effects of an intervention concerning nursing documentation when using the VIPS model.

The specific aims were as follows:

- develop an audit tool to measure both the quantitative and the qualitative aspects of nursing documentation and to evaluate the validity and reliability of the tool,
- evaluate the longitudinal effects of a nursing documentation intervention on the quantity and quality of nursing documentation in a sample of patient records at a university hospital,
- describe a group of RNs' perception of prerequisites and consequences of nursing documentation using the VIPS model in acute care,
- delineate a group of RNs' perception of and attitudes toward the effects of a two-year comprehensive intervention using the VIPS model for nursing documentation.

MATERIAL AND METHODS

RESEARCH SETTING

This thesis is based on four papers. The research intervention (**II**, **III**, **IV**) took place in three wards - a surgical, a neurological and a rehabilitation ward - at a university hospital in Stockholm, Sweden between 1993 and 1995. A fourth ward - an orthopaedic ward - from the same hospital served as a comparison ward.

The patients' hospital records included in Paper **I** were selected from the three intervention wards noted above.

Table 1. Hospital wards represented in the four papers

	Surgical	Neurological	Rehabilitation	Comparison
Paper I	X	X	X	--
Paper II	X	X	--	X
Paper III	X	X	X	--
Paper IV	X	X	X	--

DESIGN

The research designs as described in the four papers were as follows:

Paper I: -instrument development.

Paper II: -longitudinal quasi-experimental.

Paper III: -descriptive and comparative based on questionnaires.

Paper IV: -descriptive based on focus group discussions.

ETHICAL APPROVAL

The research protocol was approved by the Ethics Committee of the Karolinska Institutet (Dnr 98-137).

SAMPLES

Paper I:

Sixty patient records were consecutively included to be used in reliability testing of an audit instrument. The criteria for the collection of the records were that they should concern the first 20 patients from each ward that were admitted for five days or more during a specific period. The records were copied and de-identified.

Furthermore, ten Swedish senior researchers within nursing were selected purposefully for their knowledge in the nursing process. These researchers were used in the analysis of content validity of the audit instrument.

Paper II:

Intervention group

Originally, the RNs of three hospital wards constituted the intervention group. One of the intervention wards (rehabilitation), however, was closed down in 1995, six months after the intervention was completed and was therefore not accounted for in Paper II. Hence, there were only two hospital wards to account for in this paper.

The RN turn over rate¹ on the two wards together during the intervention period was 32%, and during the following three years, 40%. Additionally in the intervention group, the RN staffing was increased by 14 positions, leaving 34 positions as compared to the previous 20 between 1995 and 1998.

The selected wards had applied to take part in a nursing documentation intervention and thus were not selected randomly. Lewin (1973) reasoned that a need for change is the basis for an alteration. None of the RNs on the wards had any specific training in nursing documentation before the intervention.

Comparison group

All RNs (n=14) working in one hospital ward served as a comparison group. The selection criteria were aimed at identifying a ward where the RNs had no more known specific education in documentation than average RNs on acute care hospital wards at that time and that was otherwise approximately matched to the RNs in background variables from the intervention wards. The RN turn over rate between Audit II and Audit III was 57%.

Sampling of records

The hospital records of 270 patients, 30 from each participating ward for each of three audits (Table 2) were consecutively included from a computerised in-patient registry. One record was not found in the record archives. The records were copied and de-identified.

Table 2. Number of records collected and audited: before the intervention (Audit I), immediately after the intervention (Audit II) and three years after the intervention (Audit III).

Ward	Surgical	Neurology	Comparison	Total
Audit I	30	30	30	90
Audit II	29	30	30	89
Audit III	30	30	30	90
Total	89	90	90	269

The selection criteria for the collected records were that they should concern patients who had been hospitalised four days or longer and discharged from the hospital. The records collected for auditing before the intervention were written by 22 RNs (Audit I); the records collected immediately after the intervention were written by 21 RNs (Audit II); and the records collected three years after the intervention were written by 34 RNs (Audit III), where 12 of these had participated in the intervention three years earlier.

Paper III:

Totally, 377 RNs participated, forming Group A and Group B.

Group A

Group A consisted of 34 RNs from the original three intervention wards described above under Paper II. Thirty of the RNs were still working on the intervention wards and four had very recently left their employment on these wards.

Group B

Group B consisted of 343 RNs (Figure 2) who, during a period of six months, had participated in a three-day course (see Subjects in Paper III) and had had 6-12 months time – depending on when they took the course – to practice their documentation on their own in their clinical work. The participants came from 18 different acute care hospitals in south Sweden mainly

representing surgical, medical, acute geriatric wards and outpatient clinics. Twenty percent worked at university hospitals.

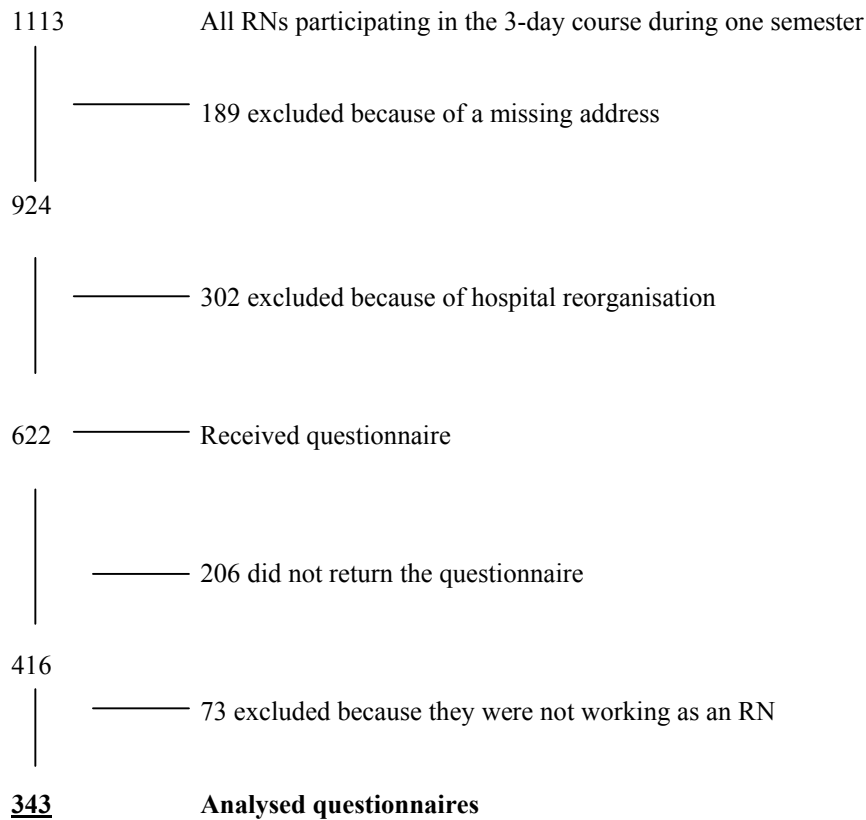


Figure 2. Exclusions and attrition rate in Group B

Paper IV:

Twenty RNs from the original three intervention wards were selected to take part in a focus group discussion. The single selection criterion was to have participated in the intervention programme for the full two years.

INSTRUMENTS FOR DATA COLLECTION

Paper I

A questionnaire constructed according to Lawshe (1975) was used to establish content validity of the Cat-ch-Ing instrument. Ten questions concerning the items in the Cat-ch-Ing instrument, which were constructed to measure the nursing process in the patient record, were

answered on a three-point scale: essential, useful but not essential or not necessary. The results were then placed into an equation and a content validity ratio was calculated.

The Ehnfors' audit instrument, used and tested in earlier research (Ehnfors & Smedby, 1993), was used to establish criterion-related validity of the Cat-ch-Ing instrument. The Ehnfors' instrument is a five-point scale that measures the content of nursing documentation with relation to the nursing process.

Paper II

The Cat-ch-Ing audit instrument (see result section) was used for auditing patient records to measure the effect of a nursing documentation education intervention.

Paper III

A questionnaire was developed for the purpose of data collection. Apart from descriptive and demographic data, this questionnaire contains 21 questions regarding perceptions of consequences of and prerequisites to nursing documentation in accordance with the VIPS model, hence the nursing process.

The questions are formulated to cover areas frequently described in the literature (Tapp, 1990; Howse & Bailey, 1992; Jerlock & Segesten, 1994; Heartfield, 1996; Allen, 1998), as well as areas experienced by two of the authors in Paper III (CB, ITE) in their own clinical practice. Five main areas are addressed: the usefulness of the VIPS model, the effects of documentation on daily practice, organisation and leadership issues relevant to documentation routines, knowledge needed and responses by other professionals regarding the nursing documentation. The respondents answered the 21 questions on a three-point scale with: Yes, To some degree, No or Don't know (scored 3 – 0). The respondents were also asked to rank what they believe to be the three major inhibitors of good nursing documentation. Furthermore, one question on the meaningfulness of documenting each of the main parts of the VIPS model (also corresponding to the parts of the nursing process) was answered on a scale from 1 to 5 (1 = totally meaningless and 5 = very meaningful).

The questionnaire was tested on a group of RNs and nursing students (n=36) at a conference, where they were asked to complete the questionnaire and write comments on each question regarding feasibility. Based on their responses, some of the questions were then modified for better understanding.

One question on meaningfulness of documenting each part of the VIPS model was modified for better understanding after the questionnaire was given to Group A; however,

Group B received the improved version. Hence, Group A answered 20 questions while Group B answered 21 questions.

Paper IV

Focus groups were used to encourage an unprejudiced discussion (Bertrand et al., 1992) among the participants with respect to change in nursing documentation (IV). Krueger (1994) described focus groups as carefully planned discussions that are used to obtain perceptions on a specific area of interest in a permissive, non-threatening environment. The purpose is to have group members influence each other by responding to ideas and comments in the discussion. Focus groups can be used before, during and after programmes, events or experiences as a means of collecting qualitative data (Krueger, 1994). This approach is considered an effective technique for exploring the attitudes and needs of staff to generate hypotheses for further investigation (Kitzinger, 1995).

Table 3. Summary of methods used in the four papers.

	Samples		Design	Sampling procedure	Data collection method /analysis
	Number of records	Number of RN's			
Paper I	60	10	Instrument development	Consecutively included records + purposive sampling of experts	Record audit, questionnaire /statistical
Paper II	269	20 ^a + 14	Longitudinal, experimental quasi-	Consecutively included records + convenience sampling of RN's	Record audit /statistical
Paper III	---	34 ^a + 343	Descriptive, comparative	Convenience	Questionnaire /statistical
Paper IV	---	20 ^a	Descriptive	Purposive	Focus groups /qualitative content analysis

^a = RNs who have participated in the two-year intervention

INTERVENTION

Papers II, III, IV

A comprehensive intervention concerning nursing documentation was carried out between 1993 and 1995. The components of the interventions, which were inspired by earlier research as described previously in this paper, were directed to address knowledge in documentation, the use of a structuring model and structuring formats, active participation in the change process and the utilisation of change agents (Lewin, 1952; 1973).

The intervention consisted of six components (**II**):

- *theoretical training* of the RNs in groups once a week for five weeks for a total of 18 hours
- *individual supervision* on the participating wards
- three *conference days* and four evening seminars for discussions
- training and continuous support of two *change agents* selected from each ward
- *support and advice to chief nurses* on organisational changes necessary to facilitate better nursing documentation
- *development* (together with the six change agents) of *new forms* and standardised care plans

PROCEDURE

Paper I:

Before an audit instrument was constructed, a set of criteria was identified to determine questions of importance about an audit of the nursing documentation in the patient record.

Nineteen questions were formulated aimed at deciding whether this kind of information was documented in the patient record. Questions were constructed to reveal both the quantity and the quality of the written content on a rating scale. A manual was designed to explain how to score each question. The instrument was named Cat-ch-Ing. To test usability in the sense of understanding questions and phrasing of the instrument five patient records, collected from one hospital ward, were independently reviewed by three RNs using the new instrument. The instrument was revised after each of the three audits.

Paper II:

The intervention, conducted by the present author (CB), was initiated in May 1993 and was completed in May 1995. The study included three measuring points of record auditing: one

pre-intervention (Audit I) and two post-intervention (Audits II and III). Audit II occurred immediately after the two-year intervention and Audit III occurred three years later, as described previously.

The records were audited by six RNs all of whom were not related to the research team. These six RNs were recognised as clinical experts in nursing documentation and had been taught how to use the Cat-ch-Ing instrument. The various auditors' evaluation scores were calibrated initially.

Paper III

The RNs in Group A were given the questionnaire at work after the two-year intervention programme was completed. They were asked to complete the questionnaire at home. The RNs in Group B received the questionnaire by mail 6 to 12 months after they had participated in the three-day course.

Paper IV:

Three focus groups were performed, with six to eight participants in each group. The groups were homogenous with regard to work place.

The focus group discussions were held in 1995, i.e. five months after the intervention was concluded to allow time for the effects to become visible. Each group met once for approximately two hours. The focus group moderators were two RNs with extensive knowledge of implementation of nursing documentation; these two RNs were not related to the study.

STATISTICAL METHODS AND ANALYSIS

Papers I-III

The inter-rater reliability coefficient (Winer, 1971) was calculated for the Cat-ch-Ing audit instrument. Score differences between reviewers were compared and calculated as percentage of agreement (I). A confirming factor analysis was performed of the items in the Cat-ch-Ing instrument using the principal component analysis for extraction and the varimax orthogonal rotation. Factor loadings higher than 0.40 were used (Polit & Hungler, 1995). Cronbach's alpha coefficients were calculated for each factor.

Pearson's product moment correlation coefficients were used to measure relationships between variables (I, II).

Student’s unpaired *t*-test and one-way ANOVA, corrected with Bonferroni/Dunn post-hoc test, were used to test differences in the scores of the Cat-ch-Ing instrument (II, III) among participating wards and over time and differences in demographic data. The Chi-square test was used to evaluate differences in nominal demographic data. Group differences on answer scores were studied using the Mann-Whitney U-test. Partial correlation was employed to test the differences with correction for characteristic differences of the groups (**thesis**). The level of statistical significance used was $p < 0.05$. The Statview and SPSS software packages were used for statistical analyses.

A post-hoc power test was performed to ensure that the sample size (II) was large enough.

Paper IV:

The transcribed focus group discussions were analysed using a qualitative content analysis method (Berg, 1998). The transcribed statements were read through line-by-line and divided into text units that reflected different aspects of the participating RNs’ experiences. These text units were coded using terms close to the original statements and then merged into themes. The text was read through a second time to make sure that no information pertinent to any of the themes had been missed. The present author (CB) performed the coding process (Blumer, 1969; Sandelowski, 1998). An additional two persons individually read through the theme lists with coded sentences. The three researchers discussed the material until a negotiated consensus was reached (Giorgi, 1989; Kihlgren & Thorsén, 1996).

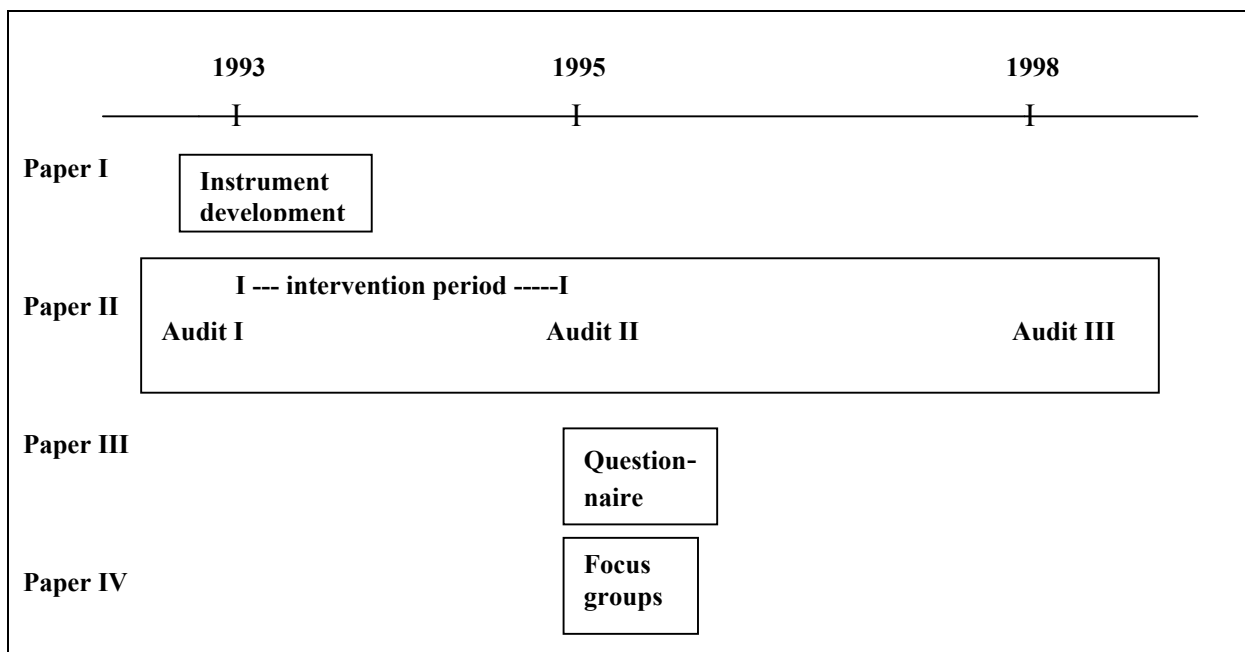


Figure 3. Time frame of the study period.

RESULTS

Nursing process and nursing care plans (I, II, III, thesis)

The Cat-ch-Ing audit instrument (I) was constructed to measure to what extent the nursing process was followed in the documentation of nursing care. The final version of the instrument consisted of 17 questions: 10 questions reflect the presence of each step of the nursing process, 1 concerns the presence of a discharge note, 4 pertain to dating, signatures and legibility, 1 relates to keywords and 1 asks about the existence of the individual patient's designated nurse. The total score ranges from 0 to 80 points (see Appendix – in Swedish).

The *inter-rater reliability*, the *content validity ratio* and the *criterion-related validity* of the Cat-ch-Ing instrument were all found to be satisfactory (I).

A factor analysis was performed on the 20 items in the instrument (11 aimed at measuring the nursing process and the presence of a discharge note in the patient record quantitatively and 9 aimed at measuring it qualitatively). Four factors were identified: assessment, care planning, outcome and discharge (Table 4 and 5). Cronbach's alpha coefficient was calculated for each factor to establish internal consistency reliability. With the exception of one, the alpha values ranged between 0.72 and 0.89 (Table 6).

Table 4. Results of the factor analysis of 11 items on *quantity* in the Cat-ch-Ing instrument ($n=269$).

Items	Factor loadings			
	Assess	Carepl	Outcome	Disch
History	.68			
Status on arrival	.80			
Diagnosis		.89		
Background to diagnoses		.82		
Expected outcome		.71		
Planned interventions		.80		
Status, updated			.74	
Outcome			.67	
Implemented interventions			.75	
Discharge note				.93
Status at discharge				.89

Assess=assessment, Carepl=careplan, Disch=discharg

Table 5. Results of the factor analysis of 9 items on *quality* in the Cat-ch-Ing instrument (n=269).

Items	Factor loadings			
	Assess	Carepl	Outcome	Disch
History	.87			
Status on arrival	.77			
Diagnosis		.88		
Expected outcome		.80		
Planned interventions		.79		
Status, updated			.81	
Outcome			.62	
Discharge note				.94
Status at discharge				.88

Assess=assessment, Carepl=careplan, Disch=discharge

Table 6. Cronbach's alpha coefficients for the factors on *quantity* and *quality* in the Cat-ch-Ing instrument (n=269).

	Assess	Carepl	Outcome	Disch
Quantity factors	.62	.89	.79	.82
Quality factors	.78	.84	.72	.78

Assess=assessment, Carepl=careplan, Disch=discharge

When using the Cat-ch-Ing instrument to audit records as an evaluation of the effect of an intervention (**II**), the audit showed that the documentation of the six items describing the nursing process had improved significantly ($p < 0.0001$) between Audit I (before the intervention) and Audit II (immediately after the intervention).

The comparison between Audits I and III (before the intervention vs. three years after the intervention) showed that all items had a significantly higher score at Audit III, except for the quantity aspect of "outcome".

Between Audits II and III, two items – nursing status and planned interventions - had decreased significantly in their mean scores on both quantity and quality and two items – nursing history and outcome – had decreased in mean scores on quantity only.

Both intervention wards had been given the opportunity and aid to develop and use standardised care plans. Only in the records from the surgical ward were standardised care plans found. At Audit II they were found in 16 records out of these 13 also contained an

individual care plan. At Audit III, standardised care plans were found in 17 and one of them also had an individual care plan.

The records that had care plans at Audit II had significantly ($p < .0001 - .0418$) higher mean audit scores than the records without a care plan, regardless if it was an individual care plan or a standardised care plan. There was no significant difference in mean total score between the records that had an individual care plan only and those that had a standardised care plan only. Care plans were found in the records as shown in Table 7. There were no care plans of either kind found in any of the records from the comparison ward (**thesis**).

Table 7. Distribution of audit score for records with and without care plans. SCP=standardised care plan, IVP=individual care plan, CP=care plan.

	Surgical ward mean (SD)				Neurology ward mean (SD)			
	SCP	ICP	SCP+ICP	no CP	SCP	ICP	SCP+ICP	no CP
Audit I	0	0	0	n=30 22 (6)	0	n=10 21 (4)	0	n=20 11 (2)
Audit II	n=3 54 (6)	n=4 50 (3)	n=13 65 (5)	n=9 43 (6)	0	n=16 46 (7)	0	n=14 31 (5)
Audit III	n=16 57 (8)	n=3 56 (4)	n=1 60	n=10 37 (6)	0	n=7 41 (7)	0	n=23 32 (7)

There was a significant ($p < 0.0001$) difference between the intervention wards and the comparison ward in all three audits when comparing total record scores. When comparing per item of the nursing process, there was a significant difference between the groups on six items at Audit I, on all items at Audit II and on all items except one, at Audit III. All significant differences favoured the intervention group, with the exception of the quantitative aspect of nursing status at Audit III, where the comparison group had a higher mean score (Table 5, Paper II).

A different way of describing the results from the audit study (II) is by using a cut-off level of how many records that received a score above or below a certain level. Using cut-off levels may be useful in a step-wise quality improvement process, e.g. by a certain time x amount of records should reach above a given cut-off level. When using a cut off level at 50% of maximum record score, the distribution of records at the three audits are as shown in Table 8.

Table 8. Percentage of records divided by a score below or above 40 . Possible score 0-80.

Score	Audit I		Audit II		Audit III	
	n=60	n=30	n=59	n=30	n=60	n=30
	Intervention ward	Compare ward	Intervention ward	Compare ward	Intervention ward	Compare ward
≤ 40	100%	100%	32%	100%	52%	90%
> 40	0	0	68%	0	48%	10%

With the exceptions of nursing diagnosis and nursing goal, most participating RNs thought that documenting the main components of the VIPS model was highly meaningful, (Table 5, Paper III).

Nursing diagnosis (II, III, IV)

The documentation of nursing diagnoses increased significantly in the intervention wards at Audit II and remained increased at Audit III, both for the quantity and quality aspect. For the comparison ward, however, there was no significant increase in documentation of nursing diagnoses at either Audit II or Audit III (Table 5, Paper II).

When asked to rate the meaningfulness of documenting the nursing diagnoses on a scale from 1 – 5 (1=totally meaningless and 5=very meaningful), 306 RNs answered. Sixty-eight percent gave a rating of four or five while four percent gave a rating of one (Table 5, Paper III).

In the focus group discussion (IV), nursing diagnosis was mentioned by the RNs in all three groups as the most difficult part of documentation. In addition, the discussion revealed that the RNs' lacked sufficient training in this area. It was also the formulation of nursing diagnoses that was said to be the part of documentation that required the most mental time because a great deal of critical thinking and reflection was necessary. Participants in each group stated that they needed more supervision by experts and additional peer review to further develop their skills.

The VIPS model (III, IV)

When asked how the VIPS model influences the ability to document nursing care, 97% (n=33) of the RNs in Group A and 82% (n=278) in Group B responded that the model facilitates this ability. In addition, 88% in Group A and 59% in Group B answered in the

affirmative to the question: “Do you believe that the VIPS model is well suited to document nursing care?” (Table 9).

Although it was clearly stated in the focus group discussion that the new way of documentation took more time, some RNs also mentioned that structured documentation through the VIPS model was time-saving compared with the formerly used running notes.

One participant questioned the feasibility of applying the richness and complexity of nursing into a systematic keyword model of record keeping and whether this actually served the RN and the patient. Another participant inquired about the future effects of ‘all this writing’, and whether it would make a meaningful difference for the patients (IV).

There were also statements from participating RNs indicating that they would be reluctant to return to their former way of documenting. As one RN put it:

If I were to change jobs and go to another ward, I could never work in a ward that didn’t use the VIPS model: that would be completely out of the question for me. (RN from Group 3)

Benefits and barriers of nursing documentation (III, IV, thesis)

Of the 21 questions in the questionnaire in Paper III, 17 are shown in Table 9. Of these 17, there was a statistically significant difference in answer scores between Groups A and B on eleven questions. When correcting for the characteristic differences in the groups – working at a university hospital, age group and years of practice as a RN – four answer differences remained (shaded values in Table 9).

A vast majority of the participants were in agreement as to the benefits and patient safety aspect of the nursing documentation. When asked if a well-written nursing documentation could replace oral shift reports, 81% of the participants answered yes or it could be replaced to some degree. When asked two questions about having the knowledge needed for nursing documentation, only 16 and 15% respectively wrote “no” (Table 2, Paper III).

Twenty percent of the RNs thought that they did not have time to document nursing care, and 71% stated that they did not have time to develop nursing documentation (Table 2, Paper III). When the participating RNs in both groups were asked to rank the most influential barriers to nursing documentation, lack of time was ranked first (Table 4, Paper III).

One finding in the focus group discussions was the participants’ statement that the structured way of documenting nursing care made them think in a more reflective way about their work with the patients. Two types of role changing for the RNs were reported: one was

change from a medical technical focus to a more nursing expertise orientation and another from a “hands on clinician” to more of an administrator and secretary (**IV**).

DISCUSSION

METHODOLOGICAL CONSIDERATIONS

PAPERS I, II, III – QUANTITATIVE METHODS

Internal validity

Internal validity refers to the extent to which an experiment rules out alternative explanations of the results. Factors or influences e.g., history, selection bias, attrition, diffusion or imitation of treatment other than the independent variable(s) that could explain the results are threats to the internal validity (Guba & Lincoln, 1989; Polit & Hungler, 1995; Kazdin, 1998).

Paper I

The experts used for testing the content validity of the instrument were selected through purposive sampling by the present researcher. Although it is deemed necessary, in achieving a reliable answer, this is not a strong method of sampling and threatens to introduce *selection bias*.

The Cat-ch-Ing audit instrument was tested for *content validity*, *criterion-related validity* and *construct validity*. The analyses indicated that the calculated findings were satisfactory.

Paper II

Because there has been nation wide attention to improvement in nursing documentation using the VIPS model, it cannot be discarded that some of the effect in the intervention group is due to this *history*. However, this parallel process is assumed to have had the same effect on the comparison group and thus may not have influenced the internal validity.

The intervention wards were selected as a convenience sample, which is the weakest form of sampling and may introduce *selection bias*. However, as Lewin (1973) insisted, there has to be a need for change in order to make an alteration; therefore, volunteering was considered necessary.

There was a high turn over rate of the RNs in the intervention group between Audits II and III, which means that 18 of the 34 RN's who had written the audited records at Audit III were different RNs than those who had taken part in the intervention and written the records at Audit II. This could be considered an *attrition* and one could speculate about the level of knowledge in nursing documentation that the new RNs may have had which may have influenced the result. However, the comparison ward had an even higher turn over rate of

their RNs. (These figures include part time as well as full time employment, therefore they do not correspond to the staffing figures in Table 1, Paper II).

It is possible that the comparison group was affected by *diffusion* (spill over) from the intervention group in that the wards were situated at the same hospital. If so, the comparison group would have had a higher score when audited than they would have had otherwise. Consequently, difference between the intervention and comparison groups would have been even larger.

Paper III

The *attrition* rate for the whole questionnaire was 33%, a figure that is a threat to the internal validity of the questionnaire. It was not possible to perform an attrition analysis because of the missing data of the non-respondents.

Each item in the questionnaire had an internal attrition rate of less than ten percent, with the exception of three items in which the rate ranged from 13 to 19%. There was no systematic pattern in the attrition rate when analysing the characteristics of the non-respondents.

External validity

External validity refers to the generalisability of the research findings to other settings and samples. Characteristics of the study that may limit the study's representativeness are threats to its external validity, such as sample characteristics, reactivity of experimental arrangements (Hawthorne effect) and novelty effects (Guba & Lincoln, 1989; Polit & Hungler, 1995; Kazdin, 1998).

Paper I

The auditors were selected because of their knowledge and experience in documentation in addition to their nursing profession, which was considered necessary when developing a new instrument. However, this puts a limitation to the generalisability because the results do not show how usable the instrument is to nurses in general.

Paper II

Because the two groups differed in the mean audit score of the patient records at baseline (Audit I), in which the intervention group had significantly higher audit scores, a bias with respect to *sample characteristics* may have been introduced and influenced the results in the comparison between the groups.

There may have been a *Hawthorne effect* in the intervention group in that the RNs were aware of the fact that they were taking part in a study and that their records were going to be audited. Nevertheless, they evidently had increased their level of knowledge in nursing documentation by using the VIPS model; in other case, they would not have been able to improve their documentation even if they wanted to.

Likewise, there may have been a *novelty effect* – positive as well as negative – in that the VIPS model was a novelty to RNs in Sweden at the time. For the participating RNs who had been looking for a model for their documentation, this attitude may have given a positive effect; on the other hand, for those RNs who opposed nursing documentation, this attitude may have given a negative effect.

Paper III

Sample characteristics differed between the two groups on the percentage of RNs working at university hospitals, age and number of years working as an RN. However, this problem has been corrected for in the statistical analysis.

Reliability

Reliability refers to the study's stability, consistency, predictability and dependability and typically rests on its replicability to yield similar findings (Sandelowski, 1986; Guba & Lincoln, 1989).

Paper I

Inter-rater reliability was tested by comparing different reviewers' total Cat-ch-Ing scores on the same record. The collected records were audited three times, each time by a different reviewer resulting in high concordance. Using as many as three raters is to be considered a strength in the analysis. Cronbach's alpha revealed satisfactory values for internal consistency (Bland & Altman, 1997).

Paper II

A calibration process was performed between the six raters before the record auditing. To ensure inter-rater reliability this procedure was repeated four times until consensus was reached. The auditing was performed with the Cat-ch-Ing instrument, which had showed satisfactory reliability testing (see above).

Paper III

Because all participants were well enough trained and experienced in nursing documentation and in the use of the VIPS model, this increased their ability to answer the questions reliably.

PAPER IV – QUALITATIVE METHOD

Credibility / Authenticity

In qualitative methodology, internal validity is often referred to as credibility or authenticity and is investigated by asking “Are the findings credible to the people we study?” and “Do the findings picture an authentic portrait?” (Sandelowski, 1986; Guba & Lincoln, 1989; Miles & Huberman, 1994). The qualitative study (IV) is credible because it presents such descriptions and interpretations of a human experience, that the people having that experience immediately recognise it as their own.

One frequently recommended technique for establishing credibility, according to Guba & Lincoln (1989), is *member check*, which means that the researcher verifies the findings with those persons who provided them. This has not been specifically done in the present study since the time lapse between conducting and analysing the focus group discussions made it unlikely that the participants would both remember what was said during the focus group discussions. It is also possible that their perspectives might have changed with time. The author has, however, less formally checked the data with both individual RNs and groups of RNs for the past seven years, and has not found anything to contradict the analysis presented.

Triangulation addresses the issue of internal validity by using more than one method of data collection to answer a research question (Begley, 1996). One limitation of questionnaires is the lack of nuances and details, which can be obtained in an interview or focus group session instead. On the other hand the results from the focus group discussions lack the generalisability of a questionnaire. The results of the questionnaire study (III), are generally in agreement with the results of the focus group discussion (IV) thus providing a type of validation (Barbour, 2001).

Fittingness / Transferability

External validity in qualitative research is often referred to as fittingness or transferability, meaning that the findings of a study can fit or be transferred into contexts outside the study situation. If descriptions are elaborate enough the readers may assess the degree of transferability (Sandelowski, 1986; Miles & Huberman, 1994). The sampling in this study

was purposive (Sandelowski, 1986; Barbour, 2001), by collecting data from persons with experience of the whole intervention period. The intent was to include as much diversity as possible to illuminate the phenomena as clearly as possible.

Dependability / Auditability

Reliability is referred to as dependability or auditability in qualitative methodology (Sandelowski, 1986; Guba & Lincoln, 1989; Miles & Huberman, 1994).

The dependability of a qualitative study is related to how well the methodology and process of *interpretation is described*. A study and its findings are auditable when another researcher can clearly follow and repeat the decision process (Guba & Lincoln, 1989; Mays & Pope, 1995). To increase dependability in this study, an additional two persons individually read through the thematised lists with coded sentences to see if there was anything in the data that contradicted the initial thematisation and the described results.

GENERAL DISCUSSION

This thesis is based on four papers with the overall aim to describe and analyse effects of an intervention concerning nursing documentation when the VIPS model is used.

The principle findings of the study are summarised as follows:

- the quality and quantity of nursing documentation in the patient record can be evaluated when using the Cat-ch-Ing instrument.
- to achieve excellent nursing documentation and patient care planning it is not enough to increase knowledge in the use of a structured documentation: organisational and leadership issues need to be addressed simultaneously.

This study has generated at least two hypotheses for future investigation:

- the use of a structured model for documentation with headings for specific content helps ensure that RNs' perform patient assessments that are more relevant.
- the use of a structured model for documentation with headings for specific content enhances RNs' ability to reflect about nursing care.

Instrument development

Ehrenberg (2001) recently described four approaches for audit instruments. The most basic level is the formal structure approach, where only presence or absence of certain data is noted while the relationship between data is not judged. The next level is referred to as the process

comprehensiveness approach. This approach focuses on the cohesiveness and comprehensiveness of the information, particularly for items related to the nursing process. The knowledge-based approach is the third level and includes auditing the relevance of the data in relation to specific guidelines, programmes or criteria. The last and highest form of auditing - the accuracy approach - aims at evaluating the concordance between documentation of patient care and actual given care.

In its present and tested form, the Cat-ch-Ing instrument (**I**) prescribes most closely to the process comprehensiveness approach. The instrument may be improved by calculating separate sub-scores for the four factors extracted through the factor analysis. This would more distinctly show which parts of the documentation that e.g. needed improvement.

The instrument can also be used for the knowledge-base approach depending on how well the criteria for the record content are specified. The instrument manual is supposed to be flexible to different criteria or minimum data levels. In a study by Wärn-Hede et al. (unpublished data), Cat-ch-Ing was used to evaluate the content of assessment and interventions of the patient's nutritional situation. The instrument detected that 49 of 52 records contained less than 50% of information deemed essential. However, the instrument needs to be further tested when used for such specific knowledge areas. Nilsson & Willman (2000) compared the Cat-ch-Ing instrument with the NoGa by auditing 40 records. They concluded that the NoGa instrument evaluated structure, whereas the Cat-ch-Ing evaluated quality of documented content. Thus, the Cat-ch-Ing seems to be of great value for its intended purpose.

The items receiving the lowest score when auditing the records (**II**) – nursing diagnosis and expected outcome – were also the parts rated to be the least meaningful to document (**III**) and described by the RNs in the focus groups (**IV**) as the most difficult parts to formulate.

When interpreting the results of the factor analysis, it is plausible that the assessment, care planning, outcome and discharge documentation are emerging as different factors concerning the quantity aspect. It is common when learning to document that some RNs document assessment only while others are better at documenting the discharge note, and still others are good at producing a care plan.

Nursing diagnoses and patient care plans

When it comes to nursing practice, the concepts of nursing diagnosis and expected outcome are still unfamiliar to most RNs in Sweden (Ehnfors, 1994) and the body of knowledge in this area needs to be further developed (Ehrenberg & Ehnfors, 1999a).

Nursing diagnosis and expected outcome improved after a two-year intervention (II) and were also the only two items that remained with a higher audit score at the time of the third audit, although still with a low mean value compared with other items.

Nursing diagnosis is the product of the process of decision-making, which is decisive for type of interventions. As Hamers et al. (1994) notes, “The administration of pain medication to a patient who is in pain, should not have to be dependent on the nurse who is caring for him at the moment.” The least common denominator of continuity of care is agreement among the caregivers as to what the problem is and how it should be resolved. This is the purpose of the care plan, including diagnosis, expected outcome and planned interventions.

In an Icelandic study (Thoroddsen & Thorsteinsson, 2002), 1217 patient records were audited, with the results indicating that 60% contained at least one nursing diagnosis (range 0-10).

In the present study, more than half of the participants (III) gave a high rating to the meaningfulness of documenting nursing diagnoses; likewise, more than half of the participants gave a high rating to expected outcome while 83% gave a high rating to planned interventions. Together, these three items constitute the nursing care plan. Earlier studies have shown that when the participants were asked what parts of the nursing process they usually document, diagnosis and goals were stated to be least often documented (Törnkvist et al, 1997; Ehrenberg, 2001). Audit studies have noted the same pattern (Ehrenberg et al., 1996). To our knowledge, no study in Sweden has described the RN’s opinion on whether it is meaningful or not to use nursing diagnosis. In the focus group discussions (IV), formulation of nursing diagnosis was stated to be difficult and participants were asking for more supervision in this area.

Heartfield (1996) found that RNs mainly document observations and rarely conclusions. One reason for this may have to do with the biomedical paradigm that has guided RNs’ perceptions for generations (Meleis, 1997), especially in the acute care system. Most RNs in Sweden are trained to look at the patient with “biomedical eyes”, asking themselves what signs and symptoms the patient has instead of asking what problems or needs the patient may have that can be treated with nursing.

The influence of standardised care plans on documentation as well as patient care is also a topic that needs to be further studied. Standardised care plans are considered a time saving device for the nurse and a valuable guideline for the novice. Critics argue that nursing care is specific to each individual and that by standardising there is a risk that the nurses will label the patients and presume that nursing diagnoses are, e.g., objective (Mitchel, 1991; Lützén & Tishelman, 1996). Moreover, standardisation encourages the nurse to focus on predictable problems instead of additional ones (Carpenito, 1997). Standardised care plans may also be used as a minimum standard of care, indicating the minimum care a patient with a specific need should receive and then be complemented with an individualised care plan. The results of the present study (**thesis**) indicated that at the time of Audit II, i.e. after the two-year intervention, almost all the records that contained a standardised care plan also contained an individual care plan. However, only 1 of 17 records with a standardised care plan also contained an individual care plan at the time of Audit III. This latter finding may indicate that one of the positive effects of the intervention programme was the documentation of individual care plans, which did not remain when most of the RNs from the intervention period had been replaced.

Benefits and barriers to nursing documentation

Studies in Sweden have shown that RNs lack sufficient knowledge in documentation procedures (Ehnfors, 1993; Jerlock & Segesten, 1994; Larsen et al., 1995; Törnkvist et al., 1997; Ehrenberg, 2001). In this study, the participants answered two questions about having sufficient knowledge in documentation procedures (**III**). Very few answered “No” to either of the questions. Nonetheless, the record audit (**II**) revealed a less than adequate quality of nursing documentation, despite the two-year intervention programme. Judging from the answers of the questionnaire (**III**) and the topics discussed in the focus groups (**IV**), organisational and leadership issues presented a major barrier to nursing documentation.

Three of the four questions in the questionnaire in which the answer scores remained significantly different between the two groups after correction for characteristic differences (**thesis**), revealed that the intervention group found facilities to be more adequate. Furthermore, they rated more knowledge in formulating care plans and they believed to a larger extent than the comparison group that they had access to documentation consultants. This result is not surprising in that these aspects were part of the two-year intervention: they were given knowledge in care planning, improvements of facilities were made and two

documentation experts (change agents) were trained on each ward to maintain continued support.

The participants who answered the questionnaire (III) ranked 'lack of time' as the primary barrier to nursing documentation, whereas the participants in the focus groups (IV) exemplified what it was that took time. Increased paperwork because of increased patient turnover rate, interruptions in thought, making the nurse start all over again to rethink how to formulate the patient's needs, documenting more elaborately and thinking about how to formulate the information correctly in the record, increased workload exemplified by sicker patients and less staffing.

The same can be said about the question concerning other health professionals' reactions to and opinions about the nurses' documentation. The majority stated (III) that physicians to some degree use nursing documentation, and in the focus group discussion (IV) details were given in which some of the participants told of support, respect and positive reinforcement from physicians while others described hierarchical attitudes, lack of respect and indifference. In this study, a broader view has been obtained by addressing the same issues using two methods (triangulation).

CONCLUSIONS

This study shows that training RNs to use a structured documentation system improves their skills for record keeping and care planning; however, this is not sufficient but must be used in combination with a complex of other methods. Apparently, there are additional factors in the clinical practice that influence the action of documenting nursing care than lack of knowledge and practice.

The following findings are concluded:

- The Cat-ch-Ing audit instrument proved to be a valid and reliable audit instrument for nursing documentation in patient records.
- A comprehensive intervention of nursing documentation based on the VIPS model and including organisational support may significantly improve the quality of nursing documentation in an acute care hospital setting.
- The VIPS model was perceived to be beneficial as a tool for documentation and documentation per se was considered of value to the RNs in their daily professional work and for increasing patient safety.
- The understanding of factors that are perceived to influence the practice of nursing documentation has improved.

Issues debated among the participants in this study largely concern organisational matters. Several of the perceptions voiced by the participating RNs were that nursing documentation using a structured keyword model increased the RNs' reflections on patient care, helped them to visualise the tasks involved in nursing care and was useful in structuring the RNs' work.

CLINICAL IMPLICATIONS

- The Cat-ch-Ing instrument is expected to be of future value in the evaluation of the quality of the written notes in patient records in assessing not only the content of information but also the double documented information. Moreover, the instrument can be used to detect whether patient care was documented in accordance with specific content criteria.
- The intervention programme used in this study is suggested to be of potential value to clinicians wishing to improve nursing documentation. However, follow-up training and supervision for a longer period is suggested as necessary as well as continuous peer review of the documentation. It is proposed that high quality nursing documentation – not yet achieved – will make it possible to measure its value on direct patient care.
- The inhibitors and facilitators of nursing documentation as perceived by RNs in the study may be of value to encourage RNs in practice and their leaders, and encourage both groups to be more attentive to the prerequisites needed to establish adequate nursing documentation in the patient record. Consciousness of the influence of organisation on documentation procedures may be of the utmost importance for staff supervisors, staff managers and others in that it will enable them to change and adapt the organisation adequately.

It may be imperative that RNs are used for what they are trained to do, namely, nursing, including its documentation. This position suggests that other staff members should perform most of the administrative tasks.

This leads to the important consideration of multidisciplinary and organisational efforts when implementing innovations within nursing.

FUTURE RESEARCH

- Once record keeping has improved, the next step will be to evaluate the effect that it has on patient care.
- To investigate to what extent does the patient record mirror reality.

- To investigate to what extent a work organisation in which each RN focuses on a few patients increase the individual patient's assessment and care planning?
- The Cat-ch-Ing instrument will need some adjustments and new testing to better fit the electronic and multi-professional patient record and in identifying standardised care plans.
- A major implication of this study is that further research is needed on the hypotheses generated in this study.

ACKNOWLEDGEMENTS

I wish to sincerely thank,

All the RNs at the four participating wards and all the RNs throughout Sweden to whom I have had the privilege to lecture, for everything I have learned from you.

Ingrid Thorell-Ekstrand, my principal supervisor, for generously sharing your knowledge and giving me inspiration.

Regina Wredling, my other supervisor, for structuring my research, guiding me with your deep engagement and for saying that very right word of comfort in the very right moment and for being that brave and supporting '*regina*' you really are.

Carol Tishelman, for your expert comments and directions regarding the qualitative methodology.

Margareta Ehnfors and Anna Ehrenberg for valuable discussions and advice.

My fellow course leaders who were there from the beginning: Anna Björkdahl, Ingela Karlsson, Cecilia Persson, Gunnel Wärn Hede, Susanne Amsberg, Marie-Louise Persson, Pia Redborg, Christina Jonsson, Magnus Oléni and Lena Axelsson for important discussions, enthusiasm and endurance.

My research colleagues at the Department of Nursing Research at the Karolinska Hospital. I would especially like to express my gratitude to Karin Säflund for sinking deep into my study and sometimes my moods, Lena Wettergren for being the sharing and ever understanding 'sister in arms', Leena Jylli for being my patient room-mate, Yvonne Wengström, Claes Cederfjäll and Eva Johansson for inspiring discussions, sharing of knowledge, critical thinking and for hanging in there when "things got shaky". Also, all you 'oldies' who are not there anymore but who were such excellent discussion partners and singers: Lena Boman, Kerstin Nilsson Kajermo, Ann Langius, Bjöörn Fossum, Unn-Britt Johansson, Barbro Mendel, Birgitta Klang, Kristina Forsberg and Christina Lindholm for you inspiring visions and never ceasing positive thinking.

Tommy Säflund for your generous layout support.

And last but definitely not least,

Mikael, my partner in life, for an increasing patience and understanding, for taking over the daily chores and for managing the summer without me.

Åke and Hjördis, my parents, for all your support and inspiration over the years.

My dearest friends, Katrin and Maud for filling my cup. I will be much more attentive from now on.

In addition, I would like to thank the Stockholm County Council whose generous grant made this study possible and the Board of Research for Health and Caring Sciences, Karolinska Institutet, Stockholm.

REFERENCES

- Adamsen, L., & Tewes, M. (2000). Discrepancy between patients' perspectives, staff's documentation and reflections on basic nursing care. *Scandinavian Journal of Caring Sciences*, 14(2), 120-9.
- Ajzen, I. & Fishbein, M. (1980) A theory of reasoned action. In Ajzen, I. & M, Fishbein (Eds.) *Understanding attitudes and predicting social behaviour*. Englewoods Cliffs, NJ: Prentice Hall.
- Allen, D. (1998) Record-keeping and routine nursing practice: the view from the wards. *Journal of Advanced Nursing*, 27, 1223-1230.
- Andersson-Segesten, K. (1989) Systemteori och omvårdnad. En teoretisk discussion. (Systems theory and nursing. A theoretical discussion) *Vård i Norden*, 16 (3), 15-18. (In Swedish)
- Argyris, C. & Schön, D. (1996) *Organizational learning II. Theory, method and practice*. Reading, Mass: Addison-Wesley Publishing Company,
- Ashworth, P., Bjørn, A., Déchanoz, G., Delmotte, N., Farmer, E., Bulanda Kordas, A., et al. (1987) *Peoples Needs for Nursing Care. A European Study*. Copenhagen: World Health Organization, Regional Office for Europe.
- Asplund, K., Alton, V., Norberg, A., & Willman, A. (2000) Individually planned nursing care – what is the scientific support? *Vård i Norden*, 20(1), 46-49 (In Swedish).
- Bakken Henry, S. (1995) Nursing informatics: state of the science. *Journal of Advanced Nursing*, 22, 182-1192.
- Barbour, R. (2001) Checklists for improving rigour in qualitative research: a case of the tail wagging the dog? *BMJ*, 322, 1115-1117.
- Barnum, B. (1994) *Nursing theory. Analysis, application, evaluation*. 4th ed. J.B. Philadelphia: Lippincott Company.
- Begley, C. (1996) Using triangulation in nursing research. *Journal of Advanced Nursing*, 24, 122-128.
- Berg, B. (1998) *Qualitative research methods for the social sciences*. 3rd ed. Needham Hights, MA: Allyn & Bacon.
- Bertalanffy, L. von. 1968) General Systems theory - A critical review. In Buchley, W. Ed. *Modern systems research for the behavioural scientist*. Chicago: Aldine Publishing Company.

- Betrand, J.T., Brown, J.E. & Ward, V.M. (1992) Techniques for analysing focus group data. *Evaluation Review*, 16(2), 198-209.
- Bland, M. & Altman, G. (1997) Statistics note. Cronbach's alpha. *BMJ* 314, 572.
- Blumer, H. (1969) *Symbolic interaction. Perspective and method*. Berkeley: University of California Press.
- Bowman, G.S., Thompson, D.R. & Sutton, T.W. (1983) Nurses' attitudes towards the nursing process. *Journal of Advanced Nursing* 8, 125-29.
- Bradley, J. (1982) Nurses' attitudes towards dimensions of nursing practice. *Nursing Research*, 32(2), 110-114.
- Bridges, W. (1996) *Transitions: Making sense of life's changes*. London: Nicholas Bealey publishing.
- Briggs, M. & Dean, K.L. (1998). A qualitative analysis of the nursing documentation of post-operative pain management. *Journal of Clinical Nursing*, 7(2), 155-63.
- Carnevali, D. & Thomas, M.D. (1993) *Diagnostic reasoning and treatment decision making in nursing*. Philadelphia: Lippincott.
- Carpenito, L.J. (1997) *Nursing diagnosis. Application to clinical practice*. 7th ed. Philadelphia: Lippincott Company.
- Clark, J. (1994) An international classification for nursing practice. In: Bakken, S., Holzemer, W., Tallberg, M. & Grobe, S. (Eds.) *Proceedings of the 5th international nursing informatics symposium Post-conference: June 24-25 Austin, Texas*. Informatics: The infrastructure for quality assessment improvement in nursing (pp. 24-31). San Francisco: UC Nursing Press.
- Craig, D. (1987) Audit design. *Recent Advances in Nursing*, 17, 65-93.
- Davis B., Billings, J. & Ryland, R. (1994) Evaluation of nursing process documentation. *Journal of Advanced Nursing*, 19, 960-968.
- Donabedian, A. (1988) The Quality of care. How can it be assessed? *JAMA*, 260, 1743-8.
- Edberg, A-C., Hallberg, I. & Gustafson, L. (1996) Effects of clinical supervision on nurse-patient cooperation quality. *Clinical Nursing Research*, 5(2), 127-149.
- Ehnfors, M. (1993) Nursing documentation practice at 153 hospital wards in Sweden as described by nurses. *Scandinavian Journal of Caring Sciences*, 7, 210-217.
- Ehnfors, M. (1994) Documentation of patient problems and nursing diagnoses in sample of Swedish nursing records. *Vård i Norden*, 14(4), 14-18.

- Ehnfors, M., Ehrenberg, A. & Thorell-Ekstrand, I. (1997) The VIPS model--implementation and validity in different areas of nursing care. *Studies in Health Technology Informormatics*, 46, 408-10.
- Ehnfors, M., Ehrenberg, A. & Thorell-Ekstrand, I. (2002) The development and use of the VIPS-model in the Nordic countries. In: Oud, N. (Ed.), *Proceedings of the special conference of the Association of Common European Nursing Diagnoses, Interventions and Outcomes in Vienna Austria*. (pp139-168). Bern: Verlag Hans Huber.
- Ehnfors, M. & Smedby, B. (1993) Nursing Care as Documented in Patient Records. *Scandinavian Journal of Caring Sciences*, 7, 209-20.
- Ehnfors, M., Thorell-Ekstrand, I. & Ehrenberg, A. (1991) Towards basic nursing information in patient records. *Vård i Norden*, 21(3/4), 12-31.
- Ehrenberg, A. (2001) Nurses' perceptions concerning patient records in Swedish nursing homes. *Vård i Norden*, 21, 9-14.
- Ehrenberg, A., Ehnfors, M. & Thorell-Ekstrand, I. (1996) Nursing documentation in patient records: experience of the use of the VIPS-model. *Journal of Advanced Nursing*, 24, 853-67.
- Ehrenberg, A. & Ehnfors, M. (1999a) Patient problems, needs and nursing diagnoses in Swedish nursing home records. *Nursing Diagnosis*, 10(2), 65-76.
- Ehrenberg, A. & Ehnfors, M. (1999b) Patient records in nursing homes. Effects of training on content and comprehensiveness. *Scandinavian Journal of Caring Sciences*, 13, 72-82.
- Fagrell, B., Funcke, L. & Nyberg, K. (1998) Nursing documentation according to the VIPS-model at nursing home. *Vård i Norden*, 18, 40-45.
- Fry, V.S. (1953) The creative approach to nursing. *American Journal of Nursing*, 53(3), 301-302.
- Gabbay, J., McNicol, M., Spiby, J., Davies, S. & Layton, A. (1990) What did audit achieve? Lessons from preliminary evaluation of a year's medical audit. *BMJ*, 301, 526-9.
- Gardell, B., Gustafsson, R., Brandt, C., Tillström, I. & Torbiörn, I. (1979). *Sjukvård på löpande band*. Rapport från ett forskningsprojekt om sjukhusets vård- och arbetsorganisation. Stockholm: Prisma.
- Giorgi, A. (1989) Some theoretical and practical issues regarding the psychological phenomenological method. *Saybrook Review*, 7, 71-85.
- Goldstone, L., Ball, J. & Collier M. (1983) *Monitor: an index of the quality of nursing care for acute medical and surgical wards*. Newcastle upon Tyne: Newcastle upon Tyne Polytechnic Products.

- Goossen, W. (2002) The International Nursing Minimum Data Set: Why do we need it? In: Oud, N. (Ed.), *Proceedings of the special conference of the Association of Common European Nursing Diagnoses, Interventions and Outcomes in Vienna Austria*. (pp139-168). Bern: Verlag Hans Huber.
- Goossen, W., Epping, P.J., Dassen, T., Hasman, A. & Van den Heuvel, W. (1998) A comparison of nursing minimum data sets. *Journal of the American Medical Informatics Association*, 5(2), 152-163.
- Goossen, W., Epping, P., Van den Heuvel, W., Feuth, T., Frederiks, C. & Hasman, A. (2000) Development of the Nursing Minimum Data Set for the Netherlands (NMDSN): identification of categories and items. *Journal of Advanced Nursing*, 31(3), 536-47.
- Gordon, M. (1994) *Nursing diagnosis: Process and application* 3rd ed. St. Louis, MO: Mosby.
- Griffiths, J. & Hutchings, W. (1999) The wider implication of an audit of care plan documentation. *Journal of Clinical Nursing*, 8, 57-65.
- Grobe, S. (1996) The nursing intervention lexicon and taxonomy: Implications for representing nursing care data in automated records. *Holistic Nursing Practice*, 11, 48-63.
- Grobe, S. & Hughes, L. (1993) The Conceptual Validity of a Taxonomy of Nursing Interventions. *Journal of Advanced Nursing*, 18, 1942-1961.
- Groenman, N.H., Slevin, O.D'A. & Buckenham, M.A. (1992) *Social and behavioural sciences for nurses*. Edinburgh: Campion Press Ltd.
- Guba, E. & Lincoln, Y. (1989) *Fourth generation evaluation*. Newbury Park: Sage Publications.
- Gunningberg, L., Lindholm, C., Carlsson, M. & Sjöden, P. (2000) The development of pressure ulcers in patients with hip fractures: inadequate nursing documentation is still a problem. *Journal of Advanced Nursing*, 31, 1155-1164.
- Gunningberg, L., Lindholm, C., Carlsson, M., & Sjöden, P. (2001). Risk, prevention and treatment of pressure ulcers--nursing staff knowledge and documentation. *Scandinavian Journal of Caring Sciences*, 15(3), 257-63.
- Hale, C., Thomas, L., Bond, S. & Todd, C. (1997) The nursing record as a research tool to identify nursing interventions. *Journal of Clinical Nursing*, 6, 207-214.
- Hamers, J., Huijter Abu-Saad, H. & Halfens, R. (1994) The diagnostic process and decision-making in nursing, a literature review. *Journal of Professional Nursing*, 10, 154-163.
- Hamrin, E. & Lindmark, B. The effect of systematic care planning after acute stroke in general hospital medical wards. *Journal of Advanced Nursing*, 15, 1146-1153.
- Hansebo, G., Kihlgren, M. & Ljunggren G. (1999) Review of nursing documentation in nursing home wards - changes after intervention for individualised care. *Journal of Advanced Nursing*, 29, 1462-1473.

- Hansen, S., Norlin, M. & Björvell, H. (1993) [HIV-patients self-evaluated health and functional status. Basis for individually-adapted nursing care planning]. *Vård i Norden*, 13(2), 8-10.
- Harvey, G. (1991) An evaluation of approaches to assessing the quality of nursing care using (predetermined) quality assurance tools. *Journal of Advanced Nursing*, 16, 277-86.
- Heartfield, M. (1996) Nursing documentation and nursing practice. *Journal of Advanced Nursing*, 24, 98-103.
- Heath, D. (1990) Random review of hospital patient records *BMJ*, 300, 651-2.
- Honnas, R., Zlotnick, C. (1995) Quality improvement in action: Development of a tool. *Journal of Nursing Care Quality*, 9, 72-77.
- Howse, E. & Bailey, J. (1992) Resistance to documentation – a nursing research issue. *International Journal of Nursing Studies*, 29(4), 371-380.
- International Council of Nurses (1999) ICNP update, Geneva, Switzerland.
- Jairath N. (1994) Strategies for motivating CCU patients. *Dimensions of Critical Care Nursing*, 13, 324-333.
- Jerlock, M. & Segesten, K. (1994) Att dokumentera omvårdnaden – svårigheter och motstånd (Documenting nursing care – difficulties and resistance). *Sjukskötersketidningen*, 2, 43-48. (In Swedish)
- Johnson, M., Maas, M. & Moorhead S. (2000) *Nursing outcomes classification (NOC) 2nd ed.* St. Louis, MO: Mosby.
- Joint Commission on Accreditation of Healthcare Organizations: Accreditation manuals for hospitals (1991) *Nursing Care Standards*. Outbrook Terrace: The Commission;.
- Kajermo Nilsson, K., Nordström, G., Krusebrant, Å. & Björvell, H. (2000) Perceptions of research utilization: comparisons, nursing students and a reference group of nurse clinicians. *Journal of Advanced Nursing*, 31(1), 99-109.
- Karshmer, J. (1991). Expert nursing diagnoses. The link between nursing care plans and patient classification systems. *Journal of Nursing Administration*, (21), 1.
- Kazdin, A. (1998) *Research design in clinical psychology*. 3rd ed. Needham Hights, MA: Allyn and Bacon.
- Kihlgren, M. & Thorsén, H. (1996) Violation of the patient's integrity, seen by staff in long term care. *Scandinavian Journal of Caring Sciences* 10, 103-107.
- Kirkevold, M. (2000) Omvårdnadsteorier – analys och utvärdering. 2a uppl. (Nursing theories – analysis and evaluation.) Lund: Studentlitteratur. (In Swedish)
- Kitzinger J. (1995) Introducing focus groups. *British Medical Journal*, 311, 299-302.

- Kramer, M. (1972) Nursing care plans. Power to the patient. *Journal of Nursing Administration*, Sept-Oct, 29-34.
- Krueger, R. (1994) *Focus Groups. A practical guide for applied research*. 2nd Ed. Thousand Oaks: Sage Publications Inc.
- Lansdtingsförbundet (2002) Svensk hälso- och sjukvård under 1990-talet. Utvecklingstendenser 1992 – 2000. (The Swedish health care system during the 1990s) Tillgänglig på www.lf.se. (In Swedish)
- Larsen, J., Gardulf, A. & Nordström, G. (1995) Sjuksköterskors syn på sin egen och sin avdelnings omvårdnadsdokumentation (Nurses' perception of their own and other nurses' documentation). *Sjukskötersketidningen* (7), 220-223. (In Swedish).
- Lawshe, C.H. (1975) A quantitative approach to content validity. *Personnel Psychology*, 28, 563-575.
- Lewin, K. (1952) *Field theory in social science. Selected theoretical papers*. London: Tavistock Publications Ltd.
- Lewin, K. (1973) Group dynamics and social change In Etzioni, A. & Etzioni, E. (eds.) *Social change: Sources, patterns and consequences*. New York, NY: Basic Books.
- Lindgren, C., Hallberg, I., & Norberg, A. (1992). Diagnostic reasoning in the care of a vocally disruptive severely demented patient. *Scandinavian Journal of Caring Science*, 6(2), 97-103.
- Lunney, M. (1990). Accuracy of Nursing diagnoses: concept development. *Nursing Diagnosis*, 1(1), 12-17.
- Lunney, M., Karlik, B., Kiss, M. & Murphy, P. (1997). Accuracy of nurses' diagnoses of psychosocial responses. *Nursing Diagnosis*, 8(4), 157-166.
- Lützén, K. & Tishelman, C. (1996) Nursing diagnosis: a critical analysis of underlying assumptions. *International Journal of Nursing Studies*, 33(2), 190-200.
- Manfredi, C. (1986) Reliability and validity of the Phaneuf Nursing Audit. *Western Journal of Nursing Research*, 8,168-180.
- Martin, A., Hinds, C. & Felix M. (1999) Documentation practices of nurses in long-term care. *Journal of Clinical Nursing*, 8, 345-352.
- Martin, K.S. & Scheet, N.J. (1992) *The Omaha system: Applications for community health nursing*. Philadelphia. Saunders.
- Mashru, M. & Lant, A. (1997) Inter practice audit of diagnosis and management of hypertension in primary care: educational intervention and review of medical records. *BMJ*, 314, 942.

- Mason, C. (1999). Guide to practice or "load of rubbish"? The influence of care plans. *Journal of Advanced Nursing*, 29(2), 380-387.
- Mason, G., & Attree, M. (1997). The relationship between research and the nursing process in clinical practice. *Journal of Advanced Nursing*, 26, 1045-1049.
- Mays, N. & Pope, C. (1995) Rigour in qualitative research. *BMJ*, 311, 109-112.
- McCloskey, J.C. & Bulechek, G.M. (2000) *Nursing interventions: effective nursing treatments* 3rd ed. Philadelphia: Saunders.
- McElroy, A., Corben, V. & McLeish, K. (1995) Developing care plan documentation: an action research project. *Journal of Nursing Management*, 3, 193-9.
- McFarland, G. & McFarlane, E. (1993) *Nursing diagnosis and interventions. Planning for patient care.* 2nd ed. St. Louis, MO: Mosby.
- Meleis, A. (1997) *Theoretical nursing: Development & Progress.* 2nd ed. (pp. 49-70.) Philadelphia: J.B. Lippincott Company.,.
- Miles, M. & Huberman, M. (1994) *Qualitative data analysis. An expanded sourcebook.* 2nd ed. (pp. 277-280). Thousand Oaks, CA: Sage Publications.
- Mitchel, G. (1991) Nursing diagnosis: an ethical issue. *Image: Journal of nursing scholarship*, 23, 185-192.
- Moen, A., Henry, S. B. & Warren, J. J. (1999). Representing nursing judgements in the electronic health record. *Journal of Advanced Nursing*, 30(4), 990-7.
- Moloney, R. & Maggs, C. (1999) A systematic review of the relationship between written manual nursing care planning, record keeping and patient outcome. *Journal of Advanced Nursing*, 30(1), 51-57.
- Needleman, J., Buerhaus P., Mattke S., Stewart M. & Zelevinsky K. (2002) Nurse-staffing levels and the quality of care in hospitals. *New England Journal of Medicine*, 343(22), 1715-1722.
- Nightingale, F. (1860) *Notes on nursing.* New York: Dover Publications.
- Nightingale, F. (1863) *Notes on hospitals* 3rd ed. London: Longman, Roberts and Green.
- Nilsson, U.B., & Willman, A. (2000). Evaluation of nursing documentation. A comparative study using the instruments NoGA and Cat-ch-ing after an educational intervention. *Scandinavian Journal of Nursing Sciences*, 14(3), 199-206.
- Nordström, G. & Gardulf, A. (1996) Nursing Documentation in Patient Records. *Scandinavian Journal of Caring Sciences*, 10, 27-33.

- North American Nursing Diagnosis Association (1990) Taxonomy of nursing diagnoses. St. Louis: NANDA.
- O'Connell, B. (1998). The clinical application of the nursing process in selected acute care settings: a professional mirage. *Australian Journal of Advanced Nursing*, 15(4), 22-32.
- Parker, L., & Lunney, M. (1998). Moving beyond content validation of nursing diagnoses. *Nursing Diagnosis*, 9(4), 144-50.
- Petterson I-L. (1997) Health care in transition – threat or opportunity? Psychosocial work quality and health for staff and organisation. (Doctoral dissertation, Karolinska Institutet, Stockholm, 1997).
- Polit D, & Hungler B. (1995) *Nursing Research. Principles and Methods*. 5th ed. Philadelphia: Lippinkott.
- Saba, V.K. (1992) The classification of home health care nursing: diagnoses and interventions. *Caring*, 11 (3) 50-56.
- Sandelowski, M. (1986). The problem of rigor in qualitative research. *Advances in Nursing Science*, 8(3), 27-37.
- Sandelowski, M. (1998) Writing a good read: Strategies for re-presenting qualitative data. *Research in Nursing and Health*, 21, 375-382.
- Shaw, C. (1990) Criterion based audit. *BMJ*, 300, 649-51.
- Socialstyrelsen. (1993). Föreskrifter och allmänna råd. Omvårdnad inom hälso- och sjukvården. SOSFS 1993:17. Stockholm, Sweden. (the Swedish National Board of Health and Welfare - In Swedish)
- Socialstyrelsen. (1993). Föreskrifter och allmänna råd. Patientjournallagen. SOSFS 1993:20. Stockholm, Sweden. (the Swedish National Board of Health and Welfare - In Swedish)
- Socialstyrelsen. (1996). Föreskrifter och allmänna råd. Kvalitetssystem i Hälso- och sjukvården. SOSFS 1996:24. Stockholm, Sweden. (the Swedish National Board of Health and Welfare - In Swedish)
- Socialstyrelsen. (1996). Föreskrifter och allmänna råd. Informationsöverföring och samordnad vårdplanering. SOSFS 1996:32. Stockholm, Sweden. (the Swedish National Board of Health and Welfare - In Swedish)
- Socialstyrelsen. (2000) Omfattningen av administration i vården. (The Swedish National Board of Health and Welfare: The amount of administrative tasks in health care). Internet publication only. (In Swedish).
- Souder, E. & O'Sullivan, P. (2000) Nursing documentation versus standardized assessment of cognitive status in hospitalized medical patients. *Applied Nursing Research*, 13(1), 29-36.

- Sparrow, S. & Robinson, J. (1992) The use and limitations of Phaneuf's nursing audit. *Journal of Advanced Nursing*, 17, 1479-88.
- Stokke, T. & Kalfoss, M. (1999) Structure and content in Norwegian nursing care documentation. *Scandinavian Journal of Caring Sciences*, 13, 18-25.
- Svensk författningssamling. (1985) Patientjournalagen 1985:562. (Swedish law on patient record keeping). Stockholm: Liber Allmänna förlaget. (In Swedish)
- Tapp, A. (1990) Inhibitors and facilitators to documentation of nursing practice. *Western Journal of Nursing Research*, 12(2), 229-240.
- Thorell-Ekstrand, I. & Björvell, H. (1994) The VIPS-model used by nursing students. Review of educational careplans. *Scandinavian Journal of Caring Sciences*, 8, 195-204.
- Thorell-Ekstrand, I. & Wallstedt, A-M. (1986) Skriftlig rapportering och dokumentation av omvårdnad. (Written report and nursing documentation.) FoU-rapport 19. Lund: Studentlitteratur. (In Swedish).
- Thoroddsen, A. & Thorsteinsson, H. (2002) Nursing diagnosis taxonomy across the Atlantic Ocean: congruence between nurses' charting and the NANDA taxonomy. *Journal of Advanced Nursing*, 37(4), 372-381.
- Törnkvist, L., Gardulf, A. & Strender L. (1997) The opinions of nursing documentation held by district nurses and by nurses at primary health care centres. *Vård i Norden*, 17(4), 18-25.
- Uden, G., Ehnfors, M. & Sjöström, K. (1999). Use of initial risk assessment and recording as the main nursing intervention in identifying risk of falls. *Journal of Advanced Nursing*, 29(1), 145-52.
- United Kingdom Central Council for Nursing, Midwifery and Health visiting. (1993) Standards for records and record keeping. London.
- Vandelt, M. & Ager, J. (1974) *Quality patient care scale*. New York: Appleton-Century-Crofts.
- Webb, C. & Pontin, D. (1997) Evaluating the introduction of primary nursing: the use of a care plan audit. *Journal of Clinical Nursing*, 6, 395-401.
- Ventura, M. (1980) Correlation between the Quality Patient Care Scale and the Phaneuf Audit. *International Journal of Nursing Studies*, 17, 155-62.
- Wearly, H.H. & Lang, N.M. (1988) Identification of the nursing minimum data set. New York. Springer.
- White, A. K. (1993). The nursing process: a constraint on expert practice. *Journal of Nursing Management*, 1, 245-252.

- Whitley Griffith, G. (1999) Processes and methodologies for research validation of nursing diagnoses. *Nursing Diagnosis*, 10(1), 5-15
- Winer, B. (1971) *Statistical principles in experimental design*. 2nd ed. London: McGraw-Hill.
- World Health Organization. (1982) *Nursing Process Workbook*. Copenhagen: WHO Regional Office for Europe.
- Wärn Hede, G., Karlstedt, M., Björvell, C. (unpublished data) Description of documentation in the patient record concerning the patients' nutritional status. Department of Nursing, Karolinska Institutet, Huddinge.
- Yura, H. & Walsh, M. (1988) *The Nursing Process. Assessing, planning, implementing, evaluating*. 5th edn. (pp 1-68) Norwalk, CT: Appleton & Lange.