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Ways of Assessing Post-operative Pain

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The incidence of reported acute pain is still high which indicates a lack of knowledge in clinical pain assessment and management. This study was carried out to investigate strategies of post-operative pain assessment in terms of patterns of criteria adopted and how these are influenced by prior experience. The research approach, phenomenography, was adopted in data analysis. The subjects of this study consisted of 10 nurses from post-operative care units from a University Hospital in Seoul, Korea. Findings revealed that the nurses mostly relied on "how it usually is" and "how the patient looks" as strategies of post operative pain assessment and "I have learned the typology of patients" as a frame of reference of post operative assessment.

Key Words: Post-operative pain; Pain assessment

INTRODUCTION

Pain is one of the major clinical problems confronting health-care professionals in general and those working in acute-care and post-operative settings in particular (Abu-Saad, Huda & Harmers, 1997; Coffman et al., 1997; Dalton & McNaull, 1998). In addition, systematic assessment of patients' pain is the foundation upon which all pain-related intervention should be based (Donovan, 1985; Miaskwoski et al., 1992; Jacox et al., 1992).

Nurses have been regarded as having direct responsibility for the provision of measures to relieve pain because nurses are with patients during their recovery from surgery and when patients report the presence of pain (Garrett, 1997). Consequently, the nurses' assessments of pain are integral to the post-operative recovery of surgical patients.

Although there are many potentially successful strategies available for pain management, a large number of clinical studies from different parts of the world and over a long period of time have found that the incidence of reported pain from patients is still high (Donovan, 1990; Chung, Ritchie & Su, 1997; Walker, 1998; Carr & Goudas, 1999; Klopfenstein et al., 2000; Long, 2000) and severe postoperative pain is a common reason for delayed discharge (Chung, 1995), and for unanticipated hospital admission (Gold, 1989; Fortier, Chung & Su, 1996). Nursing responsibility for pain management involves a complex decision-making process affected by many variables. However, the results of studies suggest that assessment of pain and pain relief are inadequately done by health personnel (Zalon, 1993; Klofenstein et al., 2000; Sjöström et al., 1997). Such data indicates that there is a lack of adequate and articulated knowledge in clinical pain. It also indicates the lack of knowledge in clinical pain assessment and that there may be basic differences between professional groups including differences in impact of previous experience.

In an empirical study, Sjöström (1995) described nurs-

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es' and physicians' ways of thinking in relation to pain assessment. The study was conducted based on two premises; that pain is a subjective experience, and professional competence to assess and manage post-operative pain is fundamental to the well-being and recovery of patients after surgery. Theoretically, it was assumed that pain assessment involves a form of a complex problem solving process in which both the defining of problems as well as actually arriving at solutions for problems are affected by the contents of "thinking" and context in the study of Sjöström (1995). Subsequent studies (Sjöström et al., 1997; 1999) made it possible to clearly distinguish different approaches to pain assessment.

The problem with the remaining high incidence of post-operative pain may to a considerable extent be related to the content of the ways of thinking by different staff members in pain assessment.

Clinical practice involves both conceptual and action decisions. Conceptual decisions (clinical decisions) involve the way of thinking in identifying clinical problems and deciding on the nature and meaning of problems. On the other hand, action decisions refer to making selections regarding the courses of action to be taken. Many clinical decisions in nursing and health care are related to subjective, experiential phenomena such as pain, and such phenomena are often explained and understood from a multidimensional framework (Kim, 1996).

The present study has a main aim to investigate how critical care staff reason when they set about assessing postoperative pain. In addition, two major research questions were addressed; the specific patterns of criteria used as the strategies of pain assessment and the specific patterns of criteria developed through experience.

In an effort to broaden the view of previous work, categories founded in the Swedish study (Sjöström, 1995) were referenced and applied

METHODS

Phenomenography, the research approach adopted in the present study, aims at describing the qualitatively different ways in which people experience various phenomena in the world around them (Marton, 1988). Phenomenography is chosen as the major scheme for the adoption of interviewing in line with the theoretical orientation regarding clinical decision-making. Phenomenography is oriented to discovering cognitive structures, that is, the mapping of understandings into categories of meaning which individuals establish in order to arrive at specific conceptions about "things" and thus is thought appropriate for this study since the research is interested in describing the content of thinking associated with pain assessment. Although sharing many similarities with phenomenology, the focus of phenomenography is on differences whereas phenomenology is where similarities are focused on to permit a description of the essence of a phenomenon. The result of a phenomenographic study is a set of categories describing the qualitative variation in empirical material. Data was generated in semi-structured interviews in which the interviewer probed deeply into how each subject perceived the phenomena in question. The results of the analysis are related to the whole interview but two questions were seen as essential to the study and have been extensively discussed here. The two questions are: "What do you go on?" and "What has experience taught you that you found useful in this assessment?" The interview data was analysed according to phenomenographic analytic steps (Dahlgren & Fallsberg, 1991). The steps in phenomenographic analyses, suggested by Dahlgren and Fallsberg (1991), formed a foundation for the analysis of data in this study: 1) familiarisation where the researcher is introduced to the empirical material by reading through the transcripts; 2) compilations of answers from all respondents to a certain question; 3) condensation or a reduction of the individual answers to find and formulate the central parts of a longer answer or dialogue; 4) grouping which involves a preliminary classification of similar answers; 5)comparison, i.e. establishment of clear borders between different categories (this is a phase which sometimes entails revision of preliminary groups); 6)naming step, i.e. formulation of the essence of the categories; and 7)final comparison, i.e. definitive comparison of categories which contain a description of the unique character of each category as well as a description of resemblances between categories. In this study, the categories constitute a category field, or discourse, which describes the content of the perceived strategy and frame of reference of postoperative pain assessment.

The aim of the analysis was to provide descriptions of categories, which constituted the outcome, i.e. a set of categories, which together may account for the total variation observed.

Subjects

The subjects of this study consisted of 10 nurses from

post-operative care units from a University Hospital in Seoul, Korea.

Nurses were carefully selected based upon the length of professional experience in surgical units since clinical experience is assumed to be an important factor in differentiating the use of different criteria of pain assessment. Five 'more experienced' nurses with more than 6 years on surgical units' (mean; 120 months); 122 months of total professional nursing experience and 33 years of mean age, and five the 'less experienced' nurses with less than 3 years on surgical units' (mean; 22.8 months), 23.2 months of total professional experience, and 25 years of mean age, were strategically sampled.

Data collection

All interviews, audio-taped and later transcribed verbatim, were conducted from October 1998 to February 1999.

Each nurse was interviewed on three occasions. When 10 nurses carried out 30 post-operative pain assessments on 30 post-operative patients who met the three criteria; (a) not on a Patient Managed Pain Medication Pump, (b) not having a diagnosis of metastatic cancer, and (c) not exhibiting confusion or an altered level of consciousness during the post-surgical period, they were assigned to the nurse-samples of this study.

Three interviews were carried out to identify specific patterns of criteria used as the strategies of pain assessment and to identify specific patterns of criteria developed through experience. Three in-depth interviews with each subject in the nurse sample were carried out using a general interview guide. The three interviews focused in detail on the respondent's perception of the patient's situation and were followed by questions about how and on what basis the nurse respondent judged the patient's pain

FINDINGS

Nurses' presuppositions were identified throughout the data and the categories of individual strategies of pain assessment criteria and frame of reference of pain assessment which were identified in the study by Sjöström (1995) were identified from the data according to the research questions. Nurses often relied on more than one category when doing pain assessments. The categories identified for nurses in this finding refer to the major category that seemed to most influence pain assessment. Also, as possible categories, the specified characteristics of Korean nurses' post-operative pain assessment were identified.

Nurses' presuppositions regarding post operative pain assessment

Throughout the data, two presuppositions of nurses' regarding postoperative pain assessment were identified.

Nurses expected post-surgical patients to have pain

The data showed that nurses see postoperative pain as normal. Nurses normalized the patients' postoperative pain in a way that is almost inevitable. The most frequently expressed excerpt from subjects is "Normally patients complain an hour after an operation".

Nurses anticipated different types of pain for different types of surgery

The data showed that nurses expected a different intensity of pain and different nature of pain according to different types of surgery. The excerpts from subjects are "The type of operation! I have cared for many patients who have undergone the same type of operation. Even though one did not complain, I know the intensity of pain he/she suffers." "It is a kind of minor surgery. He is not in too much pain, for sure, even though he expresses greatness in the intensity!"

Individual strategies of pain assessment criteria

From the interview data, especially from the question, "How do you get to this assessment?" the outcome of qualitative analysis of what the subjects refer to when they assess patients' post-operative pain, the four individual strategies of pain assessment criteria adopted by nurses in Sjöström's study(1995): (1) how the patient looks (appearance and observable data), (2) what the patient says (content of communication), (3) the patient's way of talking (form of communication), and (4) how it usually is (pre-knowledge and group affiliation) were validated by the thirty nurse-patient matched data of this study.

These categories constituting a field provide the reference framework with which the nurses formulated variations in pain assessment

Category CA: How the patient looks

This category focuses on how the patient looks and on variations in appearance between patients. This category

contains two main directions according to Sjöström (1995): signs which are more general such as body movements, grimaces etc., and signs which more specifically indicate the clinical state such as heart rate, size of pupils, skin characteristics, the flow of tears, etc. This study revealed that this categories main sign was more general such as body movements, grimaces, general appearance, and mostly facial expressions and one occasion a nurse focused on the other signs such as flow of tears.

Verbal communication is also neglected or is of secondary importance, which is the same as the Sjöström's study (1995). The category contains statements, which emphasize the importance of a non-intentional physical sign of pain.

Excerpts from the interview are "I saw tears in his eyes." "From the patient's general appearance, his response, how he looks! He looked comfortable,....comfortable face..," "And I could not find the non-verbal sign that she was in pain."

The core of this category is how the patient appears objectively. The excerpts point to objective signs of pain but also evaluate the reliability of patients' statements about pain by comparing objective criteria of pain.

Category CB: What the patient say.

The focus of this category is on the content of the verbal communication (Sjöström, 1995). The subjects relied on what the patient says whether they are in pain or not and whether they ask for pain relief. The conceived content of the statement is the main focus. The essence of patients' statements determines whether each patient is considered to be in pain or not. Examples of excerpts from subjects are; "She refused to have pain medication. And her discomfort comes from her position and muscle tension, I think that, that was her complaint." "I think this patient has mild pain because the patient said that." " From the conversation with the patient. I listened to what he said."

Statements in this category are based on talk focusing on the patient. If the patient says he/she is in pain, the nurse trusted this.

Category CC: The patient's way of talking

This category focuses on the form of communication rather than the actual content, i.e. the way of verbalizing (Sjöström, 1995). Examples of excerpts from subjects are;

"From the way of expressing pain, if a person has a real severe pain, she/he can not say well even the reason why she/he has pain, I came to know that, from the experience of caring for a lot of patients. But this patient spoke too well why she was in pain, I mean verbally, she express her pain very well."

This category expands the foundations of the assessment toward an interpretation of human manifestations in terms of hidden reasons behind these manifestations and could be seen as a pseudo-communicative category. In the data, only one occasion was identified.

Category CD: How it usually is

In this category experience is central. The theme that the subjects have seen it before was a decisive role in the assessment. They know that certain groups of patients are in pain. This pre-knowledge associated with the patient's level of anxiety due to the type of operation, diagnosis and the length of operation is taken as an indication of whether the patient is in pain or not. The focus is not on the individual patient but rather on how patients with a certain diagnosis, operation method and /or type of anesthesia used usually experience pain (Sjöström, 1995).

Examples of excerpts from subjects are; "From my experience of caring for a number of patients who have undergone the same type of surgery, I learned to know the type, intensity and duration etc. of pain that they suffer." "Patients who undergo this type of surgery usually have one or two days in pain." In this category, pain is being determined by group affiliation, that is, a certain incision gives pain.

In this data, the type of surgery that a patient has undergone was identified to be the major indicator to assess pain.

Frame of reference of pain assessment

In addition to these four descriptive criteria identified for the strategies of assessment, four frame of reference of pain assessment adopted by nurses in the study by Sjöström (1995); (1) I have learned a typology of patients (typology), (2) I have learned to listen to the patients (listening), (3) I have learned what to look for (looking), and (4) I have learned what to do for the patient (doing), were validated based on the question, "What part has experience played in this assessment?" This question was based on the assumption that experience adds to the contents of a framework (or the criteria

of assessment) that are used as the basis of assessment.

Category EA: I have learned a typology of patients

In this category, experience has established a model, which is used for the classification of patients, which is then brought up in each individual case. The model is applied to the individual patient. The experience consists of a number of types of cases, which is the result of seeing many patients (Sjöström, 1995). Examples of excerpts from subjects are: "I have cared for many patients and know how some of them cope with similar pain." "I have cared for so many patients who have gone through appendectomies." "I don't have difficulty assessing the pain of this patient, she is not different from the other patients." "I have seen many patients who have had the same surgeries. I consider the type of operation a patient has undergone when assessing pain..."

These excerpts show that experience consists of having seen a large number of patients and this experience provides the knowledge about how this patient's pain would be. Statements show that knowledge through experience is confirmed through validations over several occasions.

Category EB: I have learned to listen to the patients

This category focuses on patients' verbal communication as criteria for the assessment. Experience has shown that pain is a phenomenon in a patient who is the only one who can decide whether he/she is in pain or not. This category implies a decentralising where the meaning of experience is that the assessment must primarily rely on the patients' statements (Sjöström, 1995). An example of an excerpt from a subject is; "I have cared for many patients; I have cared for them through admission processes, pre-operative and post-operative phases, and they showed different responses to the same surgery. I think pain is absolutely subjective. I have tried to respect their responses. So if they express pain, I do my best to relieve their pain. I rely on what patients express."

Experience has taught the subject that pain is absolutely subjective, so, if the patients say they are in pain, they are.

Category EC: I have learned what to look for

In this category, experience refers to the assessment process as such, especially what to look at. The category describes what to refer to when assessing patients' pain. Experience influences and reformulates the process of assessment in itself through finding new criteria and through combining different criteria, sometimes in a new way (Sjöström, 1995). Excerpts of data from subjects are; "From my experience, I know patients are in pain by observing how they behave." "I always try to respect patient's feelings. When I see his behavior that indicates that he is in great pain, I admit that he is in pain even though it is an unusual case."

The excerpts point out that experience has taught the subjects the importance of looking at a patient's behavior individually as the criterion of pain assessment.

Category ED: I have learned what to do for the patients

In this category, assessment is seen as part of a whole, which includes treatment. The category contains statements about how to treat the patient. Experience is oriented to what to do and how to do it (Sjöström, 1995). Excerpts from subjects are; "Usually, pain is controlled in relation to the length of the operation. This patient had gone through an operation which needed a very short time, I guess that is why he was not on PCA for

Table 1. Summary of informant's ages, experience, and approaches to pain assessment and experience-associated way of assessment

NURSE INFORM ANT	AGE(YRS)	EXP.*	PAIN ASSESSMENT					
			FIRST		SECOND		THIRD	
1	25	2.3	CA	EA	CD	EA	CD	EA
2	25	1	CD	EA	CC	EA	CA	EA
3	30	7	CD	EA	CA	EA	CA	EA
4	26	3	CA/CD	EA	CB	EA	CA	ED
5	34	12	CA	EC	CB	EA	CA/CD	EB
6	35	12	CD	EA	CD	EA	CD	EA
7	24	1.5	CA	EA	CD	EA	CA	EA
8	31	7.9	CA	EA	CB	EA	CA	EA
9	35	12	CD	EA	CA	EB	CA	EA
10	25	2	CD	EA	CA	EA	CA	EA

*Number of Years of Experience

pain control." "Similar cases of patients' responses, the number of pain medication patients had and the interval between pain medications." "Through the experience I have of taking care of patients, and through the patients' response with every treatment."

The excerpts point out that experience has taught the subjects how the patient's treatment is the frame of reference for pain assessment and this experience has been confirmed through validation by observing and comparing patient's responses.

The distribution of the categories

Table 1 shows that as to individual strategies of pain assessment criteria, the majority, 50%, of the statements have been placed in the category "How the patient looks," and 37% in the category "How it usually is." As to frame of reference of pain assessment, Table 1 shows that the majority, 87%, of the statements have been placed in the category "I have learned a typology of patients."

The distribution of the categories and their relation to age and experience is summarised in Table 1.

The specified characteristics of Korean nurses' post-operative pain assessment

Throughout the data, nurses' specified characteristics in post-operative pain assessment is identified.

Nurses were engaged in trying to come up with causal factors regarding the pain experienced by patients.

Nurses seemed to rely on patient's response to pain medication when assessing pain. This seemed especially so when patient's expression and/or complaints deviated from the 'expected' and they seemed to be engaged in trying to rationalize the presence or absence of pain by identifying the causal factors. The examples of causal factors identified are; "Due to advanced surgery techniques, a cholecystectomy is done through a laparoscope, so the site of the operation does not look serious to nurses and patients as well. It seems to have an influence on the psychological state of patients." " Still now, I think she is in pain, but she looked like she was not in pain, now she seems to regard the situation as all problems are over so she is free from fear of an operation. I guess that is why she did not complain."

Nurses relied on what other nurses did while making decisions about patient's pain as a frame of reference

The internalized idea from the experience of hearing and seeing what other nurses have done to the patients in their clinical setting layed the idea of typologies of patients for most of the nurse samples. Especially for novice nurses, they tend to rely on what the senior nurse told them. Examples of excerpts from subjects are; " I remember that senior nurses have explained to patients about why patients who got the hemorrhoidectomy have pain ...just like." " I have seen what the other nurses do when they meet their patients and have knowledge from what I have done to care for post-operative patients." " I think I have seen the manner of my senior nurses when they assess patients' pain. I remember a lot of comments about patients' conditions they gave me."

These excerpts point to the idea that Korean nurses tend to think more in terms of connectedness to persons in the settings they belong to.

DISCUSSION

This study is an investigation into how critical care staff reason when they set about assessing postoperative pain. It appeared that the category systems developed for describing the initial empirical material as regards what kinds of criteria the subjects relied on when assessing pain in the patients as well as what experience has taught them in this respect, were validated for the Korean samples. However, in the current study, regarding the individual strategies of pain assessment criteria adopted by nurses, the nurses mostly relied on "How it usually is," and "How the patient looks."

As to the frame of reference of pain assessment adopted by nurses, the most striking aspect of these findings is the predominance of "I have learned the typology of patients" as the category in which the nurses specify what experience has taught them regarding pain assessment. In this study, heavy emphasis on this category in combination with the pain assessment criterion on "How it usually is," suggests the nurses' use of typological reference in making assessments and also on patient characteristics and their circumstances, but not necessarily on patients' diagnosis or surgery.

From the findings, the striking aspects of the data are that the nurses rely heavily on their stereotyped expectation and typology to base their assessment, but at the same time, a great deal of emphasis is placed on the individual patient's circumstances.

This could be partially explained by the fact that both

nurses and patients are Koreans from one ethnic group who have shared the same beliefs and tendencies for certain phenomena for a long time; even though there are few studies about Korean nurses' attributes regarding post-operative pain assessment. It was suggested by Halfens et al. (1990) that the culture of the nurse might be another important characteristic. Dudley and Holm (1984) provided support for this suggestion in their study indicating that nurses from different cultural backgrounds differed in their assessment of pain and nurses also inferred different amounts of suffering in patients from different ethnic backgrounds. Culture enables people to perceive and construe themselves (Henkle & Kennerly, 1990) and to make sense of behaviors of other human beings through the formation of stereotypes and prototypes (Diaz-Loving & Draguns, 1999). However, McDonald (1994) suggested that it is important to be aware of the effect of culture; the danger is that stereotyping may lead to inadequate or in appropriate drug administration.

This finding gives some awareness about available descriptions of how a group of people experience phenomena in a nursing setting. Experience provides the professionals with a classifying system that can be used to identify the membership of a current patient's situation (typology), a frame of reference for testing, validating and revising early hypotheses about a current situation (looking), an attitude of subjectifying patient's experience (listening), and an instrumental orientation upon confronting a problem situation (doing). Experience-based typology is the most frequent citation, while an attitude of listening is the least frequent one.

A perspective of multidimensional framework on one hand orients the practitioners to a comprehensive view of the phenomena, but at the same time it can readily lead the practitioners to a selective gestalt of the decision frames. Knowledge regarding practitioners' personal theories and their application is needed. Thus it is essential to develop not only the normative, generalized knowledge regarding clients' problems and their solutions but also an understanding about how such generalized knowledge gets to be framed within personal theories and used in practice (Kim, 1996).

The value of this finding is that the description of categories helps us to understand central nursing phenomena and can be included in education of staff members in the health care sector. In addition, broadening the Swedish study in the Korean setting has a value of furthering the knowledge base to promote developing tools about nurses' way of reasoning in assessing postoperative pain within the nursing profession.

CONCLUSIONS

The Korean nurses tended to rely more on the typology and observations, than patients' verbal complaints when they assessed post-operative pain. The nurses seemed to always be trying to validate patients' complaints with their observations and their expectations. It was evident that nurses were trying to come up with situation-specific casual attributions for the presence or absence of pain in specific situations and nurses relied on what other nurses did while making decisions about patient's pain as a frame of reference.

Therefore, contextual factors influenced the nursing practice in terms of pain assessment and pain management and the focus of post-operative care was the management of expected pain. Therefore, to what extent does the complexity of the patient's situation compound the nurse's ability to adequately assess post operative pain in surgical patients has value for further research.

NURSING IMPLICATIONS

A number of barriers stand between health care professionals and effective pain relief and these barriers include lack of knowledge about how to assess patient's pain (Collins, 1999).

For nursing practice, it is important to make clear what the goal for the postoperative pain is and it is vital for professionals to acquire accurate clinical skills in assessing patients' postoperative pain.

Professional knowledge within the health care sector consists to a large extent of knowledge about the human body. Likewise, another important aspect of professional knowledge in this area is acting, that is, professional knowledge about how to act.

Knowledge about judging and assessment belongs to this second category. This means that the results of the study can be incorporated in basic education and further training and play a role in the development of professional competence.

The treatment of pain in a particular patient is conceivably related to how healthcare providers perceive the presence of pain and view its appropriate treatment, and pain education is an essential part of a nursing curricu-

lum (Owens, 2000).

By identifying the categories and characteristics about nurses' ways of reasoning in assessing postoperative pain, we would be able to develop appropriate pain education for nursing students and nurses in critical settings.

Implications for further research would be about what is taught about pain in nursing educational programs and how this teaching is consistent nationally.

In addition, identification of nurses' way of reasoning in assessing postoperative pain in various cultural settings would be useful in furthering the knowledge base within the nursing profession.

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