THE DEVELOPMENT OF NURSE DECISION MAKING:

A CASE STUDY OF A FOUR YEAR BACCALAUREATE NURSING

PROGRAMME

By

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ABSTRACT

This project, which used a qualitative case-study design, explored the

development of decision making as nurses progressed through a baccalaureate education.

More specifically, the study focussed on the types of decisions students made and the

factors that influenced their decision making. Students from all four years, enrolled in

problem based learning (PBL) and clinical courses were recruited for this study. In

addition, Tutors from both the clinical and PBL courses were involved. In total, 76

students and Tutors participated. Data were collected through Key Informants (students,

Tutors) and Key Documents (curricular material). Students in the PBL setting were asked

to participate in either an individual semi-structured interview or in a focus group

conducted by the principal investigator. For both settings, students were asked to

complete reflective journals, which served as a stimulus for the interview. Tutors in the

PBL setting were asked to participate in an individual semi-structured interview or a

focus group, while Tutors in the clinical setting were asked to participate in an interview.

Data were also collected from curricular materials provided by McMaster University,

School of Nursing.

Results of this study indicated that students engaged in decision making, and that

they made five different types of decisions; assessment, communication, intervention,

resource, and action. Results also showed that the types of decisions they made changed

over the four years as did their approach to decision making. Students also described a

shift in their focus over the four years and this was reflected in the types of decisions they made.

Students described the influence of many internal and external factors and the collaborative nature of student decision making. One additional finding was the students' appraisal of the situation within which they made decisions. Students appraised the risk to them physically, scholastically, and professionally.

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me in such a practical way and for believing that I could make it through. You are both

amazing!

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CHAPTER 1: INTRODUCTION

As a nurse educator, I entered into the clinical area only to be confronted by a sea

of eager young nursing students who were anxious to provide patient care. And then it

happened; those same students were faced with patient situations that required clinical

decision making. Some students rose to the occasion and made decisions that resulted in

quality patient care; in contrast, some froze under the pressure and failed to respond

appropriately to the situation. My observations were supported by Thiele, Holloway,

Murphy, Pendarvis, and Stucky (1991) who discovered that novice baccalaureate nursing

students perceived decision making as a task to be approached with caution and timidity.

Many researchers who have explored nurse decision making have come to the

conclusion that decision making is a learned skill that must be taught by Nurse Educators

and that it is an area for further research (Brooks & Thomas, 1997). As a research topic,

nurse decision making received much attention in the 1960's followed by a research gap

over the next two decades. A renewed interest in this topic occurred in the 1980's

corresponding with a growing demand from the Canadian public for higher quality health

care. In today's complex and every-changing health care environment, decision making

skills are necessary if nursing is to meet these demands and changes (Lewis, 1997).

Numerous authors have emphasized the need for nurses to be able to make sound clinical

decisions in order to provide safe patient care (Brooks & Shepherd, 1990; del Bueno,

1992; Ford & Profetto-McGrath, 1994; Lewis, 1997; Mallory, Konradi, Campbell, &

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Redding, 2003; Miller & Malcolm, 1990; Paul & Heaslip, 1995; Tschikota, 1993; White, 2003). The ability for making decisions independently has been described as the 'cornerstone skill' of the nursing profession and is considered an integral part of a nurse's professional autonomy and practice (Ellis, 1997; Hughes & Young, 1990).

The need for sound decision makers in the nursing profession has been addressed by the College of Nurses of Ontario (CNO). This regulatory organization has developed guidelines for nurses entering the profession. The "entry to practice" competencies for registered nurses (RNs) in Ontario, scheduled to go into effect January 1, 2005, state that nurses must possess the ability to be autonomous in their decision making. In order to ensure that entry-level nurses are prepared to be autonomous decision makers, it is imperative that Nurse Educators understand how decision making develops so that they can develop and implement teaching strategies that will promote and enhance student decision making skills.

Theoretically, decision making begins with the educational process (Brigham, 1993; Brooks & Shepherd, 1990). Hughes and Young (1992) note that the foundation for effective decision making "begins during the undergraduate curriculum when students are taught to develop nursing diagnoses and select appropriate interventions" (p. 12). Bowles (2000) supports the ideas posited by these researchers, and notes that decision making skills are greatly influenced by the student's ability to apply theoretical and practical knowledge in the clinical setting. There is some evidence that the decision making habits

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developed and reinforced during clinical experiences carry over into a professional

practice (Jenkins, 1985). Engaging students in decision making while they are involved

in the formal educational process will thus help ensure that graduating nurses are capable

of making sound clinical decisions.

Rationale for the Study

As an educator working at McMaster University in Hamilton, Ontario, I have had

the opportunity to provide clinical supervision to students in Levels 2 and 3 and to teach

problem-based learning (PBL) in Levels 1 through 4 of the Bachelor of Science in

Nursing (BScN) programme. I have taught in this programme for 4 years and it was

because of my PBL and clinical teaching experiences that I began to question how student

decision making developed over time. It was readily apparent to me that students had

various skill levels when it came to making decisions related to patient care; however, the

reason(s) for students' varying abilities in decision making were not obvious. I began to

realize that a variety of factors influenced the decisions that students made for their

patients including whether or not they needed support from a Clinical Tutor or Nursing

Staff to make a decision. I questioned the influence of the environment, the students'

knowledge, background, and personal characteristics on their decision making.

As a preliminary step to understanding nursing student decision making, I

conducted a small case study that examined the decision making of nursing students who

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were engaged in their first surgical placement in Level 2 of the nursing programme

(Baxter, 2000). Fourteen students participated in individual interviews and completed

two reflections that described the decisions they had made and the factors that had

influenced their decision making. Results from this study indicated that students made

decisions primarily about patient care and communication, and while there were many

factors that influenced their decision making, the three key personal factors were: level of

knowledge; degree of confidence; and feelings of fear. Students determined the need to

make a clinical decision based on their prior knowledge and data gathered from the

patients. Students who were confident in their clinical skills were more confident in their

decision making and acted more independently than those who were less confident in

their clinical skills. This study also revealed that the patient; the nursing staff; and the

Clinical Tutors played significant roles in student decision making. Upon completion of

this study, it became apparent that further research was necessary in order to determine

how decision making related to patient care developed during the four years of a

baccalaureate in nursing education.

Purpose

The purpose of this case study was to explore the development of clinical decision

making activities of nursing students in Levels 1 through 4 of a basic BScN programme.

This involved the types of patient care decisions made by students and the factors that

influenced student decision making as students progressed through the educational

process.

Significance of the Study

A study of the development of student decision making skills and the factors that

influence decision making will contribute to nursing education and clinical nursing

practice in several ways. First, a description of the types of decisions nursing students

make will enable educators to understand what types of decisions they must be able to

support and facilitate. This information will also inform educators about the types of

decisions that students are not making and provide them with opportunities and strategies

to make these decisions independently or in collaboration with others. Understanding the

types of decisions made by students in the final level will enable future employers to

develop appropriate educational materials and support mechanisms to facilitate and

promote autonomous sound decision making in novice nurses. Second, understanding the

factors that influence student decision making will facilitate the development of

curricular materials that seek to reduce negative influencing factors and increase factors

that enhance decision making. In addition, Nurse Educators can be more aware of the

negative influencing factors and prepare students appropriately so that they can develop

strategies to deal with these factors. Third, if Nurse Educators know how student

decision making develops over time, they can develop curricular materials that recognize

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that decision making is a skill to be developed and nurtured and that decision makers must also be nurtured as they engage in the decision making process. Nurse Educators will understand the development of decision making and can develop and implement strategies that will promote this development, thus advancing the nursing profession.

This case report is divided into several chapters. A review of the literature appears in Chapter Two that will provide the reader with an opportunity to become familiar with past research completed in the area of decision making. Chapter Three provides the propositions, conceptual framework, and research questions. The methods used throughout this study can be found in Chapter Four. Findings from this study will be presented in Chapter Five and discussed in Chapter Six. Conclusions, implications, and potential areas for future research will be provided in Chapter Seven.

CHAPTER 2: LITERATURE REVIEW

Whether or not a review of the literature should be conducted prior to qualitative research is a point of debate as some suggest that a literature review prior to the exploration of a topic will stop the researcher from fully exploring the topic. In contrast, others suggest that a review of the literature is necessary for two key reasons: first, as Merriam (1998) and Creswell (2003) note, it establishes the lens through which the researcher can view the research topic; second, it provides the foundation for a theoretical framework which will ultimately direct the research questions. Merriam asserts that the easiest way to identify a theoretical framework is to conduct a careful review of the existing literature in order to reveal the various theoretical perspectives that could be used to view the issues under study. The literature review thus provides context for the issue that will be studied.

The placement of the literature in a qualitative study is also debated by researchers. Creswell (2003) recommends that the literature can be used sparingly and placed at the beginning in order to provide context for the study and revisited in the discussion chapter to assist with interpretation. This approach ensures that the study remains inductive in nature and allows the researcher to summarize broad themes in the literature instead of focussing on specific studies.

This chapter is intended to provide the reader with an overview of the terminology encountered in discussions related to decision making, to provide an overview of the

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theoretical bases of decision making, and to describe nurse and nursing student decision making.

Definition of Terms

The lack of consistency in the use of terms to discuss decision making is evident in the review of the literature. Various authors refer to the process as clinical decision making, clinical judgment, clinical inference, clinical reasoning, and problem-solving. Often the term "critical thinking" is also used to describe decision making. This terminology chaos exacerbates the level of difficulty in exploring this topic with many of these terms used synonymously. Appendix 1 provides an overview of these commonly used terms and their definitions.

For the purpose of this study, nurse decision making is defined as a cognitive process that requires patient assessment and problem identification, the identification and consideration of alternatives, the consideration of preferences and values (of all parties involved), and the selection of interventions and the determination of how best to achieve these interventions (Boblin, 2003).

The Conceptual and Theoretical Basis of Decision Making

Conceptual and theoretical bases of nursing decision making theory provide a starting point from which to explore decision making. Nursing literature describes two

theoretical perspectives-prescriptive and descriptive. The majority of nursing research

addressing clinical decision making has been based on decision theory (an example of a

prescriptive model) and the information processing theory (an example of a descriptive

model).

Prescriptive Perspective

Although prescriptive models for decision making are represented in nursing

literature, they are found primarily in medical literature wherein they provide guidance

for the decision-maker by prescribing how decisions <u>should</u> be made, rather than <u>how</u>

they are actually made (Boblin-Cummings, Baumann, & Deber, 1999). With prescriptive

models, decision makers are provided with a procedure that can be followed during the

decision making process. One example of a prescriptive model is decision theory

(Dowding & Thompson, 2002).

Decision theory focuses on what decision should be made based on a scientific

approach (Taylor, 2000). McGuire (1985) describes decision theory as a process that

involves "sophisticated calculation and manipulation of complex probability and utility

values in order to arrive at optimal decisions that will maximize patient benefits" (p. 587).

The most common application of decision theory is decision analysis, which

involves a quantitative approach to decision making when the situation involves uncertain

and value-laden conditions (Hughes & Young, 1992). It suggests that humans should

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choose models of decision making that are both rational and logical. This approach "tries to maximize individuals' 'expected utility' by helping steer them toward the best decision choice" (Dowding & Thompson, 2002, p. 132). Decision analysis is a model that involves the construction of a problem in an attempt to show the options that are available and the consequences associated with each. The probability of possible outcomes is assigned to each of these options and each possible outcome is assigned a numeric value which reflects the desirability of an outcome. The probability and the assigned value are combined and an expected value is determined; the outcome with the highest expected value is the best option to choose (Harbison, 1991).

A decision tree is the most common example of the application of decision analysis (Dowding & Thompson, 2002). Figure 1 provides an example of a decision tree. In this example, the decision maker would consider the two options available to him or her, to leave the cot sides up or down. The three possible outcomes are that the patient will fall, remain safe, or be psychologically threatened. Each of these outcomes is assigned a probability (or likelihood) that the outcome will occur; each possible outcome is also assigned a value reflecting the desirability of the outcome on the part of the patient. When the patient is unable to state the value, then it is the nurse's responsibility
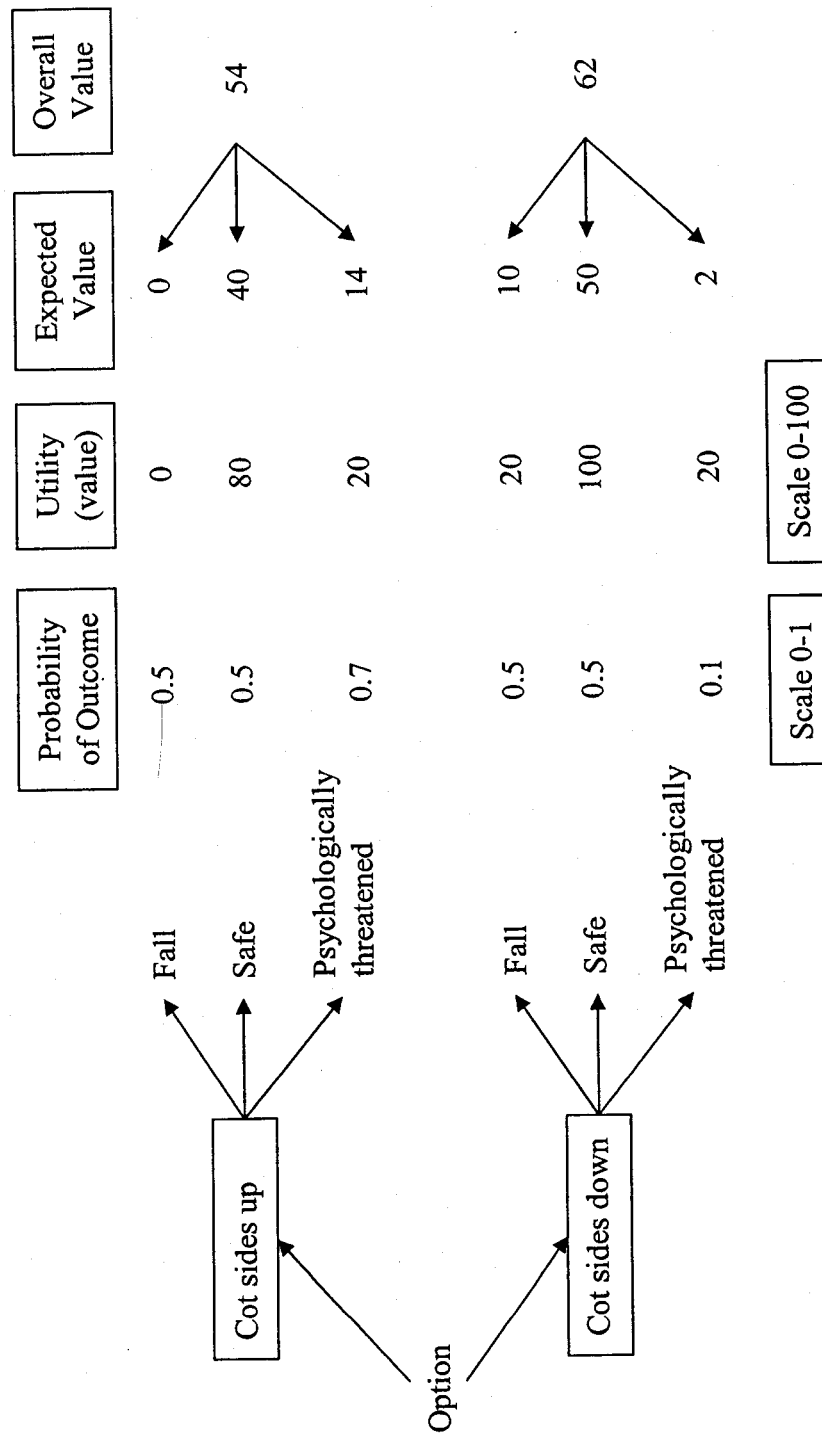
Figure 1. Decision tree: The use of cot sides (Harbison, 1991, p. 405).

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to assign a value based on what he/she believes to be in the patient's best interest. The probability and assigned values are mathematically combined to create the expected value; the option with the highest expected value is determined to be the best option to choose (Harbison, 1991). In the decision tree (Figure 1), the best option would be to leave the cot sides down because this choice would have the greatest overall value.

Several authors have suggested that decision analysis is effective in improving clinical decision making when utilized by nurses (Aspinall, 1979; Grier & Schnitzler, 1979; Harbison, 1991; Politser, 1981; Shamian, 1991; Tanner, Padrick, Westfall, & Putzier, 1987). Several benefits associated with decision analysis are postulated: first, it forces the decision maker to identify the decisions that must be made and in what sequence they must be made; second, it allows for clarification of uncertain factors and it allows the decision maker to clearly understand the consequences associated with each possible decision (Jones, 1988); third, it provides a systematic and quantitative approach to decision making even in varied, complex, and uncertain clinical situations (Hughes & Dvorak, 1997; Polister, 1981); and fourth, it allows for greater precision in decision making which can have a positive impact on the quality of patient care (Lanza & Bantly, 1991; Letourneau & Jensen, 1998; Shamian, 1991). Decision analysis can be an effective tool when a decision maker is faced with complex clinical tasks that require him/her to collect the most relevant information, synthesize information, and determine the right decision (Jones; Letourneau & Jensen).

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Decision analysis has received criticism in the field of nursing and its utilization in nursing remains questionable. There are several reasons why this approach is not easily applied in the nursing setting. First, many of the numerical data necessary to determine probability estimates are not known, making an accurate decision difficult (Jones, 1988). Second, many nurses do not like this method of decision making because they see it as artificial and contrary to a holistic nursing approach (Jones). Third, because of this theory's focus on absolutes there are limitations to this approach for nursing decisions which are often not 'either-or' in nature. In addition, patient outcomes are difficult to quantify and are not always final (Taylor, 2000).

Baumann and Deber (1989) discussed the limits of decision analysis in a rapidly changing clinical setting, concluding that decision analysis was better suited for a medical model. The process-oriented approach used in the field of nursing does not lend itself to implementing a decision analysis approach. Researchers contend that this model is rigid and does not take into consideration that the patient, the decision maker, and the complexity and integration of the setting within which the decision is made. Decision analysis oversimplifies issues and fails to take into consideration some humanistic issues (Politser, 1981). It requires a great deal of time from the decision maker in order to complete the analysis and it requires a high level of mathematical knowledge on behalf of the decision maker (Baumann & Deber). Elstein (1976) believes that there is a general dislike of quantified approaches to decision making as research in this area tends to

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promote the maximization of diagnostic accuracy and fails to take into consideration the consequences of alternative actions.

To summarize, decision analysis, with its use of decision trees, is one example of decision theory, considered a prescriptive model for decision making. Its use has been evaluated by nursing, resulting in controversial conclusions.

Descriptive Perspective

The second approach used to study decision making is the descriptive approach. Descriptive models of decision making are concerned with how and why people act and think the way they do (Bell, Raiffa, & Tversky, 1988; Boblin-Cummings et al., 1999). The information processing model (theory) and diagnostic reasoning models are examples of descriptive models (Carnevali, Mitchell, Woods, & Tanner, 1985; Corcoran, 1986a; Tanner et al., 1987; Thiele et al., 1991).

Information processing theory (also termed the hypothetico-deductive approach) is one example of a descriptive model that was developed from the work of Newell and Simon (1972) on artificial intelligence (Newell, Shaw, & Simon, 1958; Simon, 1978) and has evolved as one of the most influential theories of decision making in nursing. Taylor (2000) states that,

> "information processing theory describes problem solving as an interaction between the information processing system (the problem solver) and a task environment" (p. 845).

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The central assumption of this theory is that decision making involves both the short-term and long-term memory. The information-processing theory states that individuals have a short-term memory that is able to accommodate five to seven chunks (learned stimulus patterns) of information at any one time. In comparison, the long-term memory stores knowledge and past experiences in symbol structures, with each set of symbols connected by relations which can be retrieved at a much later date through the short-term memory (Newell & Simon, 1972).

The information processing theory is comprised of four stages illustrating the interface between two types of memory. First, the decision maker collects the data during an encounter with a patient; this stage is often referred to as cue acquisition. Second, from the collected data and information stored in the short-term memory, the decision maker generates some initial hypotheses (typically, the decision maker generates 4-6 hypotheses). Third, the collected data are interpreted based on the short-term memory's ability to retrieve both knowledge and past experiences from the long-term memory. Fourth, the decision maker determines whether the original hypotheses can be confirmed or set aside. Finally, the decision maker determines what the best decision is based on the information gathered and interpreted (Elstein & Bordage, 1988; Elstein, Shulman, & Sprafka, 1978; Thompson, 1999). This theory recognizes that there are limits to the decision maker's ability to process information and that the ability to solve problems depends on his/her ability to adjust to these limits (Taylor, 2000).

The diagnostic reasoning model is based on the information-processing theory. This model not only describes how an individual stores and retrieves information, it also employs information processing theory to describe the process used to make a decision. Descriptive models of decision making have often been developed, tested and implemented in nursing (Corcoran, 1986b; Gordon, 1980; Itano, 1989; Tanner et al., 1987).

Carnevali (1984) describes a seven-stage process of diagnostic reasoning in nursing which incorporates the four-stage model of decision making proposed by the information processing theory as follows:

1.   Exposure to pre encounter data.

2.   Entry to the data search field and shaping direction of data gathering.

3.   Coalescing of cues into clusters or 'chunks'.

4.   Activating possible diagnostic explanations (hypotheses).

5.   Hypothesis and data directed search of the data field.

6.   Testing diagnostic hypothesis for goodness of fit.

7.   Diagnosis.

Criticism of descriptive models has focussed on their effectiveness in relation to human fallibility (Arkes, 1981; Arkes, Wortmann, Saville, & Harkness, 1981; Einhorn, 1981; Fischhoff & Beyth-Marom, 1983; Harbison, 1991). Another difficulty with these models is that they view decision making as a sequential, logical process. This view that

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decision making is simply a distinct series of steps is far too simplistic and does not

recognize the complexity of this process. Another concern expressed regarding such a

model is that it fails to recognize patient involvement in decision making.

In summary, the diagnostic reasoning model is one example of the application of

the information processing theory. This descriptive model has also been critiqued for

failure to recognize the complexity of decision making. Benner (1984) is one author who

suggested that both the descriptive and prescriptive models were inadequate in describing

the decision making process and the factors that influence this process. She noted that,

"the task difficulty, relative importance, relational aspects, and outcomes of the skilled

practice are not adequately captured without including the context, intentions, and

interpretations of the skilled practice" (p. 38). Other authors support the view expressed

by Benner (Gilles, 1989; Matteson & Hawkins, 1990).

Summary of Theoretical Perspectives

The theoretical discussion of decision making makes it clear that there are two

distinct ways of looking at decision making. Both of these perspectives serve a purpose

and can contribute to our understanding of decision making and its implementation. The

prescriptive approach seeks to place boundaries on the decision making process and aids

in dealing with complex situations that may seem overwhelming to the decision maker.

The descriptive approach suggests that there is a process in which decision makers

engage when faced with a situation that requires action. It is also clear that the common thread is the human fallibility of the decision maker in both the prescriptive and descriptive perspectives; this factor cannot be discounted and with the decision maker there is the ever-present opportunity for human error. At this time it does not appear that any one model adequately describes decision making, thus reflecting the complexity of this skill.

Influencing Factors

Much attention has been given to the factors that influence decision making. The two areas that have been addressed in nursing literature are knowledge and experience.

Knowledge/Experience

Knowledge has been described as a significant influencing factor on decision making as it can be acquired from both textbooks and from experience (Shanteau, 1992). Several researchers have explored the role of knowledge and experience in decision making. In a study of the factors influencing the decision making of nurses in the coronary care unit, Baumann and Bourbonnais (1982) found that knowledge and experience were both important factors. dela Cruz (1994) also recognized the influence of knowledge on nurse decision making.

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Numerous studies have suggested that the amount of a practitioner's clinical experience contributes greatly to the successful practice of the decision maker. A review of the literature suggests that authors define experience in various ways. For example, Watson (1991) suggested that experience can be divided into three criteria including a passage of time, gaining skills or knowledge, and exposure to an event. In the literature, experience is often referred to as being equivalent to knowledge or sometimes defined as the length of time in nursing practice (Benner, 1984; Tanner, 1987; Wolf, Ambrose, & Dreher, 1996). Benner suggested that the 'expert' was able to quickly identify a problem without considering unproductive alternatives while in contrast, the 'novice' operated under rigid rules and guidelines to use in making decisions, some of which were incorrect. Novice nurses lacked the experience and knowledge that expert nurses had and thereby they were often unable to reach accurate nursing diagnoses. It can be concluded that experience influences decision making.

Types of Decisions Made by Nurses

The types of decisions made by nurses are not widely explored in the literature. Some authors suggest that the types of decisions made by nurses involve both assessment and problem identification, concluding with the decision about the intervention required (Bucknall, 2000; Ellis, 1997; Prescott, Dennis & Jacox, 1987). Bucknall suggested that nurses make decisions regarding communication and evaluation in addition to the other

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decisions noted above. Communication decisions included decisions to give and receive information from other people; this exchange of information included the patient, the health care team, and visitors. Evaluation decisions involved the observation, measurement, and review of data in order to make an informed clinical decision. The data collected were both subjective and objective in nature. These various decisions were influenced by the nurses' experience, appointment levels, and location. McCaughan (2002) found that nursing decisions were related to questions of treatment or intervention and were primarily focussed on clinical effectiveness.

Boblin-Cummings et al. (1999) suggest that nurses make complex and critical decisions after the selection of an intervention and prior to its implementation. These researchers suggest that these decisions go beyond those traditionally captured by problem solving and decision making models. They address the complex network of interactions involved with enactment of interventions, the repertoire of administrative skills required to elicit the involvement of other individuals, and the discretionary decisions made in the allocation of resources, priority setting, and strategizing. Boblin-Cummings et al. (1999) termed these decisions "Implementation Decisions".

Summary

Nurse decision making is a complex process that has traditionally reflected the nursing process, wherein nurses gather data, interpret the data, determine if there is a

problem, develop an appropriate intervention, determine how to implement the care, and provide the necessary care to the patients (Alfaro-LeFevre, 2002). This decision making of nurses is described as a linear process that has a clear beginning and ending, and is similar to the diagnostic reasoning model of decision making. Decision theory and information processing have been the two primary theoretical perspectives used in studies pertaining to nurses' clinical decision making. Information processing theory, diagnostic reasoning, and decision theory are prescriptive and concerned with how nurses should make a decision, rather than how a decision is made. The prescriptive approach tends to mechanize the process of decision making and fails to take into consideration the intrapersonal processes. The presupposition that decision making is a linear process is evident in the strategies employed to develop/enhance decision making. Current literature is unable to capture the complexity of nurse decision making.

The types of decisions that nurses make are described in the literature and include decisions related to assessment, problem identification, communication, interventions, evaluation, and implementation. A significant body of literature focuses on the factors that influence decision making. Two of the key influencing factors are knowledge and experience which apparently develop over time.

Student Decision Making

The intent of the final component of this chapter is to present a review and critique of the research conducted on the development of nursing student decision making. The search strategy used to investigate the current literature addressing the development of nursing student decision making included the search terms "nursing student", "decision making", "diagnostic reasoning", and "clinical judgment". The following indexes were searched: CINAHL, MEDLINE, ERIC, and Dissertation Abstracts with searches limited to the last 10 years. The term "nursing student" was combined with the terms "decision making", "diagnostic reasoning", and "clinical judgment". These searches revealed no studies addressing the topic of the development of nursing student decision making. Studies by Brooks and Thomas (1997), Slater (1999), and White (2003) all reported on student decision making in the final year of a BScN programme. A study by Baxter (2000) explored the decision making activities of second year BScN students who were enrolled in their first surgical clinical placement. This study revealed that students made decisions related to encounters with three key groups of individuals: patients, Nursing Staff, and Clinical Tutors. Students made decisions about patient care and nursing tasks, however, when students recognized the need for such decisions the greatest decision they faced was whether or not to seek help and from whom they would seek help. Students made many decisions about whether or not to communicate with the Nursing Staff and Clinical Tutor to ask for assistance when

faced with a patient care decision; however, none of these studies discussed the

development of student decision making over time. Benner's (1987) work described the

evolution of decision making changes over time, but it was more specific to graduate

nurses.

A small body of literature addresses the development of critical thinking during

the course of a baccalaureate degree (Adams, Stover, & Whitlow, 1999; Pardue, 1987;

Thompson & Rebeschi, 1999; Vaughan-Wrobel, O'Sullivan, & Smith, 1997). Bowles

(2000), Brooks and Shepherd (1990), and Shin (1998) all found a relationship between

critical thinking and decision making; these findings however, are contrary to several

studies concluding that critical thinking and decision making were unrelated (Gordon,

1980; Gunning, 1981; Holzemer & McLaughlin, 1988; Tanner, 1987). Thompson and

Rebeschi conducted a study on the development of critical thinking skills in baccalaureate

nursing students from programme entry to exit and found that critical thinking improved

over this period of time. As several authors suggest that critical thinking is a key element

in decision making, the body of literature that addresses the development of critical

thinking may be helpful in generating propositions related to how student decision

making develops over time. Additional factors that have been explored as influencing

student decision making have been the decision maker's locus of control (Neaves, 1989),

educational level (O'Neill, 1999; Shin, 1998), nursing theory (Field, 1987), and

confidence (Haffer & Raingruber, 1998).

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Summary

Student decision making and the development of decision making skills is an area of research that remains relatively unexplored. Much of the current literature focuses on the decision making skills of a student in one particular year of the nursing programme. The types of decisions that students make and the factors that influence student decision making remain poorly understood.

CHAPTER 3: PROPOSITIONS, CONCEPTUAL FRAMEWORK, AND RESEARCH QUESTIONS

This chapter provides the propositions that emerged from the review of the literature, the conceptual framework, and research questions posed in this study. To answer these questions a qualitative case study design was utilized. This design will be more fully described in the methods chapter. Various approaches have been suggested for the exploration of topics using a case study design. The suggestions made by Yin (1994, 2003), Miles and Huberman (1994), and Creswell (2003) have been followed in an effort to ensure that the research questions are addressed in an inductive and exploratory manner thus ensuring the study's credibility.

Propositions

The works of Yin (2003) and Miles and Huberman (1994) suggest that propositions which emerge from the review of the literature play an important role in case studies. Propositions are defined as, "statements derived from theories or from generalizations based on empirical data" (Nieswiadomy, 2002, p. 90). Yin notes that the purpose of each proposition is to, "direct attention to something that should be examined within the scope of the study" (p. 21). In addition, they ensure that a study remains reasonable in its scope.

Based on a review of the literature and observations of student decision making, several propositions were developed.

1. The types of decisions that students make will include decisions similar to those identified in previous studies of nurses (Baxter, 2000; Boblin-Cummings et al., 1999; Bucknall, 2000; Ellis, 1997; Prescott et al., 1987); this study asks students to describe the types of decisions they make regarding patient care.

2. Various factors influence nurse decision making including knowledge and experience (Benner, 1984, 1987; Tanner, 1987; Watson, 1991; Wolf et al., 1996). A variety of factors influence student decision making including feelings of fear, degree of confidence, and level of knowledge (Baxter, 2000). This study will identify the factors that students indicate enhance/impede their decision making.

3. Nursing student decision making in the clinical setting incorporates theory taught in the classroom (Bowles, 2000). In order to explore this relationship and its influence on the development of student decision making this study will ask students to describe their decision making in both the PBL and clinical settings.

4. Nurse decision making changes over time due to knowledge and experience; consequently nursing student decision making changes over time (Benner, 1984; Tanner, 1987; Watson, 1991; Wolf et al., 1996). This case study will explore the decision making activities of students in all four levels of their BScN programme.

These propositions form the basis for a conceptual framework which is described in the next section.

Conceptual Framework

Wolcott (1982) states that it is, "impossible to embark upon research without some idea of what one is looking for and foolish not to make that quest explicit" (p. 157). Miles and Huberman (1994) suggest that a conceptual framework is an important element in qualitative research, and should serve several purposes. First, it states who will and will not be studied. Second, it describes what relationships may be present based on logic, theory and/or experience. Third, it provides the researcher with the opportunity to gather general constructs into intellectual "bins" (p. 18).

Determining the "bins" of the study and suggesting how they relate to one another forms the basis of a conceptual framework (Miles & Huberman, 1994). A conceptual framework can be graphical in nature and can also be simple or complex, driven by theory or common sense, descriptive or causal (Miles & Huberman). An initial conceptual framework (Figure 2) was developed which reflects the propositions previously mentioned. It was expected that this conceptual framework would evolve as the research progressed and provided a starting point for the development of the research questions.

- Assessment
- Problem identification
- Identification and consideration of alternatives
- Consideration of preferences and values
- Selection of interventions and how best to achieve these interventions

Clinical Setting

PBL Setting

Types of Decisions

Student Decision Making

Time

Internal Influencing Factors

External Influencing Factors
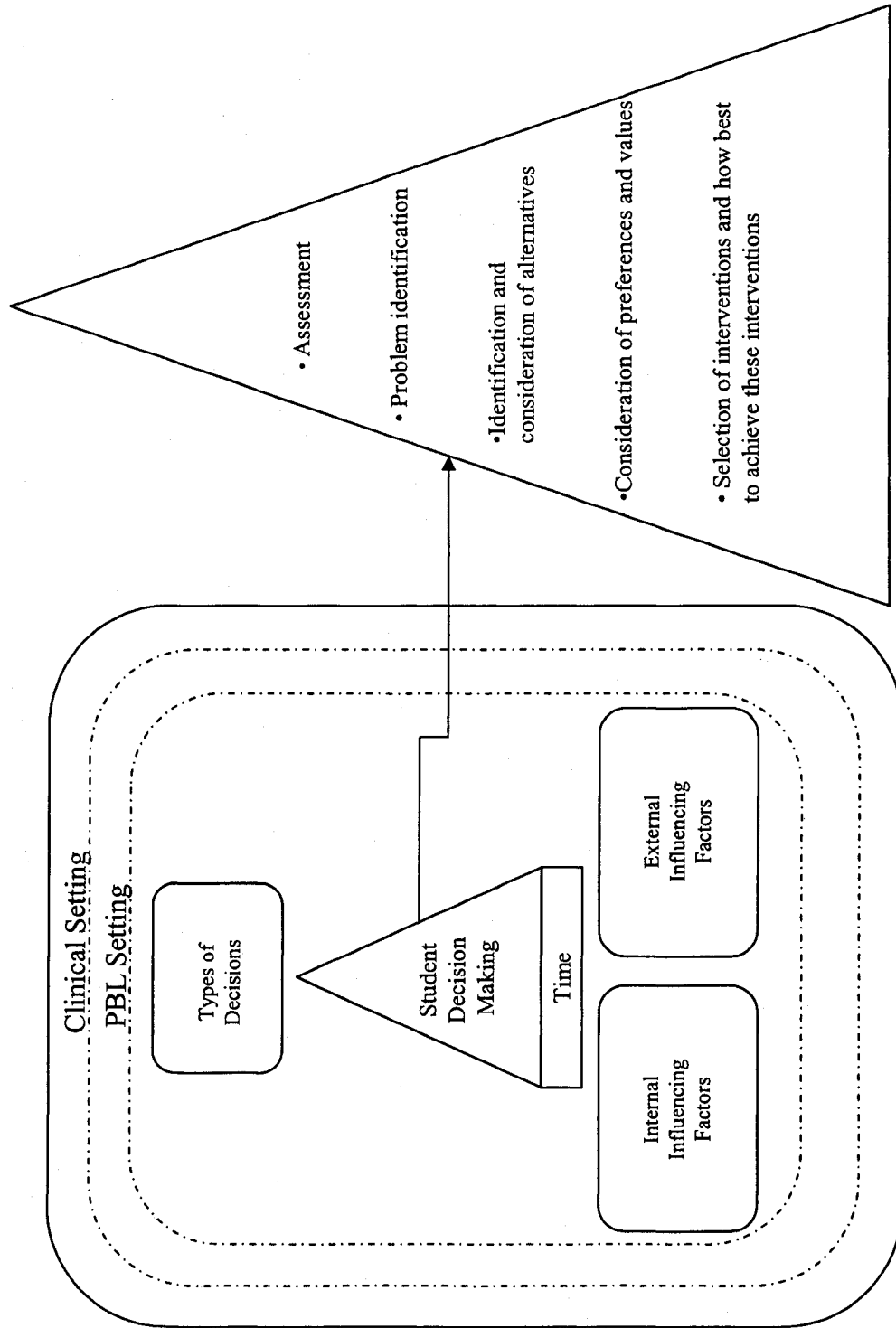
Figure 2. Initial conceptual framework.

Research Questions

1.   How do the types of patient care decisions made by students change during the

four years of a baccalaureate nursing education in both the PBL and clinical

settings?

a.   What decisions are identified in the PBL setting?

b.   What decisions are identified in the clinical setting?

2.   What factors influence student decision making in the two settings over the four

years of a baccalaureate nursing education?

a.   Decision maker characteristics such as knowledge and experience.

b.   Professional relationships such as :

   i.   Patient

   ii.   Tutor

   iii.   Nursing Staff

c. Nursing Education/Curriculum

3.   How does the nursing student decision making develop over the four years of a

baccalaureate nursing education programme in both the PBL and clinical settings?

a.   In the PBL setting?

b.   In the clinical setting?

Ethical Approval

Ethical approval was received from the Research Ethics Board (REB) at the

Hamilton Health Sciences Corporation on July 16, 2002 (Appendix 2). Ethical approval

was also received from the Undergraduate Nursing Education Committee (UNEC).

CHAPTER 4: THE CASE AND METHOD

This chapter presents methods used to conduct this research. The study's design

(case study), context, data collection, data management, and analysis will each be

described. In addition, information will be provided regarding the use of N-Vivo to

support analysis of the data.

The Case

The use of case study (Yin, 2003) enabled the researcher to fully explore the topic

of the development of student decision making. Scanlon (2000) describes the case study

approach as, "an exploration of a question or phenomenon of interest when little is known

in advance, and where the situation may be complex" (p. 1). The case study approach is

best utilized when a holistic and in-depth investigation is needed and 'how' and 'why'

questions must be answered (Yin). Case study is able to explore a phenomenon using a

variety of data sources and from the participants' perspectives (Tellis, 1997). In addition,

it explores a "bounded system" or a case over a period of time and using in-depth and

comprehensive data collection.

The case is defined by Miles and Huberman (1994) as "a phenomenon of some

sort occurring in a bounded context" (p. 25). The manner in which a case is bounded is a

point of discussion; Creswell (2003) believes that a case should be bound by time and

place; Stake (1995) believes that it should be bound by time and activity; Miles and

Huberman suggest that the boundaries are the context within which the case is situated.

Using Miles and Huberman's definition of a case, the case under study is the development

of nursing decision making by nursing students enrolled in a basic four year baccalaureate

nursing programme in a university in South Central Ontario.

Case Parameters

Following Miles and Huberman's (1994) recommendations, the case is bound by

the definition of decision making, setting, time, and student characteristics.

Definition of Decision Making

Nurse decision making is defined as a cognitive process that requires patient

assessment and problem identification, the identification and consideration of

alternatives, the consideration of preferences and values (of all parties involved), the

selection of interventions, and the determination of how best to achieve these

interventions (Boblin, 2003).

Setting

The case (development of nursing student decision making) was bound by the

PBL and clinical settings. Decision making was focussed on decisions related to patient

care in both of these settings. The PBL courses occurred at McMaster University in the

School of Nursing. Problem-based learning will be described later in this chapter. Students participated in 2.5 to 3 hours of PBL class time per week. Clinical courses occurred in the clinical laboratory, the community, or acute care settings. Students participated in 2.5 hours per week in Level 1 up to 24 hours per week in Level 4. All PBL and clinical courses were taught by McMaster University faculty members also referred to as PBL or Clinical Tutors.

Timing

The research was conducted over the fall (2002) and winter (2003) academic terms.

Student Characteristics

A third parameter of the case is the student characteristics. The students were enrolled full-time at McMaster University in the School of Nursing. The majority of the students entered the programme directly from high school, having completed required Ontario Academic Courses (OAC). The minimum OAC average for these students upon admission was approximately 80%. Students were taking their first university degree and were participating in both PBL and clinical courses. Students were registered in either Level 1, 2, 3, or 4 of the BScN programme. McMaster students are typically 90% female and 10% male.

Case in Context

As Yin (2003) states, case study research "investigates a contemporary phenomenon within its real-life context; when the boundaries between phenomenon and context are not clearly evident" (p. 13). Munhall (2001) also believes that in order for a case to be understood it must be explored in context. She provides three reasons for situating the case in this way:

1. Because it must be determined whether the conclusions apply to other contexts.

2. Because of "the belief in complex mutual shaping rather than linear causation, which suggests that the phenomenon must be studied in its full-scale influence (force)field" (Lincoln & Guba, 1985, p. 39).

3. Because values are an integral element of context, defining and influencing behaviour (Lincoln & Guba, p. 361).

Bromley (1986) notes that a case must be viewed in its physical, social, cultural, and symbolic environment. In order to situate the case in its context, an overview of the McMaster University School of Nursing programme and courses relevant to this study will be provided.

At McMaster University in the School of Nursing there is a keen desire to promote sound clinical decision making in students (McMaster University, 2002). This is accomplished through both classroom and clinical teaching. The mission of this School of Nursing is "to provide responsive and comprehensive quality education for students, to

develop nursing and health care knowledge through research at the leading edge of the

profession, and to promote exemplary nursing practice and the health of our clients"

(McMaster University, 2002, p. 4). The philosophy of the School of Nursing is based on

central concepts of: person/client, health, health promotion, healing, context, professional

caring, learning and knowing. It is believed that nursing involves both scientific and

humanistic caring (McMaster University). The School of Nursing recognizes that nursing

is guided by professional standards and that these standards are aimed at guiding

practice. In addition, the School believes that inquiry is a critical component in the

learning process and that learning requires collaboration between the learner and the

educator. This collaboration is only possible when there is "mutual respect and trust,

shared accountability and responsibility, and the recognition and utilization of the

strengths of each partner within the collaborative relationship" (McMaster University, p.

5). Important elements in learning are critical reflection and self-evaluation. The

philosophy adopted by McMaster University, School of Nursing is evident in its model of

nursing education.

The Model of Nursing Education

The McMaster Model of Nursing Education (McMaster University, 2002)

includes several critical components including: the learner and the facilitator. Each of

these individuals is made up of body, mind, and spirit and influenced by his/her life's

meaning, values, and personal beliefs. Each individual in this dyad is influenced by external influencing factors including physical, cultural, social, ecological, political, and economic variables. In order for the two individuals (learner and facilitator) to collaborate it is imperative that a dialogue occurs; this dialogue is aimed at attaining mutuality which allows the individuals to determine what educational experiences will have the greatest benefit.

The undergraduate nursing programme is based on an andragogical philosophy that places the learner in the center and enables the learner to be self-directed and problem-based in his/her learning experience. The process is aimed at helping students develop their critical thinking with regards to health-related issues and the promotion of professional caring. Students engage in a variety of learning skills including, "defining personal objectives, understanding the dynamics of behaviour change, information acquisition/assimilation, and self-evaluation" (McMaster University, 2002, p. 7).

Programme goals and level and course objectives provide the framework within which the needs and goals of the learner are identified. Goals outlined for the graduates of the McMaster University, BScN programme include the demonstration of critical thinking in assessing, planning, and evaluating client care through the integration and application of knowledge as well as engagement in effective decision making and provision of safe patient care.

Level Specific Foci Based on the School of Nursing Framework

Each level of the BScN programme has a different focus in terms of social units. In Level 1, the focus is on the individual. In Level 2 the focus changes to include the family and the community as well as the individual. In Level 3 the focus changes once again to the health care system and its influence on the individual, family, and community. Level 4 focuses on action, theory application, evidence based practice, leadership, the health care system, and professional development.

Programme Goals

The level specific foci mentioned above are intended to ensure that graduates of the BScN programme meet the required goals set out by the university. The goals are intended to ensure that graduates are competent in their professional practice and that they are able to provide care in a variety of health care contexts and with individual patients, families, groups, communities, and populations. Graduates are also expected to be able to provide care for both stable and unstable patients. In addition, they are to be able to provide care for patients who are influenced by a variety of internal and external factors. In order to meet these goals upon graduation, BScN students must engage in a variety of courses.

Clinical Courses

The clinical courses that students are required to take are situated in a variety of settings and last for 12 weeks per term, with two terms per academic year. In Level 1, students engage in 4 hours of clinical experience per week, divided between the clinical lab and the community; they are taught by a faculty member (Clinical Tutor) who facilitates student learning. In Level 2, of the programme students engage in 8 hours of clinical experience per week. During this level students gain experience providing patient care in a medical/surgical setting or a pediatric setting. A Clinical Tutor is with the students in the clinical setting to ensure that patient care is safe, that the environment is conducive to learning, and that students receive support and formative feedback throughout the year. In Level 3, students are required to engage in clinical practice for 12 hours per week within a variety of settings including maternal/child, pediatrics, oncology, orthopaedics, and psychiatry. In this level students may have a Clinical Tutor in the clinical setting working alongside them during clinical days or they may be involved in a Student- Preceptor-Clinical Tutor triad. In this case, the Clinical Tutor oversees the learning experience, but is not a nurse employed in the clinical setting. A Preceptor provides direct observation and ensures safe patient care within an environment conducive to learning. The Clinical Tutor and the Preceptor work in collaboration to ensure that the student is meeting course requirements. Finally, in Level 4 students complete 24 hours per week in the clinical setting. The student/Preceptor/Clinical Tutor

model is used for all students. In all four years the clinical course is graded on a pass/fail basis.

Problem-based Learning Courses

Problem-based learning is an approach to learning that possesses two key characteristics:

a)   a curriculum organized around problems that are relevant to desired learning outcomes, rather than organized by topics or disciplines, and

b)   conditions that facilitate small-group work, self-directed learning, independent study, functional knowledge, critical thinking, lifelong learning, and self-evaluation (Rideout & Carpio, 2001, p. 23).

PBL is a process that often involves a clinical scenario that is described on paper. This scenario is used to help students to identify their learning needs. Identifying and addressing these learning needs increases the students' knowledge base and allows them an opportunity to apply their knowledge. Steps in the PBL process include:

1.   The problem is presented to the group, terms are reviewed, and hypotheses generated.

2.   Learning issues and information sources are identified.

3.   Information gathering and independent study occur.

4.   The knowledge acquired is discussed and debated critically.

5.   Knowledge is applied to the problem in a practical way (Rideout & Carpio, 2001,

p. 29).

Some authors have suggested that the knowledge, skills in decision making, and the

ability to be self-directed gained in the PBL setting can be applied in the clinical setting

(Royle, Sword, Black, Brown, & Carr, 2001).

At McMaster University, all PBL courses last for a 12-week period, with 2 PBL

courses per academic year. The group sizes range from 7-12 students and have a faculty

member (PBL Tutor) whose role is to facilitate student learning. The PBL Tutor provides

support and formative and summative evaluation. The format for the PBL courses are

similar in Levels 1, 2 and 3. Students are presented with a paper patient problem and

utilize the above-mentioned steps to explore the scenario. In Level 4, students introduce

scenarios from their own clinical practice; these are discussed in the group in a similar

PBL format. In all four years, the amount of time spent on each patient scenario depends

on the group's learning needs. Groups in Level 1 meet for 2 ½ hours per week, while in

the remaining three years students meet for 3 hours per week. A variety of measures are

used to evaluate student performance in the PBL course. In an effort to understand

student decision making in the clinical and PBL courses a variety of data sources were

utilized.

Method

Data Sources

A key characteristic of case study research is the use of multiple data sources, also referred to as data triangulation (Speziale & Carpenter, 2003). Qualitative researchers utilize data triangulation as a strategy to gain understanding, to ensure completeness, and to confirm findings. Triangulation also enables the researcher to ensure construct validity through the use of multiple sources, providing multiple measures of the same phenomenon (Yin, 1994, 2003).

This study involved Key Informants and Key Documents which, according to Yin (2003), are two primary sources of data for case studies. This study employed data triangulation utilizing key informant interviewing, focus groups, and review of curricular materials to ensure that the conclusions drawn from the different sources of data were convincing and accurate. Figure 3 illustrates the triangulation of data sources utilized in this case study.

Key Informants

Key informants are individuals who share information with the researcher and are key to the researcher's understanding of the issue. These individuals have been described by Gilchrist and Williams (1999) as those who, "possess special knowledge, status, or communication skills, who are willing to share their knowledge and skills with the

**Primary
Data Sources**

Key Informants:

Nursing students-
interviews, focus groups

**Student
Decision
Making**

**Secondary
Data Sources**

Key Informants:
Tutors-interviews, focus groups

Key Documents:
Curricular material
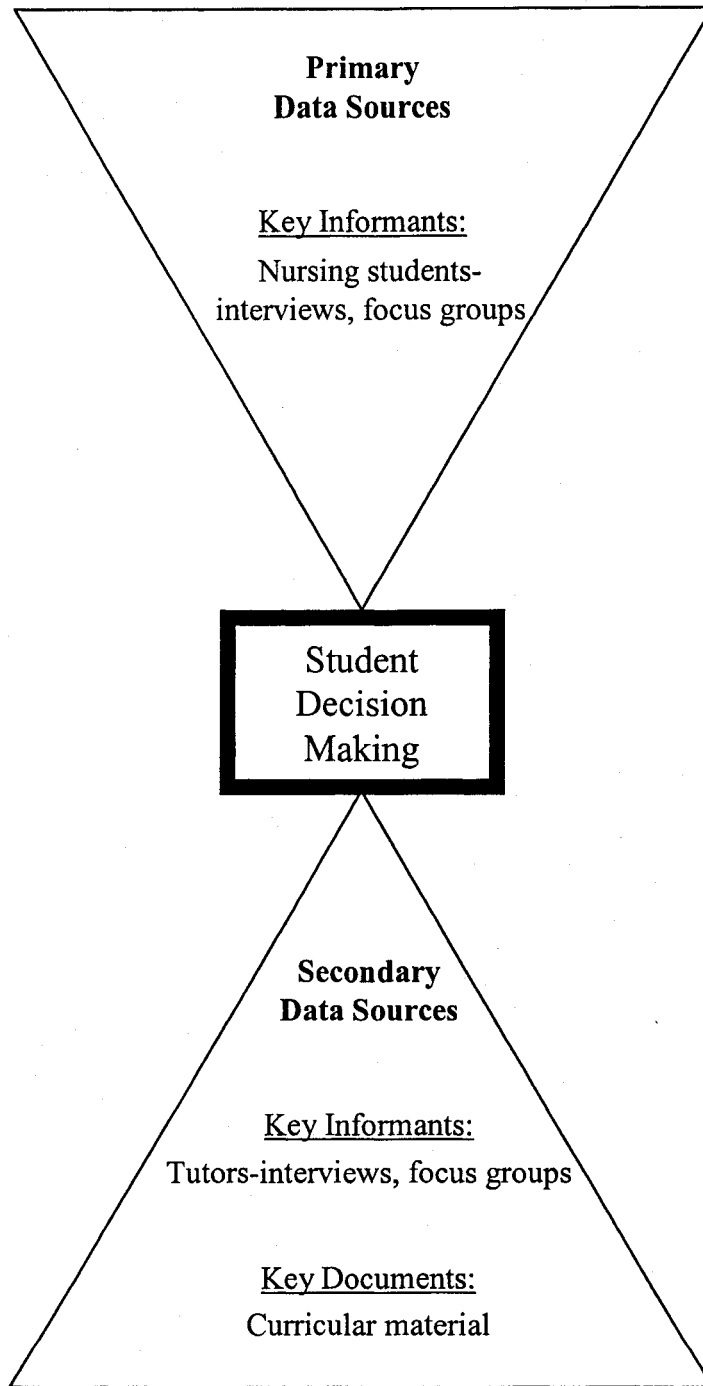
Figure 3. Triangulation of data sources (Yin, 2003, p. 100).

researcher, and who have access to perspectives or observations denied the researcher through other means" (p. 73). Key informants for this research were the students and the PBL and Clinical Tutors. Nursing students were considered the primary source of data because they would best be able to describe their decision making in detail. Tutors were used as a secondary source of data because they interacted with students in both the PBL and clinical contexts. They were able to describe the decision making activities that students engaged in as they made decisions regarding patient care. In addition, a component of the Tutor's role was to assess the student's cognitive decision making activities; therefore, Tutors could provide their own interpretation of the decision making activities engaged in by nursing students.

Key Documents

Key documents are also important to every case study (Stake, 1995; Yin, 1994). Yin suggests several advantages to a document review. First, documents serve to corroborate and augment evidence from other data sources. Second, they provide clarification of terms and concepts that might have been mentioned in an interview. Third, they allow inferences to be made which could lead to further investigation (Yin). In this study the course materials were the Key Documents; these included the programme and level goals and course goals and objectives from the Levels 1-4 PBL and clinical courses.

Sampling Strategy

In keeping with an interpretivist perspective, which holds that the participants are knowing beings and that they possess important consequences for how behaviour or actions are interpreted, purposeful sampling was utilized (Patton, 1990). This sampling method selects individuals for study based on their particular knowledge of a phenomenon in order that they might share their knowledge. Patton notes,

> "The logic and power of purposeful sampling lies in selecting information- rich cases for study in depth. Information-rich cases are those from which one can learn a great deal about issues of central importance to the purpose of the research" (p. 169).

Speziale and Carpenter (2003) suggest that purposeful sampling enables the researcher to understand a group's culture and enables the researcher to explore a phenomenon in depth, such as student decision making in both the PBL and clinical settings. Purposeful sampling provided an opportunity to fully understand the case and to explore the study propositions.

Key Informants

Students

Students from all four levels were involved in this study, in keeping with proposition #4, which states that nursing student decision making will change over time. This helped to ensure that the development of decision making was described in depth

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and that the development could be seen from year to year. Students from both PBL and clinical contexts were included to address proposition #3, which suggests that curriculum and theory influence student decision making.

Individual interviews with students and Tutors from each level and in each context were utilized in an effort to describe decision making and its development over time. Students in the clinical setting wrote two journals following two consecutive clinical days, while students in the PBL setting wrote one journal following one class. These journals served as a stimulus for discussion during the individual interview. Focus groups were held with students who were involved in the PBL class, but not held with students who were involved in the clinical setting. It was felt that a minimum of five students would be acceptable for these groups and focus groups were held for each level.

Tutors

Tutors in all four levels of the programme were asked to participate in the study. Tutors from each level were asked to describe the types of decisions students made, what decision making activities they thought students were engaging in, and what factors they believed influenced these activities. Tutors consisted of both PBL and Clinical Tutors. It was important that Tutors from each setting contributed their observations regarding student decision making to explore the proposition that there is a relationship between

theory taught in the PBL setting and practice in the clinical setting. Tutors were asked to participate in either an individual interview or a focus group.

Key Documents

Keeping in mind proposition #3 that suggests that student decision making is influenced by theory, it was necessary to look at decision making from a curriculum perspective. Programme goals, level goals, course goals and objectives were selected for review because they provided much of the direction for student learning. These documents provided insight into the development of student decision making from a programme perspective and also provided insight into the intended development of decision making over the four years of curriculum in both the PBL and clinical settings. In addition, these documents were considered important because they, "provide a framework within which the student's goals are identified" (McMaster University, 2002, p. 2). The course objectives also describe the behaviours that must be evident in order to be successful in the PBL and clinical courses.

Data Collection Strategies

This case study used three data collection strategies including individual interviews, focus groups, and document review.

Individual Interviews

In this case study semi-structured individual interviews were a primary data collection strategy. Miller and Crabtree (1999) state that semi-structured interviews,

> " ... are guided, concentrated, focussed, and open-ended communication events that are co-created by the investigator and interviewee(s) and occur outside the stream of everyday life. The questions, probes, and prompts are written in the form of a flexible interview guide" (p. 19).

To ensure that all areas of the research topic were discussed during the interview, the tree-and-branch model of interviewing was utilized. The analogy of a tree and its branches was utilized to represent the core topic (the trunk) and the research questions (the branches). This model ensured that the main questions were addressed and that the entire subject was covered during the interview. The goal of this approach was to gain a greater understanding of the topic and to, "learn about the individual branches that frame the entire tree but still obtain depth and detail" (Yin, 1994, p. 159).

This method of data collection has its advantages and disadvantages. Advantages to interviewing include the collection of data that cannot be directly observed; the opportunity to gather data that have been observed by others; and the opportunity for the researcher to question the participant (Creswell, 2003; Stake, 1995). In case study research, interviewing can be especially beneficial because it allows the researcher to obtain descriptions and interpretations of others, which in turn provides the opportunity to discover new views and perspectives on the topic under investigation. Stake suggests that

interviewing, "is the main road to multiple realities" (p. 64) as each participant is anticipated to tell a different story. The purpose of an interview is to encourage the participant to describe an event instead of simply providing closed answers such as "yes" or "no" (Stake, 1995). While an interview allows the interviewer the opportunity to explore different realities, it also ensures that the interview is focussed on the case study topic (Yin, 1994).

Disadvantages of interviewing include bias from interview questions that are poorly constructed, recall bias, and responses that are aimed at providing the researcher with the type of answer that the participant thinks is expected rather than what is truly occurring (Yin, 1994). To address the issue of bias from poorly constructed interview questions, an interview guide was developed based on the research questions. The guide was used to direct the discussion, provide some structure, and to ensure that the interview remained focussed on student decision making. Pilot testing of the guide took place with both students and Tutors to ensure that it was effective in gathering data related to the research topic. Examples of questions asked of clinical students are:

1. Can you describe for me in detail the clinical situation that you reflected on in your journal?

2. Can you describe for me how you felt in this situation?

3. Can you tell me how you responded to the patient situation?

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Examples of questions asked of PBL students are:

1. Can you describe for me the patient situation that you are currently working on in PBL?

2. Can you describe for me what you decided to do for this patient?

3. Can you describe for me how you determined what was needed for this patient?

To address the issue of students telling the researcher what they believed she wanted to hear, the students were reminded that their responses were confidential and that there was no wrong answer. It was expected that this reassurance would facilitate the disclosure of accurate data.

Student Journals

Each student who agreed to participate was asked to complete a journal following two consecutive clinical days or after one PBL class. Brown and Sorrell (1993) demonstrated the usefulness of clinical journals to enhance student critical thinking (inherent in the decision making process). Gibbs (1992) suggests that a reflective journal is an effective strategy "to turn experience into learning" (p. 14).

In this study, student journals were used to allow students an opportunity to reflect on their PBL or clinical experience and to discuss the decisions they had made regarding patient care within these . This reflection provided students with the opportunity to

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discover the decisions that they were making and the factors that had influenced their

decision making. In addition, the journal was used as a stimulus for the individual

student interviews.

Journal guidelines were developed that focussed on the decisions students made,

the decision making activities employed by the student, and the barriers and/or enhancers

that influenced their decision making. The guidelines were piloted with students in

Levels 1-4 of the baccalaureate nursing programme to ensure that they were capable of

gathering the necessary data required to address the research questions. The pilot

indicated that the journal guidelines were appropriate.

Focus Groups

Carey (1994) defines a focus group as, "a semi-structured group session,

moderated by a group leader, held in an informal setting, with the purpose of collecting

information on a designated topic" (p. 226). Focus groups are advantageous because they

can encourage participation from people who might otherwise be reluctant to be

interviewed alone. The group atmosphere is often beneficial in that it helps individuals to

share their beliefs and views regarding the topic being explored (Brown, 1999; Kitzinger,

1995). The limitations of focus groups have been described in the literature. One

limitation associated with this method of data collection is that not all members of the

group may be comfortable sharing their views or experiences with others present (Polit,

Beck, & Hungler, 2001). A second limitation is that smaller numbers of participants means that inadequate discussion may occur (Burns & Grove, 2003). Finally, in an ideal situation participants should be unknown to each other; however, this is unrealistic in the academic setting where there is a small student body and a small faculty.

Burns and Grove's (2003) recommendations were followed to encourage the free exchange of ideas. A relaxed setting was used, so that participants would be comfortable and be able to maintain eye contact with all other participants. A small room, with chairs surrounding a table was used for recording to occur. This comfortable setting allowed for the exploration of different and contrasting ideas (Brown, 1999). In addition, the environment enabled the researcher to gather the participants' perceptions on a narrow subject in a non-threatening setting.

In order to promote comprehensiveness and focus an interview guide was developed that reflected the research questions (Appendix 3), the guide was reviewed by another researcher for clarity and comprehensiveness. In addition to questions reflected in the guide, probes were developed to prompt the focus group participants to delve deeper into the topic or to provide clarification if necessary (Crabtree & Miller, 1999).

Document Review

For case studies, documents are very important because they can be used to, "corroborate and augment evidence from other sources" (Yin, 1994, p. 81). Yin provides

several reasons to review documents in that theyverify titles, names, terms used in

interviews; they corroborate information from other sources, or perhaps to find

conflicting information in which case further exploration of the topic is necessary; and

they draw inferences. The programme goals, level goals, and course goals and objectives

were selected for review because they provided much of the direction for student

learning. These documents provided insight into the development of student decision

making from a programme perspective and into the development of decision making over

the four years of curriculum in both the PBL and clinical settings.

A matrix (Miles & Huberman, 1994) was set up to display the foci, goals, and

objectives for each level of the programme. Any references to decision making or

decision making activities were highlighted to provide a visual representation of decision

making throughout the curriculum. This enabled the researcher to determine links and

gaps in these documents and allowed the researcher to access, review, compar, and

contrast the information in an efficient manner.

Data Collection

Time

Data collection occurred between October 2002 and February 2003. Data were

not collected during September and March due to the high academic demands placed on

students during these months. In addition, data were not collected during midterm and

final examination periods. Data were collected from Levels 2 and 3 during the months of

October, November, and December 2002 and collected from Level 1 in January and

February 2003. This data strategy was utilized to ensure that students in Level 1 were not

asked to participate in a study that would add to their preexisting stress level. It was felt

that entering the university was a great stressor and that this stress would alter study

results and have a negative influence on the students. Students in Levels 2 and 3 were

more likely to be less stressed in their second and third year, due to the fact that they were

already adjusted to university life and were therefore selected first. Data for Level 4 were

collected throughout the entire 5 month period of the study.

Entry

Permission was sought from level administrators to approach individual clinical

and PBL Tutors and nursing students. Following permission, a research assistant

described the study to students in Levels 2, 3, and 4 during the third week of both clinical

and PBL courses. This time period was chosen to reduce interference with the numerous

activities associated with the beginning of a new academic year. The research assistant

met with individual groups and provided introductory letters (Appendix 4) that described

the study and the level of participation required of the students. Students were informed

that participation in the study was strictly voluntary and that their decision to participate

(or not to participate) would in no way influence their academic standing at McMaster

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University. Participants were also assured that they could withdraw from the study at any time without fear of reprisal. Tutors were asked to leave the classroom while the study was introduced to the students and as they considered whether to become involved or not in order to ensure that no student felt undue pressure to participate. The research assistant was available after introducing the study for any questions and for clarification. Students were asked to decide once the research assistant had left the room. Consent forms (Appendix 5) were then signed by students, placed in an envelope, sealed and returned to the research assistant. Upon receipt of the consents the research assistant informed the researcher and ensured that each student received a copy of the signed consent. Students were contacted via phone or e-mail by the research assistant to schedule an interview at a mutually convenient time.

Students from both the PBL and clinical settings were asked to submit journals prior to the individual interview (Appendix 6). The journals served as a stimulus for the interview and enabled the students to recall the situations that they had encountered in the clinical and PBL settings. Each journal was approximately one page in length, unless the student independently expanded his/her thoughts. Guidelines for the journal were distributed to the students at the commencement of the study. Students were given the opportunity to ask questions and/or to seek clarification when the guidelines were distributed. Students in the PBL setting found it easier to complete the journal upon completion of the case scenario; therefore, all of the students completed the journals at

that time. This timing provided the student with an opportunity to reflect on the entire

patient situation and the care plan that had been developed (if one was developed) in the

PBL group and also provided a clearer picture of how students responded to a patient

situation in the classroom setting.

Guidelines for the journal were distributed to the students from the clinical course

once they had agreed to participate in the study. Students were given the opportunity to

ask questions and/or to seek clarification when the guidelines were distributed. Journals

were completed following two consecutive clinical days.

Students were also informed that upon completion of their participation a name

from each level would be drawn at the end of the year for a text book that would be

helpful in the following year. In the case of fourth year students, they would receive a gift

certificate for the McMaster University Bookstore so that they could purchase a book that

would be helpful as they entered the workforce.

PBL and Clinical Tutors were introduced to the study at the beginning of the

school year during a Tutor orientation meeting for the new semester. In addition, Tutors

were sent an introductory letter (Appendix 7) which explained the intent of the research,

included a request for their participation, and requested access to students involved in

their PBL/clinical groups. Each Tutor was contacted via e-mail to see if he or she would

be interested in an individual interview or to participate in a focus group. If the Tutor

agreed to participate a consent form was signed (Appendix 8) and either a time was

scheduled for an individual interview or his/her name was placed on a list for an upcoming focus group.

At the beginning of the second semester, Tutors in Level 1 were contacted once again to reintroduce them to the study and to seek their participation. Several Tutors who were aware of the study had already conveyed their interest to the researcher in participating during the first semester, these Tutors were contacted and interview times scheduled.

Individual Interviews

Semi-structured individual interviews were utilized in order to gather data from students and Tutors. Interviews were conducted in a private location free of noise and distractions. All interviews with Tutors and students took place at McMaster University in the School of Nursing or were conducted over the telephone. Interviews included an introduction, a review of the written journal(s), and an opportunity for dialogue between researcher and participant in relation to the topic of discussion. Comments made by the student/Tutor led to other areas of exploration. Once it appeared that the student/Tutor had exhausted the topic of decision making, or once the time for the interview had expired, then the researcher recapped the data provided by the interviewee. Each interviewee was encouraged to confirm, change or expand on this final summary. Interviews lasted for approximately 30-60 minutes, and were audio taped. The tapes were

transcribed verbatim, and imported into N-Vivo (Richards, 1999). The role of the

interviewer was to encourage discussion of the research topic (Polit et al., 2001).

Participants were thanked for their participation at the end of the interview.

Focus Groups

In keeping with Burns and Grove's (2003) recommendations, most of the focus

groups ranged in size from 5 to 10. One focus group with two individuals occurred.

Focus groups with both students and Tutors were conducted using the same format as that

used for the individual interviews; the researcher ensured that participants were

welcomed; the purpose of the discussion was stated and the length of the discussion was

disclosed. In addition, the participants were assured of confidentiality and informed that

there were no right or wrong answers and that their ideas were important to hear.

Participants were also informed that the researcher would be jotting down notes so that a

summary could be provided to them at the end of the discussion and that the focus group

would be audio taped and transcribed verbatim. Near the conclusion of the focus group

the researcher summarized the discussion and provided participants with the opportunity

to clarify, change, or add additional information to what had already been stated. This

summary acted as a member check (Crabtree & Miller, 1999).

Student Focus Group

Students from all four levels of the baccalaureate nursing programme were invited to participate in a focus group following a PBL Tutorial. One focus group was conducted per level of PBL resulting in four student focus groups. This format enabled students to openly discuss their decision making in the classroom setting. Focus groups were used to develop and clarify themes that arose from journals and individual interviews with other participants. In addition, new data were generated. The focus groups were conducted in the McMaster University, School of Nursing and lasted for approximately one hour. Students who participated in the focus groups were provided with a pizza and pop lunch; Crabtree and Miller (1999) note that the use of incentives is appropriate to encourage participation in a focus group.

Tutor Focus Group

A focus group was conducted with PBL Tutors from each level of the nursing programme resulting in four focus groups. It was anticipated that the Tutors' similar background and experience would promote a sense of security and thereby promote the free exchange of ideas (Crabtree & Miller, 1999). Focus groups were conducted at a convenient time for the participants. The discussion was focussed on the decision making activities of students. This format was efficient and promoted dialogue between

participants. The focus group was facilitated by the researcher. Participants were provided with the topic for discussion prior to the focus group.

Document Review

Documents were reviewed to determine how they contributed to the development of student decision making. A matrix of the level goals and objectives as well as how they related to decision making was created. A matrix describes two lists of information that cross; it is set up as rows and columns and enables the reader to better understand the relationship between various items. In this case, the relationship between decision making and the course goals and objectives was illustrated (Miles & Huberman, 1994).

Data Management

File folders were used to sort transcripts from the student and Tutor interviews, the journal entries, the focus groups, and the documents. An alphabetical/numerical system was used to index data while a cross-reference system was employed to assist in easy retrieval of data. All transcripts from the individual interviews and focus groups were transcribed verbatim and imported into N-Vivo, the qualitative data management software (QDM) used for this study. This programme did not replace the need for the researcher to work closely with the data; rather, it enabled the researcher to manipulate and to format text files, identify segments of the text that required coding, attach codes to

the text and to retrieve identified portions of the text with greater ease and expediency. This software freed up the researcher to have more time for critical thinking and interpretation of the data (Richards & Richards, 1991).

Using a computer programme to organize data had many advantages including the ease of access to the data. The researcher was able to enter and code data more easily. The text was easily retrieved and searches were conducted with ease as the researcher could manoeuver through the data in an efficient manner (Richards, 1999; Richards & Richards, 1991). The drawbacks of using software included the extensive time to learn how to use the programme, the increase of distance between the researcher and the data and the increased focus on mechanical and technical issues rather than on cognitive activities (Polit et al., 2001).

Data Analysis and Interpretation

Data collection, analysis, and interpretation occurred simultaneously. Miles and Huberman (1994) discuss the advantages of this approach stating,

> "... analysis during data collection lets the fieldworker cycle back and forth between thinking about the existing data and generating strategies for collecting new-often better quality data; it can be a healthy corrective for built-in blind spots; and it makes analysis an ongoing, lively enterprise that is linked to the energizing effects of fieldwork" (p. 49).

The study's propositions helped to focus attention on certain data and to ignore other data. The propositions helped to organize the findings and to,"define alternative

explanations to be examined" (Yin, 2003, p. 104). Yin notes that data analysis consists of examining, categorizing, and recombining the evidence to address the study's propositions.

Individual interviews and focus groups underwent an analysis which followed the recommendations of Miller and Crabtree (1999). Paper copies of the transcribed data were produced from the files stored on N-Vivo, with each line numbered. These paper copies were formatted so that a 4" margin appeared on the right-hand side of the paper and were then read and reread. An editing organizing style was used to search for meaningful words and phrases (Crabtree & Miller, 1999). On the first reading, the purpose was to record the intent; the purpose of the second reading was to identify words or phrases that related to the study's propositions. Segments of the text that stood out or that were related to the study's propositions were sought out and key quotations were highlighted in the text. These segments were then sorted and organized into codes which were later reviewed for similarities and duplication. The number of codes were reduced, the transcripts reread and a list of the codes was developed and combined to form categories and themes. The researcher and one additional independent researcher were involved in the coding, analysis, and interpretation of data to promote the rigor of the study.

Participants were asked to verify that the codes and themes that emerged from the analysis accurately reflected their perspectives. This was accomplished in two steps: first,

students from all four levels and in both settings were provided with an overview of their

comments and the emerging themes and then asked to comment on whether or not they

believed that their perspectives had been accurately represented; second, students

involved in the focus group were provided with the emergent themes and asked to

comment on whether or not they believed that their perspectives had been accurately

represented. Each faculty member was also asked to comment on the accuracy of the

information that was obtained and the emerging themes. These themes and issues were

used to construct a narrative of student decision making for each source of data.

For the document review the template organizing style was utilized (Miller &

Crabtree, 1999) in order to facilitate the analysis of Key Documents. The template was

derived from pre-existing knowledge and a summary reading of the documents. This

template was applied to the documents with the intent of identifying meaningful data.

When the template was inadequate, modifications were made. Once no new revisions

were necessary, the documents were reexamined to ensure that no important data had

been omitted and the connection phase began involving the connecting of units of data

into an explanatory framework (Miller & Crabtree).

Limitations of the Study

As with any research, this study had several limitations. First, students and Tutors

were asked to recall decision making activities after the fact. This delay in assessing their

actions may have altered their ability to accurately describe their experiences and observations. Second, Clinical Tutors in the fourth year have a very different role from that of Tutors in Levels 1, 2 and 3. The role of the fourth year Clinical Tutor does not include direct contact with the student in the clinical setting; the role involves working with the student following the clinical experience on a weekly or biweekly basis and reflecting on the client situations that students encounter. The Tutor is also required to facilitate student decision making and to enhance his/her critical thinking skills. The alteration in the Tutor's role may have had a significant influence on the type of data obtained. Third, there were few participants in several of the Tutor focus groups; this lack of involvement may have been related to their interest in the topic or to their workload. The limited numbers may have influenced the scope and quality of data.

Finally, I was not only a researcher seeking answers to research questions; but I was also a faculty member. Students were assured that all data that they provided would be kept confidential; however, the fact that I had previous interactions with some of the students as their PBL or Clinical Tutor may have influenced their willingness to fully disclose their decision making activities and their feelings surrounding the topic. My position as a faculty member may also have influenced students who had not yet encountered me as a Tutor. These students may have been thinking that they needed to offer elaborate answers in case they had me as a Tutor at a future time in the programme and they might not have fully disclosed their feelings and their decision making activities.

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Yet, the benefits of being someone with insider knowledge is noted by Yin (1994) who notes that an insider who has knowledge provides a richer description of the case under investigation.

Issues of Trustworthiness

Rigor in qualitative research is demonstrated when the research paints an accurate picture of the participants' experiences (Streubert & Carpenter, 1999). In 1985, Lincoln and Guba described operational techniques intended to contribute to the rigor of qualitative research. Several terms were used to embody these techniques including: credibility, dependability, confirmability, and transferability. These terms were used instead of the concepts of "internal and external validity" which are often used in quantitative research.

Credibility

Credibility is described by Leininger (1985) as how believable the findings are, particularly for the informants. Lincoln and Guba (1985) suggested that credibility includes the activities which increase the likelihood that the findings will be credible. Young and Stewin (1988) suggest that one of the best ways to establish credibility is to ask the informants whether or not the findings reflect their true experiences. The term used by Lincoln and Guba (1985) to describe this activity is "member checks" (p. 314).

Asking the informants whether or not the researcher has captured the participants' experiences provides the researcher with the opportunity to validate the findings of the study.

In an attempt to ensure credibility, all study participants were engaged in member checks. At the end of all individual interviews students were provided with a summary of the information they had provided. Participants were encouraged to correct any statements that did not reflect what they had wanted to state; they were also encouraged to add information that would clarify points and to contact the researcher if they thought of any pertinent information following the interview. This same strategy was employed at the end of each focus group. This strategy was very effective in ensuring that the information that was gathered was a true representation of both faculty and student experiences.

Dependability

Dependability refers to how dependable the results are utilizing the following questions in order to establish research standards: Is the study consistent? Is the study consistent over time? Is the study consistent across researchers and methods? This criterion is similar to validity in quantitative research. Dependability can also be looked at as the quality control criteria because it asks whether the study has been conducted with care (Miles & Huberman, 1994). In order to determine dependability, an

independent reader must be able to determine what process was used during the research project and whether that process was dependable. To establish dependability a full description of this study and the methodology employed is provided. This description enables the reader to determine whether the study that was carried out, and the data that emerged, were dependable. In addition, all records have been kept pertaining to the study so that any aspect of the study can be reviewed by interested parties at any time.

Confirmability

This is a process criterion that requires that the direct evidence from the informants is available for another individual to follow. This process is often referred to as an "audit trail" and involves recording research activities over time so that the evidence is clear and the thoughts of the researcher (leading to the conclusions of the research) can be followed. Streubert and Carpenter (1999) suggest that this criterion can be problematic because it is not always certain that another researcher will agree with the conclusions reached by the original researcher.

To ensure confirmability in the current study, an audit trail was made by recording every step of the research process. All original transcripts, notes, and coding schemes are available on request. All audiotapes of the focus groups and individual interviews are retrievable. The research process is clearly described in a manner that can be followed by another researcher.

Transferability

Transferability refers to the degree to which study findings can be applied to other similar situations. Lincoln and Guba (1985) addressed the issue of transferability and noted that this concept is very different from the traditional concept of external validity. The qualitative researcher is not able to provide the reader with the traditional quantitative methods to demonstrate external validity; instead, 'thick rich descriptions' are used to provide the reader with the best possible picture of the situation under investigation. The researcher cannot determine if the findings are transferable as only readers of the study interested in the findings can determine if they are transferable to their settings (Lincoln & Guba). Lincoln and Guba state,

> "It is ... not the naturalist's task to provide an index of transferability; it is his or her responsibility to provide the data base that makes transferability judgment possible on the part of potential appliers" (p. 316).

To ensure that the reader has enough information to determine transferability, rich thick descriptions are provided of student decision making. In addition, a description of the context within which student decision making occurs is provided, thereby enabling the reader to determine the transferability of these findings to his/her context.

CHAPTER 5: FINDINGS

As a nurse educator in the clinical setting, I saw students making decisions and I questioned how they developed their decision making and what the factors were that influenced them. I had an idea of what I believed were significant influencing factors, but I was not prepared for what I was about to discover. The story told by students and Tutors revealed the complexity of student decision making. One might say that at the commencement of this study I saw student decision making in black and white and that now, having examined the findings, I could see it in colour.

This chapter will present findings that describe the complexity of student decision making and will discuss the findings as they relate to each of the research questions. As suggested by Yin (2003), data from all sources will converge in an attempt to describe the findings in a manner consistent with data triangulation and construct validity (Figure 4). I will describe the development of student decision making in students enrolled in a four year baccalaureate in nursing programme. I will begin with the first two research questions which address the types of decisions students make in the clinical and PBL settings and the factors that influence their decision making. I will describe decision making in students in Level 1 and will progress through to Level 4. Findings from the clinical setting will be discussed followed by findings from the PBL setting. At the end of each level discussion, the impact of the findings in relation to the developing
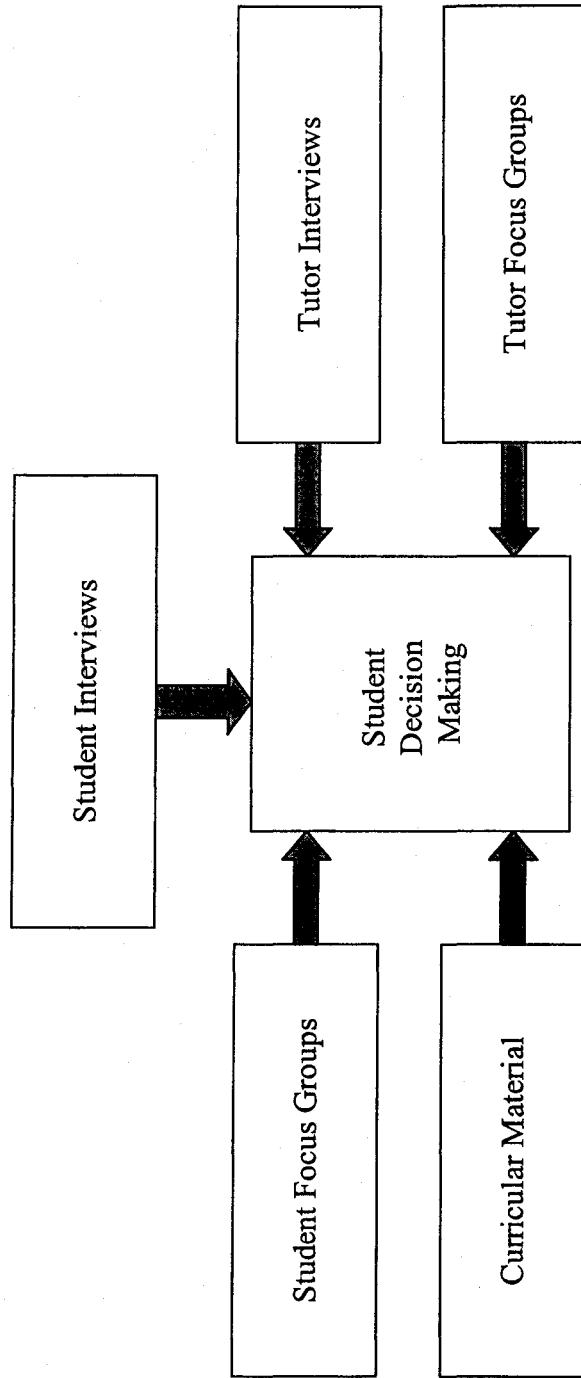
Figure 4. Convergence of evidence (adapted from Yin, 2003, p. 100).

conceptual framework will be discussed. The chapter will conclude by addressing the overall development of student decision making over the four years (the third research question).

As has been described by other authors (Boblin-Cummings, 1996; Boblin-Cummings et al., 1999), nurses experience difficulty expressing the decisions that they make during the provision of patient care which makes exploring nurse decision making a difficult endeavour. This current study revealed that students in all four levels of the baccalaureate in nursing programme also had difficulty identifying their patient care decisions. Decisions were often inferred from the intervention students selected when confronted with a patient situation.

Exemplars from both student and Tutor transcripts will be included to illustrate the findings.

Level 1

Participants

As described in the case parameters, students involved in this study were in the process of acquiring their first university degree and were enrolled full-time in the baccalaureate nursing programme. The participants were from both the clinical and PBL settings. Within the clinical setting, five students in Level 1 agreed to participate in an individual interview and to complete two clinical journals that would be used as the

stimuli for discussion. Within the PBL context, three students, different from those who participated in the clinical context component, volunteered to participate. Each was asked to complete one PBL journal and participate in an individual interview bringing the total of individual interviews to 8. In addition, 9 students participated in a focus group. In total, 17 Level 1 students participated in the study.

Level 1 participants ranged in age from 18 to 24 years of age. One student had a previous college diploma in fitness and lifestyle management. Students were asked to describe any previous health care provider experience that they might have had. The most frequent answers given were CPR and first aid courses and volunteer experience in the hospital. Two students indicated that they had no previous health care provider experience.

Two PBL Tutors and two Clinical Tutors from Level 1 participated in individual interviews for a total of 4 individual interviews. Two additional Tutors participated in a focus group. In total, six Tutors participated. All of the Tutors had achieved a minimum of a Masters degree. Five of the faculty members had taught in the programme for an average of 3 years and one had taught for approximately 10 years. Five faculty members were full-time faculty members; one was a part-time sessional faculty member.

The curricular focus for Level 1 was on the individual patient. The goals for this level stated that students were required to demonstrate their critical thinking in the assessment of the patient and to begin to plan care using their knowledge of theories

(nursing, population health, humanities, biological, psychological and/or social science

theories). They were also expected to begin to practice their decision making using

general rules, however, these rules were not described for the Tutor or the student in the

curricular materials. Students were also expected to be able to (at a beginning level)

assess, plan, implement and evaluate health teaching and begin to demonstrate their

competence in engaging in a professional dialogue with a patient. The remaining goals

cover a myriad of areas that focus on the development of the nursing role, including

knowledge of professional standards and guidelines, developing group skills,

demonstrating the ability to critique literature, and recognizing advocacy and political and

social action on behalf of the client. The level foci goals and course objectives in their

entirety can be found in Appendix 9.

Patient Care Decisions in Level 1

Students and faculty in Level 1 had difficulty describing the types of decisions

that were being made regarding patient care. Both thought that students did not make any

decisions about patient care because they were in the clinical lab and not providing "real"

patient care. One student noted that she did not think that she was making any significant

decisions because she was only in first year. However, when the students and faculty

described what was involved in the clinical lab and the required community project they

quickly realized that, indeed, patient care decisions were being made even though

students were often dealing with standardized patients (SPs).

Clinical Setting

Decisions described in the clinical setting included decisions related to patient

assessment, interventions, and resources.

Assessment Decisions

Assessment decisions are defined as decisions about what patient data to gather

and how to gather that data. The focus of Level 1, according to the curricular material,

was patient assessment and the development of assessment skills. It was, therefore, not

surprising that students spoke in great length about assessing the patient in the community

and the SP. For the first year students, assessment meant much more than simply

gathering cues; it involved attempting to incorporate prior learning, dealing with Tutor

expectations, and dealing with emotional responses to being placed in front of a patient.

It also involved decisions related to communication as students had to decide what

communication techniques to use to collect data. This focus on communication as part of

assessment was expected because it was one focus emphasized in the first year. Students

stated the following:

You have to be aware of everything you're doing. How you're sitting, your tone of voice, eye contact, all that stuff. And asking questions that we've never thought of before or maybe we feel funny asking them stuff that maybe they might not understand and we're trying to get information from them that we can't. It's hard to organize it. It's just weird. It's a situation we've never been in before, or I've never been in that kind of situation (Student B, clinical).

I'll just recognize it as being abnormal. I'll be like, ok so I palpated this, that's fine, great, moving on. And I won't really think about it, I won't really ask myself now wait a minute, is this really what it's supposed to be like or whatever. But I've started to be able to pick out the abnormal things and tell my Tutor but at the beginning I wasn't doing that. I was just going through the motions and the steps (Student C, clinical).

It's a decision and before you go in how you're going to be, behave I suppose, make sure you cover your bases like talk about confidentiality. You have to remember and decide to go through all the steps and listen and be very quiet, just use your active listening skills ... You have to decide if you're looking at something that doesn't fit the norms, you have to bring that to the attention of your Tutor or whatever, so you have to decide how to say it and that kind of stuff" (Student D, clinical).

You had to plan out what you were going to ask in a certain order (Student E, clinical).

We feel funny asking them (the standardized patients) stuff that maybe they might not understand from us and we're trying to get information from them that we can't. It's hard to organize it. It's just weird (Student B, clinical).

Tutors described the difficulty students had deciding what questions to ask, how

to ask them, and what to do with the information they received.

They (the students) practice their communication and interviewing with a standardized patient. I would say they don't use a lot of decision making skills, they're very focussed on using a tool where they would kind of come up with a tool and standardized questions and then they ask that. So I find one of my big roles is to really get them to listen to the response they're getting from the patient

and starting that whole thinking process rather than they ask the question, get an answer and ask the second question and not really listen (Tutor A, clinical).

Tutors suggested that in Level 1 a lot of time was spent on assessment and noted the following:

> I don't think they're able to do a lot of decision making if things aren't within the normal. They can probably identify that it's not normal, but don't maybe do a lot of thinking around why it's not normal or what that means (Tutor A, clinical).

> We don't really move into planning but we would move on from there looking at the data, identifying assumptions, testing those out, identifying the core concepts or issues that are relevant to the particular situation. We have to make some decisions about what are the priority concepts and what are the priority issues for that client (Tutor C, PBL).

Students described basic decisions during the patient assessment that might be overlooked as being insignificant, yet those decisions influenced patient care.

> Like with the cardiovascular assessment, you do have to put your hands under their shirt and some people are uncomfortable with that. You just make sure that they're ok and you ask them are you ok with this? So I would think that would probably be the only decision I made at that time (Student A, clinical).

Intervention Decisions

Intervention decisions are described by students as those decisions that determine what must be done for the patient to maintain or improve his/her current state of health. Intervention decisions were seldom mentioned by students, but when students discussed one of their major clinical assignments (a community project) they described how they

decided to collect the information in a way that reflected an obvious concern for the

patient and for his/her comfort and anonymity.

> I gave the surveys to the people, I let them know that everything was confidential and I told them that I would come back to their room in a couple of minutes with an envelope so they could put their surveys in there. So I wouldn't see what order they were going in so there would be no risk of me knowing exactly who did what survey. So they were a little more comfortable with that as well (Student A, clinical).

> I put them in the envelope and put on the envelope in case they didn't hear me say it or whatever, I said that they could return it to me by slipping it under my door if they wanted to do it that way because its more private and stuff like that, and I wasn't going to look at them and everything was completely anonymous, all that stuff, so they would feel comfortable giving out that information because it could be seen as personal (Student B, clinical).

Students described their frustration over limited opportunities to make decisions

based on the collected and interpreted patient data. When asked during the interview

what they might have suggested for the patient based on their knowledge, the students

described the following interventions: support groups; education related to exercise; diet;

coping strategies; and smoking cessation aids; and follow-up with the patient. By doing

so, they illustrated that they could make decisions related to interventions if given the

opportunity.

Resource Decisions

Resource decisions are described as decisions related to who or what the student

involves in the decision making process as well as when to access these resources. In an

effort to support and facilitate their decision making, students in Level 1 made decisions

regarding the best resources to use when facing a patient situation that required them to

engage in the decision making process. The primary resources were described as the

Tutor, textbooks, and assessment checklists. The dependence on these resources resulted

in decision making that was regimented and rule based.

> I usually just follow the order of the checklist because it's the easiest (Student F, clinical).

> The book says do this, this and this, so I've got to do this, this, and this (Student D, clinical).

Tutors also noted the students' reliance on these resources to make decisions.

> It's partly just their comfort, confidence level too that they're so focussed on this tool (Tutor A, clinical).

> Right now it's books in Level 1, so they're using their physical assessment book and their growth and development book (Tutor B, clinical).

PBL Setting

The types of decisions made in the PBL setting were very similar to the ones made

in the clinical setting.

Assessment Decisions

These decisions included how to assess a patient, what data to collect from the

patient, how to gather the data, and then (in some situations) how to use this information

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in an attempt to provide simulated patient care. The act of assessment was described as a group activity, with decisions made collaboratively around what data to gather and how to gather the data. Students frequently talked about assessment as a group activity that involved "brainstorming".

> Well we read the scenario over and then we brainstorm a whole bunch of different areas of her like what we think that we should touch on (Student G, PBL).

> When we first get the scenario we just look at it as a group and sometimes we make a list on the board. This time we made a list together and we looked at the different social, biological, and psychological different aspects like that, and then we made a list of the different questions we were going to ask and we went from there. Then we, as a group, decided which ones we thought we should look at first like what is smoking and what was in cigarettes is one of the things we looked at first just so we could get a base before we went on further about what Beth was about (Student H, PBL).

Intervention Decisions

Some students stated that they determined what patient interventions would be appropriate while others stated that they only focussed on the assessment and did not proceed to nursing interventions. When asked to describe why they chose to do this, students noted that the process was determined by their Tutor. Students who proceeded to nursing interventions made decisions related to determining the best intervention to provide for the patient based on the literature that they had gathered and their subsequent discussions with group members.

We decided to provide her with emotional support and smoking cessation programmes and different ways to quit smoking (Student H, PBL).

We decided that she (the patient) was the kind of patient or client that wanted information and she wanted information that was proven and something that she could rely on. So we decided that we would look into different programmes because she was interested in them. I'm actually doing research on different programmes and looking up the nurses' role right now on smoking cessation (Student I, PBL).

One Tutor provided an example of the decisions students made in the PBL setting related to interventions.

Today we did a summary on Mr. Shaw and the types of decisions they made about what types of interventions they decided to look at for Mr. Shaw. So what did they decide was necessary for Mr. Shaw? Referral to community resources, looking at issues of depression so the decision to provide Mr. Shaw with support so he didn't become more depressed, or looking at helping him develop stress coping mechanisms (Tutor D, PBL).

Students in the PBL context discussed the patient's values and beliefs in a broad sense, however, it was unclear how their understanding of the patient's perspective influenced their decision making.

We talked about what values and beliefs the patient had and how they could play into the role and the life of somebody in their health promotion and stuff, and you don't really see that until you have a patient who thinks differently than you do and who doesn't have the same goals (Student G, PBL).

Resource Decisions

In order to facilitate their decision making, students turned to their available resources and determined what the best resource was for the situation. They used

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textbooks and the Tutor as their primary resources while journal articles were only

mentioned sporadically.

> We just kind of all sat around a table and we had Beth Reid (the standardized patient) come in and then we just all fired questions at her. So we all brought our questions from Gordon's health (a textbook) because that's what we had been using as our basis for asking questions (Student I, PBL).

> We (faculty) encourage them (the students) to assess, analyze, and interpret the data using relevant sources like textbooks or journal articles so that they can identify normal from abnormal. They also use resource people, simulated patients and internet sources (Tutor C, PBL).

Factors Influencing Student Decision Making in Level 1

In Level 1, the factors that influenced student decision making appeared to be the

same in both the PBL and clinical settings, therefore they will be dealt with together. In

Level 1, these factors included: the internal factor of decision maker characteristics, and

the external factors of professional and personal relationships, nursing

education/curriculum, and environment.

Decision Maker Characteristics

Knowledge

In Level 1, knowledge was described by students as a factor that influenced their

decision making. They identified sources of knowledge including past experiences from

their personal lives, and prior content knowledge. Students also described how

knowledge from other courses in psychology, sociology, anatomy and physiology enabled

them to know more about the patient.

> It (anatomy and physiology) really helps with the clinical in doing the assessments and knowing where things are. It's an asset I think (Student D, clinical).

> I feel like I have a little bit more knowledge than some, maybe because when I was in high school I had to deal with a couple of situations, one of which was a friend who was suicidal and I helped to take care of my great uncle because my great aunt passed away and my grandmother, and he has Alzheimer's extremely bad. So he's bedridden, so I helped to do that with Home Care. So I've been exposed to that kind of situation before and I've had that kind of critical thinking (Student C, clinical).

> My psychology course that I'm taking right now, we're doing theories on personality and stuff and things like that and that's been pretty helpful (Student I, PBL).

> At this point, she's (the patient) in the pre-contemplation stage of change. So she needs help right now just to see why smoking is so bad for her because right now she sees it's sort of bad but she just wants to quit for her kids. So we wanted to provide her with more information so she'll see the reasons why she should quit and then she'll be more apt to move to the next stage. She'll be more keen to quit then and she'll see why it's going to help her as well (Student H, PBL).

Tutors in the clinical setting presented conflicting information.

> Level 1 students don't have the ability at this point to extrapolate necessarily from previous knowledge. I find that students compartmentalize. They learn something and they have their blinders on and they go on to their next course and it's almost like sometimes they don't realize that they need to carry it with them (Tutor B, clinical).

> If someone gives them a certain response they're afraid to ask more questions because they don't have enough knowledge about what they're going to tell them. Like say they say, well I have a history of diabetes. Well they don't know enough about diabetes to ask other questions, and so when the person tells them that they just stop right there (Tutor A, clinical).

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Fear

A second decision maker characteristic that influenced student decision making

was fear. Students in Level 1 described the fear they experienced when assessing the

standardized patient in the clinical setting.

> It's scary interviewing the standardized patient ... Usually I get so nervous
> beforehand and everything, and this time I was able to kind of put it out of my
> mind and just do it and go in and it wasn't so bad. I somehow got rid of my
> nervousness (Student B, clinical).

> Well I mean at first it was really difficult because you had all these eyes watching
> you and you didn't want to make any mistakes (Student A, clinical).

> I was so nervous with the standardized patient. The first one we did, it was vital
> signs and we had to do blood pressure and temperature and respiration rate. It
> was my first one so we had to dress up nice and have our badges and just going
> into the room and it was all quiet and the patient was looking at me and my Tutor
> was there marking and it was scary. It got better as it went on. The patients are
> really nice. They're not out to screw you over or anything. They're all really nice
> (Student F, clinical).

Students in the PBL setting were not immune from this emotional response to a

patient scenario.

> Sometimes I feel a bit overwhelmed by the patient scenario (Student I, PBL).

Professional and Personal Relationships

Professional relationships with Tutors and patients as well as personal

relationships with peers played key roles in student decision making.

Tutor

Students in the clinical setting described feeling the need to please the Tutor and to make decisions that resulted in action that was acceptable to the Tutor. The students talked about being very aware that they were being watched closely and that they were being evaluated. Their decisions were less a result of the cues they gathered from the standardized patient and more about what they believed was expected by the Tutor.

> Well you definitely want to make sure that you're doing everything by the book as you know the Tutor's watching you and critiquing absolutely everything that you do. So I guess it drives you to perform better because you don't want to look like a jerk (Student A, clinical).

> When you actually impress her and you make her see that you know what you're talking about, it helps to make you want to do that again and more (Student B, clinical).

> She (the Tutor) just kind of guided us along and kept us on the right track so we were able to make a decision fast and make sure we were all happy with the decision we made (Student F, clinical).

> Going into the standardized patient situation I'm confused as to what exactly the Tutor wants ... today we were doing respiratory assessment. I was getting confused as to what she really wanted us to do (Student F, clinical).

> I think that having a Tutor with expectations and knowing that she is evaluating limits decision making because sometimes she wants things done in a certain order so, like even that you can't make a decision on. So it just kind of ties your hands and makes you follow a guide. Like when we were doing the musculoskeletal assessment, she wanted everything done in a certain order when we were taking the vital signs, personally I don't think it would of mattered if you go in a different order. I know other nurses that it doesn't matter but she wanted it done in a specific order so we followed that (Student E, clinical).

We're going to go through the book and decide from there and then approach the Tutor with it because ultimately she's the one that's marking you and she's going to look and see what she wants to see. So if you're not performing properly you're not going to get the grade (Student A, clinical).

In the PBL setting students also described the Tutor as having an influence on

their decision making as they attempted to please the Tutor.

I find that I want to do something that's going to please the Tutor. Like I want to do well so if she's suggesting or something, like I want to make sure she approves it ... the Tutor is ultimately doing the marking so you do kind of have to please her." (Level 1 student focus group).

Tutors were also described by the students as resources and individuals who contributed

positively to their decision making. They suggested that Tutors were a source of

encouragement and that positive comments from them increased their level of confidence

in making decisions.

She reviews the anatomy and physiology with us. She brings in posters, shows pictures and stuff. She gets us to show her what we know just so we're prepared to do the standardized patients. She's really good with that. She's really helpful in just reinforcing everything and putting it all together (Student F, clinical).

We decide what we would like to do and then she just sort of confirms it for us. But all along she's (the Tutor) been sort of drilling it into us that when you get a patient you look at where they're at mentally, physically, and emotionally, and then their stage of life and then decide what to do from there (Student G, PBL).

Feedback from the Tutor is like a confidence booster or sometimes if you're not sure about what you're thinking, either they're going to tell you , well maybe you should think something else and kind of change your focus or tell you you're on the right track, keep going. I like that reinforcement (Student I, PBL).

Tutors also recognized that they had an influence on student decision making.

> I think my students are really influenced by what the Tutor brings to the situation as well, so my students really focussed on a lot of psychosocial stuff I have to say, and being a psych nurse I really tend to gravitate towards that as well (Tutor D, PBL).

Patient

In Level 1, the patients for whom the student provided care included the SP, the community, and the paper patient (PBL). Students in the PBL setting had consistent interaction with the patients through the paper problem. In contrast, students in the clinical setting had limited interaction with patients, including SPs. Students in both settings took the patient into consideration when possible and had empathy for them during interactions. This empathy played a role in their decision making.

> Well you can pick up on the cues of the person that you're assessing, whether or not they're comfortable. So you're just trying to make them as comfortable as possible (Student A, clinical).

> Well we look at what the patient is there for or what the most important thing that they should get out of this. Like it's education, then what do they feel they need to know and what do we feel that they should need to know. Then we just try and decipher what other factors affect it and what are minor parts. I guess we just try and focus on the patient and their needs (Student E, clinical).

> As I was preparing for the interview I wanted to gather as much information as I could to develop a teaching plan or develop some sort of plan that would be the best for her (Level 1 student focus group).

> I tried to be non-judgmental so that she (the patient) would share (Level 1 student focus group).

Students also demonstrated that they were sensitive to patient needs. The issue of confidentiality during the community project was another example of this.

> I know if it were me and I were asked questions about whether I had issues or concerns about sexuality, that I would be a little bit more afraid to answer them just because I'd feel like I would be judged. Or if I were to check off STDs as a concern just because I maybe wanted to learn about them, not necessarily that I have one, these people may feel that if they check it off it looks like they have them so that's why they want to learn about it. So, I felt that this way, with the survey, its not as invasive as a one-on-one interview (Student A, clinical).

A contrasting view was presented by a student in PBL.

> I wouldn't say that I'm worried about Beth Reid as a patient because I know she doesn't really exist. So I'm just kind of worried about what my responsibilities are to the class to bring to the next week or whatever we're doing that day (Student I, PBL).

Peers

Peers played an important role in helping students develop their decision making skills and were described as a source of knowledge, encouragement, and feedback. In the clinical and classroom settings, students described how their peers contributed to their decision making by sharing knowledge and ideas related to patient situations. It was during "brainstorming" opportunities that ideas were generated, data were collected, learning issues were identified, and patient and learning issues were prioritized.

> We just had kind of a brainstorming session, a bunch of ideas came out about what we could maybe do (to assess our community). One of the girls said that her friend had had this idea of just maybe writing down a big listing of health issues and having them just rate them because that would be a really good way to get a

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bunch of really easy to tabulate kind of data and we could really see what was important to the people in a very easy kind of quick way ... So we decided to do that and we came up with a whole bunch of issues that were really important and just sort of came up with a format of the survey, it was really fast (Student B, clinical).

Nursing Education/Curriculum

A third area influencing student decision making in Level 1 was the nursing education curriculum. In both the clinical and PBL settings, students were focussed on their learning needs and assessment.

Learning Needs. Learning needs had a tendency to direct what students decided to do for their patients. Students in this level were interested in learning about and developing their role as nurses and providing patient care. This was integrated with a focus on their own personal learning needs and the need to be successful in the course.

The learning plans kind of dictate what we're doing with the patient instead of dealing with the patient and then coming up with something with her ... when you get the patient you're deciding right off the bat what you want to do for the learning plan rather than finding out just about the case (Level 1 student focus group).

I think our learning needs are more important (than the patient scenario) at this point. Like we have this patient scenario and then we look and we see ok, well this is what Beth Reid is all about, what do we want to learn about Beth Reid (Student I, PBL).

Students in the PBL setting described frustration because they were in some instances, not given the opportunity to make decisions related to patient care. Because

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the curricular focus of this level was on assessment and not on intervention, students felt

that they were not being given the opportunity to fully explore and complete patient

scenarios.

> We get all this information about somebody and about certain things, and then we don't even give it closure by finding out what you would actually do (for the patient) (Level 1 student focus group).

> I don't think we will ever come together again as a group and discuss what will happen with Beth Reid (patient). Which in a way I think is unfortunate because it's obviously something that I think we would benefit from (Level 1 student focus group).

> I know first year 1G04 focuses on wellness so I know we're not to be getting into the treatment, however, because we've done this research maybe we could come up with something (Level 1 student focus group).

One Tutor stated:

> I think they're (the students) just so busy trying to learn the right way, that I wouldn't say that decision making is foremost on their minds. They're just trying to be successful in the course (Tutor B, clinical).

Environment

Two environmental factors described by students as important to their decision

making were feeling comfortable and feeling supported in their learning context.

Feeling comfortable. Students believed that being comfortable promoted the free

exchange of ideas, allowed ideas to be developed, and ultimately influenced their

decision making. They made it clear that they found that they were able to make

decisions in the clinical setting once they were comfortable with the process of having

both a SP and a Tutor providing them with feedback.

> Well I mean at first it was really difficult because you had all these eyes watching you and you didn't want to make any mistakes. But once that comfort level increase with the group, it really didn't matter and it was really nice (Student A, clinical).

> There is comfort from not actually having a real patient and having responsibilities because you're not going to harm anyone or cause any trouble (Student I, clinical).

> I think that if you are comfortable in the group you're going to talk about it a lot and problem solve together. If I wasn't comfortable then I probably would not be able to do that (Student G, PBL).

Tutors also recognized the need for students to feel comfortable in their setting.

> If they're comfortable in the group they make more decisions and they come together and work on decisions that relate to patient care (Tutor B, clinical).

Feeling supported. Students in both the PBL and clinical settings described the

importance of feeling supported in their decision making by both the Tutor and their

peers.

> The pat on the back helps me to be more confident in the decisions that I'm making about the patient, because obviously I really don't know what I'm talking about at this stage. It's not like you have any ideas so, I don't know if it just helps you to have input from other people to see what they think so you're like having a holistic view too. Positive reinforcement helps me to be more confident in decisions that I make about the patient. Because obviously I really don't know what I'm talking about at this stage. It's not like you have any ideas so, I don't know, it just helps you to have input from other people and to see what they think and to make sure you're being holistic (Student I, PBL).

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Summary of Level 1 Decision Making

The conceptual framework, as it has developed based on the findings from this level, is illustrated in Figure 5. In Figure 5, all new components have been underlined. In the following text, new components are illustrated in bold print.

Types of decisions:

- **Assessment**

- **Intervention**

- **Resource**

The influencing factors were described as:

Internal

- **Decision Maker Characteristics: Knowledge, Fear**

External

- **Professional Relationships: Tutor/Patient**

- **Personal Relationships: Peers**

- **Nursing Education/Curriculum: Learning Needs**

- **Environment: Feeling Comfortable, Feeling Supported**

• Assessment

• Problem identification

•Consideration of preferences and values

•Selection of interventions and how best to achieve these interventions

Clinical Setting

PBL Setting

Types of Decisions:
Assessment
Intervention
Resource

Student
Decision
Making

Time

Internal Influencing Factors

Decision Maker
Characteristics: Knowledge,
Fear

External Influencing Factors

Professional/Personal Relationships:
Tutor/Patient/Peers

Nursing Education/Curriculum:
Learning Needs

Environment: Feeling
Comfortable/Supported

Figure 5. Level 1 conceptual framework.

Level 2

Participants

From Level 2, three clinical students agreed to participate in an individual

interview, while in the PBL setting two students agreed to an individual interview. In

addition, four students participated in a focus group. In total, nine Level 2 students

participated in the study. Students were 19 or 20 years of age, were enrolled full-time in

the School of Nursing, and were taking their first university degree. Students were asked

to describe any previous health care provider experience that they might have had. Six of

the students had volunteered in the hospital setting while two students had no previous

health care experience and one had been a worker with a special needs child.

Three faculty members participated in an individual interview, two from the

clinical setting and one from PBL. Four different PBL faculty members participated in

the focus group, resulting in a total of seven who were involved in this study. Five of the

participants were full-time faculty members, one was part-time and the other a clinical

faculty member, meaning that she worked full-time at a hospital and also taught a group

of clinical students for the university. Their experience as educators ranged from 2 to 23

years. All of the faculty members had taught in Level 2 in the past. All of the full and

part-time faculty members had also taught in other courses in the School of Nursing.

The curricular focus for Level 2 PBL and clinical was on the individual patient,

family, and community. Course objectives for the Level 2 clinical course describe a

primary focus on interpreting patient assessment data, and a secondary focus on nursing diagnosis, intervention, and evaluation. Students were expected to incorporate nursing, biological, behavioural, and social science theory as well as the McMaster model into their assessments and interpretations of collected data. Students were also required to demonstrate their clinical decision making skills during assessment of individuals and families, and to be able to identify and integrate both internal and external factors influencing the patient's health status.

A review of the course objectives for Level 2 PBL reveals a focus on student decision making, however, the decision making that is focussed on is related more to group process and less on patient care. In this level, students were required to demonstrate their knowledge of four key areas in order to pass the course. These areas included: the context of health and illness; concepts and theories from nursing and biological, behavioural and social sciences; teaching and learning principles; and problem-based learning. Appendix 10 provides a comprehensive overview of the foci, goals, and course objectives for Level 2.

Patient Care Decisions in Level 2

While Level 2 students continued to make assessment, intervention, and resource decisions, they also added another significant and increasingly distinct component that is referred to as communication decisions.

Clinical Setting

Assessment Decisions

Students in Level 2 had not developed any degree of expertise in determining

what data were most important to the patient and nursing care. For example, one student

who had gathered a great deal of data from a palliative patient determined that her first

priority was to get the patient a change of clothing, (although there were many more

urgent issues related to pain) and spent the next two hours attempting to call the family to

bring fresh garments. Tutors also confirmed that students had difficulty determining what

data were pertinent.

> The decisions that students make are around what to report to a staff member and
> what's important. So for example, an elevated temperature. More difficult
> scenarios are around transfer of patient and looking at an environment that is safe .
> I see decision making around looking at what is abnormal and normal.
> Sometimes they have difficulty around determining what are appropriate nursing
> diagnoses (Tutor E, clinical).

Intervention Decisions

Students in Level 2 were able to describe their intervention decisions related to

patient care.

> So she (the patient) had an ileostomy, so she really wasn't digesting or absorbing
> anything anymore because the cancer had gone all over the place. So I did ostomy
> care for her for her comfort basically, and I also measured input and output
> because that was a big thing because she wasn't drinking and also to avoid it
> becoming like edema. We wanted to make sure she was still urinating properly
> (Student L, clinical).

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When the client complained of pain then I just informed the other RN who was in charge of him and let her know that he as in pain and she would I guess give the medication whenever appropriate (Student K, clinical).

One noted difference in Level 2 was the students' utilization of their communication skills as a patient intervention as well as a data collection strategy. This change is evident in the communication decisions described below.

Resource Decisions

The types of resources most frequently used in the clinical setting were texts, other health care professionals, other courses, and the Tutor. Students made decisions regarding what the best resource would be to help them interpret assessment data and the perceived patient problem.

I think I asked them (Nursing Staff) where to look and so they kind of led me and guided me in that (Student K, clinical).

I would research the night before with my textbooks basically that I had at home because I didn't want to come to the library, and afterwards if there are still learning gaps that I have I go to the library and read journals or more extensive books to help me understand it (the patient situation) better. But sometimes they're (journals) just too out there or too, too specific. I don't know. It's good when you can find a really good article but finding them is a challenge I guess. I use a lot of the books ... or the books at OVID are really good as well as the journals at OVID because those seem to be really nursing focussed and useable (Student L, clinical).

I talked to the clinical nurse specialist for palliative care so that was really helpful. Like she gave me all those ideas about what the palliative care team is. So it's really like using the resources at the hospital and they're really helpful (Student L, clinical).

I didn't know that he had deep vein thrombosis before but after mostly the med-surg textbook is where I got most of my information from (Student K, clinical).

They have some knowledge and resources they go to, so even if it's at least knowing that there are certain procedures they can look up or a drug first and then they go and ask about it. Or if they have been introduced to certain people on the unit, for example, we have an excellent therapist who is very good with students. So students used her as a resource (Tutor F, clinical).

We didn't talk about bringing into resources because now they know how to use Medi-Tech. It's new. And how to use the Web library on the unit. So that will really help them with decision-making too and retrieving data because we just did that yesterday at in-service (Tutor F, clinical).

Communication Decisions

In Level 2, student decisions related to communication became much more distinct. Communication decisions at this level included: what to report to the nurse/Tutor; when to report findings; and to whom to report the findings. Students often shared collected data gathered from the patient assessment with others who could help them interpret the data and determine the best course of action. Students described how they used their communication skills when dealing with various patient issues.

When the client complained of pain then I just informed the RN who was in charge of him and let her know that he was in pain and she would I guess give the medication whenever appropriate (Student K, clinical).

When I was presented with the patient I introduced myself. I asked him if he had any problems. That's when he informed me that he had had hallucinations during the night. He was clearly agitated about it. So I basically spent a bit of time just talking with him trying to get him to describe his hallucinations. I asked him what

he thought caused them. I asked him how he presently felt and he did calm down
... So after I got him calmed down I told him that I would talk to his doctor about
it. So he felt comfortable with that. So I went on with my daily routine like
taking his vitals, just talking to him about his pain or any anxiety he was feeling
(Student J, clinical).

As students I find we can't do a lot of care yet because we don't have the skills
whereas talking with them and being somebody they can just open up to its
something a lot of patients appreciate. So I find that is one of the bigger roles I
take on as a student (Student J, clinical).

So she (the patient in isolation) really appreciated me being able to come in and
just talk with her. I don't know, I think that students only have one patient per
day so we have 6 or 8 hours just to spend with them. I could tell she really
appreciated that so I felt I was able to openly communicate better with her and she
really appreciated me and I felt there was a better connection there (Student K,
clinical).

Just talking a lot about how she's dealing with her diagnosis, she knew she was
going to die and that was really difficult for me to have to talk to her about it
(Student L, clinical).

PBL Setting

The decisions made in the PBL setting mirrored those made in the clinical setting.

Although students dealt with patient scenarios on paper they were making obvious

decisions related to assessment, intervention, and resources.

Assessment Decisions

Students in this level were beginning to gather data using a framework or theory

as their guide, however, they continued to need support when deciding what information

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was relevant and what was extraneous. Students were supported in this process by both

the Tutor and other group members.

> We (the group) have to decide how to treat the patient, how to help them, what their needs are. Even how to communicate with them like for someone who has cancer, how you're going to talk to them and that sort of thing (Student M, PBL).

> I think because other people have different opinions about what they think would be more important and stuff like that, so you kind of have to take everyone's opinion and then work together to come up with what we know for sure she needs and stuff like that. It's kind of hard when people have different, conflicting opinions but you've got to listen to everyone and then take it from there and see what you're actually going to implement (Student M, PBL).

> I know with the Lalonde scenario that we hadn't done a care plan. So my question to them (the students) was, how can we summarize this information in a meaningful way. And they thought that was a good questions because then they started looking at what they had learned, what they really understood and then they had to decide how to use this information with a client (Tutor G, PBL).

> The decisions that I see second year students making in the classroom that relate directly to patient care I guess is really focussed around the clinical scenarios that we use and it begins with questions about, ok so what's the problem here, what's the topic area, what do I know about that that might be helpful, and what are the gaps - my information and knowledge base. And then I see them construct like word maps in terms of the possibilities that might be wrong with the patient. And once they've got the information I guess there's a second level of decision making that I see them using which is where they prioritize their information, classify it, if you will, in terms of likely to be useful, not at all useful, interesting but not relevant, and the determining ok, because by that point they've got chart data that we're presenting to them and then the next set of decisions are based on this new information. Now what's relevant and what am I going to do to fill in - are there any new gaps, what am I going to do to fill in those new gaps? If there are no gaps, then its ok, so what are we going to do for this patient (Tutor I, PBL).

Intervention Decisions

Whereas students were not able to identify their intervention decisions when asked to do so, the existence of these decisions became evident during later discussions with them. Intervention decisions made at this level reflected a focus on the family and on health promotion (curricular foci). In most situations, students were able to describe their interventions.

> We decided for the long-term what she needed, like what kinds of things a nurse would implement. She would need some support with the kids, help looking after the kids after she had the mastectomy. Even before when she'd have to go to the appointments and what not. They were self employed so they would need some financial assistance with medications and things like that. She'd need support from family, neighbours in the area. She's a very independent person, she didn't like going to other people to ask for help but we said she's probably going to need the nurse to encourage her to kind of go out and seek that help that she needs (Student M, PBL).

> We (the group) have to decide how to treat the patient, the family, how to help them, what their needs are. Even how to communicate with them. Like for someone with cancer, how you're going to talk to them and that sort of thing (Student M, PBL).

> We (the group) encouraged her to accept her neighbour's offer of help around the farm to decrease her anxiety about her responsibilities. And we also encouraged her to share her current problem with her family to increase support. We also researched the sort of emotional support services in the area so that she could go to them for additional support. Those were the main problems that we wanted to help her through (Student N, PBL).

However, in one situation the students stated that the SP was the reason that they could not decide what to do. They believed that the SP was not adequately prepared and did not provide them with the necessary data to determine a course of action.

Resource Decisions

In Level 2, students continued to make decisions regarding what resources to use as well as which ones would provide the most information to support their decision making.

> They have to decide what tool to use to assess or to take data. Like deciding on what framework to use in terms of health history or what specific function patterns or something that might guide them when they're hypothesizing. So what they do is they decide to do the hypothesis first in terms of issues that may be of concern in the case, and then they determine the questions or organize the questions according to those issues. From there they define what quality of information they want to get and the resources they're going to use, say journals, books, audio-visual (Level 2 Tutor focus group, PBL).

Tutors recognized the students' continued use of resources to support their care decisions.

> Students have to decide on what framework to use in terms of a health history or what specific function patterns that might guide them when they're hypothesizing. They decide what issues may be of concern for the patient and then they determine the questions or organize the questions according to those issues. From there they define what quality of information they want to use and the resources they're going to use like journals, books, audiovisual. So my students use a lot of the community agencies. They use a lot of experts as well. One of my students went to look for the clinical educator in the cardiology department, so they are aware of different resources. It helps them to decide how they are going to be approaching the issue (Level 2 Tutor focus group, PBL).

> I think that I've certainly seen that they're very good at resource collection in Level 2 in order to make decisions. But again I still think they struggle with bringing it back to the clinical and to individualize it to their patient (Tutor J, PBL).

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Factors Influencing Student Decision Making in Level 2

Once again, factors influencing decision making in the two settings included internal factors including decision maker characteristics and external factors including ; professional and personal relationships, and nursing education/curriculum. Unlike Level 1, environment was not identified as an external influencing factor.

Decision Maker Characteristics

The clinical experience for Level 2 students was within either an acute care, medical-surgical or pediatric setting. The entrance into the acute care clinical setting influenced students in a variety of ways. Students were attempting to provide care to patients using knowledge and skills taught to them in both the clinical laboratory setting and the classroom. Students described a lack of confidence in their decision making abilities, and often responded to decision making in patient situations with fear.

Knowledge

Level 2 students were beginning to apply their knowledge to patient situations in both the clinical and PBL settings in an attempt to make sound patient care decisions. Students recognized the need for a sound knowledge base and identified their level of knowledge of nursing, pathophysiology, theories, other courses, and resources as being influential in their decision making.

PBL definitely helps me assess the situation. I'm taking psychology now so I'm learning about how people think and how they can personally analyze situations. Other things like anatomy and physiology last year, it let's me know more about what's happening inside the patient. Everything kind of comes together. One of my problems is being able to link all that information (Student J, clinical).

The more knowledge about the illness, the treatments, the available options are obviously very important to decision making. And that's what we do every week, we come up with issues that are potential issues and then we go and research them and find out about them because we can't make any kind of judgments without knowing anything about it, or what would be the best kind of care because we don't know. So we would go and research it and come back. You definitely have to know a lot about every aspect of the problem before you can make decision about the patient (Student N, PBL).

Tutors recognized that students were using their knowledge of theory to inform their decision making.

It's hard to know to what extent theories and concepts influence decision making but I do believe that some students have a good enough understanding of some theories and concepts, and they can articulate it and describe it and they'll say, well I believe this intervention would work because when I read the theory of coping by Lazarus, it was this helps better with that and this family has this kind of dynamic going on. I remember from a family course I took in sociology. I hear these comments made in Tutorial so I just wanted to say that I do believe that theory and concepts influence decision making to some extent (Level 2 Tutor focus group).

Fear

Students described their fear and apprehension in response to a variety of situations related to the patient in the clinical setting, but not in the PBL setting.

It was a nurse that just saw me as a student who would be able to go and sit outside with him (the patient) while he had a cigarette because she was busy. I

said sure, but then when I walked in the room I thought, oh God, what have I got myself into. The guy is shaking like a leaf and swearing and cursing. I don't know if I had him as a patient if I'd be able to develop a level of trust with him because he wasn't thinking clearly. He was agitated at me the second I walked in the room and I was the one that was going to take him outside for a cigarette (Student J, clinical).

Clinical Tutors also recognized the fear felt by students in the clinical setting stating:

They are extremely anxious about making mistakes and you see that in their reflections and they don't want to appear to ask stupid questions (Tutor E, clinical).

I think they (the students) all come anticipating a lot more fear than actually happens because they talked about it with other students. I had them do an exercise on the first day going into the clinical area and they all talked in their pre-clinical about the fear, how sick people were, that they might hurt them, that people wouldn't like them, they'd be rejected. Like a lot of that anxiety ... They (the students) are all afraid of making mistakes, and I say, well what's a mistake? None of us are perfect and learning is all our life so that we have these hills. I always use that concept, hills and valleys. One of the students said, well I should be perfect. I said, what's perfection? It's all contextual and is that realistic (Tutor F, clinical)?

Level of Confidence

Students entering the acute care clinical setting described a lack of confidence in their skills and their overall ability to cope in a variety of patient situations. This lack of confidence sometimes left the student feeling intimidated and frightened. Students responded by seeking help from a variety of sources.

As students I find we can't do a lot of care yet because we don't have the skills whereas talking with them and being someone they can just open up to is something a lot of patients appreciate (Student J, clinical).

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As a second year nurse I was intimidated by this guy. He had a deep vein thrombosis so he had pain. When I touched his leg to lift it up he vocalized his pain. And so it was something that had to be done even though I felt bad, I thought, oh no, I don't want to do this because he's in pain, but it's something that has to be done. I took a step back and left the room and went and got someone else to help me because I didn't want to do it on my own (Student K, clinical).

It's my first clinical experience ever so I don't know if things are right I need reinforcement. You can always call her (the Tutor) and ask her, am I doing this right? Because you want to know that you're doing it right. Always ask the question, not just go on what you think. At this point I need a lot of reinforcement (Student L, clinical).

In contrast, one student's comments reflected an overconfidence in her abilities.

She expressed that she was "already bored with doing bed baths". This appeared to be

the result of either a tremendous amount of confidence in her abilities or her lack of

understanding of the usefulness of a bed bath for a variety of purposes including

assessment. Some of this overconfidence in students appeared in the PBL setting as well.

I find it really different being in PBL and being in clinical because when I'm in clinical I make my decisions with my patient. There are certain guidelines that you follow but when I take care of them I'm on medical and it's geriatric so they're older people I pretty much take care of them as much like feed them, wash them, give them their medications. And my Tutor isn't as much of a presence. Like in the beginning we followed a nurse around, we learned what to do, and then they all step back and basically you're on your own. You sign your sheets. You do your initial assessment. And coming to PBL it's more like following someone again and never getting the apron strings cut. So it's really different doing clinical and PBL because after being independent and then coming back and being dependent, it's hard (Level 2 student focus group).

Professional and Personal Relationships

In Level 2, students described the influence of professional and personal relationships on decision making. These relationships included, the Tutor, patient, and peers. New in Level 2 was the professional relationship with the Nursing Staff as a factor influencing decision making.

Tutor

It is evident from the data that students in the second year were influenced greatly by the Tutor in both the clinical and PBL settings. Tutors were described as guides who ensured that the students were meeting the course objectives and were providing safe care in the clinical setting. Tutors played an important role in helping students to look past the obvious and to begin to develop their decision making skills when exploring a client situation in either the PBL or clinical setting.

> In that case my Tutor is also very good about overseeing what we're doing so I'd ask her, and if she wasn't sure then I would go to the nurse, but I try to avoid them (the nurses) (Student J, clinical).

> She likes to oversee us do our wound care to make sure we're practising sterile technique. She is also good at looking at different patients on the floor and if there's an interesting case she'll tell us about it (Student J, clinical).

> She (the Tutor) would always monitor if we were doing it (the skill) properly ... I need reinforcement. So for the clinical she's always there for reinforcement and that's really good. And you can always call her and ask her if I am doing this right because you want to know that you're doing it right (Student L, clinical).

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The Tutor can be very directive to one area. She (the Tutor) was the one that came up with most new ideas about the situation I would say (Student N, PBL).

She (the Tutor) tried to bring out things that we really hadn't addressed yet. Like other things to research (Level 2 student focus group).

I think she wanted us to focus more too on his concussion and we were really focussed on his ACL injury. I think that was maybe the area she was trying to push us towards without flat out saying, ok you did not do anything on the head concussion (Level 2 student focus group).

The Tutor totally influences our decision making for Ryan (clinical scenario). Some of the nursing diagnoses that came up last week we wouldn't have thought of them if it wasn't for the Tutor. Some of them (issues) we didn't think were relevant but she said they were so we believed her because she has more experience than we do. So we listen and say yes. But I can honestly say that sometimes a lot of it I don't think it's relevant but we're only in Level 2 (Level 2 student focus group).

Overall, the students described a reliance on the Tutor during decision making because of their perceived and/or actual lack of knowledge and/or experience. There was an underlying tone of frustration expressed by some students when they wanted to be independent in their decision making, but due to their lack of knowledge and/or experience they turned to the Tutor for assistance. The recognition that they needed the Tutor's guidance would suggest that the Tutor was still an integral part of the development of decision making skills at this level. Without the support of the Tutor it was evident that students would have had a narrower perspective on patient situations which could be linked to their limited knowledge and experience.

The Tutors recognized that their role was not to make decisions for the students,

but to facilitate critical thinking and decision making.

> I think sometimes what I've had to do is keep quiet and stay out of the road and let them get on with it because it's so easy to want to fix it quickly, or whatever, but they're so fast themselves. In fact, if anything, when it got to decision making I'd pull them back and when I felt they zipped right through this pathophysiology I did plant a seed of, so what might this gentleman's concern be since he got ill in the United States and they got it right away, well he's probably got a horrendous bill coming ... I would ask them well is that a guess or you have facts? And where might he get help for that? ... I maybe influence on expanding their scope, the areas of interest that they're going to get information on. I have also pulled out the course objectives though (Tutor I, PBL).

> One Tutor noted that her role involved encouraging the students to see teaching opportunities with patients and to help the students to see that they, even as students, had information to share (Tutor E, clinical).

Another Tutor stated:

> At times I've said to them, I'm not going to obviously let you do something that's going to be harmful ... I'm not going to let you learn that way that you'll hurt somebody (Tutor F, clinical).

Patient

Analysis of the data revealed that the patient influenced student decision making

in the clinical setting, but was less of a factor in the PBL setting, where an artificial paper

problem was utilized. Students and Tutors both described situations in which the patient

influenced student decision making in the clinical setting.

> So I think she was kind of embarrassed about that just because she wanted to be able to wash herself but she couldn't really move that well. That was another

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thing. I just felt I had to build up a fairly strong trust with her before I even went ahead and tried to do much for her because I didn't want to put her in an awkward position (Student J, clinical).

He'd been in the hospital for awhile. I wanted to get him more motivated so just kind of coaxed him on and the first 5 minutes he didn't want to do anything so I left him and then went back like an hour later and then he said ok. So I washed and helped him (Student K, clinical).

I don't see them (the students) being pushy around the patient. Like they go with the flow of the patient's wishes (Tutor F, clinical).

The patient themselves (influences student decision making) if they are in stress, I think this creates an anxious experience. So if they're (the patients) able to respond to initial conversation then the student feels more relaxed and then they explore their health status and have the time to do that (Tutor E, clinical).

The patient was often viewed by the student as another resource as he/she provided the student with information concerning past procedures and how to carry out his/her own care.

Nursing Staff

This was the first time that students were interacting in a clinical setting with staff nurses, who influenced student decision making through role-modeling and through their responses to the student in the clinical setting.

I found that I was more independent when the Nursing Staff weren't supportive. With those kind of nurses I just try to avoid them because I feel they are kind of negative towards students in general (Student J, clinical).

There is one nurse, and we're learning about sterile technique and putting on proper dressings, what not, and she's kind of like oh well, it doesn't really need a

cleaning, it was just done a little while ago so it should be ok. It wasn't a severe wound or anything. I just explained to her that it would benefit my learning and I thought it was essential to do, I had the time, so I went ahead and did it. She understood, she just felt that if she was taking care of that patient herself she probably wouldn't have the time to do sterile technique for a wound that in her eyes was a minor thing to worry about (Student J, clinical).

Well, they (the students) work closely with their buddy nurse even when I'm there and they have their own patient because they have to communicate what they're doing, when they're doing it, and why they're doing it, and keep them fully informed …. they really do listen carefully to what the nurse has to say. If they have difficulties in some area there's open communication too that the student can get back to the RN for help. So I'd say the nurse is pretty crucial (Tutor F, clinical).

One Tutor noted that because the students were extremely anxious about making

mistakes and did not want to appear to be asking stupid questions, they would often speak

to the Tutor rather than to the Nursing Staff.

Another Tutor in the PBL setting recognized the influence of the Nursing Staff on

the students.

The students say that the nurses tell them, "don't do what I'm doing" you have to do just what you learned in school. And they say like, so what do I know is right? And they always say, the nurses do this and that, and they say this is a shortcut so don't do that, just don't forget what I just did and keep doing what I did (Level 2 Tutor focus group).

Peers

Data revealed that during the second year, students relied heavily on their peers to

facilitate and support their developing decision making skills. Both Tutors and students

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in the clinical and PBL setting described the influence of peers on student decision

making. Students engaged in discussion with their peers in order to determine an

appropriate nursing action when faced with an unfamiliar client situation.

> We've (the students) just been going to our group members and kind of going in a pair somewhere if we didn't know how to do something and then you could kind of work it out together because both of you have different ideas on what's really, really important. Or you might know more than the other. So we've been doing that kind of team thing (Student L, clinical).

> I do know some of my peers do interact with one another. They like to get people to help them out, to oversee them (Student J, clinical).

> It's definitely the people in it (the group). I mean everybody has certain strengths and things that they want to focus on. Basically as a group we would come up with a bunch of issues and then we'd sort of narrow it down because there were ten of us, and then we could go and do research on those ten ... as a group we'd decide which ones were the most important ones (Student N, PBL).

Tutors also described how they believed peers influenced the decision making of students

in both the clinical and PBL settings.

> We came up with maybe six, or seven critical problems that the person needed to have help with, and they said, wow as a group we sure are able to generate a lot more issues than we would if we were on the clinical unit. If we were doing this in the clinical unit we'd be lucky to think of two. And they were kind of commenting to one another about how they can't see the scope yet, and maybe it's because they're only there eight hours a day (Level 2 Tutor focus group).

> The students benefit from the shared ideas that others have ... decisions will shift based on group input or be confirmed, decisions about what to focus on, what to drop, where to direct things (Tutor I, PBL).

> I see them assisting each other and sometimes one will ask to observe the other's dressing change so I see them making suggestions at that point around skills. I think they do talk over either how they're going to turn the patient or how they're

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going to perfect some skill ... I think post conference is an ideal opportunity for them to discuss what went well in their day or what kinds of complexities they've been faced with. And often other students do ask questions and what to do and how that goes (Tutor E, clinical).

Nursing Education/Curriculum

In the clinical setting students did not mention the course objectives for this level

or imply that they had any influence on their decision making. However, they sometimes

referred to the influence of other courses on their knowledge level, particularly the PBL

course and the positive influence it had had on their understanding of the issues in the

clinical setting.

> I think with clinical, like in PBL I'm thinking more clinically. Like I'm thinking would I actually use this on the floor. I'm thinking more about charting and the medical aspects of ... and last year I was more like broad like big issues, holistic nursing, stuff like that. I think clinical is making it more focussed (Level 2 student focus group).

> My Tutor really she empathized with one difficult patient I had in clinical to relate different things like her infection to some medications she's on, to the symptoms she's experiencing, to why she's confused. So in clinical I had to relate all that into research, like all those things, so it helped me in PBL a little bit too to think if the patient has this symptom then that might relate to other things. So that was helpful too (Level 2 student focus group).

> Basically we've learned (in PBL) how to analyze a situation and look at the patient holistically. PBL yeah definitely helps me assess the situation. I'm taking psychology now so I'm learning about how people think and how they can personally analyze situations. Other things like anatomy and physiology last year, it let's me know more about what's happening inside of them. Pharmacology of their medications. Everything kind of comes together. One of my problems is being able to link all that information. That's one of my personal goals is to get

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better at that. I'd say every course has something to do with it (Student J, clinical).

Summary of Level 2 Decision Making

The Level 2 conceptual framework has been further developed based on the findings from this level (Figure 6). In Figure 6, those components that are new have been underlined. In the following text, new components are illustrated in bold print.

Types of decisions:

- Assessment

- Intervention

- Resource

- **Communication**

The influencing factors were described as:

Internal

- Decision Maker Characteristics: Knowledge, Fear, **Level of Confidence**

External

- Professional Relationships: Tutor, Patient, **Nursing Staff**

- Personal Relationships: Peers

- Nursing Education/Curriculum
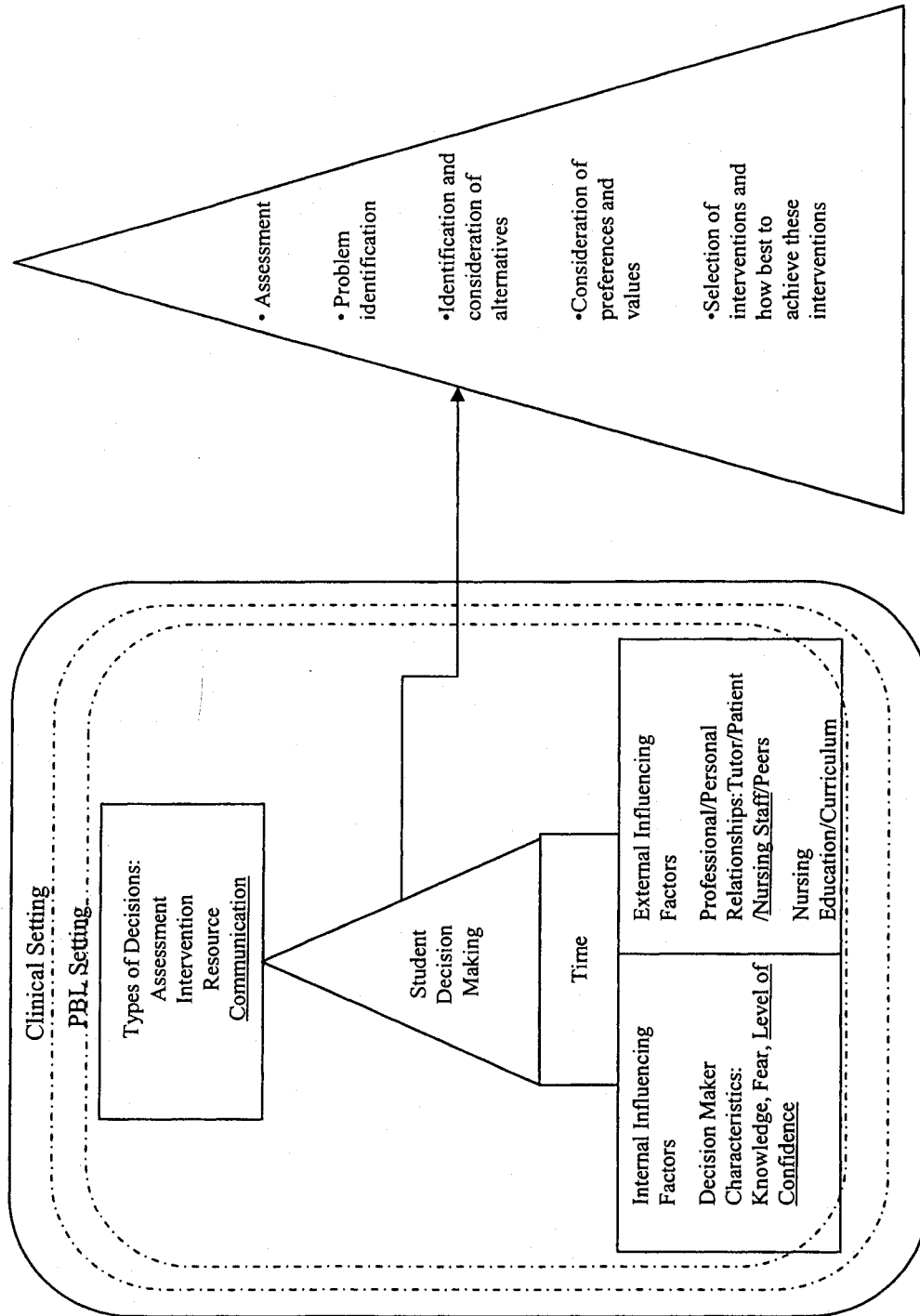
Figure 6. Level 2 conceptual framework.

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Level 3

Participants

In Level 3, five clinical and three PBL students agreed to participate in individual interviews. In addition, three students participated in a focus group, for a total of 11 students. Students from this level were between the ages of 20 and 26 years old. One student had previous experience as a dental assistant, two students worked as health care aides in long term care facilities, five had volunteer experience in health care settings and two had no past experience in health care.

Two Tutors from Level 3 clinical and two from Level 3 PBL participated in individual interviews. Two additional Tutors participated in a focus group, bringing the total to 6 Tutors who participated in the study at this level.

In Level 3 clinical placements include a medical surgical placement working with either adult or pediatric patients during one semester and then in a varied context setting (anything other than adult/pediatric medical/surgical) during another semester. A review of the Level 3 foci and the course objectives for both the clinical and PBL settings revealed that the focus for this year was on interventions and evaluation. In the clinical setting students are encouraged to continue to refine their assessment skills in order to provide appropriate patient care and to base their care on various concepts and theories. Students are encouraged to make nursing practice decisions with assistance, using prior

knowledge of biological, physical, verbal, emotional, spiritual and cultural mechanisms. Students are expected to evaluate their interventions on an ongoing basis.

The course objectives for Level 3 PBL ask students to demonstrate their critical thinking in their application of knowledge, concepts and theories. Students must be able to define patient problems, to plan care and to evaluate outcomes of their patient interventions. In this level, students are expected to develop care plans that integrate both scientific and humanistic caring concepts and that emphasize both independent and interdependent nursing actions. Students are also required to explore the concepts of clinical judgment and clinical decision making and to apply these concepts to the patient situations. A full overview of the foci, goals and course objectives for Level 3 can be found in Appendix 11.

Patient Care Decisions in Level 3

The types of decisions made in this level ranged from issues surrounding basic care to decisions in more complex patient situations. As in previous levels, students in Level 3 made decisions related to specific patient care interventions, resources, and communication. Although they continued to make decisions regarding resources and communication, their intervention decisions became more apparent. Introduced in Level 3 were the decisions to act on collected patient information (action decisions) and decisions to question information.

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Clinical Setting

Assessment Decisions

Unlike Levels 1 and 2, students and Tutors in Level 3 clinical did not describe their decisions related to patient assessment.

Intervention Decisions

In this level students began to describe their decisions about interventions as they encountered more complex patient situations. Some of these decisions were made independently and others were made in collaboration with a Tutor or a member of the Nursing Staff.

> My patient became upset during a diaper change and her oxygen sats decreased to less than 85% and she was tachycardic and had increased respirations. I suctioned her ++ for a moderate amount of mucous with good effect. With the suctioning and the change in position, the oxygen sats returned to more than 95%. I monitored the patient's temp and heart rate for tachycardia, I tried to settle her and I informed the RN and the resident (Student O, clinical).

> Unlike the previous day, the patient was active and alert. This created a challenge for me when I tried to administer the Ventolin treatment. The patient would become agitated and it would compromise his breathing abilities. I involved the parents to assist with therapy. The parents engaged the child in play and with the child distracted Ventolin therapy was continued without incident (Student P, clinical).

> This man (a psychiatric patient) did not acknowledge that he was sick at all, and got quite angry and intimidating as I tried to interview him. I reacted to this patient's anger by trying to change tactics and eventually withdrawing from the conversation. I felt intimidated because he was quite a big man. The nurse eventually ended the interview when this client started getting really angry. She

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said that I handled his aggressive questioning well (I explained why I did not know the answer and asked him to explain it to me) (Student Q, clinical).

Not all of the students had positive outcomes when making decisions in complex situations. As one student described:

On this particular day the team was short of people. My Preceptor wasn't in, she was sick and they needed someone to visit this particular individual. It was suggested that it would be ok that I would go. Initially, that was probably the first bad decision I made. This was like later now in my clinical. I'd been there for a couple of months. I think the team got comfortable with me and they felt that I was quite capable. It was one of those quick decisions that I'll go and do this, and I didn't really read too much chart data previously, like before going and that sort of thing. So this was my first time meeting the client. Again, I set out my boundaries initially. I had taken a mug I think for the bathtub as well as I was meant to do a med check to make sure he had taken his medications. When I arrived at the patient's (psychiatric patient) apartment. I was invited in for a cup of coffee and the patient locked the door behind me which made me quite uncomfortable which meant that I had no escape route. Previously I had been informed not to directly ask the patient about his meds as it might elicit a reaction. I stayed for at least half an hour and tried to establish rapport (Student R, clinical).

One Tutor acknowledged the decisions students were making in the clinical setting.

From the beginning they're (the students) making decisions around activities of daily living (ADL)s and how do I accomplish all the things I need to in the morning around ADLs and complete the worksheets, etc. And as they move on then it's decisions around more interventions, understanding the diagnoses, working at preventing increased intracranial pressure (Tutor K, clinical).

They're really keen to develop the interventions but they need to be encouraged to support the interventions with rationale from the literature. Like they really like that clinical piece but they still need to be reminded to support their interventions with research (Tutor focus group, Level 3).

Another Tutor felt that students were making simple rather than complex decisions.

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I think they're starting to make some independent decisions but I would not call them complex decisions. They're simple decisions. And maybe that's all we can expect at this point. But in terms of complex decision making, no I think they still need a lot of support from the staff, Tutor, literature to really help them to know that they've made a good decision (Tutor L, clinical).

Resource Decisions

Students in Level 3 continued to make decisions related to resources, however,

they described a growing discernment regarding the types and quality of resources

utilized to support their decision making and a greater number of resources accessed.

I think part of decision making is who you talk to. So as long as we try to I guess within our group try to encourage them to seek a variety of resources, talk to a variety of people, then the more information they have the broader the knowledge and the more ability they have to make an informed decision. So I think it's encouraging lines of communication with health care team members. Even people out in the community. I mean we've got Home Care coming in, we've got some patient care sort of group supports coming in and contacting some of our patients so connecting with those. Other Tutors and peers. I mean peers are a wonderful source of learning, especially for example, if they've had a patient with a similar complication maybe let's talk about it, what did your patient present with versus what did my patient present with (Tutor K, clinical).

Communication Decisions

Students in this level continued to make many decisions related to communication

with the Nursing Staff and patients.

I'll run it (my decision) through a student first, you know the decision I want to make, get their impression, and then it's kind of like a gradual thing and then I'll bring it to the Tutor and then I'll either bring it to the physician or the nurse just

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so I know that it is educated because you're worried about making a fool of yourself (Student P, clinical).

Although it's very very important to talk to the patient I also need to communicate with the parents (Student P, clinical).

One of the differences in the third year communication decisions was the

reasoning behind the communication. Often communication with the staff in the clinical

setting was not only to confirm or refute a student's thinking or decision making, but also

to ask for rationale supporting nursing and physician decisions.

At one point a patient had been NPO for 2 weeks and he really, really wanted to eat something and it was under the physician's order that only the physician could change that so I wanted to look into why that decision was made and change that and that's sort of the process I went through. I went through students, then the Tutor, then the nurses, and eventually addressed the physician on the issue. I guess that's more of building up my confidence or even knowledge base (Student P, clinical).

This patient had an IV. She really didn't need the IV, she was drinking well, she was eating well. The IV was a huge problem for her so I went to my nurse and said she's been drinking this much, she's eating well, she's tolerating foods. And so she asked me all these questions about her condition and then she asked me what I thought we should do. I told her we should discontinue the IV. So she helped me make the decision and then they called the doctor and explained why we had discontinued it (Student S, clinical).

Action Decisions

Action decisions are defined as the student's decision to act or not to act once

he/she had determined that an intervention was required. This resulted in an intervention

not being completed by the student and passed on to another individual; being completed

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with the assistance of another individual; or being completed independently. Students in

this level made action decisions based on the data they had gathered from the patient

assessment. One Tutor described how a student who was caring for a spinal cord patient

had not reported that the patient had not emptied his bladder in 8 hours (risking

autonomic dysreflexia) and did not provide an explanation for her actions. The student

had previously been told about the triggers and yet she had not taken appropriate action

for eight hours; by this time the patient was showing some signs and symptoms

associated with the disorder such as elevated blood pressure and flushing. The Tutor

noted that the safety of the patient must be paramount:

> Sometimes I find the students just share their assessments, share their information,
> share their recommendations but then they take it no further because the RN takes
> the information and just sort of runs with it. There are some RNs who help
> facilitate the decision making in terms of helping the student follow through with
> everything along the whole process then, I don't think there's a lot of those around
> because some people like to just sort of take the information and go with it. I try
> to encourage the students to go through the whole process but if they meet a
> system barrier then that's something we can't do a lot about (Tutor K, clinical).

PBL Setting

In Level 3, students in the PBL setting continued to make decisions about

assessment and interventions. The changes that did occur were related to the students'

approach to data collection and their confidence in challenging other group members.

The foci of the decisions made by students were directly related to the curricular focus on

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patient education, and the analysis and application of teaching-learning models/theories to specific situations.

Assessment Decisions

Unlike the clinical setting, students in the PBL setting continued to describe their decisions regarding assessment. They made decisions with respect to data collection and also to question the information brought to class by other students. Students in Level 3 described a change in their approach to decision making as they began using models and theories to collect data in an organized fashion.

> We used Gordon's to gather the data and we also felt that we needed to incorporate theory so we used King's theory and tried to devise some of our questions using King's theory. That initially didn't work very well because we didn't really know that much about it and we never really used theory before so with some guidance we used King's theory to guide the interview and to guide some other data gathering that we did specifically with the Tutor (Student U, PBL).

Intervention Decisions

Students in the PBL setting made intervention decisions related primarily to patient teaching.

> We did breastfeeding teaching. We did a lot of teaching and learning with breastfeeding. Before she had the baby we did a lot of teaching about the changes, hemodynamic changes, different changes with physiological changed within pregnancy and what to expect. It was a lot of teaching and learning (Level 3 student focus group).

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It was basically interventions regarding alcohol or drug use and abuse, anger management, stress and anxiety management and things like that because we felt that these were the main issues and why she was coming to the clinic. And so because she came and admitted it and was seeking help we thought that it was the best and most important thing for her to learn how to stop (Level 3 student focus group).

We decided the best thing for her (the patient) would be to make a birthing plan that could address all of her needs and what she expected from the birthing situation or experience. She could put all of them in one plan and that would be really helpful. I didn't mention earlier but she had some nutrition issues, and so we thought that a referral to a nutritionist would be appropriate. We thought she and her husband may feel better if they could speak to a financial counsellor just to kind of give them some assistance with savings, to be able to continue to support their family. We helped her to develop plans to contact her husband at work to identify when she would be going into early symptoms of labour so that she would be able to identify when that was going to happen and to be able to call her husband ahead of time. We referred her to a lactation consultant. I guess coping strategies as well because they needed some time to be just husband and wife and then what kind of other support systems did they have and explain other options. As well we did some patient teaching around just normal symptoms because she was a bit concerned I think because she had heard that back pain could be related to premature labour, and so she was concerned that when she was having back pain that she would again have a premature birth. So we did some patient teaching around that (Student U, PBL).

Resource Decisions

Students in Level 3 PBL made decisions regarding which resources were appropriate to facilitate and enhance their decision making. The variety of resources accessed continued to grow as students engaged in more complex patient situations.

You can critically analyze whether a human resource is valid or not. If you're doing a cardiac scenario you go talk to a cardiologist or a cardiac nurse. So you can decide. I have no problem bringing what they say into PBL (Level 3 student focus group).

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We go the night before to research about the patient. So it was going through the nurse's notes, the physician's note, to find out what kind of care they expected me to provide and it was just sort of taking that down. And then with that information going back to the literature and finding out, is this care consistent with evidence-based nursing practice and then doing a lot of basic research on upper respiratory tract infections to understand what their causes are in case those questions do come up from the family (Student P, clinical).

I used journal articles here at McMaster. I used textbooks from previous courses at Mac, I think a nutrition course I had. We also have a great teaching assistant. She's observing our PBL Tutor and she works at the public health department in healthy moms, and healthy babies. So she provided an abundance of resources and she put them on reserve for us so we could go and access them (Student W, PBL).

Decision to question information. Students also described how they challenged the information brought in by other group members in the PBL setting.

It's a confidence level and by Level 3 you aren't afraid. In first year you might say something because you heard it on TV and thought it was a good idea and might go ok as a group. But if I heard someone say that in my group now and I had ten journal articles that said, no maybe this is more the focus. I would say no I don't think so because here, here, here and here, is what it says. It's a confidence level in you and you're stronger in PBL (Level 3 student focus group).

All of the Tutors in Level 3 PBL noted that students were beginning to challenge the ideas presented by others and believed that this response was the result of role-modelling by their Tutor, increased experience, and comfort with the group.

I see them challenging each other and asking for clarification, validation in terms of their decisions ... they are developing the ability to challenge each other's ideas and I think that comes with time (Level 3 Tutor focus group).

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Even during the ethical seminars when they had to make decisions around ethical and ethical dilemma. I see them challenging each other and asking for clarification, validation in terms of their decisions. Because in the ethical decision making seminar they have to use a framework to look at an ethical dilemma and then come up with some type of decision based on rationale about how they would approach that situation using principles, ethical principles. But I do see some of that happening but I think it depends on the group and the comfort level and maturity and so on in the group. I think it's very dependent on that (Level 3 Tutor focus group).

And their ability to challenge each other on ideas, and I think that comes with time. And again I think that is also a function of the Tutor. It's almost like a modelling. It's that coaching model. It's modelling, ____, whatever, phenomena where they see you doing it and then they start doing it to each other and they get more comfortable with that (Level 3 Tutor focus group).

Factors Influencing Student Decision Making in Level 3

As in the previous two levels, factors enhancing/impeding student decision making in the two settings included decision maker characteristics, professional and personal relationships, and nursing education/curriculum. Two factors that did not reemerge were the patient and the environment.

Decision Maker Characteristics

Knowledge, experience, fear, and level of confidence were identified decision maker characteristics influencing student decision making. Students in this level began to describe knowledge *and* experience. Due to the interrelatedness of these two factors they will be discussed together. Fear continued to be an influencing factor, however, in Level

3 fear was most frequently related to the student's fear of causing harm to the patient or him/herself.

Knowledge/Experience

Students described the influence of knowledge and experience on their decision making. They recognized that their level of knowledge was increasing and that they were increasingly utilizing knowledge from other courses to inform their decision making. In addition, they described the influence of past experiences on their decision making. Students in the PBL setting continued to describe the process of clinical decision making even though they were actually asked to comment on decision making in the PBL setting.

> Knowledge is very important to my decision. Without having a knowledge base to fall back on, whether it's in the literature or even through experience, it's very hard for me to make a decision. And I talked about it with other people, I don't know if everyone is that way but I find like myself even when I research something when I'm about to make a decision I need to go back again. And even after I've made the decision, I need to go back again to constantly reassure myself that yes that was the right decision, you did base it on such and such (Student P, clinical).

> Well throughout the programme we've always been taught about health teaching and how important it is to provide the client with knowledge, self-knowledge, so that they could extend the care into their own home so that they would always depend on a nurse or a community resource. So we all used prior knowledge and experience from being on the floors, that helped us to make links between the case scenario and what we could do for the patient to help her (Student W, PBL).

> I had a health promotion course that I took which I think really helped me to understand how valuable promoting health promotion was (Student W, PBL).

I'm geared around these theories and some of that knowledge so it affects what I do in the presence of patients and my Preceptor (Student R, PBL).

I find some students have had quite a bit of the practice and knowledge and past experiences really come with a lot of thinking behind them already and can actually enter these decision making opportunities really really well. Those who are still trying to master doing a bed bath, they're the ones I struggle with because by the time they're able to master beginning level skills they're struggling with the stressors of maintaining the skills at the beginning that they can't possibly enter more complex decisions (Tutor K, clinical).

One Tutor noted that not all of the students had acquired the necessary knowledge

to make independent decisions in the clinical setting. She suggested that students in this

level may be afraid to admit their lack of knowledge for fear of how they might be

perceived by others.

In some of the stronger students you can see them (transferring their knowledge) because in this particular setting there's a lot of expectations of the students to have a lot of knowledge and some of the less confident students you won't see them transfer knowledge for quite a while, until at least midterm. If students are more confident, they will transfer knowledge quite easily when you ask them to describe a similar patient situation from the past and they tell me what happened and what that meant when they had a particular lab test for that patient and they usually can make a transfer (Tutor L, clinical).

I think students really struggle when they feel that they're supposed to know something and they don't. So they have a lack of knowledge and they don't want to tell anyone necessarily because they're afraid that they're going to be perceived as not knowledgeable enough and that really can be unsafe where they don't let someone know. I can think of a student situation where a patient had had a bleed in the middle of the night and the student didn't bother to check the patient's bleeding until it was lunch time when I caught up with her and I said, how are things going? And she said, oh I haven't checked the bleeding yet. And I asked her, and she said she had to feed the baby and she had her family in. She had rationale but it really was not sound decision making. And bottom line was she

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didn't want to admit that she hadn't done it because she was afraid that she had done the wrong thing, which in fact she had (Tutor L, clinical).

Fear

Another factor influencing decision making in this level was the student's fear of causing harm to the patient or to him/herself. This factor may have emerged in correspondence to a greater level of patient acuity in the clinical setting. Students stated the following:

> If it's something that really has major consequences that would have a major life changing event for the patient then I won't make that type of a decision (Student Q, clinical).

> But I think it would really depend on why they were angry because he got to a point where it would be unsafe for us to continue the interview (Student Q, clinical).

> I know that sounds silly but I always have a way that I know I can get out (of the patient's home). I usually have my cell phone with me. I make sure that certain things are in place just so I know that I'll be safe. I mean the patient's safety is important as well but it's kind of like you don't want to put them in a position where they feel that they need to lash out at you or anything like that. You don't want to overstep boundaries (Student R, clinical).

Level of Confidence

One of the factors that had a great influence on student decision making in the clinical setting, and to a lesser degree in the PBL setting, was the students' level of

confidence. Students in the PBL setting who commented on confidence described

experiences from their clinical setting. Students stated the following:

> Like I think confidence comes from past experiences. Like I don't think I was always confident with making decisions. I mean you're always going to make mistakes, right? So it's kind of that you make a few mistakes, and I have made mistakes in this placement and I've reflected on them and I won't make those mistakes again and I'll make better decisions the next time. So in that sense I think the confidence just comes with time. Like I feel very comfortable at the placement I'm at now. Like I'd love to work there some day. It's just been a really positive experience in that sense, and the confidence it builds as it goes along (Student R, clinical).

> To make that decision with the nurse was amazing. I knew that I was right but to hear somebody who is a professional say, yeah that's right, you've got all your bases covered and what do you do next? It was just like, wow I'm a real nurse now making decisions all by myself (Student S, clinical).

> I'm pretty independent in my decision making I would say, and in that sense on the team. They've allowed me to have patient contact on my own. Like my Preceptor isn't always with me (Student R, clinical).

> I find as the term progresses they would continue to select that kind of patient because their confidence is not that great. So if I speak with them and discuss what they're capable of doing and tell them that I feel they should take a more complex patient then they usually will (Tutor L, clinical).

> I would say in first year my ability to make a decision was a lot on confidence and it would take me along time to make a decision in anything, it really come up to relying on the research that you've done. I mean especially the first year we're worried about so many things, are my resources reliable. Once you're able to evaluate what you're basing your decision on, you're more able to stand up. In first year I was more likely to make a decision that was favourable if I thought it was going to be well perceived, whereas in year 3 although I do think about that when I'm trying to convey this information, it's not as big of a deal. It doesn't have as large an impact on it (Student V, PBL).

Professional and Personal Relationships

Several relationships were identified as important influencing factors and

including interactions with the Tutor, Nursing Staff, and peers. In this third year level,

students seldom described the influence of the patient on their decision making.

Tutor

While the Tutor remained an important influencing factor in both the clinical and

PBL settings, how the Tutor was utilized changed from previous years. Students now

described Tutor behaviours that suggested that they were perceived as having assumed

the roles of encourager, role model, prober, and navigator.

> I don't think students have the knowledge and the clinical expertise to make
> sound decisions in critical situations and that's where they really rely on the Tutor
> to give them sound advice in terms of what they should proceed to as the next step
> and it really isn't fair to students to expect them to make those kinds of decisions.
> It really is the Tutor's role to say, ok this is a patient who really needs input from a
> physician at this point (Tutor L, clinical).

> Our Tutor she shares a lot of information with us but she also challenges us to
> bring in journal articles. She questions us a lot on what is wrong with the patient
> and what we need to do for the patient and what are the issues. She challenges us
> to get as much information about our patient as possible (Student S, clinical).

> She (the Tutor) is really good at validating our priorities on an issue. We would
> go through what we thought was important because she'd tell us yeah or nay about
> whether or not what we thought was our priority really would be in a clinical
> situation because she has the clinical experience that a lot of us don't (Level 3
> student focus group).

Validation from the Tutor is very important and it shouldn't be but it is. Even though within a PBL now you see less of people presenting their information and looking right at the Tutor and seeing what their expression is, you want her to think what you're bringing is good and that you guys are going along the right track. So to hear your Tutor go, I think you guys need to focus more on this, I think this is more important. It's important in PBL and I think that's probably the role of the Tutor that we don't learn something that's irrelevant (Level 3 student focus group).

The Clinical Tutors confirmed that they took on a variety of roles to enhance student decision making and described how they applauded students who demonstrated critical thinking skills. They also suggested that they provided students with a role model for decision making and labelled what they were doing so that the students recognized the different activities that made up decision making. In addition, Tutors described how they asked students many questions in an effort to get the students to look at issues from an indepth perspective rather than merely taking a superficial approach. One Tutor described how she used questioning to promote decision making.

They will use Maslow when I ask them, ok how are you going to decide, because I do get students to actually list what the patient's concerns are for the day and this can be slow and painful, especially at the beginning of Level 3 and then when we move into sort of later in the term, in term 2, I ask them, ok how are you going to decide, on this list tell me which is the most important and how are you going to decide which is the most important? And that's where they have to use something like, they would have to look at Maslow, which is very effective if you're looking at haemorrhage or if you're looking at diabetes (Tutor L, clinical).

Nursing Staff

A relationship that remained a factor in decision making (primarily in the clinical setting) was the one with the Nursing Staff. Students in the clinical setting continued to use the Nursing Staff as a source of help to interpret gathered data, to prioritize patient issues, and to determine the best course of action. Nursing Staff were often described as individuals who challenged the student in his/her thinking, but in other instances were seen as creating a roadblock to independent decision making.

> Well, they're (the Nursing Staff) always somewhat involved in my decision making. I might check with my Preceptor just to clarify. Like I might make a decision but then it's always not second guessing but it's just the issue you want to make sure that that is appropriate. And because it is a new experience for me having someone there right away just to bounce those ideas off of, like a sounding wall type of idea, is very effective (Student R, clinical).

> The nurses definitely have different expectations. Some really see their role as being the teacher and wanting to take you through each step. Others, and I guess it comes from their own experience on what they learned, they think we should have all the knowledge before we're there on the floor. So a lot of times there is a discrepancy and I find for nurses that think we should have all this knowledge already that it should have been taught to us way before we get there, I'm less open to asking them questions because I'm worried that they might think I'm incompetent or something. So I'm more likely to ask the question but not of that nurse. I'll go to a different nurse. And it works in the opposite way where some nurses believe, ok you know nothing and they start you right from the basics and how to do vitals, and I don't want to offend them because I appreciate the time that they're giving me so sometimes I will withhold information but not bring it as forward as much because I don't want to offend them. It affects how you interact with them and how you're going to bring up a topic or ask a question (Student P, clinical).

> I think it's interesting because we have, in this setting, largely RPNs but there are a number of RNs as well. So students are exposed to a mixed staff bag. And

initially some of them say, oh this is an RPN, oh I've never worked with an RPN before, and so initially there is that, I'm not sure if this person's going to be able to help me with the level of knowledge that I need. But then they see as the weeks go on how competent these people really are and they look to them and ask them, what do you think I should do? This is what the baby's weight is, should I start finger feeding? Should I not start finger feeding? Where should we go from here? So the staff does make a huge difference in terms of the students' comfort level (Tutor L, clinical).

There's a particular staff person who comes to mind who is quite a mature woman. And it is her own practice that she likes to do everything herself. When she has a student, she really has difficulty letting students practice independently. She likes to hover over them, she likes to ask them a lot of questions and even though they give her the right answers, she still goes ahead and does what it is she chooses to do. It's just a control issue (Tutor L, clinical).

The ACT team, they're very open. They have team meetings in the morning. For approximately an hour and a half they discuss each patient, but also like any concerns that come up with a patient. So in that way I've been able to bounce ideas or mention what I did with a patient the previous day and the care provided. And then the rest of the team members will respond to that whether it's a positive response or like some constructive feedback based on what I had done or didn't do. So in that sense it is, it is helpful. I mean they're all professionals. It is helpful having the supportive environment (Student R, clinical).

Peers

Students described the influence of peers on their decision making in the PBL setting as more significant than that of the PBL Tutor. The fact that peers were not mentioned as an influencing factor by the students in the clinical setting may reflect their increased knowledge, experience, and confidence.

PBL is a completely different setting than clinical I find because you're all working together with one scenario as opposed to if you're on a clinical floor

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you've got your own patients and you do your own thing. I know (student name) and I are both two of the more vocal people in our group. I mean you have to come to some type of consensus within the group but I think there's probably a lot of decisions that could come out but don't because people are just quiet or just kind of go along (PBL focus group).

I think with our group our interventions aren't based on anyone's opinion but on their evidence-based opinions or more so now than just your personal thoughts. We take everyone's personal thoughts into context as well but then for instance, we do what's known to work in that situation (Level 3 student focus group).

I find there are certain pillars in the class and undoubtedly they seem to have a huge influence on the decision making, and it's unfortunate but I find generally there's two or three that seem to be the ones who end up making the big decisions (Level 3 faculty focus group).

One Tutor commented on the role of peers in the clinical setting stating her belief

that peers played a significant role in student decision making.

Peers are a huge factor. I think because of the limited amount of time that students spend in the clinical setting, their peers may have had an experience that they haven't had. And so they do spend a lot of time talking about, well when I had this patient this is how I dealt with the situation and this is what seemed to work for that particular patient. And so students will use that information to help them make their own decisions about the clinical experience that they're having. And then sometimes it may not even be a direct patient situation. It may have been from another setting, that it's a new student that they've met and the student will say, well I remember that my patient in this other setting had a DVT and that probably is what we're seeing here. So they can transfer that knowledge from one setting to another (Tutor L, clinical).

Nursing Education/Curriculum

Learning Needs

Another factor that was apparent in this level was the influence of student learning

needs and the curriculum on decision making. This factor was most prevalent in the PBL

setting.

> I think that the course objectives are important and influence us, and we're always trying to relate the patient scenarios as well as our research gathering back to the objectives. So that at the end of PBL we can look back and say, ok we've accomplished objective 1 through 8. So I think that's a big part of our class in decision making and research gathering (Student W, PBL).

> I knew the focus of third year was on interventions and I think it's just a logical progression because last year we were just trying to figure out how to write nursing diagnoses and now that we've got that under control we are able to make logical interventions and not just get them out of textbooks. We are able to actually come up with them in our minds and be able to develop them more fully and more appropriately, and be able to not only just devise standardized interventions but make them more specific to our patient because we are at that level. Last year we never would have been able to come up with the same type of interventions because we just weren't there and I think we're definitely there now (Student U, PBL).

> The reason we made our decisions was because we're focussing towards being able to have adequate knowledge for the RN exam. Although it was specific to the case, we did it less specific than we normally would with another case because we wanted to cover all the basics of maternity for people that didn't have the placement (Level 3 student focus group).

> It's hard to determine what you want to know because you can go and research something and there could be loads of things on it but it might not be that important clinically for us and so when you only have 4 weeks you need to focus on what you need to know (Level 3 student focus group).

We have a very diverse group. There are a lot of strong willed people … In groups from the past when someone would say well let's do it this way then everybody would say ok, whatever, that's fine. But now this year it's been, like some people say well let's do it this way and another person will say no I want to do it this way and whatever. So we've had arguments and then at the end we always now take it to a vote. We just let everybody say their piece and then ok let's vote and the majority wins. Sometimes you win, sometimes you lose. Like some people say that we should do this for the patient first, like educate her about her pregnancy and then other people are like well we should first educate her about stress and coping, whatever. So we have to prioritize but if people prioritize differently like they bring you different models to prioritize then no one is right (Student T, PBL).

One Tutor noted the students' focus on their learning needs and stated the following:

I put a stop to it (a focus on learning needs). I know it sounds, it doesn't sound probably teacher friendly, but I do talk to students about it may be your learning need to have an antepartum mother who's 18 weeks pregnant about to have a spontaneous abortion but that may not be what we have in the shopping cart this week. And so nurses are here to care for the patients that we have in the setting so you need to be flexible and fluid, those are the words I use to describe to them, that you go with what the patient's needs are and that is why we are here is to provide care to the patients that exist. And so sometimes students don't like to hear that but usually once they reflect on it, most of them I think can come to a positive conclusion. They realize that it's not about them, it's about the patients they look after (Tutor L, clinical).

Summary of Level 3 Decision Making

The conceptual framework continued to evolve as data from this level were

integrated. Figure 7 provides an illustration of the types of decisions made in both the
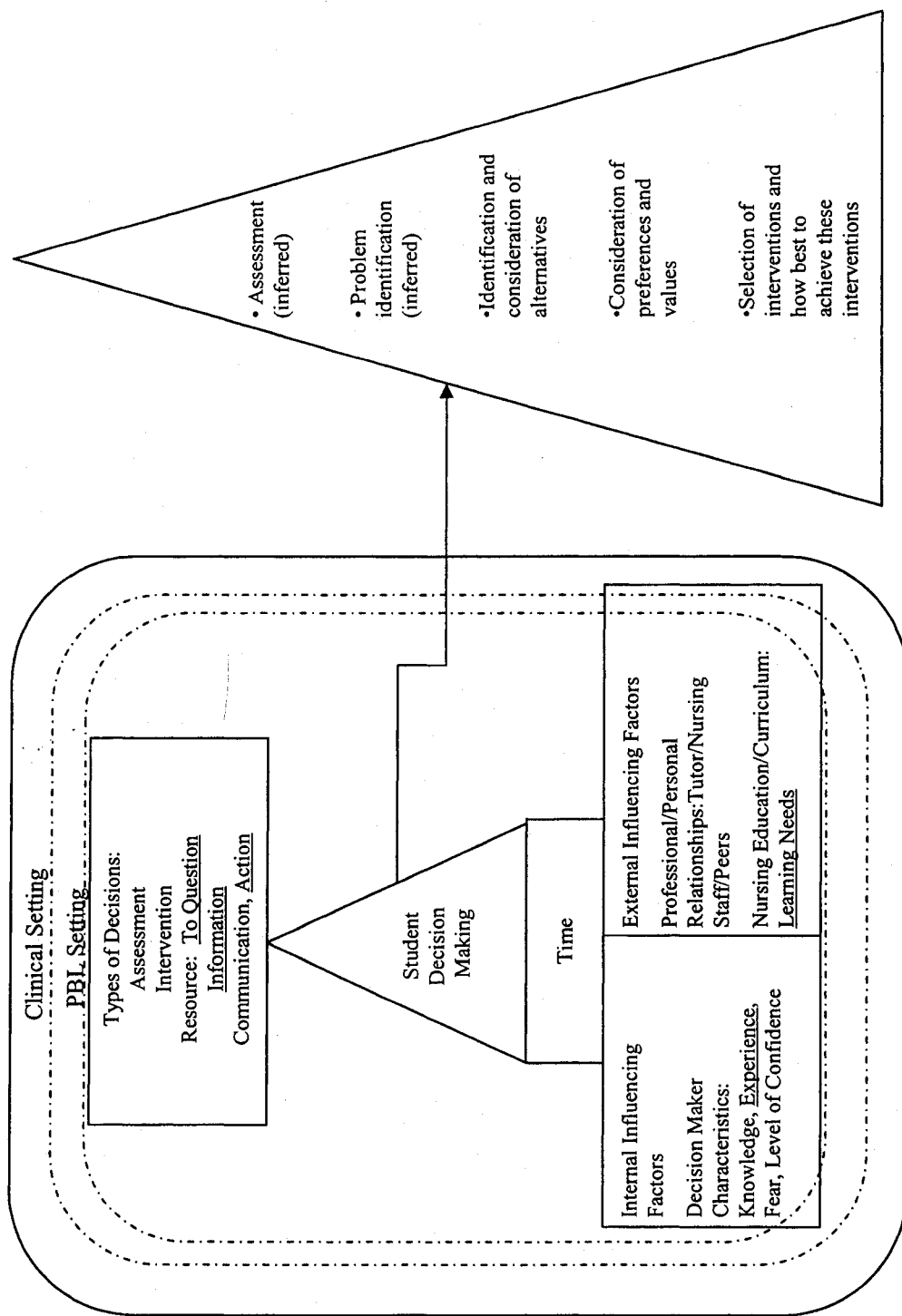
Figure 7. Level 3 conceptual framework.

PBL and Clinical settings. Similar to previous conceptual frameworks, those components that are new have been underlined. In the following text, new components are illustrated in bold print.

Types of decisions

- Assessment

- Intervention

- Resource **(decision to question information)**

- Communication

- **Action**

The influencing factors were described as:

Internal

- Decision Maker Characteristics: Knowledge, **Experience**, Fear, Level of Confidence

External

- Professional Relationships: Tutor, Nursing Staff **(Patient omitted)**

- Personal Relationships: Peers

- Nursing Education/Curriculum: **learning needs**

Level 4

Participants

Within the clinical setting, six students agreed to participate in individual interviews, this resulted in six interviews. In the PBL setting, three students agreed to participate in an interview. In addition, five students participated in a focus group with all five students being from different PBL classes. In total, 14 Level 4 students participated in this study. Ten of the students had previous experience in the health care field prior to commencing the nursing programme. Several had been health care aids, one had completed a co-op experience in an immunology lab, one was a unit clerk in an emergency department, one had worked in a group home, one had volunteered at a nursing home, and one had worked in a doctor's office. The remaining participants did not describe any past health care experience.

Nine Tutors in the clinical setting and three in the PBL setting each agreed to an individual interview. In addition, two PBL Tutors participated in a focus group, resulting in a total of 14. Clinical Tutors had from 1 to 15 years of teaching experience in both the nursing programme and this specific course. In the PBL setting, Tutors had between 11 and 18 years of teaching experience and had 5 to 8 years of experience teaching Level 4 PBL. Two of the Clinical Tutors were clinical faculty and only taught part-time for the

university while the remaining Tutors were all employed full-time by the university. All of the faculty members had a minimum of a Master's degree.

The curriculum goals for Level 4 are: to provide patient care that reflects knowledge of clinical and ethical decision making; to involve the patient in the development of a plan of care; and to choose independent, collaborative, and interdependent functioning when developing a plan of care. In the clinical setting, the course objectives require students to demonstrate their ability to integrate and apply relevant knowledge of a variety of mechanisms in their nursing practice. There is an emphasis on clinical and ethical decision making as well as on interpersonal skill acquisition and application. In the PBL setting students are expected to advance their data collection, to engage in the exploration of clinical scenarios in order to enhance clinical reasoning skills, and to expand their knowledge base. Students are also expected to evaluate their interventions. A full overview of the Level 4 foci, goals, and course objectives can be found in Appendix 12.

Patient Care Decisions in Level 4

Clinical Setting

Students in Level 4 described their decisions related to patient assessment, interventions, resources, communication, and whether to act or not when faced with a patient situation (action).

Assessment Decisions

At this level, in the clinical setting, students made decisions regarding how to collect patient information, what information was required, and what to do with the collected information. Students made decisions to gather data in an attempt to determine what was wrong with the patient.

> I decided that I would approach the family in a warm manner and take the time to teach with clarity, listen to questions, and support the parents. These are not decisions that most nurses would consciously make, it is an approach that comes naturally to an experienced nurse. This intuition of the experienced nurse is something I look forward to developing (Student X, clinical).

> He was there in the hospital for some time and then he was also going through the treatment of ECT. I got a chance to talk to him and on that particular day my assessment was to see how his mood was and how he was doing, and whether he had any suicidal ideations or whether he had any thoughts of harming himself or others. So I had a chat with him for about half hour and gathered some information, and I made sure that I went through every criteria to find out whether he was suicidal, whether he was eating properly, whether he had any signs and symptoms of depression coming back to him, things like that. So I just asked to see how he was. And his knowledge of medications and things like that, that he was taking. And what his plans were when he was discharged like how is he going to take care of himself, whether he had any support from his family or social support or any kind of community support (Student Z, clinical).

Intervention Decisions

Decisions about patient care interventions were often made in collaboration with the Preceptor and/or the Nursing Staff. Seldom did students describe independent decision making with subsequent patient interventions. However, when they did make

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independent decisions they described simple situations where, had a wrong decision been

made, it would have resulted in no perceived negative impact for the patient (eg.

scheduled meds, dressing changes, providing comfort).

> I made several decisions about attempting to improve his comfort. I would decide to suction him orally and/or nasally, clearing his airway, and then providing mouth care. Over the course of the two days, the most effective decision I made was basic: making him more comfortable, with a clean diaper, and careful repositioning (Student X, clinical).

> I decided to give the prn med on a regular schedule throughout the beginning hours of the night, as well as positioning the patient in a geri-chair (Student Y, clinical journal).

> I took that information (from the patient assessment) and then I went back to my Preceptor and I talked to her, and she asked me what the most important things were that he would have to know when he was discharged and I said he had some knowledge gaps with regards to his medications so we would have to teach him about the medications, and teach him to recognize signs and symptoms of depression and if he was getting in to it then how he's going to cope and what are the strategies that he has and what has worked for him in the past, things like that. Then she gave me some tips as well as to what I should be doing but I just threw all that information at her. And then I decided to teach him before the end of the day about the medications. I researched the medications that he was on and also I taught him about the signs and symptoms that he would have to recognize if he's getting back or falling into a depression, and also I made sure to find out whether he had any family support, all the phone, emergency phone numbers, and things like that. He would have to know that for any emergency that he needs to talk to somebody or call someone. I gave his medications to him and that's it (Student Z, clinical).

Resource Decisions

Students were quickly able to describe their decisions about the resources they would utilize to make intervention decisions. The most commonly cited resources in the clinical setting were the Preceptor, journal articles, texts, policies and procedure manuals, and other health care professionals. Students had to decide which was the best resource to access for addressing each situation.

> And some of the policies I looked at and they've helped me, not necessarily in making a decision but in how to do it, implementing the decision (Student X, clinical).

> You need to make sure that you talk to all the people who are involved in the care of that particular client. Because that gives you a bigger picture and a better picture as to what's going on with the client. Talking to the social worker or talking to any one of these health care providers who are involved in that particular client and also make sure that you read their history (Student Z, clinical).

Both clinical and PBL Tutors recognized that the students were using a variety of resources and the Tutors often made suggestions about different resources to tap into in order to address a specific patient situation.

Communication Decisions

Students in Level 4 clinical described decisions related to communication, however, this decision was not described in the PBL setting. As in Level 3, students were making decisions in relation to communication for assessment as well as decisions

regarding the use of communication as a patient intervention. Many students in this level described an increased level of confidence in their communication skills and the decision to utilize them when interacting with patients. The decision to communicate with patients appeared simple for the students and they often spoke about their comfort approaching the patient and engaging them in conversation.

> I feel comfortable asking them (the patients) how they are feeling, asking if they need anything (Student X, clinical).

> My role was just trying to console him and try to explain what was going on in the most general terms like what we were going to do for him and that every problem he had was essentially fixable – just trying to instil hope (Student FF, clinical).

> Well I was helping the other staff to try and, I hate to say restrain, but yes to sort of restrain her a bit and just to talk gently, softly, calmly to her. I found during that time too that the surgeon himself was losing his cool a little bit and you could sort of see it. I thought if I could try and remain calm like some of the other Nursing Staff and just hopefully that calmness would be, how do you say it, put on to the patient (Student EE, clinical).

> I've seen it is where there's some tension created, meaning that the physician and/or the nurse might be saying one thing and the student is using their wonderful listening skills and hearing the woman and the family saying something else and trying to figure out where they fit in there (Tutor AA, clinical).

> They're (the students) saying here's what I'm seeing, I've got this relationship with this person and I'm not convinced that this is what they would really want to do and say you know here's what I'm seeing, is there maybe a way that we might think about approaching that, and the students seem to have the confidence at this level to at least bring forth the ones (patient issues) they feel pretty passionate about (Tutor X, clinical).

Action Decisions

Action decisions in Level 4 involved the student determining whether to act independently or in collaboration with others when determining an appropriate nursing intervention.

> During my shift I had two fairly acute patients in the same room. I had just received report and was organizing my meds when I was told that one of my patients was throwing up. I immediately went to assist him and to discover what the problem was in order to strategize some interventions. While I was helping him, the patient across the room began yelling for help. I was able to see him from where I was working and could tell immediately that he was in no physical distress and that he was safely in bed and not climbing out. From my observations, I decided to finish what I was doing and prioritize the first patient's needs above the second patient's needs at that time. This decision was made through past experiences where I have left something important to deal with something else that seemed important and have found that I did neither well. It also came through the knowledge of what constitutes distress and what is not as serious. I also had previous experience with the patient and therefore understood his condition better. My prioritizing turned out to be accurate in this case and thus validated my decision (Student Y, clinical journal).

> I couldn't just make the decision even though I thought I had the knowledge on my own to make a decision, there's always little circumstances and exceptions to the rule that without a lot of experience I wouldn't know about. So though in black and white I could say this should be the outcome for this situation, this is the decision that should be made, I would always consult with one of the other nurses who had a lot of experience to see if my decision would match theirs and if it didn't, why not, so that I could learn if I had made the wrong decision and why (Student AA, clinical).

> You don't want to do it but they want you to do it, or you want to do it, they don't want you to do it. But I think you would have to do the best for the client. At the same time, try to respect the fellow staff and try not to offend them but I would say the client comes first. There was one incident that I felt that what they did

was not right. As a student you have limited freedom to do what you would do and what you say (Student Z, clinical).

Students often noted that they did not feel like they had many opportunities to make independent decisions in the clinical setting. One student who felt that she could work through a patient situation fairly independently stated:

> I didn't take the whole thing into my hands. I did go and contact my Preceptors and tell them what the situation was to confirm or kind of get reassurance that I was on the right track and that I wasn't overstepping boundaries or stepping on people's toes to see that it was ok that I proceed this way and with their consent I sort of went ahead and made the decisions with the couple (Student AA, clinical).

> Because they are students they really don't feel they have much opportunity to make decisions (Tutor M, clinical).

Some Tutors felt that students were making autonomous decisions in the clinical setting.

> They're making decisions about what nursing model is going to work for them or incorporate into their practice sort of in the real world and forever as they go forward. I think that they make decisions about what they do and don't want to be and what they want to be as a practising nurse. They are also making decisions about who they are going to use to help them make their decisions, and that's really important. They're very discerning now in terms of knowing. They're very choosey about that and that's good for them. They're not going to accept an answer and say, well that's what the grad told me. They're pushing the envelope, well that doesn't make sense, and learning how to push when they get information or answers back that they know isn't right or its not comprehensive enough for them or its not indepth or it doesn't make sense. And so they begin to decide who's going to help them learn or help them make decisions (Tutor N, clinical).

PBL Setting

Students did not describe the assessment decisions they made in order to determine what the patient issues were. However, from the interventions they described it was obvious that these decisions were made at this level PBL. Students primarily described decisions related to patient care interventions.

Intervention Decisions

The majority of the decisions made by students were intervention decisions which looked at how to proceed once cues were collected and interpreted, and the patient problem identified.

> So the clinical decisions that we made in PBL were more of strategies to enact next time to better our practice. But they are realistic strategies like one piece of literature said consult an anthropologist to learn the cultural ways of this culture. This is a good strategy, but realistically we said that it was better to spend the money on an ATT translator and get a good understanding and a good overall impression of this patient and the family to provide the culturally sensitive care across the language barrier (Level 4 student focus group).

> In my group we are still looking at patient care, especially strategies for implementation. I mean this morning we were looking at how you would go about performing education with a group of 12 year old boys who had ADHD and looking at how you would be able to talk to them about their illness if you had them all out, say ten of them in a classroom. So strategies for implementation for types of things like that as opposed to you know looking up the diagnosis and the medication, which we all do on our own, but it's not necessarily the focus of the class (Level 4 student focus group).

One Tutor noted the difficulties that she had seen students experience when

dealing with patient scenarios.

> It's a struggle for them (the students) to take the information that they've gathered
> from everyone and actually make a decision, not just to continue to sort of data
> gather and brainstorm and have that open-endedness to discussion but to actually
> come down and have to make a decision, an individualized decision based on
> solid evidence (Tutor O, PBL).

Several students stated that they did not deal with patient care issues at all and

only focussed on system issues and their own learning needs.

> In my fourth year PBL class we don't do anything really related to patients at all.
> It's all about nurses in the system and a lot of health care issues. For example,
> this week we're talking about reporting bad practice. So what do you do when
> you think that one of your colleagues is stealing medications, what are the steps
> the nurse goes through, how to make the decision to report it to the manager, is it
> your job, whose responsibility is it. Looking at larger system issues as opposed to
> the patient (Student BB, PBL).

> At the very beginning of the year we looked at the learning objectives for the
> course and then we all picked one at the beginning of the year ...We haven't been
> putting patients into the scenario at all because we've been focussing on system
> issues. I did entry into practice and how it applies to the nursing population that's
> already graduated, the older population and how it's going to affect us. And this
> week we're discussing reporting bad practice for nurses and we've done political
> action of nurses. We haven't done really anything like scenario-based (Level 4
> student focus group).

> What I'm seeing with my students is without my intervention they are thinking
> about the broader system issues or the nursing profession issues that are
> associated with that client or with that scenario that's brought forward. So they
> aren't looking so much, actually we haven't talked about pathophysiology or like
> any kind of clinical interventions in the scenarios, we've looked at it more from an
> organizational perspective, communication between the nurse and the rest of the
> health care team. Next week's scenario is all around the Canada Health Act and
> the health system from a more federal/provincial level. And so their decision

making seems to be more about what am I going to be moving into in terms of a job in the next … well all of my students are actually graduating, this is their last course (Level 4 Tutor focus group).

Students in the second semester are most attune to system issues and bring in information from Mills library and go through law books. They discuss theoretical concepts such as autonomy, decision making and law. They switch to system decision making not just individual decision making (Tutor P, PBL).

So they're very much focussed on their career that's about to start and the nursing role and the broader issues all around that and how the nurses can optimize patient care within a multidisciplinary team (Level 4 Tutor focus group).

One faculty member found that she was able to encourage the students to integrate patient issues and the larger system issues. She provided an example of this integration.

And we just did our midterms this morning and one of the things that I was complimenting them on was their ability to go from individual patient … we've had actual individual situations, let's say a child with trichologia , the students' clinical placement was at Sick Kids. They received a newborn who was born in Brampton, was transferred and the transfer happened at shift change, the nurse forgot to leave the chart and they had to give immediate care to this sick newborn. The mother was in the hospital, the father didn't speak English, was East Indian and spoke another language that they didn't understand and so there were physiological issues that some of the students looked up about the heart defect and how the nurses needed to know what to look for in terms of lab values and in terms of physical assessments. They did a lot of integrating there. But really the focus of it the second week was on the systems issues of responsibilities of a transferring nurse, responsibilities of the admitting nurse, student responsibilities, physician responsibilities except how the infant got transferred. How that process happens in the system in terms of an attending physician accepting that there was a place on that unit and how babies have to get moved out of that unit if new ones are coming in. So it was great on all kinds of levels (Level 4 Tutor focus group).

PBL Tutors also had a difficult time describing the decision making that students engaged in as it related to patient care in the PBL setting. They suggested that students

were making decisions related to group process and their emerging role as a professional

nurse. This focus on system issues, group process, and role development was not

surprising considering course objectives already described for this level as well as the key

concepts. Key concepts for Level 4 include: the developing role of the nurse; nursing

boundaries; autonomy and collaboration; systems entry; models of practice; and

interprofessional collaboration.

Factors Influencing Student Decision Making in Level 4

Student decision making was influenced by a variety of factors in both the clinical

and PBL settings. These factors included, decision maker characteristics, professional

relationships, nursing education/curriculum, and environment. No longer were peers

described as influencing factors in the clinical setting. The patient did, however,

reemerge as a factor in Level 4 decision making.

Decision Maker Characteristics

Several decision maker characteristics were described in Level 4 including:

knowledge/experience, fear, confidence, and reflection (self-evaluation).

Knowledge/Experience

The factors of knowledge and experience were very influential in student decision making in both the PBL and clinical settings. While some students described how knowledge and experience had enhanced their decision making, there were many others who expressed frustration over their perceived lack of knowledge and experience in the clinical setting. This perception was often frightening to them as they engaged in more complex environments, because they felt they were not adequately prepared to make some of the decisions that were placed in front of them.

> My decisions might not be right. I'm just not experienced. If the hand bagging didn't work I don't want to be the one to think ok, ... now what. You think I'm going to initiate compressions when he really goes right down? That's for someone to do that has experience (Student CC, clinical).

> I try to ask the Tutor or the Preceptor as to what they think as well because its not because I have the knowledge gap, I might have some, but I also like to run it through a second person my thought to make sure that its in the right direction. I need reinforcement and confirmation, ok this is the best thing for the client rather than me deciding on my own. It's better for two people to decide. And also they're experience, so I can tap into their knowledge base (Student Z, clinical).

This lack of knowledge and experience was also described by Tutors as an influencing factor in student decision making.

> Well the students that I have met in their, and my very limited experience in the last couple of years with them, is that they feel very much overwhelmed in the clinical areas and they repeatedly tell me that they need more practical experience. They wished that they had more practical experience. And when I talk to them about what their clinical backgrounds have been, they have had kind of a mixture between public health and the community and the clinical areas. Those who have had med-surg experience usually are much more confident. But some of them

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have had little of that and I'm sure that's a placement issue or maybe even their choice. But those who have med-surg experience seem to be very much more comfortable in the clinical situation (Tutor Q, clinical).

Fear

By Level 4 it was be expected that the level of fear and anxiety experienced by students in the clinical setting would have decreased due to increased time in the clinical setting and increased levels of knowledge and experience. However, data from Level 4 suggested that fear and anxiety continue to play a significant role in student decision making. Students provided examples of what they experienced in response to patient situations.

> I was in a geriatric setting and I had a patient who had just had her blood taken and they put a little cotton ball on it. We were in the shower and it started bleeding really profusely, and I was very alarmed. I stuck my head out in the hall and got a nurse to come and all she did was just put towels and put pressure on it and it was fine. But my reaction in that decision that I didn't make a decision or the appropriate one was very disappointed in myself and sort of just felt real low that maybe I'm not cut out for this ... I felt a real sense of panic. I was worried about how the patient perceived that situation or whether she even feel safe with me and what she was thinking about me as a nurse later (Student X, clinical).

> I'm worried about whether or not I'm making the right decision and if the baby is safe and in good hands and I worry about how the family might feel if the baby doesn't make it (Student X, clinical).

> I was afraid that I might really screw it up so bad that I might have to deal with the consequences. But then as the years go on you're more relaxed and you're able to think through your decisions and your actions and your process of providing care. So the key is to not panic and to think through does this matter and learn to say no if you don't know (Student Z, clinical).

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My fear is that I will do something wrong or just not do it. I find I might not do things. Like capillary blood sampling on their feet, it took me weeks to get good at that because I wouldn't squeeze hard enough because I was scared that I'd hurt them. They (the nurses) say they're so sensitive so don't touch the baby in between touching them every 4 hours but you want me to squeeze the life out of his poor foot (Student CC, clinical)!!

Tutors also discussed how they saw students respond to situations in the following way.

Sometimes they worry, particularly in critical care, worry about hurting the patient, making a wrong judgment, being left with too much responsibility, and not realizing that they're left with too much responsibility. Not knowing what they don't know is something that they talk about (Tutor Y, clinical).

In the early stages they (students) might say, gee I wasn't sure whether to do something even though this patient wasn't assigned to me or my Preceptor, I was afraid...I wanted to approach them but I wasn't sure if I should so I started thinking about all the pros and cons of doing that. And they don't yet quite have the confident to do so. And one of my theories around that is they're not yet confident with the other relationships on the staff so they don't know if some nurse might really be bugged if you intruded on what she perceived to be her territory versus my student saying this is a client in need and this other nurse is busy so I'm going to move in there and at least be kind of the medium (Tutor W, clinical).

One Tutor described what she believed to be the sources of student fears.

The other issue too in these settings is the Preceptor and if the Preceptor doesn't have a grasp of what's reasonable in that setting, it can have a negative influence on the student because the expectations are set so high. And as a result, the students are scared and they want to pass but they want to please also their Preceptor and that's important to them, and for the Preceptor to have confidence in them, but at the same time the high expectations and the acuity (of the patients) is very frightening for them (Tutor T, clinical).

Level of Confidence

Students described how their level of confidence, whether high of low, influenced their decision making. Their confidence largely reflected additional knowledge and experience, but in addition, Level 4 students spoke about their ability to critique literature and to use it to support their decisions regarding patient care. This ability to use literature more effectively impacted how confident they felt in their decision making.

> I was unsure … I guess that would be where there would be a lack of confidence in the setting as a student not knowing if it was appropriate for me to speak up or if I'd be stepping on toes (Student AA, clinical).

> In the summer I had a Preceptor that left me on my own a lot and I wasn't ready to be left. I was in peds for the first time so that's really scary. And I wasn't ready to be left on my own but she (the nurse) left me on my own a lot, and I constantly had so many questions that I couldn't have answered. And so I didn't really feel supported in my environment but it had to do with my confidence too. I wasn't skilled in that area at all, and so I basically would make no decisions other than basic decisions on patient care and would run everything by my Preceptor or another nurse that I would find on the ward (Student DD, clinical).

> I was going to say it's the positive reinforcement that you get that makes the confidence go up, and it's the autonomy that you have to make your own decisions and that when they are reinforced and respected and commended, then you feel yes I actually know what I'm doing as opposed to I'm going to walk into fourth year PBL last semester and I finally know what I'm doing (Level 4 student focus group).

> I think that they have a confidence level to interact with physicians now that they may not have had earlier and are quite prepared to use them for the information they need to make nursing decisions … The kinds of summer employment they've had, all of those things, those very much contribute to the kind of confidence that I see when they're in fourth year and they're suddenly in the emergency room and they will act much more, they will take on an autonomous role in the setting if they are confident about their skill level and have had similar experiences … those

that are pretty confident with their clinical skills make a much easier transition (Tutor N, clinical).

One Tutor described how students entering the ICU setting lacked confidence in their knowledge and skills.

> Students say to me, I can't do anything here (ICU), I don't really know anything. And certainly because of the huge variety of patients you never really know everything, there isn't a routine either. At the beginning especially it was like, I don't know all of this, oh I don't know that, oh I don't know anything about this. I don't know that drug, I've never done that. And it was really, oh I shouldn't really be here. It took a bit of time and some shifts to start to build that up, oh yeah I do know some things and lots of people that I'm working with don't know everything either. And you just keep building on your experiences and then going back and looking things up and asking questions and by the end of it (the semester), it's like, ok there are some key themes that are always there. And if you know basic respiratory, it doesn't really matter whether it's a cardiac patient or an oncology patient. Respiratory is respiratory. So it was just trying to build on where are the bottom blocks and how do you go from there as opposed to feeling overwhelmed that you know nothing (Tutor O, clinical).

In the PBL setting students described their level of confidence in the following manner.

> I'll have it on paper in front of me from a good critically appraised article that says, this is what you should be … if you have a newly diagnosed diabetic, this is what you should be teaching them day 1 and this is what you should be teaching them day 2. So when I come to group knowing this and I'll say ok well my article from this journal has these qualities which make it a good article, like quality, this is what it's telling me to do, this is what I'm going to do. That's the only thing that's giving me the confidence to do it (Level 4 student focus group).

> But I think even carrying over to clinical the decisions because permission that you gather within PBL gives you the confidence in clinical if your Tutor is trying to sway you one way or the other to say, no this is what I've done, these are the decisions we came to in PBL, and this is what we've found to be the most

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effective. So this is what I'm going to do. It's fine for your practice, this is my practice, this is what I'm going to do (Level 4 student focus group).

You see it that way, that's fine, that's great, but you know what I'm starting out new and I still have the luxury of being a student and when I graduate I'll have the luxury of being sorry I'm new to this profession, I think I'm going to take a different twist on it. As long as I'm providing ethical care, by the standards, if I want to walk backwards all day long, that's … it's not going to affect my patient care so why can't I do it (Level 4 student focus group)?

Reflection (Self-evaluation)

Students began to emerge as reflective practitioners in the fourth year. They often referred to reflection (self-evaluation) and their need to reflect on their practice and on the practice of others in order to inform their future decision making.

Reflection allows you to slow down and really kind of count out what you did, to step back and have another look at it and sometimes to have a look at it through a different lens. When you're in a situation you see it through one lens, personally I find I might be narrow minded about it and I can't at that moment that I'm in it see any other way, so you go through it that way. When you reflect upon it you can start to analyse it and see it other ways as well using the literature, using evidence support what would be the best way to reapproach the situation. So it allows you to really figure it out and what might be better for the future (Student AA, clinical).

When I reflected on that situation and I think of other situations I look to see if there are other things that I could have done better. But then sometimes it leaves me with, I'm not sure, is this the way things should have gone (Student EE, clinical)?

Tutors also noted the usefulness of reflection for clinical students.

Well I think the reflective journal is a very good tool to use to talk about these things. So with this particular student I'll be looking at her quandary about patient

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care and this very overloaded work shift and talk about how she might handle that the next time just to give her some idea of what would be appropriate (Tutor Q, clinical).

They (the students) really sort through some of what they saw, what they thought was happening, and how they could do that differently (Tutor W, clinical).

The clinical course objectives suggest that students in Level 4 should be reflective practitioners who are able to evaluate themselves. It is obvious that this objective is being met by the students who participated.

Professional and Personal Relationships

Students in this level discussed how their encounters with the Tutor, the patient, Nursing Staff, and Preceptor significantly influenced their decision making. Students were trying to consider their patients when determining a course of action, while at the same time making every effort to please the Preceptor and other members of the Nursing Staff.

Tutor

The Tutor played a significant role in the PBL setting. In this setting the Tutor was seen in two different ways; either as an overseer to ensure that the students stayed on track, or as an involved participant who ensured that the course objectives were being

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met. Some students suggested that both approaches had positively influenced their

decision making.

> I think from times when I have had less direction it's been good because I think it's increased my confidence in the ability to make a decision because I've seen that I can decide what I need to learn and then seen yes that was good and I made right choices and I came to an effective conclusion. So I think it makes me a little more confident. And I have noticed in clinical practice because I'm able to outline what I need to learn, how I need to learn it, and then see it actually with a patient it does help with my thinking skills there (Level 4 student focus group).

> Whereas I have the alternative perspective because my Tutor tells us when we come in with the literature and we make the decisions with regards to the patient situation or their care, she tells us this is great, this helps me because you're my link to the new research. Because she doesn't have the time to go out and find all those things and to learn the new things that are going to help her make decisions every day. So she tells us that we're helping her learning which furthers our confidence too in the fact that we can find the literature and help her out as well (Level 4 student focus group).

In contrast, some students described the Tutor as having a negative influence on

their decision making.

> Like I was coming into September my last semester I was very confident in my PBL abilities, very confident in my clinical because I felt very much that this was going to be the semester to wrap it all up but the PBL Tutor this semester she's very much into the research part of things and she's always there say, ok well, almost that she almost tries and generate alternative perspectives too much so we never get to focus on our immediate task. And as a result of that, and it's been talked about in the group and private, like not during PBL but just amongst members, that it's a decrease in our confidence, that we thought we knew not that we're like know-it-alls and we know how to do all this but we thought that we were fairly comfortable critiquing our literature, critiquing our resources, finding the appropriate resources. And it just seems that it's never good enough, like we're not commended for what we do but what we don't do is recognized (Level 4 student focus group).

Well in class she (the Tutor) makes our decision we don't get a lot of say in them but I think outside of class we come to our own conclusions and aren't influenced by what she says because it becomes more of a dictatorship than a suggestion in the end (Student GG, PBL).

Patient

The patient was identified as an influencing factor in student decision making as students described how they wanted to take the patient into consideration when making decisions and expressed their empathy for the patient on numerous occasions.

His respiratory rate had gone up and he was shaking his head. He would kind of just look at you with this almost tearful look, like he was on the verge of tears. And he really responded when I would be right at his head and talking to him, he really responded to that. I'd say do you understand me, and he'd nod. I guess I just picked up on his cues as well like what he was doing ... you could tell that he was scared and just talking to him one on one and explaining what was happening or what we were going to do to fix the problem and he was going to be ok .... So just kind of trying to reassure him that he was going to live, he was going to be ok, he had to fight (Student FF, clinical).

If I knew she wasn't going to eat her lunch, I wouldn't wake her up and ask her to eat her lunch. Because this would just increase her stress level drastically. It sounds horrible but really she could eat her lunch later. Even wound care, if it was first thing in the morning, got her washed and dressed, if she was really having a hard time I would come back later, like a couple of hours later and check her dressings and things like that. My Preceptor stressed the importance of the wound care. I didn't really see that it was a priority because it was so uncomfortable for her, but she really stressed the need for them to me and why we had to make sure that the sites were clean and dry every day and make sure that they got done in order for it not to progress into anything further. But if it was my own choice I don't think I would have made that a priority (Student DD, clinical).

Students in Level 4 also continued to worry about causing injury to the patient, but this was less of a factor than in previous years. Their first priority was ensuring that the patient was treated with respect and that he/she was included in the care plan.

Nursing Staff

The Nursing Staff played a significant role for the fourth year student. The Nursing Staff was often described by the students as a source of anxiety. Many suggested that they did not want to do anything to upset the nurses or to appear foolish in front of them. Patient care decisions were often influenced by the students' attempts to appear like a 'good' nurse in front of the staff nurses.

> You don't want to do it, they (the Nursing Staff) want you to do it, but other times, you want to do it and they don't want you to do it. But I think you would have to do the best for the client. At the same time, try to respect the fellow staff and try not to offend them but I would say the client comes first. There was one incident with a patient and I felt that they did not do things in a right way. As a student you have limited freedom or limited say in what you do and what you can say (Student Z, clinical).

> Nursing Staff highly influence my decisions and my practice in how I go about doing things. For me, I regard the Nursing Staff as the seniors who know more. They have the knowledge, they have the training. So I look to them as sort of mentors as people who I can look to and strive to be. I use them as a model (Student EE, clinical).

> I think basically to just kind of win respect of the nurses. I'd have to have a lot of the problem solving done myself instead of sort of working through it with them. For example if I was going to be inserting a foley I'd have to have prepared everything and attempted a few times and maybe couldn't landmark or something like that, or have them help me hold, but if I didn't even have the correct

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equipment and didn't know how to open the tray then that would be another strike against me (Student FF, clinical).

The fears students have are mostly to do with things like what the staff will think about me and my abilities, what my Preceptor expects of me, and whether I will be able to meet their expectations (Tutor U, clinical).

The level of expectation placed on students by the Nursing Staff was felt by the

students.

I never felt so frightened before. Because there's also the pressure of being fourth year and they say, well you're supposed to do everything ... it's a lot to take in (Student CC, clinical).

Sometimes they are (the students) discouraged about the nurses in the hospital telling them that they don't have the experience to do certain things and they compare them with the college students (Tutor M, PBL).

I think that (when there's not the support from the Preceptors) they (the students) are forced to make a decision that may not be the product of critical thinking but one that seems convenient and acceptable to the staff in the context, and I think that that's very, very tragic for a student (Tutor Q, clinical).

Students often made decisions based on what was expected of them, or the way

they perceived that the nurse thought the decision should be made.

They (the students) know that they have to conform in order to be successful in the eyes of the Preceptor and yet it creates some dissonance for them because they also know that they're not really doing what they feel they want to or would like to do or would be helpful for their learning. And they may even feel like they're not dealing with the client in the best possible way given what they've learned. So it does create a lot of angst for them (Tutor U, clinical).

I think that just in general I would always kind of contact them before any final decisions were made to confirm the direction of the decision. And if there was a difference, if they had a different answer than I did about the situation, then we'd discuss why and then come up with a solution (Student AA, clinical).

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Students also described how nurses had shown them, "tricks of the trade"

> They give me helpful hints like holding his buttocks together to retain the enema and things like that. So they kind of helped just with sort of tricks of the trade. It's not really decision making, but just sort of tricks of the trade (Student FF, clinical).

> You have nurses say to you, I know this is a big no-no, but we're not going to get anything out of the tube if we don't put a bit of saline in it. Even though the stuff I've read completely disagrees with doing that (Student CC, clinical).

Preceptor

The Preceptor was identified by the students as being a person who had a significant influence on their decision making. This individual was responsible for questioning the student in order to help him/her sort through various cues, to develop hypotheses and to determine an appropriate course of action.

> There was dark green bile coming up through the NG tube so we just had a syringe open to air going through the gastric tube and there was dark green bile coming up and I would pull back and there would be more in there. So I got my Preceptor, my nurse, so we started brainstorming around what could be the problem (Student X, clinical).

The Preceptor was also the person that students looked to for support, encouragement, and reassurance in their decision making.

> I am just getting that kind of reassurance because I don't want to do anything wrong (Student CC, clinical).

> Feedback is very important. Right now I still need that confirmation that what I'm doing is in the best interest of the patient and to know that that's been successful and effective and especially from my Preceptor I really value her

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opinion and she's very experienced. For her to say now that's exactly what I would have done or the way that it would be done is really good (Student X, clinical).

I try to do what the Preceptor wants (Student Y, clinical).

Nursing Education/Curriculum

The formal curriculum played a minimal role in fourth year decision making in the clinical setting, and the course/level objectives were not identified as playing any role in the students' decision making related to the patient. The assumption made by students was that they would meet the objectives by completing their learning plans with the Tutor and being successful in the course. However, many students indirectly suggested that they used theory in order to deal with patient situations.

In contrast, in the PBL setting the course objectives played a significant role in the decision making engaged in by students. Level 4 students expressed frustration over their perceived loss of the patient in lieu of system issues and they described their reticence as they dealt with bigger systemic issues.

> In Level 4 there isn't that ultimate goal where you think, ok you're starting a scenario every time, we're going to walk away from this with a care plan, and we're all going to understand this and we're all going to know this care plan and be ready to use it. There's no incentive or motive to do that anymore, it's really looking at the bigger picture (Level 4 student focus group).

> The focus is more on caring for the patient within the system and within the interdisciplinary health care team, working with other people, trying to come together with all the resources is more the focus (Level 4 student focus group).

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I find this semester that our clinical is supposed to be tied into the PBL and we're not getting that at all, we're really not getting it. We are going at clinical situations from such an angle that it's not relevant to patient care anymore. It's not what anyone would actually do in clinical it's not at all attached. I think PBL has become three hours a week of learning we're never going to use because it's become very very abstract ... For instance, we'll try to go at it (the patient scenario) from a political standpoint and the topic is something that we really don't understand and it comes away from the patient. I can see these things being applicable if you were in management or administration, but for the new grad entering we aren't looking at the patient anymore and that makes me very frustrated because I think its our last chance to kind of tie it all together and bring it all together. I was looking forward to clinical and PBL being all related and as I move forward in public health I lose out on the clinical side of it so its interesting to stay clinically oriented and this hasn't been that and its frustrating and everyone is having such different experiences and it would be interesting to find out what they're really doing (Student GG, PBL).

But our Tutor affects it too because at the very beginning he was very driven to focus our learning on system issues. Like it was the broader political picture that he was really into so we ended up looking at really big things, not like patient situations (Student HH, PBL).

They're (the students) comfortable looking at patient care issues and that it's such a stretch to look at broader issues and they linked health and society and fourth year PBL as being such a stretch because they really understood things more from a patient, individual patient focus and learning that traditional role. And for them to be thinking about the broad determinants of health and really understand them is very difficult (Level 4 Tutor focus group).

Learning Needs

Students did not describe the influence of their learning needs on decisions made in relation to patient care. However, Tutors in the clinical setting described a focus on learning needs and the influence of this focus on the students.

They (the students) are pretty focussed on their own learning needs no question. Yeah they're pretty 'I' focussed and that's some of what I hope my questioning does is to bring them back to the patient. But yeah a lot of the stuff that they talk about is well yeah I can tick this off my list and I did this. Oh ok, good. How was the patient about all that? But they are still very 'I' centered (Tutor T, clinical).

But it strikes me that generally what they come in with is stuff related to their course objectives as opposed to sort of clinically-oriented issues. But generally they seem to focus on those course objectives that are less related to the day-to-day clinical stuff and more to the leadership and the communication and those other things that they need to do as part of the course requirements. And generally speaking, their course objectives, you know those little side projects that we do in fourth year, they all tend to revolve around patient care type issues, but when it comes to actually sort of coming to discuss how they might have managed a situation or whatever, they sort of rarely do that unless approached about it (Tutor, X, clinical).

And so that the students kind of needs and learning needs of how do I do this patient teaching piece sometimes drives what they do but it's wrong for the patient (Tutor Z, clinical).

Environment

One factor that significantly enhanced or impeded the decision making of fourth year students was the environment within which they were practising. Students described the environment as having been either supportive or not conducive to independent decision making. They also described the need to feel comfortable in the environment. One new influencing factor described by students in this level was the influence of the struggle between ideal and 'real' nursing practice.

I think if you're in a less critical environment, you have the luxury of time and you don't here so I think the big thing is the quickness or the rapidity of my

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problem-solving. It has to be immediate from this is the problem to, what am I going to do about it? And not really thinking of the pathophysiology or other mechanisms. It's just, ok he's bleeding, what are we going to do right now (Student FF, clinical)?

It's (the clinical environment) overwhelming. There's just lots of noise and beeping all the time, especially your initial vision when you walk in there ... feeling overwhelmed impeded my decision making. I wanted to make sure that I was doing an appropriate intervention for the baby, especially because they're so fragile, to make sure that everything is in the best interest of the baby (Student X, clinical).

Last semester I was in a geriatric assessment unit, and at the end of the term I felt confident making a lot of clinical decisions on my own than I do now in a new environment (Student X, clinical).

This was reiterated by the Tutors who also suggested that the environment played

a key role in the students' success or failure in the clinical setting. They commented that

fast-paced settings and settings that dealt with critically ill individuals were not well

suited for independent decision making by nursing students.

I think that their autonomy as a decision maker does not emerge until later in the placement when they are in more critical care environments. There's a confidence level that they have to acquire in the setting as well as a comfort level of the Preceptor for the student. Their decision making may be a little limiting just by virtue of the acuity of the patients (Tutor N, clinical).

I don't know that the students in terms of decision making if they really make many decisions. Many of them report that they don't feel that they are able to make a collegial contribution to decisions in the clinical setting. And so sometimes that's helpful in the group for them to feel that the group is providing support for them (Tutor R, PBL).

I think that the setting effects their ability for decision making and if they're just going at a fast pace, then I don't think they're learning or making decisions as

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often as they could be. I don't think they should be at a fast pace when they are students (Tutor S, clinical).

Students are reactive and they are just trying to survive and get through the shift. They don't make decisions because the setting doesn't allow it (Tutor T, clinical).

Feeling Comfortable

Students repeatedly suggested that they needed to feel comfortable in the clinical

setting and with the Clinical Preceptor and other Nurses in order to feel confident in their

decision making.

It's easy to make decisions when they're (the patient) doing well and you can say I'm comfortable advocating ... like yesterday I had a mom who wanted to breastfeed her baby and her baby isn't doing particularly well at the moment and I said, do you want them to give him a bottle or do you want an NG tube inserted? I'm comfortable kind of presenting these options ...When they're deteriorating and you've got them, I become much less confident in my decision making. Like I'm fine to hand ventilate using the ventilator but when it comes to hand bagging and actually getting in there I'd rather have someone who has experience. I really don't feel comfortable using that as a learning time (Student CC, clinical).

Yeah I find if the staff is supportive and it's very comfortable in that situation, what a place to learn. It's really a positive learning experience if you feel comfortable there. If you don't feel comfortable there, you feel like you're an alien and you feel like you're an intruder, and a lot of the times then you just want to put your time in and leave as soon as you can and just not do anything negative (Student EE, clinical).

The staff were very supportive of me and they're like, well we know you're a student, you're learning, it will happen, little mistakes. They were very supportive and they made it a comfortable environment for me in which to learn, and I found that in those environments where it's comfortable I learn the best, the most (Student Z, clinical).

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If students felt comfortable with the Nursing Staff then they felt that any wrong decision would not be criticized, but that learning would occur from it. This was supported by the Tutors who recognized that when students were comfortable they were more prone to make independent decisions.

> I think it (the setting) provided her (the student) with the confidence to be able to do it (decision making) without worrying that somebody would say, oh the student did this or that. She just really felt supported by them. There were a couple of times that she flubbed something up, but she said that people were really understanding and didn't give her a hard time about it. So I think it gave her the confidence, and she's certainly not somebody who kind of jumps in with both feet and does silly things without asking. If she's not sure, she asks. But I think she felt really confident that if she did make a little boo boo here or there that it wasn't going to be the end of the world and people wouldn't think less of her or not still consider her a member of the gang (Tutor X, clinical).

Ideal Versus Real

In this final year nursing students talked about their struggle between the clinical and classroom environments. They questioned the differences between ideal Iwhat was taught in the classroom) and reality (what they way in the clinical setting) in nursing practice. This may be due to the fact that students in this year were on the clinical floor for more hours than in previous years and had a greater opportunity to see the real workings of the floor. Students and faculty both described the struggle as students tried to resolve the dissonance between ideal practice and reality. This disparity was another factor that influenced their decision making.

They (the nurses) have their own practices and then the physician will come along and say, not that way to them and its what the literature says. There's a very, very strong line in there which I didn't expect there to be between the medical and the Nursing Staff. So the decisions that are made are very much top-down. So there's not a lot of autonomy for the nurses in there (Student CC, clinical).

Summary of Decision Making in Level 4

The conceptual framework for Level 4 is illustrated in Figure 8. This framework is, once again, based on the findings from this level. In Figure 8, those components that are new have been underlined. In the following text, new components are illustrated in bold print.

The types of decisions:

- Assessment

- Intervention

- Resource

- Communication

- Action

The influencing factors were described as:

Internal

- Decision Maker Characteristics: Knowledge, Fear, Level of Confidence,

    Reflection (self-evaluation)

External

- Professional Relationships: Tutor, Patient, Nursing Staff/**Preceptor**

- Personal Relationships: **None described**

- Nursing Education/Curriculum

- **Environment: Ideal vs. Real**
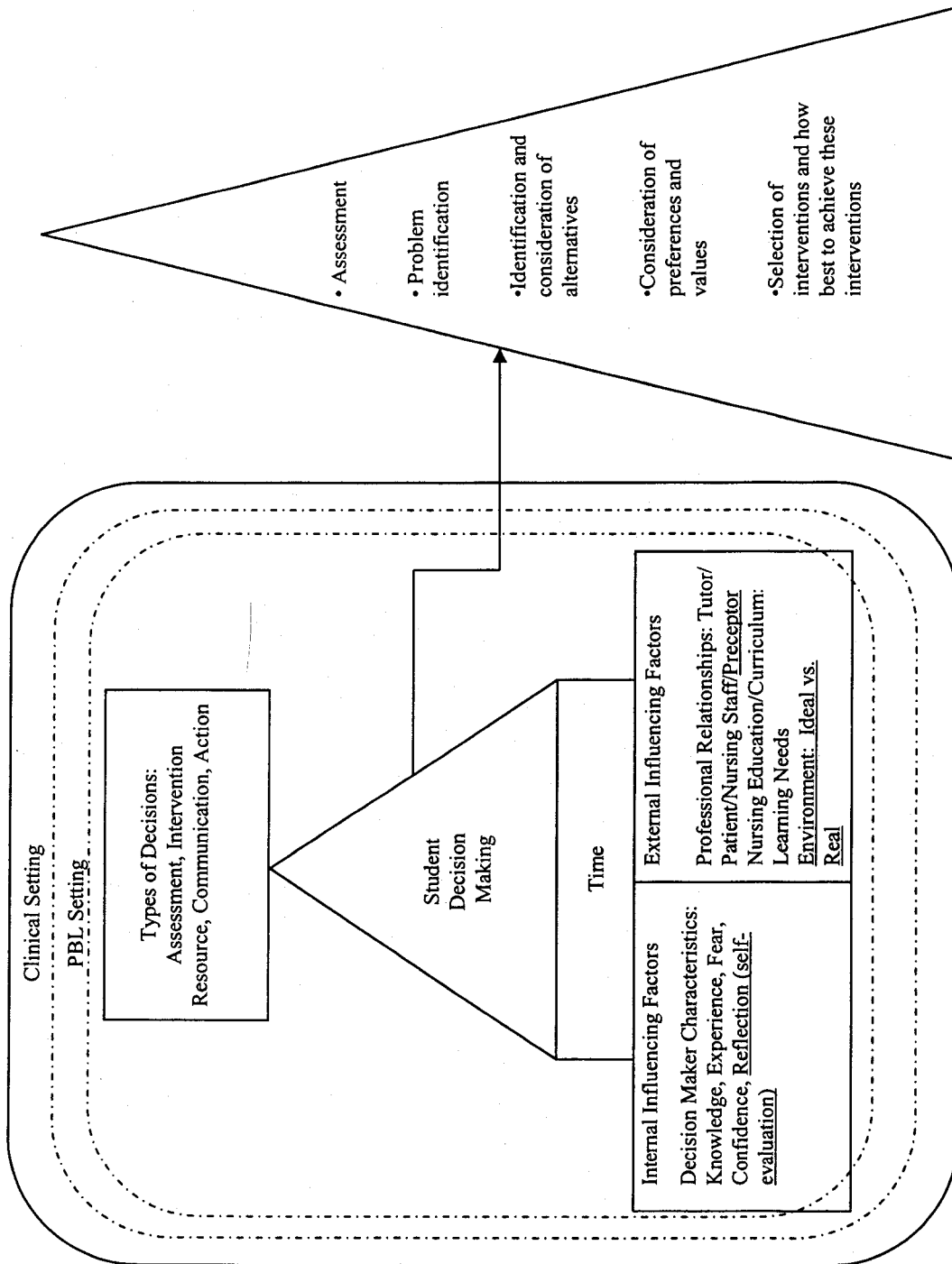
Figure 8. Level 4 conceptual framework.

The Development of Student Decision Making

The final research question asked how student decision making developed over the four years of a baccalaureate nursing education. This development will be presented according to the types of decisions made and the factors that influenced decision making (both internal and external).

Types of Decisions

As has been described by other authors (Boblin-Cummings, 1996; Boblin-Cummings et al., 1999), nurses experience difficulty expressing the decisions that they make during the provision of patient care, which makes the exploration of nurse decision making a difficult endeavour. This current study revealed that nursing students in all four levels of the baccalaureate nursing programme also have difficulty identifying their patient care decisions.

Students over the course of the four years described five key types of decisions: assessment, intervention, communication, resource, and action. As is illustrated by Figure 9, the presence of these types of decisions varied across the four years. The presence of a check mark (X) indicates that the students in either the clinical or the PBL setting referred to the decision.

	Assessment	Intervention	Resource	Communication	Action
Level 1	X	X	X		
Level 2	X	X	X	X	
Level 3	X	X	X	X	X
Level 4	X	X	X	X	X

Figure 9. Table of decisions by levels.

Assessment Decisions

Students in Level 1 were able to describe their assessment decisions which focussed primarily on how to complete a patient assessment. They made decisions about the types of questions to ask the patient, the manner in which to ask the questions, and their approach to the patient. They also described how they made assessment decisions that they hoped would please the Clinical Tutor as opposed to decisions based on gathered information. By Level 2 students were making decisions about what information was of greatest importance. This focus on decision making related to assessment was not evident in Level 3 clinical. Students in this level described their interventions and failed to describe any decisions related to what data they had gathered or how they determined what was important information and what was extraneous. This omission may reflect the course objectives and the focus of this year which is on interventions and not on assessment. This may also reveal that by Level 3 students are internalizing the assessment process and do not feel the need to articulate it. Students in Level 4 were able to describe their assessment decisions which included decisions about what questions to pose, how to pose the questions, and what to do with the collected data.

Intervention Decisions

Intervention decisions also changed over the four years. In Levels 1 and 2, students in the PBL setting described simple intervention decisions that often related to

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providing resources and information to the patient. These decisions were related to the

curriculum which focussed on health promotion. By Level 3, students were beginning to

make independent intervention decisions when they encountered simple situations. By

the end of the programme students were beginning to engage in intervention decisions in

more complex clinical settings and much of the decision making around interventions

was in collaboration with the Nursing Staff/Preceptor. Intervention decisions were often

made independently by the students, but not acted upon without first seeking support and

feedback from the Nursing Staff/Preceptor.

Communication Decisions

Students in all four levels described their decisions related to communication.

These decisions fell into two categories; decisions about who to discuss the clinical

situation with in order to make a decision (eg. Tutor, patient, Nursing Staff/Preceptor),

and decisions about what communication strategies to utilize with the patient and Nursing

Staff/Preceptor.

Students in both Level 1 PBL and clinical described their decisions to engage the

Tutor and/or peers in their decision making. In the PBL setting this was a necessary part

of their group work and a course requirement. However, it was obvious that students

recognized the benefit of these individuals to their decision making as they shared

information and provided feedback. Students in Level 1 made decisions related to how to

use their communication skills to put the SP and the patients in the community "at ease" and "to make them comfortable". They described their decision to use their listening skills, to introduce themselves, and to ensure confidentiality.

Communication decisions changed in Level 2 and now incorporated Nursing Staff in the clinical setting. Students described their decisions about who to approach for information and when to approach that individual. They were very cognizant of how their decision making would be impacted if they approached a non-supportive nurse and they quickly discerned which nurses would benefit their decision making process and which ones to avoid.

In Level 3, students also made decisions about what to report to the nurse and/or Clinical Tutor and when to report it. However, the biggest difference was the perceived risk associated with discussing client issues with the nurse to determine a course of action. Students in their third year were frightened that they might be perceived as "stupid" if they asked questions and were not willing, at times, to admit that they did not know things, which may have influenced their decision making abilities. By Level 4 students described a significant change in their communication decisions. Not only were students approaching Nursing Staff/Preceptors for assistance and support in their decision making, they were also engaging in discussions with other health care team members. Students described several occasions when they called the physician to describe a patient

care situation. Overall, they described a heightened level of confidence in their decisions related to communication.

Students continued to make decisions about how to utilize their communication skills as they progressed through the programme. By Levels 3 and 4 students made many decisions to use their skills to provide comfort for patients and their families. Students noted that they could not intervene in many complex situations, but they could provide emotional support through the utilization of their communication skills. Students in all four levels described their decisions to approach individuals (Nursing Staff, Preceptor, patient, physician) in the clinical setting. Various factors influenced these types of decisions including the perceived receptiveness of the individual, and the student's perceived response of the other individual to his/her questions and information sharing.

Resource Decisions

Students in Level 1, in both the clinical and PBL settings were focussed on the use of textbooks and access to the Tutor to support their decision making. Much of their decision making directly related to what they were told to do by the book or Tutor. In addition, students utilized tools that were provided for them by the Clinical Tutor to determine what information to gather during the patient assessment. Students also utilized the information and feedback from their peers to facilitate their decision making. As students progressed in the programme they began to utilize more resources and the

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quality of the resources increased in congruence with the students' level in the

programme. By Level 3 it was evident that students were beginning to critique their

resources and were seeking out quality information to inform their practice. Level 4

students were deciding to include many more people resources including allied health

care professionals and were utilizing other resources such as policies; they became more

critical of both text and professional resources.

Action Decisions

Students in Levels 1 and 2 in both settings did not describe any action decisions.

These decisions emerged in Levels 3 and 4 and are described as the decision to act

independently based on collected patient information, to act in collaboration with another

individual (Tutor, Nursing Staff, Preceptor), or to take no action. Students and Tutors in

the clinical setting noted these action decisions and how they influenced patient care and

the overall development of decision making skills.

Factors That Influenced Decision Making

Students described various factors that influenced their decision making and as

well as the degree to which each factor influenced decision making. Students described

both internal and external influencing factors. Internal factors are defined as factors that

originate within the individual decision maker. In contrast, external factors originate

outside of the individual.

Internal

Students described several decision maker characteristics including;

knowledge/experience, fear, confidence, and reflection (self-evaluation). These factors

played a significant role in student decision making as they influenced the types of

decisions students were willing and able to make and how they proceeded through the

decision making process. These internal factors were less apparent in the PBL setting

which may be directly related to the fact that students were not dealing with 'real'

patients.

Knowledge/Experience

Students in Level 1 described how knowledge from a variety of sources including

past personal experiences, prior content knowledge, and knowledge from other courses

were utilized to facilitate their decision making. Knowledge from previous courses was

also a source of information upon which decision making was based. Tutors suggested

that students were not able to extrapolate from previous knowledge and suggested that

their lack of knowledge actually impeded decision making.

By Level 2 it was apparent that students were beginning to apply their knowledge from a variety of sources to patient situations in both the clinical and PBL settings. They described a growing number of sources for their knowledge including the introduction of theory and other courses such as psychology and sociology. Tutors agreed that students were integrating theory into their decision making.

The utilization of theory and knowledge from other courses continued into Levels 3 and 4. The most significant change was the students' utilization of knowledge gained from nursing literature and a greater amount of clinical experience to refer to during the decision making process. As much as students described their increasing level of knowledge and experience in Level 4, students also articulated a frustration over their perceived lack of knowledge and experience in complex patient situations. They described feeling unprepared and lacking in experience. This finding was supported by the Tutors in this level who also recognized the students' lack of experience and the influence this had on decision making.

Fear

Feelings of fearfulness remained consistent over time, but the reasons behind the fear changed. Students in Level 1 were fearful of failing the course if they made a wrong decision during the assessment process; they feared the Tutor and his/her response; and they feared approaching the patient, and/or upsetting the patient during the assessment

process. These fears changed in Level 2 as students entered the clinical setting where direct patient care was required. Students now described their fear of causing harm to the patients and a fear of looking stupid in front of the Nursing Staff. This fear often influenced what students communicated to the nurse and impacted their ability to gather information that could best inform their decision making. By Levels 3 and 4, students continued to fear causing harm to the patient as they engaged in more complex patient care situations. They now had the knowledge to understand what the implications might be if a poor decision was made. The fear that students described was reiterated by Tutors in the clinical setting. One underlying fear that Level 4 graduating students described was their inability to make sound autonomous decisions when they graduated.

Level of Confidence

The third internal factor influencing decision making was the student's level of confidence. Students slowly gained confidence in their decision making skills and began to describe how their increasing level of knowledge and experience influenced their level of confidence in the clinical setting. Students in the PBL setting also described a growing level of confidence as they became increasingly familiar with the PBL process and the expectations of the course. By Level 4 students suggested that they were confident in making decisions related to what data to gather and how to interpret the data and described their ability to make intervention decisions, but they also described how they

lacked the self-confidence to act independently on them. Students described their reasons for not acting independently noting that they did not want to make a mistake and hurt the patient. They also recognized that there were 'exceptions to the rules' and didn't want to risk that they would make a mistake. The complexity of the clinical setting and the level of patient acuity may have been an influencing factor in the students' level of confidence. In the PBL setting students continued to gain confidence in their decision making as they progressed through the four years. A lack of confidence was not apparent in this area which may be attributable to the artificiality of the patient situation.

Reflection

Another internal factor that emerged in the fourth year was the decision maker's use of reflection (self-evaluation) to inform his/her decision making. In Levels 1-3 students did not describe how they evaluated their decision making, but instead they described their reliance on Tutors/Nursing Staff and peers for feedback regarding their decisions. However, in Level 4 students described how they were now able to look back on patient situations, critique both their decisions and the way they were made, and then determine what to do the same or differently the next time they encountered a similar patient situation.

External Factors

Students described several external influencing factors including: professional and personal relationships, nursing education/curriculum, and environment. Many individuals provided support for student decision making including the Tutor (clinical and PBL), patient, the Nursing Staff/Preceptor, and peers. The presence of these factors remained fairly consistent over the four years, however, the amount of influence they had on the student did change. These factors were described as having had both positive and negative influences on student decision making.

Professional and Personal Relationships

The Tutor was described as an influencing factor more in Levels 1 and 2 in the clinical setting, yet remained consistent over time in the PBL setting. As students in PBL moved through the programme they described the Tutor more as a source of validation and support in contrast to a source of information and guidance in earlier years.

Patient. The patient was described as an influencing factor in all levels in both the clinical and PBL settings, excluding Level 3 clinical. When making decisions, students considered the patients' safety, their needs, their families, and how the patient intervention would influence them. They feared upsetting patients and tried to do the best for them. This focus on the patient influenced the types of decisions students made and

the way they engaged in gathering data. In Levels 2 and 4, students described the patient as a source of information to facilitate their decision making, but also described him/her as a source of threat and intimidation. In these instances the patient was perceived as an inhibiting factor in their decision making.

Nursing Staff/Preceptor. The influence of the Nursing Staff/Preceptor on student decision making remained consistent in Levels 2, 3, and 4. Students made decisions that they felt were going to please the Nursing Staff and they utilized the Nursing Staff/ Preceptor as a source of information and guidance when faced with patient situations that required action. The only change that was apparent was the student's utilization of the Nursing Staff/Preceptor. By Level 4 students were approaching the Nursing Staff to support their decision making and to provide them with feedback. In addition, students began to ask nurses for the rationale behind their decisions and began to challenge these nurses' decisions.

Peers. Decision making in both the PBL and clinical settings was influenced by the peer group. Students in the early years utilized their peers as a source of information and feedback, and often described brainstorming activities. Peers were also helpful when students engaged in the assessment and prioritization involved in patient scenarios. As students proceeded through the programme the influence of peers on their decision

making decreased. By Level 4, the Nursing Staff/Preceptor were themselves considered 'peers' and interacted in a similar fashion with these individuals to support their decision making.

Nursing Education/Curriculum

The curriculum played a role in student decision making by focussing students on particular stages of the decision making process. In addition, it influenced the types of decisions they made for their patients. Students in Level 1 described decisions related to assessment in the clinical setting which was the focus of the curriculum. In the PBL setting, some students expressed frustration over not being able to go forward following the assessment to determine patient interventions due to the curricular focus. This frustration was again evident in Level 4 when the focus of the curriculum was primarily on looking at patient issues from a macro perspective and less concerned with the individual patient issues. Students expressed frustration over the perceived loss of the individual patient and his/her needs. In contrast, in the clinical setting students continued to make decisions related to the individual patient and his/her needs and only discussed macro issues with the Clinical Tutor during weekly meetings. Tutors also described this change in curricular focus and discussed their struggle to ensure that students took a broad approach to patient issues instead of focussing only on immediate patient care issues.

Student learning needs were also an influencing factor on decision making.

Students in Level 1 were concerned with their learning needs and about being successful

in the course and less focussed on making patient care decisions. The focus towards

learning needs and away from the patient was evident in Levels 2 and 3 PBL, and in

Level 4 clinical. A focus away from the patient influenced the type and number of

decisions students made regarding his/her care.

Appraisal

One unanticipated finding that emerged from the data when reflecting on the

entire four year programme was the appraisal process used by the students during

decision making. The students' appraisal of the situation influenced the types of

decisions they made and the way they responded to the situation. Appraisal involved the

student determining the risk that was involved in each aspect of the decision making

process. At various stages, students appraised the risk to themselves personally,

scholastically, and professionally, as well as to the patient. This reflected a simultaneous

process the students engaged in as they proceeded through the decision making process

Appraisal occurred during all phases of the decision making process, however, it

was most evident during data collection and intervention phases. It allowed the student to

either continue with the decision making process, to stop or to pass the remainder of the

decision making process and ultimate nursing action over to a Tutor or Nursing Staff/

Preceptor. This appraisal process had the potential to influence decision making for students in all levels of the programme. In Level 1, students described their appraisal of risk as it related to their ability to be successful in the course. They primarily appraised the Tutor's response to them in both the PBL and clinical setting and this appraisal influenced the types of decisions that students made. To a lesser degree, students assessed the SP's potential response to their assessment and/or the questions that they were asking and the manner in which they were asking them. The appraisal influenced how they asked questions and the types of questions that they posed to the patient.

In Level 2, students in the clinical setting continued to describe the influence of appraisal on decision making. One added element was the introduction of the students into the acute care setting. In this setting students found themselves assessing the risk to both themselves and to patients. Students also appraised the influence of additional factors including the Nursing Staff and the patient. Students appraised the response of Nursing Staff to the question they posed to Staff, which was a necessary element in their decision making. Students also described their appraisal of the patients' response to them when they made decisions about their care. In addition, these Level 2 students described their fear of failing the course.

In Levels 3 and 4, as the level of patient acuity increased in the clinical setting, students described their reluctance to act independently for fear of causing harm to the patient, appearing 'stupid' in front of other professionals or seeming to be inadequately

prepared. If the students determined that Nursing Staff or the Preceptor would not be supportive in their decision making, they would not approach them, but would alternately utilize another resource. Students in Levels 3 and 4, in the clinical setting, continued to describe an appraisal of how other nurses would respond to them and this appraisal influenced communication and action decisions.

Students in these senior levels continued to appraise the response of the patient to their decisions. If they determined that the patient would respond negatively to them, then they would employ the assistance of Nursing Staff or their Preceptor to intervene. Students also continued to assess the risk to the patient.

Students also appraised the risk to themselves and this was most evident in Levels 3 and 4. Students in these levels described this appraisal when they were facing situations where they felt that they were in danger of being harmed by the patient. The majority of these situations arose in community or psychiatric settings, however, students also appraised the risk to themselves professionally. In Level 4, students were determining what decisions they could make that would help or hinder them as they sought to fully engage in the role of the Registered Nurse. This was most often apparent when Preceptors gave students patient care responsibilities that were not appropriate within the student role.

In the PBL setting, the appraisal process involved an assessment of the Tutor, course, and/or peer expectations. In addition, it involved the students' appraisal of the

risk to themselves scholastically if they were unable to meet these expectations. Students determined what decisions to make based on their appraisal of these factors.

Summary of Key Findings

The analysis of the data revealed three key findings.

1. Nursing students make five major categories of decisions which are: assessment, intervention, resource, communication, and action decisions. Intervention and action decisions are less often described by students in comparison to assessment, communication and resource decisions. These decisions are sometimes made independently and most often in collaboration with another individual.

2. Student decision making is influenced by several internal and external factors. Internal factors include the decision maker characteristics of knowledge/ experience, fear, confidence, and reflection (self-evaluation). External factors include professional and personal relationships, nursing education/curriculum, and environment.

3. Students engage in an appraisal process during decision making. They appraise risk to themselves physically, scholastically, and professionally. This appraisal occurs at various stages in the decision making process including during assessment, interpretation, and intervention. Students also appraise the risk to the patient when making intervention decisions in the clinical setting.

Each of these findings will be discussed in the context of existing literature in the next chapter. Figure 10 presents the final conceptual framework that illustrates these major findings and presents a pictorial perspective of nursing student decision making in the PBL and clinical settings. It must be remembered that this conceptual framework is two dimensional in nature and is designed to capture the elements of student decision making; it is not designed to capture the decision making process. It is important to note that the elements contained in this conceptual framework occur simultaneously and not in a linear fashion. A comparison of the final conceptual framework with the initial conceptual framework illustrates the enhanced understanding of the various components of decision making.

Students make five key types of decisions. These decisions were not delineated in the initial conceptual framework because literature was unable to provide an account of the decision making made by students during the baccalaureate nursing programme. Another change to the framework can be found in the factors that influence decision making. The initial thought was that factors existed, but it was unclear what or who the factors were that influenced student decision making. It is now evident that numerous factors play a significant and interactive role in the types of decisions that students make. On reflection, it is apparent that internal influencing factors can be further classified as cognitive components and emotional responses. Cognitive components include the utilization of knowledge and experience to inform decision making. The amount of

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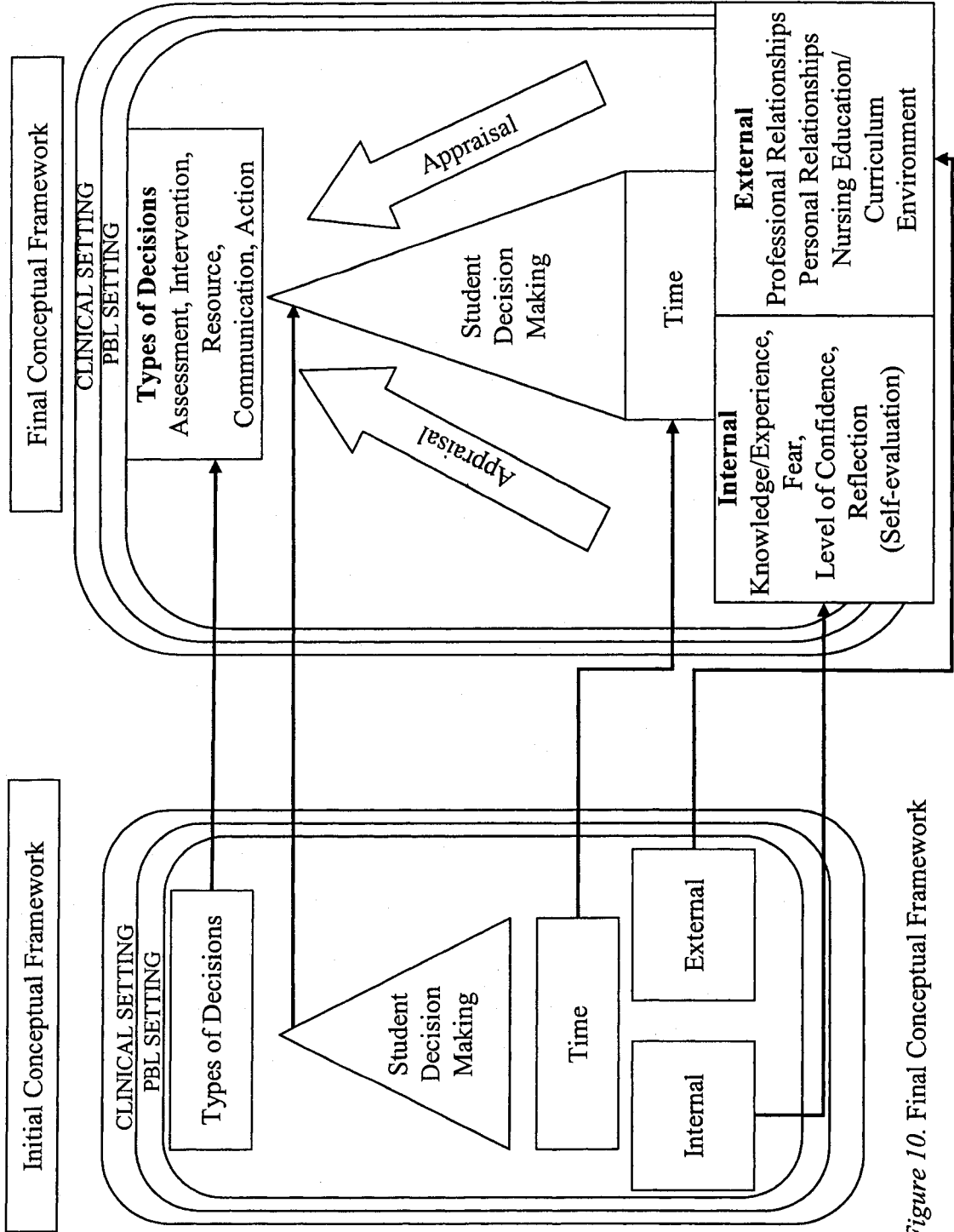
Figure 10. Final Conceptual Framework

knowledge and/or experience possessed by the decision maker influences all stages of the decision making process and these factors have a direct influence on the decision maker's emotional response to patient situations. Emotional responses include the decision maker's fear, lack of confidence, and reflection (self-evaluation). For example, if a student possesses a strong knowledge base about a particular patient situation and has experienced a similar scenario in the past, he/she is more likely to respond confidently and proceed in the decision making process. In contrast, the decision maker who lacks knowledge and/or experience in an unfamiliar patient situation may respond with fear, thereby impeding the decision making process.

What was not described in the initial conceptual framework was the appraisal process in which students engage in all aspects of the decision making process. This appraisal includes the student's perception of risk to him/herself physically, scholastically, and to his/her professional role. In addition, the student appraises the risk to the patient. The appraisal process influences all components of student decision making.

CHAPTER 6: DISCUSSION

This case study explored the development of nursing student decision making in Levels 1 through 4 of a basic BScN programme. To do so, this study explored the types of patient care decisions made by students and the factors that influenced student decision making. Decision making related to patient care was the focus of the study. As is recommended by Speziale and Carpenter (2003), this chapter will discuss the major findings and the literature will be used to place the findings in the context of what is already known about nursing student and nurse decision making.

Types of Decisions

Nursing students made five key types of decisions. These included; assessment, communication, intervention, resource, and action decisions. These decisions were made independently, or in collaboration with another individual. Intervention and action decisions were less often described by students in comparison to assessment, communication, and resource decisions.

Decision making is a complex process in the everyday life of the nurse. Nurses must make a vast number of varied decisions throughout the course of their day. As Ellis (1997) states, "nurses must make decisions daily about whether a problem exists or has the potential for existing, what the cause of that problem is, and what interventions would be most beneficial for solving the problem" (p. 325). Several studies have explored the

types of decisions made by nurses. One such study was conducted by Bucknall (2000) who observed 18 nurses in urban and rural based critical care settings to explore their decision making activities. She discovered that nurses made intervention, communication, and evaluation type decisions. Intervention decisions included goal setting, anticipatory preparation, implementation, and revision of patient care. Communication decisions involved any activity that the nurse engaged in that required deliberate communication with the patient, visitors, or other members of the health care team. Bucknall's intervention and communication decisions are much like the decisions made by the nursing students in this research. Prescott et al. (1987) also support the study findings, and suggest that nurses are involved in decisions related to assessment, problem identification, and conclude with the decision about the intervention required and evaluation. Unlike nursing students, nurses in the previously mentioned studies also made evaluation decisions which involved the deliberate activity of observing measuring and recording or reviewing data to make an informed decision on the patient's medical state.

The types of decisions that nursing students made in both the PBL and clinical settings for all four levels (except Level 4 PBL) were those that facilitated the provision of patient care. Many of these decisions were made in relation to what information was necessary to gather and how to interpret it (assessment decisions). Students also described decisions related to communication and utilized their communication skills to

gather and prioritize information, and to determine the best course of action

(communication decisions). Decisions related to what nursing action was appropriate

based on the collected patient information were described by students (intervention

decisions). Students also made decisions related to who or what resources to utilize when

collecting and interpreting data, and determining an appropriate nursing intervention

(resource decisions) and decisions to act based on the information gathered (action

decisions).

Assessment Decisions

Nursing literature identifies a diagnostic phase within the decision making

process. The diagnostic phase includes the observation of a patient situation, data

collection, and data processing which ultimately results in the identification of problems

or decisions about nursing problems (Junnola, Eriksson, Salantera, & Lauri, 2002;

Prescott et al., 1987). This diagnostic phase is reflective of the assessment decisions that

students in this current study made. Another parallel to these findings can be found in

O'Neill and Dluhy's (1997) research on undergraduate decision making. They noted that

the students had a short repertoire of assessment options when faced with a clinical

situation, and that they based their decision making on simplistic rules. This rule-based

approach required students to report their assessment findings to an appropriate person.

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Findings from this current study support those of both Junnola et al. (2002) and

O'Neill and Dluhy (1997). Students in Level 1 and 2 were much more rigid in their

approach to decision making. Students in Level 1 utilized checklists to assess the patient

and approached the situation in a rigid fashion. Similar to the findings described by

O'Neill and Dluhy (1997) students did not always understand the meaning or significance

of the data they had collected and shared their information with the Clinical Tutor,

Nursing Staff and/or Preceptor. Students in the beginning years were more focussed on

tasks and less on interpretation of the data and subsequent action. As students progressed

through the programme they became more confident with their assessment decisions and

described interventions that required an independent decision.

Although students in Levels 3 and 4 did not always describe their assessment

decisions it was apparent that assessment had occurred in order to get them to the point of

intervention. This finding is in keeping with Benner's (1984, 1987) work which noted

that as the nurse moves along the continuum from novice to expert, the activities involved

in a task become less distinct, and more of a gestalt.

Communication Decisions

Effective communication is a major component of individualized patient care.

The nurse is required to engage in therapeutic communication with clients, as well as to

work effectively within the health care team (Sallee, 2002). Not surprisingly, as nursing

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students learn how to fulfill this aspect of the nursing role, they are required to make decisions about the best way to communicate. Bucknall (2000) identified communication decisions as those that involved any activity that the nurse engaged in that required deliberate communication with the patient, visitors, or other members of the health care team. In this current study, these types of decisions were made in the clinical setting, and to a lesser degree, the PBL setting. The decision making process was influenced by the students' communication decisions and it was these decisions that enabled the student to proceed towards an action. Communication decisions included who to communicate with, how to communicate, what to communicate, and when to communicate. Many of these decisions have been described by Boblin-Cummings et al. (1999) who, in a qualitative study of 64 nurses in a variety of settings, discovered that nurses made decisions about how to implement their selected actions, which they described as "implementation decisions". These decisions are made as the decision maker determines how to implement nursing actions, interventions, or treatments. Implementation decisions also involve decisions about who to involve in implementing the intervention, how many resources are required to implement the intervention, how resources will be involved, obtained and used, and how the intervention will be implemented. The communication decisions that students described only capture some of these implementation decisions.

Intervention Decisions

Intervention decisions are defined as patient care decisions and include a nursing action and a patient outcome. For example, providing nourishment, assisting with activities of daily living, providing PRN medications, etc. Bucknall (2000) described nurse intervention decisions as including goal setting, anticipatory preparation, implementation, and revision of patient care. Unlike these students, nurses in Bucknall's study made evaluation decisions which involved the deliberate activity of observing, measuring and recording, or reviewing data to make an informed decision on the patient's medical state. Students in the current study described intervention decisions, but these decisions did not include goal setting or anticipatory preparation as described by Bucknall. Only in Level 4 clinical did students give consideration to the revision of patient care through reflection.

The types of intervention decisions students described included decisions related to PRN medications, personal care, communication as a comfort measure, suctioning, providing emotional support and advocating for the patient. This finding is supported by White (2003) who, in her qualitative study of seventeen fourth year students, discovered that students made decisions about which medications to administer, to prioritize patient need, and how to incorporate dietary restrictions into the patients' lifestyles. This author found that the types of nursing decisions made by students were focussed on the patients' immediate needs.

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Nursing students in this study described making more assessment, communication, and resource decisions than intervention decisions. This finding is challenged by Benner (1984) and Jinks and Hope (2000), who suggest that nurses make the largest number of decisions related to treatment and intervention. This may be directly related to the nurses studied, their years of nursing experience, and level of knowledge.

Students in Levels 1 to 3 PBL described a greater number of intervention decisions than students in the clinical setting. This finding is also supported by educational literature which suggests that one of the primary goals of PBL is to resolve a problem. Barrows and Tamblyn (1980) state:

> The problem is encountered first in the learning process and serves as a focus or stimulus for the application of problem solving or reasoning skills, as well as for the search for or study of information or knowledge needed to understand the mechanisms responsible for the problem and how it might be resolved (p. 18).

If the goal of PBL is to resolve problems through the application of decision making skills then it is not surprising that students make decisions about interventions in the PBL setting.

> Students in Level 4 PBL focussed more on system issues, therefore, intervention decisions were not described by the students. A focus away from the patient in the PBL setting is not supported in the literature. Rather, the PBL approach is aimed to integrate theory and practice through dealing with real life situations and encouraging the student to reflect on their knowledge and experience gained from past clinical and PBL experiences (Frost, 1996).

Resource Decisions

Safe and effective patient care often requires that the nurse involves additional

resources to determine an appropriate nursing intervention. Nursing literature provides

two conflicting views regarding resources. Webb (2002) notes that research findings are

being utilized frequently by nurses to provide the basis for clinical decisions. However,

other authors state that although a variety of resources are utilized by nurses in the

clinical setting, nurses prefer human sources of information over text sources

(McCaughan, 2002). Findings from the current study reveal that the primary resource

described by the students to support their decision making in all four levels in the clinical

setting was the Tutor and/or the Nursing Staff. In the PBL setting, the Tutor, peers, and

literature were the most commonly used resources. In both settings, students had to make

decisions regarding the best resource to utilize for a particular patient situation and these

decisions influenced their ability to provide care.

Findings from this current study are also supported by Thompson et al. (2001)

who sought to describe the information that nurses needed to examine the patient

situations that they faced. Their case study discovered that nurses placed the most value

on the information provided by colleagues (including physicians). These individuals

were sought out because they were readily available, their advice was tailored to the

patient's problem and they were seen as trustworthy and credible. McCaughan (2002)

also found that nurses preferred human resources as opposed to text book resources to

support decision making. A study by Junnola et al. (2002) on nurses' decision making in

collecting information for the assessment of patients' problems revealed that sources of

information played a significant role in decision making, in particular information

received from others involved in patient care. Findings in the current study suggest that

students also access resources that are readily available in the clinical and PBL settings.

As they move through the programme, they begin to utilize more resources and a greater

variety of resources, including journal articles to facilitate their decision making.

Additional decisions were made by students when making resource decisions and

included how to gather information from the particular resource, when to utilize the

resources, and what to do with the information gathered from the resource. These

decisions are described by Boblin-Cummings et al. (1999) as implementation decisions

and are evident in all four years of the programme.

Action Decisions

What is not identified in the literature is the decision made by nurses to act or not

to act once patient data have been gathered and interpreted. In this current study, students

described their decision to act or not to act following the collection and interpretation of

patient information. Nursing literature states that decision making involves an action.

However, for these students, this follow-through did not automatically occur; rather

students made the decision to move forward independently, in collaboration with another

individual, or to relinquish the decision making task to someone with more knowledge

and/or experience, most often the Nursing Staff or Preceptor.

One qualitative study of 17 nurses practising in acute care settings conducted by

Ellis (1997) examined the processes nurses used to make decisions in actual practice

settings. Findings from this study note that nurses engage in a rule-out process; they rule-

out whether or not a patient problem exists; they rule-out a cause of the problem; and

finally, they rule-out various actions. Once again, in this study, as in many others, the

assumption is made that nurses act on collected patient data. Benner, Tanner, and Chesla

(1996) provide insight into the student's decision to act or not to act stating that beginners

feel " a remarkable sense of responsibility to perform ... but are so dependent on others ...

they cannot decide what to do or even how to do it" (p. 19).

In the current study students described how they decided to utilize various

individuals to make patient care decisions and often sought out individuals that they

believed would have the most relevant knowledge and experience. First, students

gathered data and sought out help to interpret the data, to decipher what data was most

important, to determine the issue, to prioritize, and to develop a plan of action. This

collaboration required a setting that was supportive and sensitive to the students' learning

needs.

These findings are congruent with those of other authors including McCaughan

(2002) who suggested that decision making was an interactive and collaborative activity

and recognized that decision making in its clinical context was a social activity that involved more than one clinician. McCaughan also noted that nurses rarely made decisions in isolation on any aspect of patient care and constantly sought out assistance and information from their colleagues and other professionals on how to act when they were faced with uncertain situations. The nurses chose those individuals that they perceived to have the necessary information to deal with the clinical situation. This author notes that nurses drew on collective knowledge and experience when they recognized that their own was inadequate for the situation that they were facing. Interactions with others influenced the nurse's decision making. The need for students to collaborate in the decision making process may be related to their level of confidence. Seldomridge (1997) found that students were confident in determining what was wrong with a patient after assessing them and taking a history from them, but were not confident interpreting and acting on their findings.

Students in this current study described how they often went to the Nursing Staff/ Preceptor for assistance in determining the best nursing intervention, but that ultimately it was the nurse who made the decisions. This finding mirrors those found in the literature. Bucknall (2000) who conducted research on the decision making activities of critical care nurses found that novice nurses often deferred implementing a treatment or communicating the problem to medical staff until they were sure that a trend was present and required treatment. This author suggested that nurses were using defensive

avoidance, due to their lack of experience, to cope with situations of risk. In addition, Bucknall found that the less experienced nurses had a tendency to refer patient problems to more senior nurses. Thompson et al. (2001) in a study of nurse decision maker also found that nurses often used other sources of information to facilitate their decision making. However, sometimes recruiting others into the decision making process was made so that the nurse could avoid responsibility for decision making. This finding would concur with findings from the current study.

Thiele et al. (1991) noted that students were unable to discriminate and/or prioritize pieces of data. Therefore it was not surprising that students in the current study sought assistance in the decision making process. McCaughan (2002) also recognized that decision making in nursing is collaborative in nature and suggests that nurses rarely make decisions alone. Rather, they seek out information from colleagues and other professionals on how to act when the situation is unclear. Nurses sought advice from doctors, pharmacists, senior nurses, or clinical nurse specialists who they saw as having greater knowledge and experience applicable to the situation. Nurses not only sought out assistance to determine the right approach to a situation, but they also sought out support to confirm their own decisions to ensure that it was the 'right' decision. McCaughan suggests that this might occur so that responsibility for any repercussions is spread out. Luker and Kenrick (1992) discovered that nurses demonstrate a high degree of practical skill, but were unable to describe logical reasons for the decisions they had made. This

finding is frightening when we consider the significant influence of nurses on student decision making and the important role they play in role-modelling decision making activities. White (2003) in her study of nursing student decision making also found that the majority of decisions made by students were not independent, but were made in conjunction with the staff nurse or the physician. Her finding supports the findings of this current study.

Internal and External Influencing Factors

Nursing students were influenced by several internal and external factors. Internal factors included decision maker characteristics of: knowledge/experience, level of confidence, fear, and reflection. These factors can be further categorized as cognitive components and emotional responses to patient situations. External factors included professional and personal relationships, nursing curriculum, and the environment. Influencing factors were included in the initial conceptual framework, but the types of factors within these categories were not described. Both internal and external factors varied over the four years and each are described in nursing literature as influencing nurse decision making.

Internal Influencing Factors

Knowledge/Experience

The importance of knowledge to the decision making process has been stressed in nursing literature (Catolico, Navas, Sommer, & Collins, 1996; Corcoran (1986b); del Bueno, 1992; Hamers, Huijer Abu-Saad, & Halfens,1994; Luker & Kenrick, 1992; Pesut & Herman, 1999; Tanner et al., 1987). These authors suggest that the greater the knowledge base, the more likely the decision maker is to choose the relevant data necessary for decision making. They also note that knowledge enables the decision maker to recognize patterns and to determine an appropriate nursing action. Authors such as Catolico et al. (1996) describe the interrelationship between knowledge and assessment decisions. Similar to what the students expressed in this current study, as knowledge level increased, so did their ability to collect and interpret data. It is not surprising that the importance of knowledge was indicated by both students and Tutors in the present study.

Higgs (1992) recognized that professional knowledge came from experiences and learning activities that occurred in a variety of contexts, and served as a source of information, ideas and a reminder of past clinical situations, responses and outcomes. Higgs' work parallels what was found in nursing students, that knowledge comes from a variety of sources, and a variety of contexts. However, Junnola et al. (2002) found only a small percentage of nurses who indicated that their actions were influenced by knowledge

they had gained from the literature, journals and supplementary training. Students also described how their primary resources were human resources and they were less reliant on literature, although it did play a role.

Many studies have explored the role of experience in nurse decision making (Benner, 1984; Benner & Tanner, 1987; Bucknall, 2000; Cioffi, 2001; Lauri & Salantera, 1995; Pardue, 1987; Pyles & Stern, 1983; Schraeder & Fischer, 1987; Tanner, 1987; Thompson et al., 2001; Watson, 1991, 1994; Wolf et al., 1996; Young, 1987). These studies revealed that nurses rely on past clinical experiences when processing information about current situations. Tutors in this study supported Benner's (1984) perception that novice nurses with limited clinical experience are less able to make a nursing diagnosis. Students in the present study, on the other hand, discussed their integration of experiences from a variety of sources and were more aware of their integration of knowledge and experience than they were given credit by their evaluators.

A quantitative study conducted by Lauri and Salantera (1995) involving 100 registered nurses working in acute care and 100 public health nurses in Finland found that experience significantly influenced nurse decision making. The authors found that the less experienced nurses in both settings made decisions with a questioning approach. This is consistent with the current study, in which students described their decision making in a questioning manner. Also in support of the findings of Lauri and Salantera, they sought support from various resources. Thompson et al. (2001) found that nurses

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relied on their own experiential knowledge and on the knowledge of others (including

patients) during decision making. Results from this current study suggest that both PBL

and clinical students rely on past experience and other individuals such as peers, Tutors,

Nursing Staff, Preceptors, and patients, to facilitate their decision making.

In the past, research has focussed on formal knowledge and clinical experiences.

These current findings suggest that knowledge of the clinical and classroom environment

and personal experiences with family, peers, media, Tutors and Nursing Staff are also

significant influencing factors. A new finding is the lack of influence knowledge and

experience have in helping students to become decision makers who will act on their

decisions. Students in Level 4, just prior to graduation, continued to seek out support in

their decision making. This may reflect their understanding of the complexity of patient

issues and the potential negative impact of their decisions on the patient's well-being.

Level of Confidence

The influence of confidence in all components of nursing , whether that be in the

performance of nursing interventions, or the process of deciding what to do, has been

reported in the literature (Haffer & Raingruber, 1998; Jenkins, 1985; Mallory et al,

2003;White, 2003). White, in her study of nursing student decision making, described

how confidence in technical and communication skills influenced student decision

making, and how important it was to feel confident in those skills in the clinical

environment prior to graduation. In this study students had a tendency to focus on

psychomotor skill acquisition and less on decision making.

As students progressed in the programme they talked about their confidence in

their assessment and communication decisions. In Level 4, when students realized that

they did not possess the full complement of skills to provide complete patient care in

complex situations, their confidence waned. Jenkins (1985) offers support to these

findings, noting that, "the performance of first-time tasks undermine the assurance of the

most well prepared student" (p. 243). Without the confidence in these skills, the students

were less focussed on the patient and his/her needs and more on their own learning needs.

The link between a student's confidence and the development of decision making is

further described by Haffer and Raingruber (1998). Using an interpretive

phenomenological approach these investigators sought to better understand the

experiences of nursing students as they developed decision making skills. These authors

found that students were very apprehensive when they entered nursing practice and that

their decision making was thwarted by self-doubt and diminished confidence. However,

they also found that students' confidence changed over time, as was evident in this study.

The influence of others on a student's gain or loss of confidence as they compare

themselves to their peers is also reported. Haffer and Raingruber (1998) suggested that

students moved from feeling that their abilities were inadequate compared to the abilities

of their peers, to recognizing that their skills were comparable. Students went from

lacking the confidence to question others to recognizing the power in questioning and moved from being fearful of the responsibility of providing patient care and fear of harming the patient to experiencing comfort with shared responsibility. The current study supports the findings of Haffer and Raingruber (1988) and revealed that students engage in questioning from the first year of the programme. Students began to utilize questioning as a strategy to facilitate their decision making and their confidence in performing this skill increased with time and experience. The increase in questioning to support decision making may reflect that students are gaining comfort in their nursing role and are beginning to assume the nursing role (White, 2003). The questioning of others to support decision making is role-modelled for students by Nursing Staff (McCaughan, 2002). Therefore, it is not surprising to see students in the current study engage in this activity as they gain confidence in their nursing role.

A study by Mallory et al. (2003) revealed that new graduates were plagued with a lack of confidence, a lack of organizational skills, and an inability to see the whole patient. These graduates described a decreased level of confidence, lacked empathy and compassion for others, were fearful, self-centered and unable to manage the stressors found in the clinical setting. In addition, these nurses lacked initiative and were tentative when interacting with physicians. These authors make it clear that it is important to ensure that students become confident in their decision making abilities prior to graduation because of the implications for the patient, the nurse, and the employer.

Fear

Fear is one emotion that emerges in literature as a response of students to being in the clinical setting. Findings from this study are supported by Sedlak (1997) who discovered that students involved in their first clinical course experienced a variety of emotions. She revealed that student emotions ranged from feeling vulnerable, embarrassed, overwhelmed and insecure to feeling confident, enthusiastic, and comfortable. She also found that students struggled to identify their own emotions while being sensitive to their patients' emotions and trying to understand them and provide humanistic care. The current study did not reveal a relationship between the students' emotions and their ability to be sensitive to the patient. In contrast, students described a caring attitude towards the patient, even when they were fearful.

This current study revealed that the student's fear response had the potential to impede their decision making. It must be noted that the presence of fear and anxiety expressed by students did not decrease over time. Whereas the cause of the fear varied, the presence remained constant throughout the programme. Primary sources of fear were the Tutor, the Nursing Staff/Preceptor, a fear of harming the patient, and a fear of failure. The fear described by students in Level 4 may have been directly related to the fact that they would soon be graduating and would then be ultimately and solely responsible for patient care. This realization may have led to additional feelings of stress and anxiety

when faced with decisions. These feelings may have resulted from a heightened

awareness of their limited knowledge and skills in critical clinical areas.

Reflection

Reflection is an integral part of nursing care and is generally accepted as a process

that, "links an experience with relevant knowledge" (Duke & Appleton, 2000, p. 1558).

Nurses are encouraged to reflect on the decisions they make and determine what to do in

similar situations in the future. McCaughan (2002), suggested that reflection is most

frequently associated with a clinical situation that had a negative outcome, for example a

medication error. In contrast, Junnola et al. (2002) suggested that it was quite rare for

nurses to evaluate their nursing care. Reflection was described in the current study by

students in Level 4 as an opportunity to review their decision making and was not always

associated with a negative patient situation. This may be due to the fact that reflection is

required as a course objective in the fourth year, with students meeting with the Clinical

Tutor on a weekly basis to reflect on a variety of issues, not just patient care issues. This

finding is supported by Saylor (1990) who suggested that to be a reflective practitioner

the nurse must possess a strong commitment to improving practice.

The omission of this finding in previous levels may reflect the student's struggle

to make decisions related to patient care and a lack of confidence to take a critical look at

the decisions they made and how they might be changed in future situations. In addition,

students may not have engaged in reflection, but often described how important it was that Clinical Tutor/Nurse and Preceptor provide them with feedback regarding their decision making. In these levels it would appear that the source of evaluation was external to the decision maker. In contrast, students with more knowledge, experience and confidence engaged in an internal evaluation of their decision making in conjunction with the feedback received from other external sources.

External Influencing Factors

Students frequently described the influence of external factors on their decision making. They mentioned several key interactions with individuals in both the PBL and clinical settings. These factors played a role in all areas of the decision making process, from collecting patient information to acting on the information. The key factors included, professional and personal relationships, resources, curriculum, and the environment.

Professional Relationships

Students in the clinical setting and in all four years described the influence of professional relationships on their decision making. Students in the PBL setting described relationships as an influencing factor, but to a lesser degree. Several relationships were described by students throughout the programme and included: the

Tutor (clinical and PBL), the Nursing Staff/Preceptor, and the patient. Findings from this study are supported by a study conducted by Junnola et al. (2002), of 107 nurses in various acute care settings discovered a strong correlation between the information received from other professionals and the acquisition of patient data collection and the identification of patient problems. Boblin-Cummings (1996) also found that relationships with patients and other health professionals influenced nursing decision making. In addition, a study of baccalaureate nursing students conducted by Haffer and Raingruber (1998) discovered that students drew comfort and confidence from the nursing team because it was perceived as a source of support and sharing in the responsibility of appropriate decisions.

Tutor. Tutors were seen as a factor influencing the decision making by students in the clinical and PBL settings. Students described Tutors as evaluators, supporters, and facilitators; they also described them as intimidating and directive. The role of the Tutor in the PBL setting has been well described by authors such as Barrows and Tamblyn (1980) and Benson, Noesgaard, and Drummond-Young (2001). Additional literature addresses the role of the Clinical Tutor. What is lacking is research on attributes of the Tutor and how these influence nursing student decision making. This is an area that warrants further attention. What is described in the literature is how students perceive the Tutor in the clinical setting. Corlett (2000) suggests that students see Tutors as teaching

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an idealized version of nursing, which often does not fit with reality. In this current study, some Tutors felt that it was necessary to teach ideal nursing so that the principles were understood by the student. However, students in the current study described a struggle to resolve the conflict between ideal and real nursing practice, especially in Level 4.

Students in the current study relied on the clinical and PBL Tutors for assistance at various stages in the decision making process. However, by Level 4 students relied more heavily on the Nursing Staff to support their decision making. This finding is supported by Davis (1990) who, in a study of how nurses learn and how to improve the learning environment, found that students generally preferred the ward staff to the teaching staff as resources. Davis notes, "they tended to prefer those who they saw more as people than as professionals" (p. 407).

Nursing Staff/Preceptor. Nursing education increasingly recognizes the value of staff nurses as experienced clinical decision makers who can contribute significantly to students' clinical education (Atack, Comacu, Kenny, LaBelle, & Miller, 2000; Beddome, et al., 1995; Luker & Kenrick, 1992; Melander & Roberts, 1994). One author who found a relationship between these individuals and student decision making was White (2003). In a study of fourth year nursing students she discovered that staff relationships were extremely important and that the relationship that students had with the Nursing Staff was

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critical to student decision making. Hart and Rotem (1994) also found that students

valued positive relations with ward staff and needed to feel a sense of belonging and

acceptance.

In this current study students valued the knowledge, experience, and opinions of

the Nursing Staff and Preceptors. Students also wanted to feel accepted by the nurses and

made decisions in an attempt to avoid upsetting the Nursing Staff or of 'stepping on toes'.

Several authors (Cope, Cuthbertson, & Stoddart, 2000; Lave & Wenger, 1991) have

suggested that becoming proficient is as much to do with joining a culture of practitioners

as it is about developing technical skills. Cope et al. (2000) also discussed the influence

of experienced nurses on the novice nurse and noted that becoming a nurse was about

joining a community of practice that included qualified nurses as much as it was about

learning the technicalities of nursing.

Data from this current study support the students' integration into this community

of nurses as they began to describe nurses as peers and less as authority figures in their

final year.

Patient. Students often described their empathy for the patient and how their

decision making was influenced by the patient's perceived response to their decisions,

their needs, and expectations. This attention to the patient and his or her needs was

particularly evident in Level 4 when students described their efforts to advocate on behalf

of the patient. Students in all levels described how they sought to provide holistic care. This was often reflected in the student's desire to collect comprehensive data based on a holistic nursing theory.

A growing body of literature now recognizes the influence of knowing the patient on nursing interventions. Radwin (1995) and Whittemore (2000) are two authors who discuss the influence of knowing the patient on decision making. They describe this concept as being comprised of two related components. The first reflects the nurse's understanding or knowledge of the patient based on how the patient describes his or her experiences, behaviours, feelings and perceptions; individualized interventions constitute the second component. These authors found that several key strategies were employed by nurses to know the patient: empathizing, pattern matching, developing a bigger picture, and balancing preferences with difficulties. The benefits of knowing the patient as described by these authors include: the enhancement of decision making, selection of optimal patient interventions, and patient outcomes.

White (2003) in her study of student decision making also discovered that connecting with patients meant moving, "from following the rules in the clinical environment to implementing patient-focussed nursing care" (p. 117). Although knowing the patient is considered important to the provision of care, in this current study several students and Tutors described how the Nursing Staff responded negatively when students took time to get to know the patient. Staff responses to the time students spent with

patients was often considered 'unrealistic' in the 'real' world of nursing and discouraged students from engaging in lengthy discussions.

Whittemore (2000), discussed the consequences of not taking the time to get to know the patient and noted that the potential effect on nursing practice was potentially devastating in that nurses who failed to get to know their patients impacted them in a negative manner. Nurses were also negatively impacted by this omission in their practice as they experienced greater difficulty making clinical decisions, acting as a patient advocate, and fulfilling their professional role when the patient was not considered. Findings from this current study suggest that nurses in the clinical setting serve as role-models for the nursing students, therefore, it is imperative that students see nurses engaging in attempts to 'know' the patient and are encouraged to implement this practice and that they understand that this is an important element in decision making.

This current study revealed that the students were sensitive to the patient and his/her needs. However, they were often distracted from this patient focus by a focus on psychomotor skill acquisition and task completion. The focus on skills and tasks was the focus of many staff nurses and this was communicated to students which ultimately influenced student decision making. A tendency to focus away from the patient is very concerning and may reflect various pressures in the clinical setting including, lack of time and resources. This may also reflect the Nursing Staff's lack of understanding regarding the objectives of the clinical course and the impact their negative responses have on the

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student's developing role as a nurse. Continued efforts must be made by Tutors and Nursing Staff/Preceptors to ensure that the patient is not removed from patient care and that holistic care is promoted and role-modelled for the student.

Personal Relationships

In addition to professional relationships, students described the influence of peers on their decision making. The influence of peers on decision making in the PBL setting remained constant throughout all four years of the programme. This was not surprising due to the focus on small group learning in a non-competitive learning environment.

Peers. Lewis (1998) suggested that peers have a positive influence on a student's performance and that joint performance was beneficial to the learner. Hallett, Austin, Caress, and Luker (2000) in a study on decision making amongst community nurses found that they often sought information and advice from colleagues who were members of the same nursing team.

In this current study it was interesting to note that collaborative decision making started at the beginning of the baccalaureate programme and continued to develop throughout the four years. However, in Level 4 students began to consider the Preceptor and members of the Nursing Staff as peers and turned to them for information and

support when faced with patient care decisions. This change may reflect the student's role development and socialization into the nursing role.

Nursing Education/Curriculum

Analysis revealed that the formal curriculum played a role in student decision making. A review of the curriculum revealed that aspects of decision making were embedded in level and course goals and objectives. Decision making appeared to be a 'covert' expectation, with the focus dependent more upon Tutor than on the curriculum. Decision making was referred to in the course objectives, but it was unclear how students would be evaluated on their decision making skills and the development of these skills.

This lack of specificity continued into the literature on decision making. General statements were made about the importance of curriculum to decision making, but it remained unclear what strategies to employ to ensure that the elements of decision making were included and the development of this skills promoted and evaluated.

Jenkins (1985) suggested that decision making terms need to be explicit and integrated realistically into the curriculum with strategies for discussion and analysis. In addition, students need practical experience and the opportunity to participate in decision making. These experiences must be based on the limits of the students' knowledge, skills, and abilities. Thiele et al. (1991) suggested that, "the development of decision making ability as a curricular outcome is crucial" (p. 625) and that it is a learned skill that

must be deliberately and systematically taught in a variety of ways. Mallory et al. (2003)

suggested that historically, curricula in nursing has sought to meet academic and

professional standards and that they do not reflect the complexity of specific clinical

settings.

A review of the curriculum revealed goals and objectives aimed at providing

opportunities and strategies to develop the student's questioning and challenging skills.

Students in Level 3 and 4 demonstrated their ability to question the practice of others in

both the PBL and clinical settings. This skill is imperative for promoting sound clinical

decision making (Siegel, 1985). This finding conflicts with those described by Haffer

and Raingruber (1998) who found that students were reluctant to ask questions and to

challenge the opinions of others.

Environment

Students described the importance of feeling comfortable and supported in their

clinical and PBL environments. Students who felt comfortable and supported in their

environment described a heightened level of confidence in their decision making.

Students who were less confident in their abilities felt that in a supportive environment

they could turn to the Preceptor or other nurses for assistance in their decision making.

Students in their fourth year were often placed in highly complex clinical settings.

Students described their fear, anxiety, and feelings of being overwhelmed when entering

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these settings which often required them to have a greater knowledge of anatomy and physiology, equipment, and additional psychomotor skills. Findings from this study are supported by Woolley (1990) who also recognized the influence of the environment on decision making. This author suggested that settings where the workload was constantly high and highly pressured influenced nurse decision making. In these types of settings time was often spent performing necessary physical tasks, as opposed to spending time on the cognitive processes of developing nursing diagnoses, and planning care to meet the patient's individual needs.

In the current study environmental factors played a significant role in decreasing the students' confidence in their ability to provide care and to make independent decisions. Students were often in situations that were not conducive to independent decision making, because of the level of patient acuity. However, in these situations students in the later years would often engage in collaborative decision making with the Tutor, Preceptor and/or Nursing Staff.

Findings regarding the need for students to feel comfortable in their environment are supported by White (2003) who found the clinical setting to be an influencing factor in nursing student decision making in the clinical setting. This author suggested that as students gained confidence in the clinical setting they were better able to recognize their ability to provide patient care.

Ideal versus real. Students practising in the clinical setting struggled with the disparity between ideal nursing practice taught in the classroom and 'real' nursing practice in the clinical setting. In addition, students struggled with practice decisions made by nurses and what they were taught by the Clinical Tutor. On several occasions students discussed how the nurse had said, "this is the way I do it, but you can't do it this way". This was a source of conflict for the students as they struggled to develop their own decision making practice. The conflict that students described may have been a result of a conflict between their perceived role as a nurse and the actual nursing role they observed in the clinical setting. These findings are supported by Woolley (1990) who noted that when an individual's role expectations and the actual role did not match up within a particular environment, such as the clinical setting, the decision making process was often hindered. Lewis (1998) also recognized the conflict between theory and practice as a common problem amongst nursing students. The conflict between 'real' practice and ideal practice is a concern when we consider the impact nurses have on the developing decision maker and the message that nursing is conveying to these future graduates.

Appraisal

Appraisal played a significant role in student decision making. Students appraised the risk to themselves physically, scholastically, and professionally. This appraisal

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occurred at various stages in the decision making process including assessment, interpretation, and intervention. Students also appraised the risk to the patient when making intervention decisions in the clinical setting, but not in the PBL setting. A body of nursing literature addresses the appraisal of risk. However, much of the literature on risk assessment is focussed on the nurse's assessment of risk to his/her patient, or risk to the clinical environment. Clinical practice is often concerned with risk reduction and due to the increasing amount of healthcare litigation, there is an increasing emphasis on risk management (for patients and staff). Managing risk involves reducing the number of negative outcomes associated with a procedure or an environment (Dowding, 2002).

Nursing and educational literature do not address the issue of student appraisal of risk. However, findings from this current study are supported by Boblin-Cummings (1996) who recognized that nurses engage in a personal risk appraisal in the clinical setting. In her study, Boblin-Cummings discovered that nurses considered risks, benefits, preferences, and values in relation to self and others and that this appraisal influenced decisions related to patient care. Masters and Masters (1989) and Rew (2000) also suggest that all nursing decisions involve risk and are influenced by a person's propensity for taking risks. In the current study, it was apparent that students did not possess a propensity for taking risks. A study by Haffer and Raingruber (1997) supports this finding and suggests that students focus excessively on potential harm and their need to avoid making mistakes. These authors also suggest that students are unable to distinguish

between a minor and a serious mistake, therefore they often find themselves questioning their decision and abilities and sometimes question their decision to enter the nursing profession. Findings from this study suggest that in addition to students being fearful of making mistakes, students are also concerned with many additional risk factors such as the risk to them personally, scholastically, and professionally.

CHAPTER 7: SUMMARY, IMPLICATIONS, FUTURE RESEARCH, AND

CONCLUSION

This chapter will present a summary of the research completed on the

development of student decision making and the factors that influence decision making.

The implications of the three key research findings for Nurse Educators, employers of

nurses, and administrators in both the educational and health care settings will be

described in this chapter. Areas for future research will also be suggested and an overall

conclusion from the study will be drawn.

Summary

Nurse decision making has been described as the 'cornerstone' of the nursing

profession and a requisite skill, therefore, the importance of exploring the development of

this skill cannot be understated. Current nursing literature discusses nurse decision

making in great depth and has sought to describe 'how' nurses make decisions

(descriptive approach) as well as how they 'should' make decisions (prescriptive

approach). Many strategies have been developed as a result of prior research findings.

Yet, there is a paucity of literature that addresses how decision making develops as part of

nursing education. Currently, as evidenced by the upcoming entry to practice guidelines

for nurses developed by the CNO, it is assumed that graduates are able to engage in

autonomous decision making and that graduate nurses possess sound decision making

skills. Findings from this study challenge this belief and suggest that much effort must be made during the educational process to ensure that this expectation for graduate nurses is met.

In this study, qualitative methods were chosen to address the topic of the development of decision making during a baccalaureate nursing education. Qualitative approaches are often utilized when a topic has been poorly explored and understood, as is the case with the development of decision making. A case study design was chosen because it enabled me to fully explore the topic by gathering data from several sources. Data were collected through Key Informants (students, Tutors) and Key Documents (curricular material). Students from all four years, enrolled in problem based learning (PBL) and clinical courses were recruited for this study. Students in the PBL setting were asked to participate in either an individual semi-structured interview or in a focus group conducted by the principal investigator. For both settings, students were asked to complete reflective journals, which served as a stimulus for the interview. Tutors in the PBL setting were asked to participate in an individual semi-structured interview or a focus group, while Tutors in the clinical setting were asked to participate in an interview. Data were also collected from curricular materials provided by McMaster University, School of Nursing.

A review of literature addressing nurse and nursing student decision making provided propositions and the foundation for an initial conceptual framework. This

framework guided the collection and analysis of the data, and continued to be developed as the study progressed. The final framework illustrates the enhanced knowledge we have about student decision making within the key components of this framework which were discovered to be; types of student decisions, internal and external influencing factors, and appraisal.

This description of the development of nursing student decision making is illustrated by the final conceptual framework (Figure 11) which reveals that student decision making involves five key types of decisions: assessment, communication, intervention, resource, and action. Although all of these decisions were evident throughout the programme, it was apparent that in certain levels, students focussed on different decisions. For example, in Level 1 students focussed on assessment decisions, while in Level 3 the focus was on intervention decisions. The change in the focus of the decisions reflected both the course objectives and the student's personal development as reflected by their level of knowledge/experience, fear, and confidence.

Also present in the final framework are various internal and external factors which were not fully described in the initial framework. Findings reveal that internal factors focus on the decision maker's characteristics such as knowledge/experience, confidence, fear, and reflection. These internal factors influence the decision maker's response to patient situations and are divided into cognitive components and emotional responses to patient situations. Findings also reveal the impact of the external factors of professional

and personal relationships, nursing education/curriculum, and environment. Among the relationships identified through the study, those revealed to be the most influential on student decision making were their relationships with the Tutor, patient, Nursing Staff and/or Preceptor, and peers.

What is interesting to note is that there are fewer influencing external factors than internal ones. A relationship between the internal and external factors is revealed, which was not anticipated at the initiation of the study (this finding is revealed by a comparison of the initial and final conceptual frameworks). The process of appraisal described by students (illustrated in the final conceptual framework by an arrow) highlights the interaction between the internal and external factors and the types of decisions made by students.

The initial conceptual framework described the components of student decision making based on nurse decision making. The definition of decision making in nursing was described as a cognitive process that required: patient assessment and problem identification; the identification and consideration of alternatives; the consideration of preferences and values (of all parties involved); and the selection of interventions and determination of how best to achieve these interventions. An assumption was made that the decision making activities described by students would parallel those of nurses. The final framework illustrates that although the activities are all present in student decision

making, this skill is seldom engaged in independently and is most often completed in collaboration with others.

As this study progressed a revised definition of nursing student decision making emerged. Nursing student decision making can now be defined as a collaborative process that requires patient assessment, problem identification, decisions about interventions, decisions about who or what best to access as a resource and when to utilize the resource, and decisions about whether or not to act on collected patient information. It also involves an appraisal of personal, scholastic, and professional risk that indicates to the student whether to continue on with the decision making process either independently or in collaboration with another individual, or to make the decision to disengage from the process. These changes are significant to our understanding of how nurse decision making develops.

Implications

Considering these findings in terms of the two theoretical perspectives on decision making (descriptive and prescriptive), this case study has provided more information on how nursing students make decisions. This research has also revealed how nursing student decision making develops within the context of a BScN programme. Benner (1984) noted that it was important to examine decision making within the appropriate context in order to fully understand and describe decision making. As such, this study

can be classified as a descriptive approach to understanding this phenomenon. This descriptive approach enabled the researcher to describe *how* nursing students made decisions rather than providing information about how nursing students *should* make decisions (prescriptive approach).

Many implications for Nurse Educators, Nursing Staff, and potential employers of nursing graduates flow from the findings revealed in this study of the development of student decision making. The first flows out of the five different types of decisions described by nursing students. Some of those types of decisions remained consistent over time, while others did not emerge until later in the programme. One of the most interesting findings was the description of an action decision. Students, in contrast to graduate nurses, described making a decision to act or not to act, and based this decision on their appraisal of risk to themselves and/or the patient. Action decisions may have been integrated into student decision making because of the 'option' they believe they had to engage or to disengage from the decision making process. This 'option' was available to them because of the ever-present support of the Clinical Tutor or other Nursing Staff in the clinical setting. Students may have believed that their role was not to be independent in their decision making and may have also seen this as a responsibility reserved for the graduate nurse.

Types of Decisions

The aforementioned findings create implications for both Nurse Educators and future employers of graduate nurses. Knowing the types of decisions students are making, and sometimes not making, in both the clinical and PBL setting should prompt Nurse Educators to reevaluate whether curricula in both the theoretical (PBL) and clinical settings provide the necessary tools to facilitate the development of decision making and whether or not students are sufficiently encouraged to engage in making all types of decisions (McCaughan, 2002).

Recognizing that students make decisions related to assessment in the beginning levels, but focus less on these in later years reinforces the need for Nurse Educators to continue to emphasize the important role assessment plays in decision making and providing effective and safe patient care. In addition, Nurse Educators should encourage students to act on the assessment data based on their knowledge and, as time goes by, their experience. Decision making will only improve if decision makers are taught to systematically assess, gather information, plan, and implement nursing care (Dawes, 2000).

Findings from this study also suggested that students made many decisions related to communicating with the patient. The importance of therapeutic communication to patient care must continue to be emphasized, however, as students progress through the programme they need to continue to develop this skill and learn to act on the information gained from patient interactions. Other communication decisions related to the resources

that students would utilize to facilitate and/or support their decision making. These decisions reflected both a curriculum that promoted collaboration and evidence-based practice, and the development of a self-directed student who sought out a variety of appropriate resources to address patient situations. These decisions required a comfortable and supportive environment. Nurse Educators in both the PBL and clinical settings must continue to provide this type of environment in which decision making can occur and decision making skills can continue to be developed without fear of reprisal.

Another unexpected finding was the level of collaboration students required to make these decisions. This collaboration between the students and various others provided them with the opportunity to receive support and feedback when making decisions. Students described the need to seek out others at various points in the decision making process. Literature suggests that nursing is collaborative and that students are provided with role models in the clinical setting of decision making that involves the collaboration of many individuals. Recognizing that students may be mimicking what they see evidenced in the clinical setting, Nurse Educators have a responsibility to assist them in understanding the importance of collaboration in decision making, but at the same time emphasize that they must be prepared to support and to be accountable for their decisions.

The focus on collaboration in the self-directed nursing programme may actually detract from the development of autonomous decision makers. If this is the case, we

must consider how to promote collaboration while ensuring that students recognize the

need for autonomy in decision making. This is not to suggest that students must engage

in decision making that would be disadvantageous to the patient, but rather, that

educators should promote autonomy when students are faced with situations that are

familiar and non-life threatening. If Nurse Educators fail to promote and support

independence in the decision making process then I believe that we are setting the

students up for failure upon graduation. The CNO guidelines require the entry level nurse

to be autonomous in his/her decision making and yet, findings from this study suggest

that additional measures are required to ensure that this competency is met. The

questions must be posed: Are we asking more of our entry level nurses than is expected

of experienced nurses? Do nurses in practice engage in autonomous decision making or

are they practising collaborative decision making?

Future employers of nursing graduates must also recognize that university

prepared nurses entering the profession may not be adequately prepared to engage in

independent decision making and that this may require additional clinical orientation time

and mentor support. Employers should be encouraged to provide new university

graduates with mentorship from experienced nurses who can role model independent,

sound decision making. In a health care environment that is facing the retirement of

many nurses in the next few years, providing such a role-model is becoming increasingly

difficult and may also pose an additional financial burden for an already exhausted health

care budget. However, the benefits should outweigh the costs as employers gain nurses who are less fearful and anxious in the clinical setting. Reducing such influencing factors may also result in a higher level of job satisfaction among nurses, which will ultimately benefit patient care.

Employers of nurses must also ensure that members of the Nursing Staff recognize the influence that they have on student decision making. Although it is often perceived that the Clinical Tutor is responsible for the education of these neophytes, in actual fact it requires a collaborative effort. Efforts must be made to ensure that Nursing Staff and Preceptors enhance and not detract from the decision making process and nurses must be supported to learn strategies that would facilitate the development of student decision making skills.

Knowing that Nursing Staff influence student decision making, it is imperative that nurses be encouraged to challenge old practices and to provide rationale for their decisions (Dowding & Thompson, 2002; McCaughan, 2002). However, this may not be a reasonable expectation because many expert nurses are not able to provide the scientific rationale necessary to justify their decisions (Upton, 1999). If this is the case, then students need to be taught why this occurs and why their approach to decision making may be different from that of the "expert".

Influencing Factors

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The second finding suggests that student decision making is influenced by several internal and external factors. Although it was anticipated that internal factors such as knowledge and experience would influence student decision making, it was surprising to note that the students' level of confidence to make independent intervention decisions and to act did not develop consistently as they progressed through the programme. Whereas their confidence increased through the first three levels, when they reached the fourth and final year of the program, their confidence actually decreased. An example of this can be found in their confidence to act based on their interpretation of their assessment. The implications of this finding are significant for both Nurse Educators and future employers of graduates.

Nurse Educators are compelled to try to understand why the fourth year student is feeling a lack of confidence, and to develop strategies to help him/her overcome this inhibiting factor. Failure to address this issue may lead to graduate nurses who lack confidence in their decision making, which may in turn result in them experiencing a high level of stress in their work environment and ultimately prompt them to leave the profession. This would have significant human resource and economic implications for employers of nurses.

The lack of confidence described by students was often closely related to the level of fear they described themselves experiencing in the clinical setting. One of the most startling findings from this study was the recurring theme of fear throughout the four

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years. Students in every level described their fear of causing harm, of 'stepping on toes', of over-stepping their boundaries, and of making individuals angry or upset with them. This fear had the potential to influence or impede decision making.

Nurse Educators, once again, are in the position to mediate the influence of this factor. Recognizing that students deal with fear in the clinical setting and that this emotion interferes with the development of decision making, Nurse Educators have a responsibility to reduce or at least moderate the number of stressful conditions experienced by the students in an attempt to promote independent student decision making (Jenkins, 1985). One strategy may be to provide students with clinical experiences in less acute settings, for example long-term care facilities, medical/surgical and rehabilitation settings in an attempt to promote and enhance their comfort level, reduce their stress, and thereby promote decision making. In addition, consideration may be given to increasing the students' exposure to the clinical area by increasing the amount of clinical time allotted. This increased exposure could help reduce student fear in two ways: first, the student would become more comfortable in the setting with increased exposure and would gain more experience; and second, increased exposure to the clinical setting would provide the students with additional opportunities to develop and practice their decision making skills. However, it is recognized that increasing the amount of clinical time may reduce the amount of time available for the student to learn and to

develop the theoretical basis for practice which may also have a negative influence on the development of decision making.

Administrators of nursing programmes must give careful consideration to the types of clinical settings within which students are required to practice. For a myriad of reasons including a shortage of clinical areas available and/or the expectations from prospective employers that students be prepared to work in these areas upon graduation, students are often placed in highly acute areas. This may further increase feelings of fear in the students and may actually be counterproductive as students may graduate from the programme lacking the self-confidence necessary to act as graduate nurses. It must be recognized that if settings are not conducive to the development of decision making skills then they may detract from the development of the decision maker.

Implications are also evident for employers of nurses in health care institutions. Today's health care settings are experiencing a shortage of Nursing Staff which has led to the hiring of newly graduated nurses into acute settings such as the Intensive Care Unit (ICU) and the Coronary Care Unit (CCU). Employers must understand the level of decision making skills that new graduates are, and at times are not, bringing to these stress filled areas. Furthermore, it is imperative to recognize that graduate nurse decision making is often inhibited by fear and a lack of confidence to practice decision making independently. In an attempt to reduce such negative influencing factors employers must be encouraged to provide a thorough orientation to the setting and should consider

providing the new graduate with a Mentor for an initial period who would act as a primary resource of encouragement and assistance. This would allow the new graduate an opportunity to discuss new situations and to have support in his/her decision making. Ultimately, this mentorship model may lead to a heightened level of confidence and a decrease in fear and altering these two influencing factors may have a significant impact on the nurse's ability to provide patient care.

An additional external influencing factor described in the study was nursing education/curriculum, which, in certain levels, included the student's personal learning needs. It was not surprising to find this to be an influencing factor in Level 1, however, it was startling to find a re-emergence of this as a significant factor in Level 4. This may have occurred as students began to realize that they had much to learn in order to provide patient care upon graduation. It may also have been the result of the student's introduction into a more complex clinical setting which required a specific body of knowledge and a specific set of nursing skills.

Implications of this finding for nursing educators are the need to support students and help them to realize the transferability of many nursing skills they already possess, and to realize the importance of cognitive and decision making skills over technical (psychomotor) skill acquisition. It is important for students to understand that cognitive and decision making skills provide the foundation for providing safe patient care.

In general, curriculum influenced student decision making as it often determined the focus of the types of decisions made by the students. In response to this, Nurse Educators must ensure that curricular materials provide a clear description of decision making as well as the elements involved in the decision making process. Strategies to facilitate the development of decision making must be clear to both students and Tutors. It has been suggested by several authors that course goals and objectives regarding decision making must be deliberately developed and taught (Jenkins, 1985; Mallory et al., 2003; Thiele et al. 1991). Findings from this study suggest that this action must be taken from the very commencement of the program. Efforts must be made to ensure that what is taught in the theoretical component of nursing education will correspond, at least to some degree, with what occurs in the clinical setting (Armitage & Burnard, 1991). The curriculum must demonstrate an understanding of the development of student decision making and the factors that influence it. Curriculum must also include strategies for both Tutors and students to utilize, to enhance, and to promote the development of decision making.

Environment also played a significant role in decision making. It was not surprising that students required a comfortable and supportive learning environment or that they struggled with the disparity between ideal and real nursing practice. Level 4 students in both the clinical and PBL settings described frustration and confusion over what they were taught in the classroom setting and what they saw practised in the clinical

setting. This disparity posed a challenge during decision making as students attempted to determine the best course of action.

Once again, implications can be drawn for Nurse Educators. Curricular materials must better prepare students for the inevitable conflicting philosophies of nursing in the classroom and the reality of the clinical environment. This may serve to decrease anxiety in students, to facilitate on-going decision making that is evidence-based and sound, and help the students to work more effectively with the many discrepancies they encounter (Cook, 1991).

Appraisal

One of the most significant findings from this study was the appraisal of risk that students engaged in throughout the decision making process. Whereas components of appraisal can be recognized in the description of types of decisions and the factors that influenced these decisions, the concept of appraisal as an overall process did not crystallize until there was opportunity to overview and reflect on all four levels of student decision making.

Appraisal played a significant role in the decision making process as students weighed the risks of engaging in various components of the decision making process. When students were assessing they appraised how the patient would respond to them. When attempting to interpret information and required assistance, they appraised the

potential response of the Tutor or Nursing Staff. When faced with engaging in an intervention, they appraised the risk to themselves physically, scholastically, and/or professionally, and to the patient. Students described a desire to please the patient and to act in his/her best interest. However, this sometimes posed a conflict for the students when they faced a situation that was new and/or complex. Traditional decision making models include risk, but it is often only considered with respect to the patient's level of risk. This concept of appraisal adds new dimension to current models of decision making and understanding that students engage in such a process is important for Nurse Educators and future employers to consider. Nurse Educators face the challenge of helping students to articulate their appraisal of a situation so that the risks to themselves and to the patient can be explored and better understood. Because it was discovered in this study that the appraisal process often impeded decision making, engaging in this type of discussion would allow Clinical Tutors an opportunity to support students as they determine the best decisions to make under a given situation. Understanding that appraisal is a component of decision making in the clinical setting, Nurse Educators must also be cognizant of the risks to the student. Although the physical risks to nurses in the community are described in the literature, no literature was found that addressed the risk to students. Students in the current study described their appraisal of physical risk to self in both community and psychiatric settings. As Nurse Educators it is our responsibility to be sympathetic to the risks that may potentially be perceived and/or encountered and to

ensure that students are placed at minimal risk for injury. This may require a review of

the types of settings students practice in and guidelines that delineate how to ensure the

student's safety.

Implications also arise for nursing employers who must recognize that this same

appraisal process described by students may also be engaged in by practising nurses.

Patient care may be influenced by the nurse's perception of risk to themselves personal or

professionally. Patient care may be compromised as nurses decide that acting on their

assessment of the patient may result in a risk to themselves and therefore may not act in

the patient's best interest.

Employers of nurses must also recognize that if nurses engage in an appraisal

process and determine risk personal and/or professionally that it may have significant

monetary implications due to possible disciplinary action or loss of employment. If

nurses perceive such risks they may be less willing to work; they may experience more

illnesses; they may experience burn out; and ultimately there will likely be a cost to be

borne by the hospital or other employers. The potential ramifications of ignoring the

impact of appraisal on decision making by nurses carry significance for the entire health

care system.

The appraisal process and the student's response to patient situations suggests that

students experience tremendous feelings of powerlessness. As they describe their efforts

to please the Tutor, the Nursing Staff, Preceptor, and patient, it is evident that much of

their decision making risks may be altered based on their perception of the response of others. If this is the case then there are other significant implications for Nurse Educators. Curriculum must be developed to help students to understand their role in the clinical setting and they must be taught that they can make a valuable contribution to the patient's care. In addition, students must be taught coping strategies to deal with feelings of powerlessness to avoid opting for counter-productive personal survival techniques.

Future Research

Suggestions for future research flow from this current study and are related to the clinical setting, nurse education/curriculum, and the appraisal process.

Research designed to further explore the types of decisions students make in the clinical setting.

1.   Studies are required that explore the types of decisions that Clinical Preceptors believe nursing students are making in the clinical setting and their perceived role in facilitating the decision making process. The Preceptor's perception of student decision making was not explored in the current study and this viewpoint would have added additional depth to the data.

Research that observes the students in the clinical setting to gain a better understanding of the factors that influence decision making.

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2.   An exploratory study is required that specifically addresses the influencing factors that are believed to impact student decision making. This study would involve Nursing Staff, Clinical Preceptors, nursing students and Clinical Tutors.

Research that explores the impact of complex clinical settings on the development of student decision making.

3.   The influence that various complex clinical settings have on student decision making must be further explored in an attempt to ensure that students are being taught in environments that promote the development of their clinical decision making skills.

4.   Studies that ask Clinical Preceptors and students in Level 4 to describe the influence of the setting on decision making should be implemented in an attempt to gain a better understanding of these two key perspectives, paying special attention to any differences in their perceptions.

Research related to the development and implementation of strategies to facilitate the development of student decision making skills.

5.   A study to explore and analyze the effectiveness of current teaching strategies employed in baccalaureate nursing programmes would increase our understanding of how student decision making is promoted.

Research that explores the appraisal engaged in by students during decision making.

6.   A study to explore the concept of student appraisal of risk in the clinical and PBL

settings should be conducted to further explore this concept and to see what

strategies can be developed to facilitate and inform this appraisal process.

Research in the aforementioned areas will begin to provide a clearer picture of

student decision making, its development over time, and the influencing factors that

enhance and/or impede decision making. It is anticipated that additional research will

lead to new teaching strategies and will promote the development of a sound autonomous

decision maker upon graduation from the baccalaureate in nursing programme.

Conclusion

The exploration of the development of nurse decision making during a

baccalaureate nursing education has had a significant impact on me as a Nurse Educator.

As I began this journey, my intent was to gain a better understanding of why some

students made patient care decisions with ease, while others froze under the pressure of

the patient situation. I questioned why individuals in the same programme of study

would respond so differently and what factors influenced their decision making. I also

questioned whether or not the students' decision making changed as they proceeded

forward in the baccalaureate nursing programme. As I analyzed the findings, it became clear to me that the relatively simple picture that I had of student decision making when beginning this research project, had changed significantly. The picture that I was starting to see was one that more closely resembled a kaleidoscope of colour and movement; a picture that revealed the complexity of student decision making.

Now, as I begin a new year of teaching, I will look into the faces of eager young students and understand that not every one of them will deal with patient situations in the same manner. Each of them will make different types of decisions; they will be influenced by various and different factors; they will each appraise situations in their own unique way; and they will all seek out resources to assist in their decision making. I will remember to look at the students and remember their fears, their keen desire to do their best for the patients, and their need for a supportive and comfortable environment to develop and practice their decision making. I will also remember the need for me to be a positive role model, and to provide them with the support and caring necessary to engage in, proceed through, and succeed in the decision making process.

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Appendix 1:
Overview of Definitions of Decision Making Terms:
Common Elements of These Definitions Are Underlined

Clinical decision making	1.	One level beyond problem solving, in that it requires not only problem solving skills and a knowledge base needed to identify the possible alternatives and the probabilities of each likely outcome, but also a clarification of values (p. 141).	Deber & Baumann (1992)
	2.	Includes the analytical and intuitive processes rendering a judgment about some aspect of patient care and the products, the final judgments. Knowledge is embedded within the analytical and intuitive processes (p. 64).	Corcoran-Perry & Bungert (1992)
Problem solving	1.	Generation of possible solutions to an issue of concern.	Eisenhauer & Gendrop (1990)
	2.	Involves an individual who determines the right solution to the problem.	Baumann & Deber (1989)
	3.	Involves the knowledge base of the problem solver and how the individual manipulates the knowledge in order to apply it to the patient situation.	Barrows & Pickell (1991)
Clinical judgment	1.	A process used by an individual to make a conclusion regarding a patient's health status in the determination of a patient's health needs. Judgment involves a careful evaluation of the situation and the development of an opinion based on a knowledge base.	Itano (1989)
	2.	A process that includes three key activities. First, the decision maker makes decisions regarding what needs to be observed in a patient situation. Second, the individual engages in inferential decision, and draws meaning from the data collected. Third, the decision maker makes a decision regarding the action that should be taken in order to benefit the patient.	Tanner (1987)

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Critical thinking	1.	Analogous to decision making. Reflective and reasonable thinking that is focused on <u>deciding what to believe or do</u> (p. 45).	Ennis, Millman, & Tomko (1985)
Clinical reasoning	1.	A method of problem-solving that is designed to <u>address patient problems.</u>	Barrows & Pickell (1991)
	2.	These authors provide an analogy of this process as a detective trying to solve a crime by investigating the scene, gathering clues, interviewing witnesses, gathering information, creating hypotheses, gathering more clues to confirm or deny the hypotheses, and finally deciding what the cause of the crime was.	
	3.	The cognitive processes and strategies that nurses used to understand the significance of patient data, to identify and diagnose actual and potential patient problems and to make clinical decisions to assist in <u>problem resolution</u> and to enhance the achievement of positive patient outcomes (p. 60).	
	4.	The thought processes and decision making associated with an <u>individual's examination and management of a patient.</u>	

Appendix 2:
Ethics Approval

RESEARCH ETHICS BOARD (REB) APPROVAL

July 18, 2002

PROJECT NUMBER: **02-172**

PROJECT TITLE: "The Development of decision making skills during baccalaureate nursing education"

PRINCIPAL INVESTIGATOR: **Pamela Baxter**

As you are aware your study was presented at the July 16, 2002 Research Ethics Board meeting where it received final approval from the full Research Ethics Board. The submission, including the consent form was found to be acceptable on both ethical and scientific grounds.

We are pleased to issue final approval for the above-named study for a period of 12 months from the date of this letter. Continuation beyond that date will require further review and renewal of REB approval. Any changes or amendments to the protocol or consent form must be approved by the Research Ethics Board.

We wish to advise the Research Ethics Board operates in compliance with ICH Good Clinical Practice Guidelines and the Tri-Council Policy Statement.

Investigators in the Project should be aware that they are responsible for ensuring that a complete consent form is inserted in the patient's health record. In the case of invasive or otherwise risky research, the investigator might consider the advisability of keeping personal copies.

A condition of approval is that the physician most responsible for the care of the patient is informed that the patient has agreed to enter the study. Any failure to meet this condition means that Research Ethics Board approval for the project has been withdrawn.

PLEASE QUOTE THE ABOVE-REFERENCED PROJECT NUMBER ON ALL
FUTURE CORRESPONDENCE.

Sincerely,

Peter B. McCulloch, MD, FRCP(C)
Chair, Research Ethics Board262

Appendix 3:
Interview Guide

1. Can you describe for me what you did for the patient(s) you described in your journal reflection?

2. Can you tell me the types of decisions you made when you were trying to provide care for the patient?

3. Can you describe for me what factors (positive or negative) you believe influenced your decision making? For example: what (who) made it easy to make that decision or what (who) made it difficult.

Appendix 4:
Student Introductory Letters

September 19, 2002

Dear B.Sc.N. Student,

Let me introduce myself and explain to you why I am writing to you today. My name is Pamela Baxter and I am currently a student in the Doctor of Philosophy program here at McMaster University. I am writing to ask for your assistance in a research project that is currently under way. This project explores the development of student decision-making from the first to the fourth year of the baccalaureate in nursing program (BScN).

I am asking if you would be willing to participate in this project by writing a reflective journal entry at the end of two consecutive clinical days. Journal entries will enable you to reflect on your clinical day and to describe a clinical situation that required you to make clinical decisions related to patient care. A journal guideline will be given to you to help you in writing these entries. It is anticipated that the journal completion will take approximately 10 minutes. The completed journals will be handed in to the research assistant. **You are also asked to participate in a short interview (approx. 30 minutes) following the submission of your journals.** The timing of this interview will be arranged at a convenient time for you by the research assistant.

All information that you provide and your identify will be kept confidential. The decision to participate, or not to participate, in this project will in no way impact your current standing at McMaster University, School of Nursing.

Ultimately, the goal of this study is to gather information that will allow nurse educators to better understand more about you as a nursing student, and the clinical decisions you currently engage in. This knowledge will facilitate the development of tools that may enhance and promote clinical decision-making in the future. This information will also ensure that graduating nurses will meet the 2005 entry to practice guidelines set out by the College of Nurses of Ontario (CNO).

I hope that you consider participating in this study.

Thanking you,
Pamela Baxter, R.N., B.Sc.N., Msc., PhD (Candidate)

September 19, 2002

Dear B.Sc.N. Student,

Let me introduce myself and explain to you why I am writing to you today. My name is Pamela Baxter and I am currently a student in the Doctor of Philosophy program here at McMaster University. I am writing to ask for your assistance in a research project that is currently under way. This project explores the development of student decision-making from the first to the fourth year of the baccalaureate in nursing program (BScN).

I am asking if you would be willing to participate in this project by writing one reflective journal at the end of one PBL class. This journal will enable you to reflect on your PBL class and to describe the patient scenario that you are currently exploring and any decisions you may have made related to patient care. A journal guideline will be given to you to help you in writing this reflection. . It is anticipated that the journal completion will take approximately 10 minutes. The journal will be handed in to the research assistant upon completion. **You are also asked to participate in a short interview (approx. 30 minutes) following the submission of your journal.** The timing of this interview will be arranged at a convenient time for you by the research assistant

All information that you provide and your identify will be kept confidential. The decision to participate, or not to participate, in this project will in no way impact your current standing at McMaster University, School of Nursing.

Ultimately, the goal of this study is to gather information that will allow nurse educators to better understand more about you as a nursing student, and the clinical decisions you currently engage in. This knowledge will facilitate the development of tools that may enhance and promote clinical decision-making in the future. This information will also ensure that graduating nurses will meet the 2005 entry to practice guidelines set out by the College of Nurses of Ontario (CNO).

I hope that you consider participating in this study.

Thanking you,

Pamela Baxter, R.N., B.Sc.N., MSc. PhD (Candidate)

September 2002

Dear B.Sc.N. Student,

Let me introduce myself and explain to you why I am writing to you today. My name is Pamela Baxter and I am currently a student in the Doctor of Philosophy program here at McMaster University. I am writing to ask for your assistance in a research project that is currently under way. This project explores the development of student decision-making from the first to the fourth year of the baccalaureate in nursing program (BScN).

I am asking if you would be willing to participate in this project by participating in a focus group conducted by the principal investigator. The focus group will be approximately one hour in length. This focus group will occur following a PBL class. A pizza lunch will be provided for all participants.

All information that you provide and your identify will be kept confidential. The decision to participate, or not to participate, in this project will in no way impact your current standing at McMaster University, School of Nursing.

Ultimately, the goal of this study is to gather information that will allow nurse educators to better understand more about you as a nursing student, and the clinical decisions you currently engage in. This knowledge will facilitate the development of tools that may enhance and promote clinical decision-making in the future. This information will also ensure that graduating nurses will meet the 2005 entry to practice guidelines set out by the College of Nurses of Ontario (CNO).

I hope that you consider participating in this study.

Thanking you,

Pamela Baxter, R.N., B.Sc.N., MSc. PhD (Candidate)

Appendix 5:
Student Consent Forms

CLINICAL STUDENT CONSENT FORM

I, _____ agree to participate in the study **"The development of decision making skills during baccalaureate nursing education"** conducted by Pamela Baxter.

I understand that participation in this study will require me to complete two journal entries and to participate in one interview (approx. 30 min. in length) conducted by the principal investigator or the research assistant.

I understand that all personal information learned about me during this study will be confidential. My name and any other identifying particulars will not appear in any publication or be made available to anyone other than the researcher.

I have had the opportunity to discuss this study with _____. My questions have been answered to my satisfaction.

I consent to take part in this study, knowing that I may withdraw at any time. This will not affect my standing at McMaster University, School of Nursing.

I understand that I will receive a copy of this signed consent.

If I have any questions about the study, I may contact Pamela Baxter at 525-9140 x22290 or by e-mail at baxterp@mcmaster.ca.

_____
Name Printed   Signature

_____
Phone #   E-mail Address

_____
Witness   Date

Please circle the appropriate class (the one you were in when introduced to the study):

| Level 1 | Clinical | | Level 3 | Clinical |
| Level 2 | Clinical | | Level 4 | Clinical |

PBL STUDENT CONSENT FORM

I, _____ agree to participate in the study **"The development of decision making skills during baccalaureate nursing education"** conducted by Pamela Baxter.

I understand that participation in this study will require me to complete one journal entry and to participate in one interview (approx. 30 min. in length) conducted by the principal investigator or the research assistant.

I understand that all personal information learned about me during this study will be confidential. My name and any other identifying particulars will not appear in any publication or be made available to anyone other than the researcher.

I have had the opportunity to discuss this study with _____. My questions have been answered to my satisfaction.

I consent to take part in this study, knowing that I may withdraw at any time. This will not affect my standing at McMaster University, School of Nursing.

I understand that I will receive a copy of this signed consent.

If I have any questions about the study, I may contact Pamela Baxter at 525-9140 x22290 or by e-mail at baxterp@mcmaster.ca.

_____

Name Printed   Signature

_____

Phone #   E-mail Address

_____

Witness   Date

Please circle the appropriate class (the one you were in when introduced to the study):

Level 1	PBL	Level 3	PBL
Level 2	PBL	Level 4	PBL

PBL FOCUS GROUP STUDENT CONSENT FORM

I, _____ agree to participate in the study **"The development of decision making skills during baccalaureate nursing education"** conducted by Pamela Baxter.

I understand that participation in this study will require me to participate in one focus group following one PBL class (approx. 60 min.) conducted by the principal investigator or the research assistant.

I understand that all personal information learned about me during this study will be kept confidential. My name and any other identifying particulars will not appear in any publication or be made available to anyone other than the researcher.

I have had the opportunity to discuss this study with _____. My questions have been answered to my satisfaction.

I consent to take part in this study, knowing that I may withdraw at any time. This will not affect my standing at McMaster University, School of Nursing.

I understand that I will receive a copy of this signed consent.

If I have any questions about the study, I may contact Pamela Baxter at 525-9140 x22290 or by e-mail at baxterp@mcmaster.ca.

_____

Name Printed   Signature

_____

Phone #   E-mail Address

_____

Witness   Date

Please circle the appropriate class (the one you were in when introduced to the study):

Level 1   PBL   Level 3   PBL
Level 2   PBL   Level 4   PBL

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Appendix 6:
Reflective Journal Guidelines

CLINICAL REFLECTIVE JOURNAL GUIDELINES

Name: Program Level   Clinical Setting

Please circle one: Journal #1   Journal #2

Please take a moment to reflect on your clinical day and then answer the following questions. If you run out of space you can use the back of this page.

1.   Describe your patient(s) (eg. Diagnosis, age, sex)

2.   Describe what you did for your patient(s) today.

3.   What, if any, problems did your patient(s) encounter today?

4.   How did you resolve these problems?

PBL REFLECTIVE JOURNAL GUIDELINES

Name: Program Level

Please take a moment to reflect on your PBL discussion today and then answer the following questions. If you run out of space you can use the back of this page.

1.   Briefly describe your patient scenario (eg. diagnosis, age, sex)

2.   Describe what you did (hypothetically) for your patient(s) today. (For example: formulated patient diagnoses, discussed nursing interventions, applied a theory)

3.   What, if any, problem(s) is your patient encountering?

4.   How did you resolve this (these) problems?

Appendix 7:
Tutor Introductory Letters

INTRODUCTORY LETTER TO PBL TUTOR

September 15, 2002

McMaster University
School of Nursing
Hamilton, Ontario L8S 4K1

Dear PBL Tutor,

I am writing to you to ask for your assistance in a research project that is currently under way. This project explores the development of student decision making from the first to the fourth year of the baccalaureate of science in nursing program (BScN).

The purpose of this study is to explore the development of student decision making in both the PBL and clinical settings over the course of a baccalaureate in nursing education. Ultimately, the goal of this study is to gather information that will allow nurse educators to better understand more about the clinical decisions made by nursing students and the factors that influence these decisions. It is anticipated that this knowledge will facilitate the development of tools to be used in undergraduate nursing education that will enhance clinical decision making in the future.

I am asking if you would be willing to participate in a focus group that would last for approximately one hour. This focus group will be addressing the issue of student decision making related to patient care in the PBL setting.

If you would be interested in participating in a focus group please call me at 525-9140 x22290 or e-mail me at baxterp@mcmaster.ca.

Thank you for considering this request. I look forward to hearing from you. If you have any questions or concerns please feel free to contact me.

Sincerely,
Pamela Baxter R.N., B.Sc.N., MSc. PhD (c)

INTRODUCTORY LETTER TO CLINICAL TUTORS

September 25, 2002

McMaster University
School of Nursing
Hamilton, Ontario L8S 4K1

Dear Clinical Tutor,

I am writing to you to ask for your assistance in a research project that is currently under way. This project explores the development of student decision making from the first to the fourth year of the baccalaureate of science in nursing program (BScN).

The purpose of this study is to explore the development of student decision making in both the PBL and clinical settings over the course of a baccalaureate in nursing education. Ultimately, the goal of this study is to gather information that will allow nurse educators to better understand more about the clinical decisions made by nursing students and the factors that influence these decisions. It is anticipated that this knowledge will facilitate the development of tools to be used in undergraduate nursing education that will enhance clinical decision making in the future.

I am asking if you would be willing to participate in an interview that would last for approximately 30- 60 minutes. The focus of the interview will be student decision making related to patient care in the clinical setting. The interview will be conducted in a convenient location, and at a time that is convenient for you. If you would be interested in participating please call me at 525-9140 x22290 or e-mail me at baxterp@mcmaster.ca.

Thank you for considering this request. I look forward to hearing from you. If you have any questions or concerns please feel free to contact me.

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Thank you for considering this request. I look forward to hearing from you. If you have any questions or concerns please feel free to contact me.

Sincerely,

Pamela Baxter R.N., B.Sc.N., MSc. PhD (c)

Appendix 8:
Tutor Consent Forms

CLINICAL TUTOR/PRECEPTOR CONSENT FORM

I, _____ agree to participate in the **study "The development
of decision making skills during baccalaureate nursing education"** conducted by
Pamela Baxter.

I understand that I am requested to participate in an interview (30-60 min. in length)
conducted by the principal investigator.

I understand that all personal information learned about me during this study will be
confidential. My name and any other identifying particulars will not appear in any
publication or be made available to anyone other than the researcher.

I have had the opportunity to discuss this study with _____.
My questions have been answered to my satisfaction.

I consent to take part in this study, knowing that I may withdraw at any time.

I understand that I will receive a copy of this signed consent.

If I have any questions about the study, I may contact Pamela Baxter at 525-9140 x22290
or by e-mail at baxterp@mcmaster.ca.

_____   _____
Name Printed   Signature

_____   _____
Phone #   E-mail Address

_____   _____
Witness   Date

PBL TUTOR CONSENT FORM (A)

I, _____ agree to participate in the **study "The development of decision making skills during baccalaureate nursing education"** conducted by Pamela Baxter.

I understand that I am requested to participate in an interview (30-60 min. in length) conducted by the principal investigator.

I understand that all personal information learned about me during this study will be confidential. My name and any other identifying particulars will not appear in any publication or be made available to anyone other than the researcher.

I have had the opportunity to discuss this study with _____.
My questions have been answered to my satisfaction.

I consent to take part in this study, knowing that I may withdraw at any time.

I understand that I will receive a copy of this signed consent.

If I have any questions about the study, I may contact Pamela Baxter at 525-9140 x22290 or by e-mail at baxterp@mcmaster.ca.

_____   _____
Name Printed   Signature

_____   _____
Phone #   E-mail Address

_____   _____
Witness   Date

PBL TUTOR CONSENT FORM (B)

I, _____ agree to participate in the **study "The development of decision making skills during baccalaureate nursing education"** conducted by Pamela Baxter.

I understand that I am requested **to participate in a focus group conducted by the principal investigator. The focus group will be approximately one hour in length.**

I understand that all personal information learned about me during this study will be confidential. My name and any other identifying particulars will not appear in any publication or be made available to anyone other than the researcher.

I have had the opportunity to discuss this study with _____.
My questions have been answered to my satisfaction.

I consent to take part in this study, knowing that I may withdraw at any time.

I understand that I will receive a copy of this signed consent.

If I have any questions about the study, I may contact Pamela Baxter at 525-9140 x22290 or by e-mail at baxterp@mcmaster.ca.

_____   _____
Name Printed   Signature

_____   _____
Phone #   E-mail Address

_____   _____
Witness   Date

Appendix 9:
Level 1 Focus Goals

OVERALL GOALS OF THE BScN PROGRAMME LEVEL 1

The student:

1. Has a beginning awareness of the importance of internal and external influences on the determination of human health.

2. Understands selected areas of knowledge in relation to biological, physical, verbal, emotional and spiritual mechanisms inherent in nurse/client dialogue:
   a. Can initiate dialogue to elicit client meaning.

3. Demonstrates awareness of the significant of selected processes on the enactment of nursing practice:
   a. Valuing.
   b. Caring.
   c. Beginning decision-making skill acquisition.
   d. Beginning technical skill acquisition.

4. Has a beginning awareness of the roles of other members of the health care team in relation to client wellness and life situations.

5. Demonstrates beginning competence in initiating nursing dialogue in selected settings:
   a. Has a beginning awareness of contextual and relational properties of nursing.
   b. Defines client health in terms of coherency between possibilities/practices and meaning.
   c. Initiates dialogue in simplistic one-on-one and learner group situations.
   d. Is aware of the need to reach goal-directed consensus with client/group.
   e. Recognizes clients' right of choice and participation in care contracting.
   f. Develops an understanding of the relationship of a model of nursing practice to the initiation and interpretation of dialogue.
   g. Begins to understand the faculty model of nursing and the roles of communication and interpretation.
   h. Evaluates the quality of dialogue with clients and its relationship to interpretation and caring roles.
   i. Has a beginning understanding of current technical skills.

6.   Is becoming aware of the principles and philosophy of humanistic approach to client care.

7.   Develops an awareness of personal characteristics that are necessary to achieve professional meaning:
   a.   Begins to understand intrinsic dignity, worth and uniqueness of persons and its sources.
   b.   Develops awareness of role/use of self in dialogue.
   c.   Begins to understand self-appraisal skills.
   d   Defines advocacy, empathy, tolerance and accountability in light of nursing practice goals.
   e.   Develops an understanding of values and value clarification.
   f.   Begins to appreciate nursing's history and current professional issues in light of this.
   g.   Understands the role of creativity in evolution of the professional.
   h.   Develops an awareness of the scope and diversity of nursing roles.
   i.   Understands the role of leadership in evolution of current professional practice.

8.   Identifies personal responsibility for Programme learning and begins to identify own role as a self-directed learner.
   a.   Demonstrates a beginning appreciation for specific areas of knowledge as they contribute to holistic understanding and a view of client context (psychology, biology, humanism).

Level 1 Focus
Individual

1.   Settings - clinical learning lab and the community.

2.   Health and health promotion

3.   Teaching/learning

4.   Communication
   a.   client-individual

5.   McMaster model of nursing
   a.   Humanistic/scientific model of care
   b.   Introduction to professional role

6. Nursing process
   a. Assessment of individuals

7. Technical Skills
   a. Vital signs, TPR, BP, medical asepsis, health history and physical assessment

8. Assessment skills
   a. Health promotion/health management
   b. Nutrition/metabolic
   c. Activity/exercise
   d. Values/belief (includes culture and spirituality)
   e. Sleep/rest
   f. Musculoskeletal
   g. Respiratory
   h. Abdominal
   i. Cardiovascular
   j. Self-concept/self-perception

9. Information management skills
   a. Evaluation of information

Appendix 10:
Level 2 Focus Goals

OVERALL GOALS OF THE BScN PROGRAMME LEVEL 2

The student:

1.   Can explain the contribution of internal (e.g. genetic, cultural) and external (e.g. occupational, environmental) influences in a given context.

2.   Demonstrates consideration and analysis of biological, physical, verbal, emotional and spiritual mechanisms in a given context.

3.   Demonstrates an organized knowledge base about the following processes:
      a.   Caring
      b.   Coping
      c.   Valuing
      d.   Learning/teaching
      e.   Appraisal
      f.   Clinical decision making
      g.   Technical skill acquisition and application.

4.   Analyzes interprofessional interchange in a given context.

5.   Demonstrates a beginning ability to be organized in their approach to nursing practice as described by the McMaster Model of Nursing.

6.   Understands and demonstrates critical analysis of the basic tenets of a humanistic approach to client care.

7.   Begins to formulate professional identity using information from various sources about the nature of nursing:
      a.   Analyzes self and use of self.
      b.   Understands concepts of advocacy, empathy, tolerance and accountability.
      c.   Understands ethical viewpoints and analyzes ethical dilemmas.
      d.   Can differentiate independent collaborative and interdependent functioning.
      e.   Describes leadership roles in nursing settings.

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8.   Applies information from related studies to understanding of human beings and to nursing practice. Analyzes strengths and limitations as a self-directed learner.

Level 2 Goals

At the end of level 2 the student will:

1.   Demonstrate a beginning ability to work with a community, as a partner, to assess community health status when the community is the client.

2.   Understand and demonstrate a beginning ability to analyze critically the basic tenets of a humanistic approach to client care, using knowledge of healing, caring and valuing.

3.   Demonstrate a beginning ability to establish, maintain and terminate a relationship with a client and/or family in an acute care setting acknowledging the influence of context, dialogue, and mutuality.

4.   Demonstrate an organized knowledge base about the following:
        a.   Clinical decision making
        b.   Technical skill and acquisition
        c.   Participatory community assessment
        d.   Determinants of health
        e.   Group development
        f.   Impact of internal and external influences on a client in a given context

5.   Demonstrate beginning critical thinking and clinical decision making in assessment of individuals, families, and community applying appropriate principles, concepts, and/or theories.

6.   Demonstrate beginning ability to provide nursing care according to professional standards, guidelines, and ethics.

7.   Demonstrate analysis of biological, physical, verbal, emotional, and spiritual mechanisms in a given context in collaboration with the client, with the health care team and with community partners, when appropriate

8.   Begin to formulate a professional identify using information from various sources about the nature of nursing:
   a.   Identify leadership behaviours of nurses.
   b.   Differentiate between independent, collaborative and interdependent functioning.
   c.   Apply information form various sources to understand human behaviour and nursing practice.

9.   Begin to question research based evidence and its relevance for application to identified clinical questions.

10.   Begin to promote client behaviours that facilitates change.

11.   Begin to formulate a professional identify and to develop personal characteristics associated with professional caring.
   a.   Incorporate concepts such as caring, empathy, acceptance, and advocacy.
   b.   Accountable for actions.

12.   Continue to develop personal characteristics associated with professionalism:
   a.   Awareness of strengths and limitations as a self-directed learner.
   b.   Self reflection and reflective practice.

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Level 2 Focus
Individual, Family and Community

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Settings
    Acute care institutions, schools, community
    Clinical learning lab

Communication
    Client: family, group, school, community
    Interdisciplinary team

Major concepts
    Health & illness, group theory, theory, family, other models of nursing, ethical principles, health promotion

Nursing process
  Assessment and nursing diagnosis of individuals, families and community
  Beginning planning and intervention

Technical Skills
  Hygiene, positioning & transfer, surgical asepsis, IV therapy, tube care, oral and
  inhalation medications, documentation

Assessment Skills
  Individual with acute illness
  Family
  Community

Information management skills
  Evaluation of search strategies
  Analysis of resources
  File management skills

Appendix 11:
Level 3 Focus Goals

OVERALL GOALS OF THE BScN PROGRAMME LEVEL 3

The student:

1. Identifies the important internal and external influences on human health and explains the relevance of these in the immediate nursing situation.

2. Can infer from knowledge of biological, physical, verbal, emotional and spiritual mechanisms to nursing practice.

3. Tests nursing practice roles that reflect knowledge of the following processes:
    a. Change
    b. Caring
    c. Coping
    d. Valuing
    e. Learning
    f. Appraisal
    g. Clinical and ethical decision making
    h. Skill acquisition and application

4. Demonstrates knowledge of the impact of interprofessional interchange on nurses, other health disciplines and the health care system.

5. Is developing a comprehensive approach to nursing practice in a variety of settings:
    a. Understands that nursing is contextual and relational
    b. Accepts that client health is being all of which the client is capable in a given situation
    c. Engages in meaningful dialogue with individuals and groups
    d. Relates context and dialogue in nurse/client situations to determine meaning and direction of caring and change
    e. Tests and negotiate contracting with clients
    f. Tests the application of selected theories/models
    g. Continuously evaluates the process of nursing in light of changes in the situational context
    h. Tests ability to apply relevant technical skills

6. Demonstrates a humanistic approach to the care of nursing clients.

7. Refines personal professional nursing through testing in lived nursing experiences:
    a. Recognizes the intrinsic dignity, worth and uniqueness of persons
    b. Tests alternate roles for self in client/professional dialogue
    c. Is able to generalize strengths and limitations form one situation to another
    d. Demonstrates advocacy, empathy, tolerance and accountability
    e. Refines and analyzes ethical viewpoints based on client context and meaning and own lived experiences
    f. Tests out alternate solutions to debate about professional issues
    g. Tests self in independent collaborative and interdependent roles
    h. Assumes leadership roles on behalf of client(s)

8. Evaluates own ability to be self-directed and demonstrates responsibility for professional growth:
    a. Demonstrates an appreciation for how a broad knowledge base contributes to holistic understanding and a world view.

Level 3 Focus
Individual, family, community, health care system

Settings
Acute Medical/surgical consolidation
Varied Nursing Contexts
(rehabilitation/psychiatry/community/geriatrics/maternal-child)

Communication
Client - individual, family, group, community
Therapeutic use of self
Interdisciplinary team
Health care system

Major concepts

Health & illness	Nursing models/theories
Stress, coping, violence	Pathophysiology
Families in crisis	Crisis theory
Critical appraisal	

Nursing process
      Planning and intervention
      Beginning evaluation

Technical Skills
      Further clinical skills
      I.M. & I.V. medication administration

Health care system issues

Professional development

Research and theory integration

Appendix 12:
Level 4 Focus Goals

OVERALL GOALS OF THE BScN PROGRAMME LEVEL 4

The student:

1.   Identifies the important internal and external influences on human health and explains the relevance of these for nursing practice.

2.   Utilized knowledge of biological, physical, verbal, emotional and spiritual mechanisms in nurse/client(s) situations.

3.   Demonstrates nursing practice that reflects knowledge of the following processes:
   a.   Change
   b.   Caring
   c.   Coping
   d.   Holistic care
   e.   Valuing
   f.   Learning/teaching
   g.   Appraisal
   h.   Clinical and ethical decision making
   i.   Technical skill acquisition and application

4.   Demonstrates knowledge of the impact of interprofessional interchange on nursing as a profession with other health disciplines and the health care system.

5.   Demonstrates a comprehensive approach to nursing practice in a variety of settings:
   a.   Understands that nursing is contextual and relational.
   b.   Accepts client health as being all that the client is capable of in a given situation.
   c.   Engages in meaningful dialogue with individuals and groups.
   d.   Strives to achieve a common sense of direction and purpose with client(s).
   e   Engages in mutual contracting with client to develop plan of care.
   f.   Applies and justifies use of a selected theory/model as the working base for any given nursing situation.
   g.   Seeks understanding of and familiarity with current technical skills and strives to apply them in all appropriate situations.

h. Justifies selection of nursing approach based on available research evidence.

i. Continuously evaluates the outcomes and process of nursing care.

6. Utilizes a humanistic approach to the nursing care of clients.

7. Demonstrates personal characteristics that reflect a developing professional meaning:

a. Recognizes the intrinsic dignity, worth and uniqueness of persons.
b. Shows sensitivity and use of self in dialogue.
c. Is aware of personal assets, potential and limitations.
d. Demonstrates advocacy, empathy, tolerance and accountability.
e. Analyzes ethical issues in depth and maintains ethical standards in practice.
f. Thinks rigorously and debates about professional issues.
g. Can use principles of nursing practice to implement creative/innovative approaches to nursing care.
h. Chooses independent, collaborative and interdependent functioning.
i. Develops leadership skills to facilitate the promotion of change.
j. Consolidates the nursing role in orientation and intent.

8. Accepts responsibility for lifelong learning through personal and professional growth.

Level 4 Focus

Action, theory application, evidence based practice, leadership, the health care system, and professional development

N4J07

1. Identify the important internal and external influences on health.

2. Explain the relevance of the influences on nursing practice and the role of the nurse, considering the past, present and future perspectives .

3. Integrate and apply relevant knowledge of biological, physical verbal, emotional, and spiritual mechanisms to the health care of clients.

4. Critically appraise research evidence and apply relevant finding s to the care of clients.

5. Demonstrate nursing practice that reflects knowledge of the following concepts and processes:
   a. Change
   b. Caring
   c. Coping
   d. Holistic care
   e. Valuing
   f. Learning/teaching
   g. Appraisal
   h. Clinical and ethical decision making
   i. Technical skill acquisition
   j. Interpersonal skill acquisition and application

6. Demonstrates knowledge of the impact of interprofessional interchange on nursing as a profession with other health disciplines and the health care system.

7. Work collaboratively with members of other health disciplines in the delivery of care.

8. Promote the role of the nurse to the public, health care and other agencies.

9. Demonstrate a comprehensive approach to nursing practice by:
   a. understanding that nursing is contextual and relational
   b. accepts client health as being all that the client is capable of in a given situation
   c. engages in meaningful dialogue with individuals and groups
   d. strives to achieve a common sense of direction and purpose with client(s)
   e. engages in mutual contracting with client to develop plan of care
   f. applies and justifies use of a selected theory/model as the working base for any given nursing situation
   g. analysing the relevancy of pathophysiology and therapeutic concepts
   h. deliberately selecting caring approaches for selected clients
   i. justifying selection of nursing approach based on available research evidence
   j. seeking understanding of and familiarity with current technical skills and striving to apply them in all appropriate situations
   k. continuously evaluating the outcomes and processes of nursing care.

l. utilize a humanistic approach to the nursing care of clients

m. support self, peers and colleagues who implement humanistic approaches which facilitate clients' resolutions of ethical dilemmas in different clinical settings.

10. Demonstrate personal characteristics that reflect a developing professional meaning:
   a. tests alternate therapeutic roles
   b. facilitates collaborative, empowering relationships within the clinical settings
   c. analyzes development of own nursing role recognizing the influence of expectations of others, institutional norms, and culture
   d. recognizes the intrinsic dignity, worth and uniqueness of persons
   e. shows sensitivity and use of self in dialogue
   f. is aware of personal assets, potential and limitations
   g. demonstrates advocacy, empathy, tolerance, respect and accountability
   h. analyzed ethical issues in depth and maintains ethical standards in practice
   i. thinks rigorously and debates about professional issues
   j. uses principles of nursing practice to implement creative/innovative approaches to nursing care
   k. chooses independent, collaborative and interdependent functioning
   l. develops leadership skills to facilitate the promotion of change consolidates nursing roles in orientation and intent.

11. Demonstrates responsibility for personal and professional growth by:
   a. being a self-directed learner
   b. being a reflective practitioner
   c. consistently and realistically evaluating self
   d. developing and implementing goal-directed plans for ongoing professional learning and development

N4K07

1. Identify internal and external influences on the planning and implementation and evaluation of client care recognizing the importance of these factors.

2. Demonstrate knowledge of the contribution made by nursing as a profession by analysing the impact of policies, from agencies, professional organizations and legislation that impact on the profession of nursing.

3. Demonstrate a comprehensive approach to nursing practice by:
    a. implementing collaborative evidence-based nursing care using professional literature and resources effectively
    b. empowering clients and self in the implementation of caring approaches.

4. Understand how power dynamics and systemic processes can be changed to promote empowerment of clients, and self in professional nursing role.

5. Develop skill in using power as a client advocate or role model.

6. Demonstrate nursing practice that reflects a development of professional meaning:
    a. exercise judgement in using alternate roles of therapeutic use of self
    b. facilitates relationships with clients and colleagues within the clinical setting
    c. advocates for improvements in policies and procedures related to client care
    d. tests behaviours indicative of professional role commitment
        i) accept responsibility for lifelong learning through personal and professional growth.