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Sherri E. Shinn
San Jose State University

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Shinn, Sherri E., M.S.

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U·M·I
300 N. Zeeb Rd.
Ann Arbor, MI 48106

CLINICAL JUDGMENT SKILLS OF THREE TYPES OF NURSING STUDENTS

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By

Sherri E. Shinn

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APPROVED FOR THE SCHOOL OF NURSING

Ann Doordan

Ann Doordan, PhD, RN

Coleen Saylor

Coleen Saylor, PhD, RN

Clara Boyle

Clara Boyle, EdD, RN

APPROVED FOR THE UNIVERSITY

Serena N. Stanford

ABSTRACT

CLINICAL JUDGMENT SKILLS OF THREE TYPES OF NURSING STUDENTS

by Sherri E. Shinn

This nonexperimental, comparison study examines differences in clinical judgment skills of three types of nursing students at one northern California university baccalaureate school of nursing. Subject types included generic BSN students (n=10), RN to BSN students (n=10), and LVN to BSN students (n=10). All subjects had completed the adult medical-surgical course requirements and were licensed or eligible for RN licensure in the state of California. Subjects viewed eight videotaped patient simulations and then were asked to identify patient problems, list interventions, and provide rationale for their actions.

Data were analyzed using a Kruskal-Wallis one-way analysis of variance. There was a statistically significant difference in these subjects' abilities to list complete, appropriate interventions for the simulated patient problems (p=.009). RN students were more likely to give acceptable interventions (72.5%) than LVN (38.75%) and generic BSN (31.25%) subjects. There were no significant differences in problem identification or listing of rationale.

Recommendations include further research to examine the effects of education and experience on clinical judgment skills.

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Chapter 1

INTRODUCTION

This chapter presents problems and challenges inherent to the process of evaluating clinical judgment skills of university nursing students. Further, it explores the purpose and significance of this study. Lastly, it states the research question and defines terms which were used throughout the study.

Purpose of the Study

The purpose of this study was to determine what, if any, differences exist in the clinical judgment skills among three types of students in a northern California state university school of nursing. In addition, it explored the use and effectiveness of video simulations as a method for evaluating these nursing students' clinical judgment abilities.

Statement of the Problem

Clinical judgment is an essential component of the nursing process. The ability of the nursing student to make sound clinical judgments is one outcome of the university's nursing school. The National League for Nursing (NLN) requires a baccalaureate school of nursing to demonstrate evidence of objectives, outcomes, and strategies to improve critical thinking as well as criteria by which the critical thinking skills of its students are evaluated (1991). Clinical judgment is an element of critical thinking. This university enrolls three types of students in the baccalaureate degree program: generic baccalaureate

of science in nursing (BSN), registered nurse (RN) to BSN, and licensed vocational nurse (LVN) to BSN students. The RN students usually have an associate degree in nursing.

Accurate and efficient evaluation of clinical judgment skills of nursing students in the clinical setting presents a challenge. Traditionally, evaluation of clinical judgment has been done largely by instructor observation of student performance in a clinical setting. Wood (1982) and Sommerfeld and Accola (1978) documented the need for objective feedback. They described the problems which plague evaluation by direct instructor observation in the clinical setting. Some of the problems include issues with limited time, subjectivity, bias and interpretation, and lack of reliability of student evaluation in a continuously changing practicum environment. Another method of evaluating clinical judgment is the use of simulations. Video simulations in particular have been used as a supplement to clinical observations to evaluate clinical judgment skills in an objective, consistent, time and cost effective manner (del Bueno, 1983; Matthews & Viens, 1988; Tanner, Padrick, Westfall & Putzier, 1987). Video simulations can be shown to a large group at the same time. Only one faculty or instructor needs to be present to coordinate and facilitate each session. In addition, because all participants are presented with exactly the same cues and information, each student is provided with the same opportunity for success. This also ensures more objectivity.

Significance of the Study

In times of severe budget constraints, the emphasis must shift towards cost effectiveness while maintaining high quality education and evaluation. Student and program outcomes are under close scrutiny by accrediting bodies, such as the National League for Nursing (NLN). Nursing schools must demonstrate evaluation of critical thinking skills of students in order to receive accreditation. Critical thinking, including clinical judgment, is critical to a student's successful completion of a clinical practicum. The use of video simulations may be a viable and efficient method to evaluate critical thinking skills of students in terms of time and cost. They can be used in large groups, administered by one trained instructor, and responses to each simulation presented can be evaluated objectively within minutes.

In addition to obtaining student outcome data, this study explored the use of video simulations to evaluate some of the program outcomes of the three types of nursing programs at this university, i.e., generic, RN to BSN, and LVN to BSN. Simulations were evaluated to determine if all students who completed the coursework or who demonstrated competence by examination in the adult medical-surgical curriculum were able to make similar and acceptable clinical judgments.

Research Question

What, if any, differences exist in the clinical judgment skills among three

types of students who have completed the basic adult medical-surgical requirements in a 4 year baccalaureate northern California state university nursing program?

Definition of Terms

Operational Definitions

The following operational definitions apply to this study:

1. Clinical Judgment is the ability to synthesize data and apply knowledge and comprehension in the management of clinical risks (PBDS, 1992). It is the ability and process of decision making. In this study, it is synonymous with critial thinking and will be measured by responses to videotaped clinical situations.

2. Generic BSN student is a nursing student who entered the nursing program with no previous nursing license and who must satisfactorily complete all curriculum coursework and university requirements.

3. RN student is a registered nurse who graduated from an associate degree program and is enrolled in an accelerated university nursing "bridge" program to earn a baccalaureate degree in nursing. This student has had an opportunity to "test out" of some basic nursing coursework by demonstrating competency on written NLN waiver examinations and must meet all university graduation requirements.

4. LVN student is a licensed vocational nurse who graduated from a

vocational nursing program and is enrolled in a program to earn a baccalaureate degree in nursing and eligibility for RN licensure. This student has had an opportunity to "test out" out of some basic nursing coursework by demonstrating competency on written NLN waiver examinations and must meet all university graduation requirements.

5. Simulations are mock media presentations of didactic information in a realistic and meaningful context. A series of videotaped patient situations in which a scripted actor experiences a specific, common problem.

6. Student Outcome is the ability of a student to apply content in simulated practice.

7. Model Answers are criterion-referenced "answers" which reflect the exact desired responses, developed by expert nurses and preceptors at a local community hospital.

Assumptions

There were a number of assumptions which accompanied this study. It was assumed that clinical judgment and critical thinking were synonymous, although not clearly defined in the literature.

It was assumed that a difference in clinical judgment abilities would be found. It was assumed that the clinical judgment abilities would be higher in the RN students if they had experience and the opportunity to develop clinical judgment skills. Being more experienced and knowledgeable about disease

conditions and human responses to illness provides a better basis for data collection (Itano, 1989). Although LVNs may have been experienced, a vocational nursing curriculum may not have included development of critical thinking. It was also assumed that a student who had higher academic achievement or a previous college degree would have better developed clinical judgment abilities. It was assumed that generic BSN students would not do as well as experienced RNs and LVNs due to lack of nursing job experience.

The study operated within the assumption that the adult medical-surgical coursework and/or requirements were consistent among the three programs. It was assumed that all students either completed the readings and learning activities required in the adult medical-surgical curriculum, or demonstrated competence by achieving an acceptable score on the waiver examination.

The investigator recognizes that the study required active student participation, called for creative, individualized thinking and integration and analysis of information necessary to reach conclusions and make decisions. In light of these assumptions, the investigator also assumes that adult learning principles applied and that the students did their own work and tried to do their best on the simulations during data collection.

Limitations

The findings are not generalizable due to the small sample size and the fact that it is representative of only one institution. Students may have

perceived either conditions of stress or of casualness while participating. Lastly, the investigator acknowledges that the scope of the clinical judgment process is quite broad and is not consistently defined or described in the literature. This study addresses a small aspect of this complex decision-making process.

Summary

This chapter examined problems and challenges inherent to the process of evaluating clinical judgment skills of university nursing students. It presented the purpose and significance of this study, and introduced the research question and operational definitions. It has laid the foundation for further exploration into methods and processes of evaluating clinical judgment skills of nursing students.

Chapter 2

CONCEPTUAL FRAMEWORK AND REVIEW OF LITERATURE

This chapter describes the framework for this study. It delves into the five stages of skill acquisition of nurses as defined and described by Patricia Benner (1984). In addition, it presents the findings of the review of the literature around the use of media simulations to evaluate clinical judgment skills of nursing students.

Conceptual Framework

The work of Patricia Benner (1984) provided the conceptual framework for this study. Benner's work was largely based on applying the Dreyfus Model of Skill Acquisition to nursing. In her book, Novice to Expert (1984), Benner stated that the Dreyfus model is a situational model which "posits that in the acquisition and development of a skill, a student passes through five levels of proficiency: novice, advanced beginner, competent, proficient, and expert" (p. 13). Benner further described how these levels reflect changes in aspects of skilled performance.

By interviewing newly graduated nurses and their expert nurse preceptors about a shared clinical situation, Benner was able to distinguish characteristic differences of nurse performance at these levels of experience. To further distinguish nurse performance at these and the other levels, Benner and her research team also conducted interviews and/or observations with

additional experienced nurses, newly graduated nurses, and senior nursing students. A linear model specific to nursing emerged. It is this model which provided the framework for this study.

To be able to apply this portion of Benner's work to this study, an understanding of the performance characteristics of the five levels, or stages, of skill acquisition and development is neccessary. Therefore, each stage will be described.

Novice

A novice is one who has had no experience of a situation in which he/she is expected to perform (Benner, 1984). A novice may be aware of attributes of a situation, but has no understanding of the context of it. A novice focuses on tasks but is unable to determine which, if any, tasks are more important; in fact, a novice is unaware of the need to prioritize. The performance and behavior of a novice is strictly rule governed. The behavior of a novice is limited and inflexible because he/she uses the textbook and context-free rules and principles taught in school to guide performance. Nursing students enter a new clinical area as novices, as does any nurse entering a clinical area with no prior experience. To illustrate this concept, Benner (1984) stated, "...a clinical specialist with graduate work and in-depth experience in adult critical care would be at the novice stage of skilled performance were she/he to transfer to a neonatal intensive care unit" (p. 22).

Advanced Beginner

Once a novice has experienced enough real situations to become aware of some aspects, or patterns, among like types of situations, he/she progresses to the advanced beginner level (Benner, 1984). The advanced beginner still focuses on the rules and the list of tasks or procedures to be done, and continues to treat everything as equally important. At this level, the nurse is more open to coaching and begins to ask questions. A newly graduated nurse usually enters the job as an advanced beginner. Benner (1984) described a preceptor's account of a situation with a new graduate to illustrate the performance of an advanced beginner. The preceptor gave very explicit, detailed instructions on what to assess on each baby. The new graduate assessed each baby one at a time, oblivious to the fact that her other babies were screaming. "When she did notice, she was like a mule stuck between two piles of hay" (p. 23). She was unable to distinguish and assess what was most important to each baby.

Competent

Nurses who have worked with similar patient situations for 2 to 3 years usually demonstrate competent performance (Benner, 1984). At this level, the nurse has sufficient situational experience to begin to consciously plan his/her actions. Although lacking the speed and flexibility of the proficient nurse, the competent nurse is able to tell which attributes or aspects are

important and which can be ignored. Prioritization is established. Although not yet able to recognize a situation in terms of an overall picture, the competent nurse demonstrates growth in achieving more efficiency and organization. Benner (1984) described how, instead of getting caught up on working on one task at a time, a competent nurse organized herself and her patient care while in report. She made rounds to introduce herself and check the things most important to each patient, "...then I have the morning set out and can go ahead and do things" (p. 25).

Proficient

Nurses who have worked with similar patient populations for about 3 to 5 years usually exhibit proficient performance (Benner, 1984). The nurse now has the experience-based ability to perceive a situation as "presenting itself" as a whole, rather than in terms of separate attributes and aspects. Because a proficient nurse can perceive a situation as a whole, he/she is able to recognize when an expected normal situation does not occur. The nurse's decision making is improved at this stage. The proficient nurse has a deep understanding of a situation and quickly recognizes the nuances and salient aspects of a situation, and thus narrows options to focus specifically on the accurate region of the problem. The performance is actually guided by the nuances, or maxims. Benner (1984) noted, however, that proficient performance will regress to an analytic, competent level when the need for an

analytic, procedural description arises. In other words, the performance of a proficient nurse may be guided by maxims but he/she is unable describe the situation or his/her performance in terms of those maxims. "It just depends on the situation," and "You know what you've done in the past, and you know when you're going to get into trouble," are examples of a proficient nurse's response.

Expert

The expert nurse has an enormous background of experience (Benner, 1984). At this stage, the nurse possesses an intuitive, rapid grasp of a situation and no longer relies on rules, guidelines, or maxims when taking action. The expert immediately zeroes in on the salient problem. Benner (1984) stated, "Expert clinicians are not difficult to recognize because they frequently make clinical judgments or manage complex clinical situations in a truly remarkable way" (p. 34). Performance becomes fluid, flexible, and certain. The expert has a deep, holistic understanding of the total of a situation. Like the proficient nurse, it is very difficult, if not impossible, to extract a description of expert performance. "Because it felt right," and "I just knew," are examples of expert responses.

Benner (1984), through transcripts of the interviews and field notes of the observations, also identified 31 competencies within 7 domains which could be measured. Because the five stage model of skill acquisition implied

that structural models, decision analysis, or process models cannot describe advanced levels of clinical performance, Benner sought an interpretive approach to describe the rapid, holistic decision making of experts. She qualitatively examined performance measurement of aspects of expert clinical judgment. She asserted that "more is known about measuring problem-solving (judgment) capabilities when problem-solving is reduced to defining the problem and ordering alternatives." Benner focused instead on measuring the ability of expert nurses to find problems and implement strategies for resolution within the context of skilled practice.

Review of the Literature

The recent emphasis on assessment of outcomes is related to changing economics and enrollment patterns in nursing schools. The development of programs designed for licensed nurses, adult learners, minority and disadvantaged groups, and second-career students has accelerated sharply in recent years. Budget constraints are severely increasing. These factors have stimulated more flexibility and assessment of prior learning and associated integration of competency-based and adult learning principles. As diversity increases, so does the need for more objective outcome evaluation (Lenburg & Mitchell, 1991). In the face of limited budgetary resources, student evaluation must also be cost effective. This section presents reported literature around evaluation of clinical judgment of students, as well as the use of simulations as

a means to evaluate same.

Clinical Evaluation

Feeney and Benson-Laundau (1987) described the three-fold purpose of evaluating the competency of professional nurses on the job. The three-fold purpose could be expanded for use with a nursing student population. Evaluating clinical judgment and competency promotes the delivery of consistent, quality care by ensuring that all student nurses are able to perform at a competent level. It provides objective data for use in grading and evaluating performance, as well as for counseling. Lastly, it provides necessary documentation for accrediting bodies that the outcomes of individual students and programs have been defined and evaluated. Clinical judgment has been identified as one of the desired outcomes of students in this university's school of nursing.

Jenkins (1985) described the need for effective clinical decision making among nurses and her belief that responses to this need should begin at the educational level, and not when a nurse enters the workforce. Her article described and reflected upon the complex and demanding profession that nursing students face today. Educators must strive to develop and refine methods and strategies to assess and develop the critical thinking abilities of students.

Brooks and Shepherd (1990) stated that the demonstration of critical

thinking in the clinical setting is a universally expected behavior of professional nurses. They described it as an essential component of precise communication, problem-solving abilities, and theoretical and conceptual understanding of nursing concern. Tanner and Lindemann (1987) reported that a survey of research priorities in nursing education identified research on strategies for teaching clinical problem-solving as the second highest priority topic of 63 listed topics.

Evaluation methods are constantly changing and improving in an attempt to meet the needs of ever-changing student populations and nursing program curricula, administrators and educators. The literature reflects the frustration which accompanies the dynamic process. Wood (1972, 1982) documented the troubled history of clinical evaluation methods and listed a number of basic issues which complicate traditional clinical evaluation. Thus, the search for new, more effective and efficient methods are constantly sought.

Evaluation Using Media

New methods of evaluation have become available with advances in technology. One such method is the use of media simulations. The use of multi-media simulations as an evaluation method has started to become more prevalent in the literature. Use of video simulations of patient problems for evaluation of clinical judgment outcomes, however, appears to be in its infancy. There was little literature found on deriving either student or nursing program

outcome data from use of video simulations. No studies with video simulations involving LVNs were found. However, a few studies that used various types of simulations to evaluate critical thinking (or a part of the process) of students and licensed nurses were found.

Researchers began to examine nurses' judgment processes as early as 1968 (Verhonick, Nichols, Glor, & McCarthy, 1968). This group of researchers used five filmed patient situations to elicit nurse respondents' observations and suggested actions. Although the goal of the research was to identify what the nurse observes in a patient situation (and how they evaluate what they see) before taking specific nursing action, this is one of the first documented uses of simulations in nursing evaluation. These filmed patient situations presented a set of stimuli to which subjects responded with a nursing action. The sample for this study was obtained from national conventions and professional meetings. Although data were collected from RNs, LVNs, and a few nursing students, as well as non-nursing convention attendees, only data obtained from the RNs were analyzed. The researchers acknowledged that although some patterns emerged, more information was needed in order to generalize. The patterns, however, were not disclosed in this article.

Gross, Takagawa, and Rose (1987) reported a study which evaluated the impact of nursing education on 108 baccalaureate and associate degree students' critical thinking abilities, as measured by the Watson-Glaser Critical

Thinking Appraisal (WG). Critical thinking skills were embedded within each program's curriculum. Critical thinking ability was measured by the WG using two forms. Neither of the WG forms were specific to nursing. Each form contained 80 items and was used alternately at entry and graduation. The instrument consisted of five subtests of inference, recognition of assumptions, deduction, interpretation, and evaluation of arguments. The exercises in the WG included problems, statements, arguments, and interpretation of data. The study revealed highly significant improvement, but no significant differences between baccalaureate and associate degree nursing students.

Johnson, Lehman, and Sandoval (1988) described the development and use of a 2-day clinical performance exam in which brief videotaped vignettes were shown to baccalaureate nursing students. After viewing a vignette twice, students had an individual conference with an instructor and were evaluated on their ability to assess visual and auditory information and develop a written plan of care utilizing that information. The second day, students viewed another vignette, which presented extended information on the same patient. Again, they had a conference with an instructor, and their leadership qualities were assessed. In addition, students were offered an opportunity to revise their original care plan, given the new information. The two care plans were evaluated together by student and instructor, looking at the student's ability to apply the nursing process. The researchers reported that the results of this

exam were similar to the intuitive evaluations of the clinical instructors, i.e., students who had difficulty during the semester practicum performed with marginal success on the clinical exam. Of particular interest is that when students' results on the clinical exam were compared with their results on the standardized registered nursing (RN) licensing exam, it was found that of the students who failed the licensing exam, all but one scored below the group average on the clinical exam. However, the researchers did not report the actual number of students who *passed* the licensing exam who also scored below the group average on the clinical exam.

Itano (1989) agrees that the study of the judgment process offers important information to educators in developing methods and procedures for teaching students to make valid judgments. She compared two elements of the clinical judgment process used by newly graduated student nurses and RNs who were identified as highly-skilled judgment-makers. She looked specifically at cues and the judgment process. The judgment task was the initial assessment of a patient. Each nurse reviewed medical and nursing orders, listened to a taped change-of-shift report, and assessed the patient as if it were the beginning of the shift. A data collector observed and tape recorded the patient assessment. Each nurse was then asked to review their thoughts as brief segments of the nurse-patient assessment were replayed. This was also tape recorded. The tapes were transcribed, and nurse educators rated

each transcript using a judgment process rating scale. In each set of interviews, all the clinical cues were identified by the researcher and classified as either a current state cue, historical state cue, current contextual cue, or historical contextual cue. However, no definitions for these cues were given in the article; it was unclear as to what they were, what they meant, what the researcher did with this information, or how it "fit" into the research. The study reported that nurses collected more cues than the students and used each type of cue differently.

Davis (1974) also reported the use of the same filmed patient situations that Verhonick et al. (1968) developed. She used them to compare clinical nurse specialists, baccalaureate nurses, and diploma nurses, and the effect of years of clinical experience on quality and quantity of nursing care. She found that clinical nurse specialists made more relevant observations, suggested more relevant actions based on their observations, and gave more appropriate rationale than the baccalaureate or diploma nurses. She asserted that increased education was the reason for enhanced nurses' performance despite the belief that nursing skills also improved as a result of increased clinical experience. In fact, Davis reported that increased experience was associated with a *decrease* in the level of performance. This study reported that baccalaureate and clinical nurse specialists listed approximately 95% of their actions as supportive or voluntary actions which required nursing

knowledge, skills and/or judgment, and did not depend on directions from others or from medical prescription. In contrast, diploma nurses listed approximately 90% of their actions as therapeutic, such as initiating an order from a physician or professional nurse before using voluntary or supportive actions. This suggests a difference in clinical judgment skills of nurses with different types of educational preparation.

DeBack and Mentkowski (1986) support Davis' findings. They administered 4 written instruments and utilized peer reviews and nurse interviews which included a review of self-reported critical incidents to measure competencies of experienced baccalaureate, associate degree and diploma nurses. Competencies were defined as "outcomes of an educational process." Competencies measured in this study were ego strength, influencing, independence, conceptualizing, reflective thinking, emotional stamina, helping, coaching, and positive expectations. Although the methodology was very different from Davis', the study found that nurses with a baccalaureate education demonstrated more competencies as compared to associate degree and diploma nurses. The researchers also suggested that their findings may have indicated that education promoted a broader range of abilities than did experience.

Westfall, Tanner, Putzier, and Padrick (1986) looked at one piece of the critical thinking process: activation of hypotheses derived from clinical data.

They used videotaped simulations of patient problems along with a verbal change-of-shift report. They compared baccalaureate nursing students and experienced staff nurses. After watching the simulations, subjects were interviewed and allowed to ask for additional information. In addition, they were requested to "think aloud." The interviews were audiotape recorded and transcribed for qualitative analysis. Westfall and her colleagues found that the activation of hypotheses is a component of the reasoning process common to both nurses and nursing students, and that the level of education does *not* influence the number, comprehensiveness, earliness, or proficiency of hypothesis activation. They asserted, however, that the level of education *is* related to the complexity of the diagnostic hypothesis.

del Bueno (1983) developed and used videotaped simulations to measure clinical judgment in nursing. She studied RNs from baccalaureate, associate degree, and diploma programs with varied levels of experience. In addition, she included a small sample of 5 nursing students. After viewing a patient simulation, subjects identified the patient's primary problem, listed nursing interventions appropriate for the problem identified, and listed rationale for nursing actions. She evaluated responses using a criterion-referenced model answer. She found that the experienced nurses made fewer judgment errors than did the inexperienced nurses. She also found differences in decisions by educational preparation. She reported that experienced

baccalaureate nurses gave more acceptable responses, followed by experienced associate degree nurses and then experienced diploma nurses. Of the 5 subjects in the student group, she reported only that the associate degree student gave the most acceptable responses. She emphasized that no conclusions could be drawn about what a nurse would actually do in a real patient situation, and conceded that direct observation of performance is a more reliable method, albeit more subjective and costly in terms of time and expense.

In 1990, del Bueno reported further research to measure clinical judgment of nurses with varied experience and education levels. She reported using "more sophisticated and diverse" video simulations than those in her earlier study. These videos are now a part of the Performance Based Development System (PBDS), originally developed in conjunction with Baxter Management Services. The convenience sample of registered nurses was obtained from ten PBDS user hospitals and data were collected over a 6 month period of time. A greater number of simulations were used and with a larger sample than in her earlier study. The data collection procedures were the same as in her earlier study. Unlike her previous study, however, this study found no relationship between experience, education, and ability to make acceptable clinical judgments.

Sanford, Genrich, and Nowotny (1992) performed a retrospective study

to look at differences in clinical judgment abilities of newly hired baccalaureate and non-baccalaureate nurses at a large metropolitan hospital. Most of the subjects were baccalaureate graduates with less than 2 years of experience. Researchers used an ex post facto design and analyzed anonymous orientation records of 116 subjects to investigate clinical judgment abilities. Responses to four videotaped simulations were used to measure clinical judgment. Nurses watched the simulation, labeled the patient's problem, specified the nursing interventions required in order of priority, identified rationale for each intervention, and listed preventive actions that might have eliminated or minimized the patient risk. Responses were compared to model answers and assigned points which indicated the completeness of the response. The total points earned for each vignette and all four vignettes were calculated. The researchers defined competency in clinical judgment as requiring a minimum overall score of 80% correct. Results of the study were that although 80% of the subjects did not achieve the acceptable level of 80%, the total scores did not discriminate between baccalaureate and non-baccalaureate graduates. In addition, they did not attempt to explain why so many subjects failed to achieve "competence."

Summary

This chapter provided the framework for this study by outlining the conceptual framework. It presented possibilities for evaluating the similarities

and differences in clinical judgment among the subjects of this study. Previous studies which used media to examine clinical judgment abilities were described. Studies in which media were used were limited in the literature. Documented studies involving nursing students were extremely scarce. The research reported in both areas has also been largely inconsistent and not generalizable.

Several studies reported differences in clinical judgment among nurses with varying levels of education and experience. These studies used various forms of media. Of the studies which reported a difference, one trend emerged: Education has an effect on clinical judgment.

Verhonick et al. (1968) used films to examine judgment and acknowledged "emerging patterns" but did not elaborate as to what the patterns are in the article. Davis (1974) used the same films as Verhonick et al. and reported that the more educated clinical nurse specialists performed better than baccalaureate and diploma nurses. Using written media and an interviewing process, DeBack and Mentkowski's (1986) results supported Davis'. They reported that baccalaureate nurses demonstrated more competencies than associate degree and diploma nurses and attributed this difference to education.

Other studies seem to point in the same direction. Westfall et al. (1986) found that while education did not influence the ability to make judgments,

nurses with a higher level of education demonstrated more complex decision-making skills.

del Bueno twice used video simulations to measure clinical judgment of RNs with varied education and experience levels (1983, 1990). It is of interest to note her diverse findings. In her 1983 study, she reported that experienced nurses made fewer judgment errors than did inexperienced nurses. She also reported that experienced baccalaureate nurses gave more acceptable responses. In her 1990 study, she found no relationship between experience, education, and the ability to make acceptable clinical judgments. No other studies which specifically examined experience as a variable were found.

Because the methodologies differed greatly and results are not generalizable, it was not possible to synthesize these findings to arrive at any definitive conclusions. This, and the fact that there has been little research probing into the clinical judgment abilities specifically of nursing students, clearly supports the need for further study in this arena.

Chapter 3

METHODOLOGY

This pilot study utilized a nonexperimental design. A cross-sectional, comparison study was performed on a non-random, convenience sample of 30 university nursing students who had successfully completed the basic core of adult medical-surgical requirements and were eligible for licensure in the state of California. This chapter describes the research procedures used in this study.

Design

Subjects

Subjects were recruited from a 4 year baccalaureate program in a northern California state university school of nursing. Three types of students were studied: generic, RN to BSN, and LVN to BSN. Participants were recruited by the investigator on a voluntary basis. Ten volunteer subjects from each student group (generic, RN, and LVN) were recruited. The criteria for inclusion were successful completion of the basic core of adult medical-surgical requirements (junior year) of this university school of nursing, and eligibility for RN licensure in the state of California. The majority of subjects (24) had met these criteria in the previous semester. Two subjects met these criteria 1 year prior to participation. Four subjects met these criteria the same week, but prior to, participation in the study.

Setting

The study took place in a 4 year baccalaureate nursing program in a state university in northern California. Data were collected in a classroom or meeting room at the university.

Human Subjects Approval

Approval from the university Human Subjects Institutional Review Board was obtained (Appendix A). All responses and surveys were confidential. In addition, subjects were told by the investigator that participation would not affect their grade(s). Data were reported in aggregate form. Subjects were informed of this verbally by the investigator as well as via the written consent form (Appendix B). Data were kept secure in the investigator's home and were only labeled by an identification code number. The identification code number matched the demographic survey to the response forms. Subjects were given a card with this identification code number so they alone would be able to identify their personal responses. Subjects were informed that individual results and feedback would be available after data were analyzed.

Instruments

The videotaped simulations which were used were from the Performance Based Development System (PBDS). Data presented include visual and auditory signs and symptoms, cues and clues relevant for problem recognition, such as patient history and assessment information (del Bueno, 1990). The

simulations used in this study were developed by Baxter Management Services. They are now a part of the Performance Based Development System (PBDS) owned by Performance Management Services, Inc. (PBDS, 1992). del Bueno (1990) documented the reliability and validity of these simulations. Expert nurses validated content validity. Sixty simulations were field tested to determine quantitative validity and reliability. del Bueno (1990) reported that, "Reliability estimates for the simulations, obtained by using an equivalence approach, averaged 94% for individuals tested with parallel situations." In addition, over 50 PBDS user hospitals subsequently reported that the simulations consistently differentiated between nurses with and without the ability to meet established model answer criteria (del Bueno, 1990). The simulations, however, had not been tested with students.

Permission to use these tools was obtained from Performance Management Services (Appendix C). Eight videotaped simulations, each showing a patient problem situation, were used. Problem selection was based on adult medical and/or surgical disease processes or conditions common to the content of any program preparing students for licensure as a registered nurse. In addition, the simulations depicted patient problems common to the clinical experience of all three types of students in this study. It was likely that each student would have taken care of a patient with the actual or a potential for each problem. The problems selected were: blood transfusion reaction,

acute renal failure, hyperglycemia, airway obstruction, paralytic ileus, pneumothorax, thrombocytopenia, and urinary retention.

The simulations included concepts that senior level students would be expected to apply, although their clinical experience may have differed. Though the 3 types of students entered at different levels and/or points in time due to previous education, experience, or competence on qualifying examinations, all students at this university are expected to be able to meet the same outcomes. The students were expected to apply the same basic concepts learned in respective program content.

The response form (Appendix D), also from PBDS, was adapted slightly for use in this setting to allow adequate room to legibly respond to the simulations. In addition, the form allowed the researcher to separate the critical intervention behaviors, allowing trends and missing pieces to be easily identified.

Data Collection

Subjects completed a brief, anonymous demographic survey (Appendix E), which was coded to match the response forms but collected separately to ensure that data were evaluated objectively. Subjects were informed as to confidentiality by the investigator at this time. In addition, subjects were informed by the investigator and class instructor that participation would not affect their grade(s). The investigator explained the research procedures. The

possible benefit of targeting problem areas of clinical judgment as a means for growth and preparation for the "real world" were also explained by the investigator.

Each data collection session lasted approximately 90 minutes. Six sessions were offered in order to accommodate the schedules of the participants. Each subject attended one 90 minute session.

The investigator read the research procedures to each group. Informed consent was obtained. Each subject received a packet with eight response forms and printed data relevant to each situation. Each packet and response form was coded so that it could be matched to the corresponding demographic survey. Subjects received a card with their identification code number to allow them to identify their results, if desired, at a later date. The investigator verbally read instructions regarding the procedure. After instructions were given, study participants were familiarized with the procedure by presenting a sample video simulation (thrombophlebitis); this was completed verbally as a group. Questions were answered by the investigator.

The subjects viewed each simulation once. Supplementary printed data relevant to each situation was also available in each packet. This data included the verbal script and visual information presented in the simulation. After viewing each simulation, students were asked to identify the patient's priority problem, to provide specific nursing interventions for that problem, and

to list rationale for interventions. The time limitation of 5 minutes to respond to each simulation was enforced in order to simulate the need for urgency in making the clinical judgments. All responses from the students were anonymous, but were matched to the coded demographic survey.

Analysis Procedures

Demographic data for each group were compared by the investigator to describe the characteristics of the sample. Age, education, grade point average, and experience of the sample are described in Chapter 4.

Each subject's responses were individually evaluated and rated by the researcher using criterion-referenced model answers developed at a local community hospital by expert nurses, preceptors, and nursing instructors for their use. This hospital utilizes PBDS to assess new nurses during their orientation to the hospital. Each subject received a separate rating for problem identification, interventions, and rationale for each of the 8 simulations.

Ratings were recorded on an individualized subject profile developed by the investigator (Appendix F). Responses were rated as "acceptable," "partially acceptable," or "unacceptable," (per PBDS procedure) as delineated by the model answers. An acceptable response was one in which all elements of the model answer for that simulation were contained. A partially acceptable response was one in which most elements of the model answer for that simulation were contained. An unacceptable response was one in which few

or no elements of the model answer for that simulation were contained. Because the model answers were criterion-referenced, they clearly compared the student's performance to specific criteria (rather than normative-referenced, which would compare a student with other students in the group). This method depicted how well individual students performance compared to model answers (expected performance). It also enabled the investigator to identify trends in subjects' performance and give individual feedback and direction to subjects for further growth.

Responses were grouped into 2 categories (acceptable and non-acceptable) in order to limit the number of variables with a small sample size. The proportions of acceptable problem, intervention, and rational responses were determined for each subject. The maximum possible acceptable response in each of these categories was 8 out of 8. A percentage of acceptable responses was obtained from these proportions. The percentage of acceptable answers in each category for each group were then analyzed.

Data were analyzed using a Kruskal-Wallis one-way analysis of variance to determine the differences in responses to the videotaped patient simulations among the three groups. The alpha used to examine differences was set at .017 (.05 ÷ 3).

Summary

This chapter described the subjects, setting, instruments, data collection

procedures, and design methodology of this study. Chapter 4 presents the analyses and interpretation of the results of the study.

Chapter 4

ANALYSIS AND INTERPRETATION OF THE DATA

This chapter presents the results of the analysis of the data collected. The purpose of this study was to determine what, if any, differences exist in the clinical judgment skills among three types of students in one northern California state university school of nursing. Characteristics of the sample and their responses to the videotaped patient simulations are also described.

Characteristics of the Sample

A profile of the sample was compiled from the demographic surveys. Frequencies and percentages were used to describe the demographics of the sample. The three types represented all of the student types in this school of nursing.

Age

Ages ranged from 22 to 51 years. Fourteen of the 30 subjects were in the 22 to 30 age range (46.7%). Eleven of the subjects were in the 31 to 40 age range (36.6%). Five of the subjects were in the 41 to 51 age range (16.7%).

The age range of the generic students was 22 to 51, with a mean of 28.9 years. The age range of the RN students was 30 to 47, with a mean of 38 years. The age range of the LVN students was 26 to 41, with a mean of 32.2 years.

Gender

There were 28 female and 2 male participants. The RN and LVN groups each had 9 females and 1 male. The generic group were all females (n=10).

Previous Education

Ten subjects (LVN) had completed a vocational nurse program. Ten subjects (RN) had completed an associate degree program. Two of these subjects reported they had previously earned a nursing diploma. It is important to note, however, that these two subjects returned to school to earn an associate degree and were included in the RN to BSN group. Six of the 10 generic subjects reported they had completed a non-nursing associate degree. One BSN and two LVN subjects also reported they had previously earned a baccalaureate degree other than nursing.

Estimated Grade Point Average

Subjects were asked to estimate their overall grade point average. The overall estimated grade point average ranged from 2.60 to 4.0, with a mean of 3.29. The estimated grade point average of the generic group ranged from 2.60 to 3.80, with a mean of 3.31. The estimated grade point average of the RN group ranged from 2.80 to 4.0 with a mean of 3.68. The estimated grade point average of the LVN group ranged from 3.0 to 3.5, with a mean of 3.22.

Previous Experience

None of the ten generic students (33.3%) reported registered or licensed

nursing experience. Of the remaining 20 subjects, previous years of experience ranged from 1 to 23 years, with the majority (n=13) reporting 4 to 10 years. RNs reported a range of 4 to 23 years of previous nursing experience, with an average of 10.8 years. LVNs reported a range of 1 to 8 years of previous nursing experience, with an average of 6.7 years. Table 1 further illustrates years of experience.

Table 1

Years of Experience

Years of Experience	Number of RNs (n=10)	Number of LVNs (n=10)
1	1-5	5
6-10	6	4
11-15	1	0
16-23	2	1

Note. No generic BSN subjects reported experience.

Description of Data

The raw data were first grouped by subject type and by simulation. This made it possible to visualize how each group performed in each aspect (problem identification, intervention, and rationale) for each patient simulation.

Table 2 illustrates the overall summary of responses by group by simulation.

The RN group consistently performed better than the other two groups on most simulations. They performed markedly better on the second and third simulations (renal failure and hyperglycemica, respectively) than the LVN and generic BSN groups.

The LVN group generated more acceptable problem labels and interventions than the RN and generic BSN groups on the thrombocytopenia simulation. In fact, this was the only simulation in which the LVNs as a group performed better than the RN group. The generic group performed similarly to the RN group on this simulation.

The LVN group had difficulty on the urine retention simulation. Only half were able to label the problem, intervene, and list the rationale correctly. Every one of the RNs (n=10) performed acceptably in all three categories.

All of the groups experienced some difficulty with the renal failure simulation. While only half the RNs (n=5) correctly labeled the problem, all (n=10) intervened appropriately; however, only 3 out of the 10 RNs listed appropriate rationale. Generic BSNs performed poorly and only marginally better than the LVNs.

Overall, LVNs listed more acceptable intervention responses than the generic BSN group. However, generic BSNs listed more acceptable rationale responses than the LVNs. Results will be further discussed in Chapter 5.

Table 2

Responses by Group by Simulation

	Problem			Intervention			Rationale			
Subject Type	A	P	U	A	P	U	A	P	U	Simulation
RN	9	1	0	9	1	0	10	0	0	Blood Reaction
LVN	10	0	0	5	5	0	9	1	0	
GENERIC	9	1	0	2	8	0	10	0	0	
RN	5	3	2	10	0	0	3	7	0	Renal Failure
LVN	2	7	1	0	9	1	4	5	1	
GENERIC	3	3	4	0	8	2	5	3	2	
RN	10	0	0	6	4	0	10	0	0	Hyperglycemia
LVN	6	2	2	2	6	2	5	3	2	
GENERIC	8	0	2	4	4	2	6	2	2	
RN	9	0	1	7	2	1	9	0	1	Airway Obstr.
LVN	6	3	1	4	3	3	6	2	2	
GENERIC	7	2	1	6	4	0	8	2	0	

Note. A = Acceptable, P = Partially Acceptable, U = Unacceptable

Table 2 (continued)

Responses by Group by Simulation

	Problem			Intervention			Rationale			Simulation
Subject Type	A	P	U	A	P	U	A	P	U	
RN	8	2	0	5	4	1	9	0	1	Paralytic Ileus
LVN	5	3	2	3	6	1	7	1	2	
GENERIC	5	4	1	3	5	2	5	4	1	
RN	10	0	0	5	5	0	9	1	0	Pneumothorax
LVN	7	1	2	5	3	2	8	1	1	
GENERIC	9	1	0	1	8	1	6	3	1	
RN	8	0	2	6	3	1	8	1	1	Thrombocytopenia
LVN	9	0	1	7	1	2	8	1	1	
GENERIC	9	1	0	5	5	0	8	2	0	
RN	10	0	0	10	0	0	10	0	0	Urine Retention
LVN	5	0	5	5	1	4	5	1	4	
GENERIC	6	1	3	4	3	3	7	0	3	

Note. A = Acceptable, P = Partially Acceptable, U = Unacceptable

Data were collapsed by response category by group. This gave an overall view of each group's performance in each response category. Tables 3, 4, and 5 illustrate the overall summary of each group's responses (acceptable, partially acceptable, and unacceptable) by response category (problem, intervention, rationale).

Table 3

Summary of All Problem Responses by Group

Subject Group	Acceptable	Partially Acceptable	Unacceptable
RN	69	6	5
LVN	50	16	14
Generic	56	10	14

Note. Total number of responses by each subject group=80.

Table 4

Summary of All Intervention Responses by Group

Subject Group	Acceptable	Partially Acceptable	Unacceptable
RN	58	19	3
LVN	31	34	15
Generic	25	45	10

Note. Total number of responses by each subject group=80.

Table 5

Summary of All Rationale Responses by Group

Subject Group	Acceptable	Partially Acceptable	Unacceptable
RN	68	9	3
LVN	52	15	13
Generic	55	16	9

Note. Total number of responses by each subject group=80.

To limit the number of variables with this small sample size, responses were divided into 2 categories: acceptable and non-acceptable. Therefore, the partially acceptable and unacceptable responses were categorized together as non-acceptable for this purpose. The statistics were performed with the data divided in this manner. Table 6 summarizes the total percentage of acceptable responses by group.

Table 6

Summary of Acceptable Responses by Group

Subject Group	Problem	Intervention	Rationale
RN	86.3%	72.5%	85%
LVN	62.5%	38.8%	65%
Generic	70%	31.3%	68.8%

Note. Maximum percentage possible=100%

Overall, RNs were more likely to give acceptable responses in all three areas measured (problem identification, interventions, and rationale). Collectively, RNs correctly labeled patient problems 86.25% of the time (69/80). They listed acceptable interventions 72.5% of the time (58/80). Their rationales were correct 85% of the time (68/80).

LVNs correctly labeled patient problems 62.5% of the time (50/80). They listed acceptable interventions 38.75% of the time (31/80). Their rationales were correct 65% of the time (52/80).

Generic students correctly labeled patient problems 70% of the time (56/80). They listed acceptable interventions 31.25% of the time (25/80). Their rationales were correct 68.75% of the time (55/80).

Statistical Findings

Data were analyzed using a Kruskal-Wallis one-way analysis of variance. The alpha used to examine differences was .017 (.05 ÷ 3). The statistical analysis found no significant difference among the 3 types of subjects' abilities to correctly identify the patient problems. Differences in the ability to give correct rationale were likewise statistically insignificant. The analysis did, however, reveal a statistically significant difference among the three types of subjects' abilities to intervene appropriately (p=.009). That is, the RN subjects gave significantly more appropriate and acceptable intervention responses than did the LVN or generic BSN subjects.

Therefore, in answer to the research question, there was a difference in the clinical judgment skills among these 3 types of students, in the area of intervention. There were no statistically significant differences in problem identification or listing rationale for interventions among these 3 groups.

Summary

This chapter described the characteristics of the sample and their responses to the simulations. The results and interpretation of data analysis were also presented. It was found that RN subjects gave significantly more appropriate and acceptable intervention responses than LVN or generic BSN subjects. The conclusions and recommendations are presented in the next chapter.

Chapter 5

CONCLUSIONS AND RECOMMENDATIONS

The purpose of this study was to determine the existence of differences in the clinical judgment abilities of three types of nursing students. This chapter examines the results of this study. It includes insights and possibilities for the outcomes, as well as offers indications for further research.

Conclusions

The results of this study indicate that there was, indeed, one significant difference in the clinical judgment skills among the 3 types of students at this university. Specifically, this study revealed that the RNs were more likely to identify acceptable and complete nursing interventions for the simulated patient problems presented than the LVNs and generic BSNs. No statistically significant differences in problem labeling or in giving rationale were found.

Of interest is that when raw responses by group by simulation were compared (Table 2), there were several descriptive items of interest with unexpected results. It is important to keep in mind that this information is presented for descriptive information and comparison only. It was not a function of this study to look at individual simulations or any singular item or aspect of them.

In general, the RN group consistently performed better that the other two groups on most simulations. The investigator had assumed prior to

conducting the research that this would occur. They performed markedly better on the second and third simulations (renal failure and hyperglycemia, respectively) than the LVN and generic BSN groups. Because statistics were not performed to compare the effects of experience or education, it is not possible to know for certain that one or both were the cause of the enhanced performance.

However, on the thrombocytopenia simulation, the LVN group generated more acceptable problem labels and interventions than the RN and generic BSN groups. This was the only simulation in which the LVNs as a group performed better than the RN group. In fact, the generic group performed quite similarly to the RN group as well. A possible explanation is that RNs did not have as much experience with thrombocytopenia as they did with the other simulated problems and were thus operating from about the same knowledge base as were the LVN and BSN groups.

Another surprise was that the LVN group had difficulty on the urinary retention simulation. As this is a common occurrence in many nursing specialties, it was surprising to the investigator that this group did so poorly in the light of their experience. This simulation was rated as "easy" by the community hospital experts who developed the model answers.

The LVN group also had difficulty with the renal failure simulation. Again, this was surprising as the signs and symptoms the patient exhibited in

the simulation were common and this simulation was likewise rated as "easy" by the hospital experts.

Another item of interest includes the fact that generic BSN students listed more acceptable rationale for interventions responses than the LVNs. This is probably attributed to the fact that an LVN curriculum focuses on technical aspects of nursing and does not stress as much theory or rationale development as an RN curriculum. This has implications for a bridge program in which incoming LVNs are able to test out of some theory and skills classes. They may miss the opportunity to develop this aspect of clinical judgment and may need coursework added for this purpose.

LVNs listed more acceptable intervention responses than the generic group in every simulation, except for hyperglycemia and airway obstruction. Again, this is may be attributed to experience and the technical focus of an LVN curriculum.

The only simulations in which the generic BSN group gave more acceptable overall responses than the LVN group were renal failure and airway obstruction. This may be due to chance, or that LVNs had not had as much experience with these conditions as they had with the other simulated problems.

Table 2 illustrated the overall responses by group by simulations. With the data displayed this way, the RNs also appear to be able to label problems

more acceptably than LVNs and BSNs. However, this appearance is merely descriptive and is not statistically significant, possibly due to the small sample size. It may have been statistically significant had the research been conducted with a larger sample size.

Because it is PBDS procedure, overall subject responses were initially rated as acceptable, partially acceptable, and unacceptable. To limit the number of variables with this small sample size, the responses were condensed into two categories. This was achieved by grouping the partially acceptable and unacceptable responses together. Had the partially acceptable responses been grouped instead with the acceptable responses, the LVN and BSN groups would have performed more alike. Had the responses been condensed in this manner instead, findings would likely have been different.

Several reasons for these differences are possible. One possible influencing factor is previous nursing experience. RNs reported more experience than LVN's. Generic students reported *no* previous experience. The author's assumption that the clinical judgment abilities would be higher in the RNs held true for intervention responses. Though not statistically examined, this may be because they have had more experience and opportunity to develop their judgment skills. Itano (1989) stated that being more experienced and knowledgeable about disease conditions and human responses to illness provides a better basis for data collection. Additionally,

two studies described in the literature review found that experienced nurses performed better than inexperienced nurses (del Bueno, 1983; Itano, 1989). Though the LVN's may have had experience, they likely did not have the same previous theoretical knowledge base as the RN's.

In the conceptual framework of this thesis, Benner (1984) described how nurse performance is positively influenced by experience. She asserts that experience is not based on passage of time or longevity. Instead, she maintains that "experience" is gained only when an event refines, elaborates, or disconfirms "foreknowledge" of a given situation. This experience allows practical knowledge and theoretical knowledge to be bridged and refined, eventually developing advanced clinical knowledge. In essence, she found that while theory guides practice, the nurse discovers through experience differences in reality that the theory fails to express. It is important to note this explanation of experience, since it explains why a nurse with many years in nursing can become a novice when she enters a new nursing specialty.

Since the generic BSN subjects reported no job experience, they would be expected to perform at the novice to advanced beginner level of Benner's theory. By this point in their course of study, they had enough clinical experience to be able to perform at least marginally on the simulations. However, it is possible that subjects did not have experience with one or more the patient problems in this study; in this case, novice performance would be

expected.

The RNs and LVNs should function at a higher level due to their reported experience. Keeping Benner's explanation of experience in mind, they may return to a lower level during a situation with which they have no experience. This could be a possible explanation for why subject groups seemed to have some difficulty with some of the simulations in this study.

At the competent level, the nurse begins to distinguish important aspects of a patient situation and is able to plan and prioritize actions. The nurse usually reaches this level at 2 to 3 years of experience. Most of the RN and LVN subjects in this study should be at least at this level.

Nurses who reach the next level, proficient (3 to 5 years of experience), demonstrate improvement in decision making. Many subjects in this study were probably proficient. The proficient nurse has "a deep understanding of a situation and quickly recognizes the nuances and salient aspects of a situation and thus narrows options to focus specifically on the accurate region of the problem" (p. 29). The proficient nurse recognizes when something is not normal and can focus on the specific problem.

An expert has an enormous background of experience and operates out of instinct in situations in which they have had that experience. In situations in which the expert has had no experience, the expert will return to analytic problem-solving. Several subjects in this study were probably experts. An

expert may successfully problem-solve through an unfamiliar situation, whereas a novice or advanced beginner may not. This probably contributes to the finding in this study, as RNs and LVNs may not have had experience with a particular patient problem, yet still responded more correctly than did the generic BSN, who had little practice experience. Because the statistics did not examine this variable, it is not possible to draw any definitive conclusions about the role of experience in this study.

Another possible influencing factor is previous education. An LVN curriculum may not stress decision-making; rather, it may focus on more technical aspects of nursing including the reporting of signs and symptoms, thereby relying on the direction or decisions of the professional RN or physician. An associate degree RN curricula should include development of the clinical judgment process. The generic BSN curriculum at this university includes development of clinical judgment skills. It was also an assumption of this study that subjects with a previous college education in any area would have better developed judgment. This variable was not statistically examined. Most (80%) RN subjects had reported completion of at least an associate degree; however, the remaining subjects had approximately the equivalent of an associate degree by this time in their program. It was assumed that the subjects had experienced the judgment process as a part of that education, which may have contributed to an increased ability to make acceptable

judgments. Davis (1974), DeBack and Mentkowski (1986), and del Bueno (1983) reported a positive correlation between education and performance. However, del Bueno (1990), and Sanford et al. (1992) reported that education did not affect performance.

Additionally, one cannot rule out the possibility that life experiences may influence a person's judgment. Life experiences are often associated with age and/or multiple significant events in a person's life. Although this was not measured in this study, some subjects responses could have been influenced in this way.

It was observed in this study that if the problem was labeled incorrectly, the interventions (and usually the rationale) were either focused on the incorrect problem or were so nonspecific that they were often not acceptable. Therefore, a subject will probably intervene incorrectly and inappropriately in a situation in which she or he is unsure of or wrong about a specific patient problem. This has potentially dangerous implications in a real patient situation.

The results of this study are most like Itano's (1989) findings in that the RN group, who had experience, performed significantly better than did the generic group, who did not. However, Itano did not report an LVN group with which the results of this study can be compared.

The use of video simulations may indeed be one efficient method of examining clinical judgment of students. After giving the instructions and

"talking through" one example (20 minutes), it required 65 minutes for the subjects to complete these 8 simulations. Time would vary according to the simulations chosen. Only one facilitator was required. It took approximately 10 minutes per subject to evaluate responses. However, if the evaluator wanted to give individual feedback or written comments to each student, the response evaluation time would increase substantially. The criterion-referenced model answers to be used were those developed by a local community hospital for use with novice and experienced nurses at that institution. Although they appeared to be appropriate for use with this sample, it may be more appropriate for university instructors to select simulations and develop model answers which are consistent with and organized according to the major threads of the curricula.

Limitations

This study operated on the assumption that the adult medical-surgical coursework and requirements were consistent among the three types of programs at this university. It was further assumed that all the subjects either completed the readings and learning activities required in the adult medical-surgical curriculum, or demonstrated competence by achieving an acceptable score on the waiver exam. It is also assumed that practicum instructors were consistent in terms of expectations and acceptable student performance standards. The responses of a subject could have been affected if the

curriculum or expectations were not consistent or if the subject did not complete the assigned reading or learning activities.

Other things which may have influenced or affected subject responses include perceived stress or anxiety, or a sense of casuality. It was assumed that the subjects would try to do their best in their responses; however, because their participation was neither mandatory nor graded, some subjects could conceivably have performed minimally. On the other hand, some subjects may have experienced stress or "test anxiety" as a result of the test-like environment. High-achievers could also have experienced performance anxiety. Perceived stress could have affected responses positively or negatively.

The results of this study are not generalizable due to the small sample size and the fact that it was representative of only one institution. The small sample size is probably a major factor in the failure to find many significant differences. A much larger scale study must be done with these simulations and student types in order to generalize the results. Additionally, it must be mentioned that results of this study cannot be extended to draw any conclusions about subjects' performance in an actual clinical situation; that is, there is no proof that a subject would *in fact act* in congruence with responses to the simulation.

Implications and Recommendations

The review of the literature conducted for this study revealed that there have been few research studies which utilized video simulations to examine clinical judgment abilities. Even fewer studies were found in the literature which probed into the clinical judgment skills specifically of nursing students. Further, this research has been largely inconsistent and not generalizable. Clearly, much more research with video simulations and nursing students is needed in order to establish the usefulness of this method of examining clinical judgment abilities.

The videotaped simulations could be used in other ways as well. They could be used to assess students with previous nursing experience at entry to the program. Results would serve as a baseline to compare with later evaluation results. This may be an effective way to measure some of the student and nursing program outcomes (validate that content and expectations of each type of curriculum are consistent). Schools of nursing could also consider utilizing different specialty area simulations (nursery, cardiac, orthopedic, etc.) to establish a more comprehensive baseline and more diverse evaluation of program outcomes.

Instructors could take it a step further and compare the individual student's simulation results with objective documentation of his/her actual clinical performance. It would be an interesting way to examine both the

validity of the effectiveness of the simulations as a measurement of clinical judgment as well as the student's ability to apply his/her knowledge and make judgments in a real-life situation.

If determined to be a valid measurement of actual bedside clinical judgment, the use of simulations could even be considered to determine competency and waive practicum hours for previously experienced students.

Recommendations for Future Study

1. Replication of this study in more than one university and on a larger scale should be performed. A larger, more diverse sample would increase the ability to generalize the results of the study.

2. Further research into previous education and experience is supported by inconsistencies found in the literature. Researchers could examine not only the length of experience, but the type of experience (i.e., nursing specialties) and their effect on judgment skills on these simulations. The combination of education and experience, and type of experience may account for differences or similarities among these groups.

3. A future research study which would evaluate generic, inexperienced BSN subjects at predetermined points in their careers (student, 6 month, 2 years, 5 years of experience, etc.) would be potentially valuable for nursing educators.

4. Researchers could consider further studies to examine the possibility

of using simulations, along with written and practicum experience, as a graded activity in a college nursing curriculum.

Summary

This chapter discussed the results of the study. A statistically significant difference in one aspect of the clinical judgment process was found. RN students gave more acceptable intervention responses than did generic or LVN students. This finding was consistent with the limited research found in the area in which judgment skills of student and experienced nurses were compared.

Though definitive conclusions cannot be drawn from this study, previous education and/or nursing experience were suggested as possible influencing factors. This chapter validated the need, as well as presented a number of recommendations, for further research in this area.

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APPENDIX A

Human Subjects-Institutional Review Board Approval

SJSU SAN JOSE STATE UNIVERSITY

A campus of The California State University

Office of the Academic Vice President • Associate Academic Vice President • Graduate Studies and Research
One Washington Square • San José, California 95192-0025 • 408/924-2480

To: Sherri Shinn

From: Serena W. Stanford Serena Stanford
AAVP, Graduate Studies and Research

Date: October 22, 1992

The Human Subjects-Institutional Review Board has reviewed and approved your request for exemption from Human Subjects Review for the proposed study entitled:

"Clinical Judgment Skills of Three Types of Nursing Students"

Provided that there are no changes in the procedure proposed, you may proceed with this study without further review by the Human Subjects-Institutional Review Board. You must notify the Human Subjects-Institutional Review Board of any changes in the subject population or procedure for this study

I do caution you, however, that Federal and State statutes and University policy require investigators conducting research under exempt categories to be knowledgeable of and comply with Federal and State regulations for the protection of human subjects in research. This includes providing necessary information to enable people to make an informed decision regarding participation in your study. Further, whenever people participate in your research as human subjects, they should be appropriately protected from risk. This includes the protection of the confidentiality of all data that may be collected from the subjects. If at any time a subject becomes injured or complains of injury, you must notify Dr. Serena Stanford immediately. Injury includes but is not limited to bodily harm, psychological trauma and release of potentially damaging personal information.

Please also be advised when people participate in your research as human subjects, each subject needs to be fully informed and aware that their participation in your research project is voluntary, and that he or she may withdraw from the project at any time. Further, a subject's participation, refusal to participate or withdrawal will not affect any services the subject is receiving or will receive at the institution in which the research is being conducted.

If you have questions, please contact me at 408-924-2480.

APPENDIX B

Consent Form

SJSU SAN JOSE STATE UNIVERSITY

A campus of The California State University

College of Applied Sciences and Arts • *Department of Nursing*
One Washington Square • San José, California 95192-0057 • 408/924-3130 • FAX 408/924-3135

Agreement to Participate in Research

Responsible Investigator: Sherri Shinn, RN, BSN, MS-c

Title of Protocol: Clinical Judgment Skills of Nursing Students

1. I have been asked to participate in a research study investigating the clinical judgment skills of nursing students.
2. The study will take place at SJSU. I will be asked to complete a brief, anonymous demographic survey and watch and respond to 8 videotaped patient simulations.
3. There is no anticipated discomfort or risk to me involved with this study. A possible benefit to me is a better understanding of my abilities and the clinical judgment process used by nurses.
4. The results of this study are available to me upon my request.
5. The results of this study may be published but no information that could identify me will be published unless I sign a "release to publish statement."
6. There is no monetary compensation for participation in this study.
7. Questions about this study may be addressed to Sherri Shinn at Complaints about the research may be presented to Dr. Virgil Parsons, Nursing Department Chairperson, SJSU, at (408) 924-3130. Questions or complaints about research, subject's rights, or research-related injury may be presented to Serena Stanford, Ph.D., Associate Vice President of Graduate Studies and Research, at (408) 924-2480.
8. No service of any kind to which I am otherwise entitled will be lost or jeopardized if I choose not to participate in this study.
9. My consent is voluntary. I may refuse to participate in this study or in any part of this study. If I decide to participate in this study, I am free to withdraw at any time without prejudice to my relationship to San Jose State University or any other participating institutions, nor will it affect my grade in any class.
10. I have received a signed and dated copy of this consent form.

*The signature of a subject on this document indicates agreement to participate in this study.

*The signature of a researcher on this document indicates agreement to include the above named subject in the research and attestation that the subject has been fully informed of his or her rights.

_____ _____
Subject's Signature Date

_____ _____
Investigator's Signature Date

APPENDIX C

Permission to Use Instrument

Dorothy J. del Bueno

Philadelphia, PA 19103

May 28, 1992

Ms. Sherri Shinn, BSN
Education and Training
El Camino Hospital
2500 Grant Road - PO Box 2500
Mountain View, CA 94039-7025

Dear Sherri,

Sorry for the delay. You can send mail directly to me at the letterhead address. It will be faster.

In regard to your proposed research design the following:

- Yes, you may use the video simulations (subject to below)
- Yes, you may include a copy of the Answer-Response Form

My permission is predicated on your revising your design to use no less than 8 video situations which will include no less than 3 situations identified as urgent in the Model Answer (i.e., no time to consult). I would also need to see a script of your verbal directions to the assessment to verify accuracy of presentation for the purpose of the evaluation method.

Collective findings are generally not meaningful because PBDS is a qualitative individual assessment. Assigning a number value is acceptable as long as you don't then give a "score" or deal with means or averages. A table showing individual results and patterns or trends with an overall rating of "acceptable - meets standards" "marginal" "does not meet standards" is a relevant way to report findings.

Please call me if this is not clear or if I can be of any further help (home).

Sincerely,

Dorothy

Dorothy J. del Bueno, Ed.D., RN

APPENDIX D

Sample of Subject Response Form

ID # _____

SUBJECT RESPONSE FORM

#1:_____

Problem Label/Diagnosis: _____

Specific Interventions AND Rationale

APPENDIX E

Demographic Survey

ID#_____

Demographic Survey

1. Age:_____

2. Nursing program in which I am currently enrolled:

   _____Generic _____ADN Bridge _____LVN to BSN

3. Estimated current GPA:_____

4. Previous education:

   _____BA/BS _____MA/MS _____AA/AD _____Diploma (nsg.)

   _____Vocational

   _____High School _____Other (List)_____

5. Previous registered/licensed nursing experience:

   _____years _____none

6. Area(s) of practice or specialty(s) and length of time practiced:

Area	Years	RN	LVN
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

APPENDIX F

Sample of Subject Profile Form

ID # _____

SUBJECT PROFILE

Rating Keys
A = Acceptable
P = Partially Acceptable
U = Unacceptable

#1 Blood Reaction	Problem Label	Interventions	Rationale
COMMENTS:			
#2 Acute Renal Failure	Problem Label	Interventions	Rationale
COMMENTS:			
#3 Hyperglycemia	Problem Label	Interventions	Rationale
COMMENTS:			