STUDENT ANXIETY AND THE EFFECT OF PRECLINICAL EVALUATION IN LEARNING A COMPLEX TASK

by

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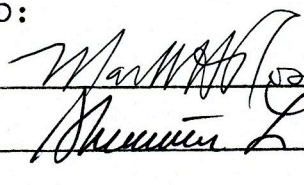

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ABSTRACT

In today's health care setting, all nurses, regardless of their clinical assignments, must be able to perform technical, interpersonal, and critical thinking skills in a simultaneously integrated, thoughtful process. However, development of such competence is often time-consuming, complex and difficult for both nurse and employers.

The purpose of this study was to identify the anxiety profile of undergraduate nursing students when learning a complex nursing skill, to determine the effect of preclinical skill evaluation on student anxiety and performance when applying the skill on a patient situation.

Findings support preclinical skill evaluation as an effective strategy for reducing anxiety related to initial transfer of skill learning from a laboratory to a clinical setting and enhancing self-confidence.

DEDICATION

To Jack, Beth, John, and Joe, without their love and support there would not be a purpose or a meaning to the quest for higher esteem. To my friend, Simon Olstein, M.D. without whom there would be darkness along the path to success.

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CHAPTER ONE

THE PROBLEM

Introduction of the Problem

There are many sources of stress in nursing education that may result in anxiety sufficient to hinder optimal learning and/or performance (Blainey, 1980; McKay, 1978; Strauss and Hutton, 1983). One potential stressor is the process of acquiring psychomotor skill competence (Dye, 1974; Fox, Diamond, Walsh, Knopf, & Hogden, 1963; Gunther, 1969; MacMaster, 1979; Pagana, 1988; Sellek, 1982).

Psychomotor/technical skills are essential to the practice of nursing. Preparation for competence requires that students achieve proficiency in a number of skills, most of which are complex, novel for the learner, and have an inherent patient safety risk factor.

The purpose of this study was to identify the anxiety profile of undergraduate nursing students when learning a complex motor skill, and to determine the effect of preclinical evaluation on student anxiety and performance when applying the skill in a patient situation for the first time.

Higher levels of anxiety have been found to interfere with performance involving complex skills, coordination,

steadiness, fine muscle movements, and concentration (Oxendine, 1972). While anxiety is recognized as a critical learner variable (Heinrich & Speilbarger, 1982; Martens, 1971), there have been few investigations of learner anxiety associated with the process of acquiring nursing psychomotor skills or of instructional strategies designed to minimize stress/anxiety that might otherwise delay achieving skill competence.

Sams (1968) has investigated the relationship between anxiety, stress, and task complexity (surgical handwashing and sterile gowning vs. female catheterization with a retention catheter). Anxiety level was determined by the IPAT Anxiety Scale Questionnaire. No significant interactions between anxiety, stress, and complexity were found. However, subject performance was better under nonstress than stress instructions, and low-anxiety subjects performed significantly better than high anxiety subjects.

Gilmore (1982) investigated the relationship between performance and fear of failure as measured by the worry and emotionality subscales of the Osterhouse Inventory of Test Anxiety (OITA). The sample included both baccalaureate and associate degree nursing students. A significant relationship between OITA scores and performance was found only in the baccalaureate group; subjects with higher OITA scores made more errors and engaged in more performance

trials while practicing surgical gloving than subjects with lower OITA scores.

Goldsmith (1984) investigated the interactions between anxiety, field orientation, media presentation, and practice conditions related to learning a complex skill (sterile dressing change with a Penrose drain). Anxiety was assessed by the State-Trait Anxiety Inventory. No significant effect on performance was found with field orientation, media presentation (videotape vs. slidetape), or practice condition (mannequin vs. real person role-playing a patient). However, anxiety related to how subjects felt while performing the skill had a significant negative correlation with performance.

Background of the Problem

Acquiring nursing psychomotor skills involves preclinical preparation in a simulated laboratory setting followed by clinical application. Discussion of preclinical instruction indicates that skill learning is most effectively accomplished in a laboratory setting when objectives and reading assignments are specified, when there is an opportunity to view a demonstration of the skill, and when practice is supervised to avoid error fixation (Bauman, Cook, & Larson, 1981; Crow, 1980; Grigsby & Smith, 1977; Hallal & Welsh, 1984; Haukenes & Halloran, 1984; Taylor & Cleveland, 1984). One condition not consistently identified

is individual testing/ evaluation to validate performance prior to clinical application.

Psychomotor skill instruction of the target population of this study included specification of objectives and prelaboratory preparation (assigned reading and videotape viewing), and a weekly two-hour laboratory class with supervised practice by graduate teaching assistants. Each laboratory was devoted to a new skill. Students needing additional practice/review prior to clinical application could use the laboratory facility independently. Since individual testing/evaluation before clinical application was not done, this situation provided an opportunity to investigate the effectiveness of preclinical skill evaluation as an instructional strategy.

Viewing a videotape was selected for comparison because it was one usual means by which students could review prior to clinical application of a skill. This situation also supported serial measurement of student anxiety during the process of skill acquisition which had not been previously investigated. The study skill was female catheterization using either an indwelling or straight catheter. Anxiety was measured before and after the usual laboratory class for this skill, after preclinical evaluation/videotape viewing, after the skill was performed in a patient situation, and at the end of the clinical day in which this performance occurred.

The Research Question(s)

Will students report the same amount of anxiety at each time of measurement?

Will students who experience preclinical skill evaluation report less anxiety and demonstrate a higher level of proficiency when performing the study skill in a patient situation for the first time than students who do not experience preclinical skill evaluation?

Statement of the Problem

Until recently, there have been few reliable or valid tools to collect evidence of nurses' ability to make acceptable clinical judgments. Multiple-choice tests or printed or computerized case studies measure circumscribed knowledge about managing health risks but do not measure the complex process required to integrate simultaneously cue sensing, cue interpretation, hypothesis formation, and option generation, all of which are presumed to be essential components of decision making. Printed tests or CRT screens that present information in a narrative or outline form are useful but context-free, therefore lacking test verisimilitude or reality. Real patients do not present nurses with a case study or multiple-choice options that include the "right" decision. Obviously, the most reliable test of nurses' decision-making abilities are their performance in actual situations. However, it may be unsafe

or untimely to wait until a performance opportunity occurs clinically. Thus, in response to concerns about the relevance of traditional evaluation techniques' capacity to measure clinical performance, simulated performance tests have become more popular and more commonly used (Bashook, 1985; del Bueno, 1983; Lenburg, 1979).

Purpose of the Study

Many kinds of experiences take place in the process of becoming adult and through them adults acquire knowledge, skills, and values. Adults have a diversity of goals both as individuals and as workers; their perceptions of the means and experiences required to achieve these goals differ widely. It seems reasonable, therefore, to try as frequently as possible to consider this diversity of needs perceptions and goals when developing educational programs. Traditional teaching methods do not generally do this.

Adults are accustomed to learning new skills, knowledge, and values "on their own." They continually engage independently in activities that change them as individuals or as workers. Thus, if experiences and content are provided, adults are quite capable of changing their behavior without a structured classroom situation, and with a minimum of anxiety.

Significance of the Study

Teaching and learning are parallel processes, but they are not the same. Teaching, as practiced by most

instructors, concentrates heavily on transmission of information. However, it is more than delivery of content. Teaching should also include assessment of the learners in relation to the variables of readiness, willingness, and the ability to change their behavior. Teaching also includes formative and summative evaluation of the outcomes of teaching.

Learning, or change in behavior, involves a series of stages that can be identified as acquisition, application, and internalization. If individuals are conscious of the need to learn and are willing, they will find opportunities to acquire that learning. They can then apply the acquired knowledge, skills, and values in a real or simulated setting. If the learner experiences positive feedback, reinforcement, and consequences from this application process, he/she is likely to internalize the new behaviors. Thus, teachers can be most effective if they concentrate on assisting the learner to apply what has been acquired, while eliminating one of the greatest barriers to learning, which is stress caused by anxiety related to fear of failure. Acquisition itself can be carried out independently if learners are provided with resources and materials.

Assumptions

The following assumptions have been made:

1. Patients have the right to expect care from

competent nurses who consistently and continuously provide care that is congruent with patients' expectations, professional standards, organizational policies, values, and norms.

2. There are some methods of assessing or predicting competency that have a greater probability for success than others. Structured assessment of individuals' abilities to perform before the initiation of educational intervention can be achieved using objective, reliable, valid performance methods and components such as performance simulations, games, rehearsals, exercises, and troubleshooting algorithms designed to collect data that provide a profile of the nurses' ability to perform technical procedures, manage clinical risks, use interpersonal strategies, set priorities and solve clinical problems.

3. Although validation of performance ability and assessment of learning needs are important, the ultimate outcome, i.e. continuous, effective, practice, can only be achieved by subsequent clinical practice. Therefore, the link between assessment-validation learning and clinical application is critical and essential.

Limitations

A major concern of researchers planning structured observation is a balance between the "molecular approach" and the "molar approach" (Kerlinger, 1986). This means choosing

units of behavior that are small enough to ensure reliability in observation (molecular), while not reducing the size of units so much that they bear no resemblance to the context of human activity (molar). In the molecular approach to observation, verbal interaction, for example, is broken into words or phrases, whereas the molar observer first defines the variable broadly and then proceeds to identify several behaviors that fall into that one category. The molar observer "depends on his experience, knowledge, and interpretation of the meaning of the actions he is observing. The molecular observer...seeks to push his own experiences and interpretations out of the observational picture. He records what he sees...and no more" (Kerlinger, 1986). A variety of rating scales can be used in observations--checklists, forced-choice inventories, category rating scales, numerical rating scales, graphic rating scales--and each is somewhat different in format. Checklists, for example, are used as a guide in the observation and simply include a list of behaviors and events that potentially could be viewed by the observer. The observer checks those things on the list that are actually seen. Observers trained and practiced in the coding and recording and aware of the potential biases they bring to research contribute significantly to the reliability of results.

Definition of Common Terms

CATHETER: A tube, usually made of synthetic rubber, used to facilitate drainage of fluids from a body cavity or organ.

CATHETERIZATION: The act of using a catheter for purposes of drainage.

COMPETENCY: Skill level maintained through practice.

JCAHO: Joint Commission for Accreditation of Health Care Organizations.

PBDS: Performance-Based Development System.

STAI: State-Trait Anxiety Inventory.

CHAPTER TWO

REVIEW OF THE LITERATURE

The Joint Commission for Accreditation of Hospitals (JCAHO) has mandated health care institutions with the task of validating competency of nursing personnel. Historically, assessment of skills for new employees was facilitated through the use of checklists, standardized tests, such as the National League of Nursing Basic Medication Test, and actual performance. Preceptors were assigned the task of orienting a new employee to the physical environment, culture, and norms of the new job site.

Unfortunately, actual competence of new nursing personnel was not assessed until an adverse patient outcome was experienced or reported, such as a burn from a too-hot heating pad, or an infection from an improperly performed procedure. Orientation and staff development strategies are costly, both in payroll dollars and in nonproductivity incurred while nurses learn or practice. Increased patient acuity, decreased length of stay, and complexity of patient populations intensify the need for cost-effective methods for competency development. Although there are no easy answers or obvious panaceas to resolve problems associated

with competency development, there are some methods that have a greater probability for success than others. One of these is the Performance-Based Development System (PBDS) (del Bueno, 1989).

Providing the link between assessment-validation learning and clinical application is essential. The clinical teacher serves as the critical link, coordinating both ability assessment and clinical practice application. Collection of assessment data allows the clinical teacher to coordinate the development of clinical competence, acceptable organizational behavior, and a professional model of practice. The clinical teacher encourages learners to be self-directed, with periodic evaluation of progress. It is made clear that the learner is ultimately responsible for successful mastery of a skill (del Bueno, 1989).

The use of such assessment methods while the learner is still in a nursing program would seem to be an innovative method for addressing unacceptable performance and reducing the cost involved in addressing these performances on-the-job (del Bueno, 1989).

Competency-based education can be considered a philosophy of education as much as a method of educational

programming--a philosophy that emphasizes learning rather than teaching. This is not just a semantic difference, but a real difference. Accordingly, the majority of the people engaged in higher education conceive of the education process as information transmission. They have a model that assumes that someone (the teacher) has a great deal of information, knowledge, or content and that many others (the learners) do not have it. The content expert is paid to teach in the sense that there is a salary paid to transmit this information. The selection of the teacher is heavily influenced by expertise in a particular content area. More enlightened universities even hire an audio-visual specialist so that more sophisticated techniques can be brought to bear on sharpening and glamorizing the message. The lecturer still remains the central communicator but the presentation becomes clearer and more palatable by translation into contemporary media. This model fails to take into account such critical elements as active participation of the learner, the role of reinforcement, feedback, and a dozen others (Geis, 1977).

Another drawback of the model described is that it evaluates the learner by asking for a demonstration of acquisition of the content. Little attempt is made to evaluate whether or not the learner can act upon what has been learned.

Teaching and learning are not the same. Teaching also includes formative and summative evaluation of the outcomes of the teaching (del Bueno, 1989).

A broad interpretation of competency-based education allows for what Dewey (1977) described as democracy in education. The belief is that democracy in education meant freedom--freedom to make choices, freedom in carrying out these choices, and the freedom to develop wisdom and foresight. The critical elements in this philosophy are the making of choices and the responsibility that must be assumed for the consequences of these choices. Thus, through the choices they make and the subsequent consequences of those choices, people acquire wisdom about effective and ineffective decision-making. Holding people accountable for their choices helps them develop the ability to plan responsibly for the future. They realize that if choice is to be free, it must be intelligent. It must grow out of reflection on the range of possibilities open to the individual and perception of the consequences likely to follow from pursuing different courses of action.

Thus far, articles have described the broad and narrow interpretations of competency-based education and the philosophical theory it springs from. In summary, a broad interpretation of competency-based education allows the individual learner to make choices in relation to actions and outcomes. A narrow interpretation offers certain

choices to the learner but limits the degree of freedom in making them. The narrow interpretation allows the learner the choice of accepting or rejecting the predetermined outcome plus the choice of demonstrating prior acquisition of the outcome or sequencing the learning experience. Competency-based education requires that the learner be motivated and self-directed. Not all learners will be comfortable with this learning style. If traditional methods are the learner's choice, then a decision must be made about providing them.

Simulations permit nurses to perform psychomotor skills in a controlled setting, thus reducing risks to patients and providing for repetition until the performance criterion is achieved. Unlike teaching a skill in the clinical setting where many other activities are going on, the variables in the simulation can be carefully controlled. This allows the focus to remain on the skill being taught and contributes to decreased stress levels and increased self-confidence (Evans, 1977).

Cost has been noted as a major limitation in the use of simulations. Simon (1981) stated that selection of the simplest simulation that still permits achievement of the critical elements of the skill is appropriate, and careful selection could cut costs significantly.

To assume the role of the learner in a high stress area can produce feelings of inadequacy, frustration, and

decreased self-esteem (Lewis & Spicer, 1987). Therefore, if anxiety-producing factors were controlled in the laboratory, the learner would acquire new skills faster and internalize the positive experience.

CHAPTER THREE

METHODOLOGY

Data collection utilizing the checklist in an observed (structured) setting was selected because it allowed for easy coding of the response. It did not require additional training of the researchers, who were already familiar with the skill being observed and could systematically utilize the checklist.

The subjects were 30 volunteer, first-semester junior-year students enrolled in the first clinical course at one baccalaureate nursing program, none of whom had prior instruction or experience in performing the study skill. Subjects ranged in age from 19-34 years, with the mean age being 23.8 years. Two were males and 28 were females.

Anxiety was measured by the State-Trait Anxiety Inventory (STAI), (Speilberger, Gorsuch, Lishene, Vagg & Jacobs, 1983). This inventory consists of two scales: Form Y-1, (see Appendix A) designed to measure state anxiety (situation anxiety), and Form Y-2, (see Appendix B) designed to measure trait anxiety (anxiety-proneness). Each instrument consists of 20 items to which subjects

respond by rating themselves on a 4-point scale. Possible scores range from 20 to 80. Reliability of both instruments is well established with the state anxiety scale having internal consistency coefficients ranging from .86 to .95, and the trait anxiety scale having coefficients ranging from .73 to .86. Correlation of the two trait measures in this study yielded a coefficient of .8676.

As recommended, both forms of the STAI were referred to as a "Self-Evaluation Questionnaire." When both forms were administered at the same time, subjects were asked to indicate how they "generally feel." For measurement of state anxiety before and after the laboratory class, and following preclinical skill evaluation/videotape viewing, subjects were asked to indicate how they felt at that moment about performing female catheterization in an actual patient situation. Following clinical application, subjects were asked to indicate how they felt while performing female catheterization. At the end of the clinical day in which this application occurred, subjects were asked to indicate how they felt at that moment about performing female catheterization in the future.

A performance, or criterion checklist (see Appendix C) was developed by the investigator to measure skill proficiency. Items were constructed from a description of the procedure published in a well-known basic nursing

textbook (Nursing Procedures, Springhouse, 1992) which was the same reference used by the subjects. The checklist was submitted to a panel of four nurse experts, all of whom agreed that the items were relevant, complete, and clear. They also agreed that the checklist guidelines were adequate for appropriate, consistent evaluation of the study skill in an actual patient situation. Interrater reliability was established by having all evaluators independently rate the same videotape of the study skill. The video utilized was "Ureteral Catheterization Techniques," produced by the Bard Corporation. This checklist was also used for preclinical evaluation.

Three background questionnaires were used to identify confounding variables and to assess further the effect of treatment. The factors addressed were preparation other than the laboratory class, self-confidence, self-perception of performance, anticipatory concerns, and perceived stress during clinical application.

Questionnaire #1 provided the amount of prelaboratory preparation (see Appendix D). It also included a self-rating of performance and confidence, and concerns about performing the study skill in a patient situation after the subjects had completed their laboratory class. Questionnaire #2 provided a second self-rating of performance and confidence after the subjects had completed preclinical skill evaluation/viewing a videotape (see

Appendix E). Questionnaire #3 provided the amount of preparation after completing the laboratory class, and a self-assessment of perceived stress when performing the study skill in the future (see Appendix F).

An invitation to participate in the study was extended to first-semester junior year students at the end of a usual class period. Volunteers then completed STAI Form Y-2. To insure anonymity, subjects were instructed to use a four-digit code number of their own choosing on all data collecting forms. Just before the usual laboratory class for the study skill, all subjects completed STAI Form Y-1. Immediately after this laboratory class, all subjects completed STAI Form Y-1, STAI Form Y-2, and Questionnaire #1. Subjects were then randomly assigned to experimental and control groups. During the next week, the experimental group participated in preclinical skill evaluation, and the control group viewed a videotape of the study skill.

Preclinical skill evaluation was conducted by the investigator at a time convenient for the subject. Each subject was allotted 30 minutes and demonstrated female catheterization using an indwelling catheter on a mannequin. Equipment was similar to that used in patient care settings. To clarify expectations and minimize the effect of potential test anxiety, each subject was given the following instructions:

> The purpose of this experience is to give you specific feedback on your performance. You may ask any questions you feel necessary at the time. I will interrupt you only when you do something incorrectly, or can anticipate that it is very likely that you will do something incorrectly, so you can see immediately what changes are needed. In addition to demonstrating the procedure, tell me what you would do before and after performing it with a patient.

Immediate feedback was complimented by summary feedback following the demonstration. Subjects then completed STAI Form Y-1, and Questionnaire #2.

The control group viewed a videotape of the study skill at a time convenient for each subject. Just before viewing, the investigator met with the subjects briefly. They were told that the tape was a demonstration of female catheterization using an indwelling catheter, and were given instructions for completing the data collection instruments.

Questions about the procedure were neither encouraged nor discouraged; no subject asked a question. The investigator was not present during or after the viewing, which created a usual situation in that the videotape is a resource available for all students to use on an

independent basis. The videotape was 14 minutes in length, and purchased by the nursing school the subjects attended. After viewing the videotape, each subject completed STAI Form Y-1 and Questionnaire #2.

During the remaining three weeks of the semester, the subjects' first performance of the study skill in a patient situation was evaluated by their clinical instructor. Immediately after this performance, all subjects completed STAI Form Y-1, which was again completed at the end of that clinical day along with Questionnaire #3. Clinical application time lapse was the same for both groups. Fifty percent of the subjects in each group performed the skill within the first two weeks of this three-week period.

CHAPTER FOUR

PRESENTATION AND ANALYSIS OF THE DATA

Initially, 55 students volunteered to participate in the study. Thirteen subjects withdrew before and one subject withdrew after formation of the experimental and control groups. Eleven subjects had no opportunity for clinical application. Preliminary analysis revealed that attrition did not affect group trait and prelaboratory state anxiety. The mean trait anxiety for all volunteers was 38.8 (N=55); after dropout it was 38.2 (N=30). The mean prelaboratory state anxiety for all volunteers was 48.7 (N=55); after total dropout, it was 49.8 (N=30). Also, preliminary analysis revealed that trait anxiety was not a consistent predictor of state anxiety in this sample. The first trait measure was correlated with each of the five state measures. A significant positive correlation only occurred with the second ($r=.3688$, $p<.05$) and third ($r=.4405$, $p<.01$) measure.

The t-test for independent means was used to determine the effect of preclinical skill evaluation on subject anxiety. The Chi-square test of independence was used of analysis of confounding variables.

Anxiety experienced by both the experimental and control groups was similar; it was the highest prelaboratory, lowest as related to future performance, and showed a progressive decline, except for the fourth measurement (see Table 1). The control group reported an increase in state anxiety, whereas the experimental group reported a slight decrease in anxiety as compared to the third measure. A significant difference between the two groups occurred twice. The experimental group reported significantly less anxiety during clinical application than the control group ($t=2.514$, $df=28$, $p<.05$). The experimental group also reported significantly less anxiety about performing the study skill in the future than the control group ($t=2.124$, $df=28$, $p<.05$).

The study skill included two types of catheterization that may be perceived as being unequally difficult. Therefore, the mean performance scores were compared by type of catheterization. Analysis revealed no significant differences between the two groups in performance of catheterization with an indwelling nor with a straight catheter. Possible scores ranged from 0-10 on a 10 point scale. Mean performance scores were 6.5 for the indwelling catheter and 7.0 for the straight catheter ($t=1.45$, $df-14$,

TABLE 1

State Anxiety

	GROUP*	RANGE	MEAN	SD
Prelaboratory	A	25-69	48.50	13.827
	B	38-72	50.94	10.279
Postlaboratory	A	22-70	44.93	11.445
	B	25-66	43.69	12.311
After clinical eval/VT (videotape)	A	22-50	36.86	10.144
	B	22-53	38.50	7.763
While performing in clinical	A	21-53	36.07	9.707
	B	21-66	46.63	12.811
Performing in the future	A	20-50	30.07	8.792
	B	21-52	37.25	9.518

*A = experimental (n=14) B = control (n=16)

$p<.05$). This finding of no significance held when mean performance scores were compared without regard for type of catheterization.

Analysis of other pretreatment data revealed no significant difference in trait anxiety, self-confidence, performance self-rating, and anticipatory concerns. Immediately following treatment, the two groups did not differ significantly in self-confidence and in performance self-rating. However, after clinical application, the experimental group reported significantly more self-confidence about performing the study skill in the future ($x^2=9.592$, $df=2$, $p<.01$).

The two groups did not differ significantly in the number of times the videotape was viewed and the procedure was read or practiced before and after the laboratory class. Also, there were no significant differences with respect to perceived stress affecting performance at the time of clinical application. Significantly more subjects in the control group reviewed/rehearsed the study skill either completely or partially than in the experimental group ($x^2=6.735$, $df=2$, $p<.05$).

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

Summary and Conclusions

This study demonstrated that there are two potentially stressful times during the process of acquiring skill competence; introduction to the skill and first-time application of the skill in a patient situation. The decline in reported anxiety after a laboratory class suggests that students benefitted from this instructional experience. However, the increased anxiety reported by the control group while performing in a patient situation indicates that this preparation may not have been sufficient. Transfer of the study skill from a simulated laboratory setting appears to have been more threatening for the control group than the experimental group.

The finding of no significant difference with respect to performance may be due to measurement. The performance checklist did not delineate the type and amount of instructor assistance given nor was a measure of performance fluency included. Another explanation is that state anxiety may not have been high enough to disrupt performance. Speilberger, et al. (1983) report state

anxiety norms as being 38.76 for female college students and 36.47 for male college students. State anxiety for the control group while performing the study skill in a patient situation was 46.6.

Two factors may have enhanced the control group's performance. Skill application occurred in two different settings; hospital maternity unit and geriatric long-term care unit. Sixty-nine percent of the control group performed catheterization in a geriatric setting, as compared to thirty-six percent of the experimental group. In the geriatric setting, there may have been more preparation time, more opportunity to perform the procedure at a pace determined by the subject, and better visual cues than in the maternity setting. Also, more subjects in the control group reviewed/rehearsed just prior to clinical application. Motor skills research indicates that mental practice improves performance (Johnson, 1984; Schmidt, 1982).

While anxiety-reducing benefit of preclinical skill evaluation did not result in a significantly better first-time performance in a patient situation, the experimental group did report less anxiety and more self-confidence about performing the skill in the future. Minimizing anxiety should enable students to become more involved in other important aspects of the clinical

experience. Furthermore, competence implies not only knowing how to do something, but feeling confident in one's ability.

Recommendations

The study was limited to beginning students and one complex skill. Additional investigation is recommended to determine the effectiveness of preclinical skill evaluation with advanced students and other skills of varying complexity. Also, the effect of review/rehearsal on performance is an area warranting further investigation.

The study also was limited to beginning students in the university setting. Additional investigation is recommended for students in the community college or vocational training setting. Perhaps gender-specific studies would also be of value both in regard to the students and/or the patient population.

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APPENDIX A

STAI FORM Y-1

SELF-EVALUATION QUESTIONNAIRE

Developed by Charles D. Spielberger
in collaboration with
R. L. Gorsuch, R. Lushene, P. R. Vagg, and G. A. Jacobs

STAI Form Y-1

Name _____ Date _____ S ____

Age _____ Sex: M ____ F ____ T ____

DIRECTIONS: A number of statements which people have used to describe themselves are given below. Read each statement and then blacken in the appropriate circle to the right of the statement to indicate how you feel *right* now, that is, *at this moment*. There are no right or wrong answers. Do not spend too much time on any one statement but give the answer which seems to describe your present feelings best.

	NOT AT ALL	SOMEWHAT	MODERATELY SO	VERY MUCH SO
1. I feel calm	①	②	③	④
2. I feel secure	①	②	③	④
3. I am tense	①	②	③	④
4. I feel strained	①	②	③	④
5. I feel at ease	①	②	③	④
6. I feel upset	①	②	③	④
7. I am presently worrying over possible misfortunes	①	②	③	④
8. I feel satisfied	①	②	③	④
9. I feel frightened	①	②	③	④
10. I feel comfortable	①	②	③	④
11. I feel self-confident	①	②	③	④
12. I feel nervous	①	②	③	④
13. I am jittery	①	②	③	④
14. I feel indecisive	①	②	③	④
15. I am relaxed	①	②	③	④
16. I feel content	①	②	③	④
17. I am worried	①	②	③	④
18. I feel confused	①	②	③	④
19. I feel steady	①	②	③	④
20. I feel pleasant	①	②	③	④

Consulting Psychologists Press
577 College Avenue, Palo Alto, California 94306

APPENDIX B

STAI FORM Y-2

SELF-EVALUATION QUESTIONNAIRE

STAI Form Y-2

Name _____ Date _____

DIRECTIONS: A number of statements which people have used to describe themselves are given below. Read each statement and then blacken in the appropriate circle to the right of the statement to indicate how you *generally* feel. There are no right or wrong answers. Do not spend too much time on any one statement but give the answer which seems to describe how you generally feel.

	ALMOST NEVER	SOMETIMES	OFTEN	ALMOST ALWAYS
21. I feel pleasant	①	②	③	④
22. I feel nervous and restless	①	②	③	④
23. I feel satisfied with myself	①	②	③	④
24. I wish I could be as happy as others seem to be	①	②	③	④
25. I feel like a failure	①	②	③	④
26. I feel rested	①	②	③	④
27. I am "calm, cool, and collected"	①	②	③	④
28. I feel that difficulties are piling up so that I cannot overcome them	①	②	③	④
29. I worry too much over something that really doesn't matter	①	②	③	④
30. I am happy	①	②	③	④
31. I have disturbing thoughts	①	②	③	④
32. I lack self-confidence	①	②	③	④
33. I feel secure	①	②	③	④
34. I make decisions easily	①	②	③	④
35. I feel inadequate	①	②	③	④
36. I am content	①	②	③	④
37. Some unimportant thought runs through my mind and bothers me	①	②	③	④
38. I take disappointments so keenly that I can't put them out of my mind	①	②	③	④
39. I am a steady person	①	②	③	④
40. I get in a state of tension or turmoil as I think over my recent concerns and interests	①	②	③	④

APPENDIX C

CRITERION CHECKLIST

CATHETER, URINARY: INSERTS
CRITERION CHECKLIST

Name: _____

Critical Behaviors	Initial MET	Initial NOT MET	COMMENTS
1. Uses sterile technique while preparing equipment.			
2. Checks balloon intactness.			
3. Cleanses meatus from clean to dirty.			
4. Inserts lubricated catheter without contamination.			
5. Verifies placement by urine return.			
6. Advances catheter 2" - 3" further.			
7. Inflates balloon with designated amount of sterile water.			
8. Secures catheter.			
9. Places drainage bag below level of bladder.			
10. Documents catheter insertion and urine in nurse's notes.			

*If using straight catheter, omit steps 2, 6, 7, 8 and 9, add removes catheter before documenting.

[ ] Passed [ ] Needs to Repeat

Validated by _____

Date _____

APPENDIX D

QUESTIONNAIRE #1

PRELABORATORY PREPARATION

QUESTIONNAIRE #1
PRELABORATORY PREPARATION

1. Prior to this laboratory, I:
   1. Read over the procedure in the text.
   2. Watched the videotape.
   3. Both 1 & 2.
   4. Neither 1 nor 2.

2. In general, my perception of my ability to successfully perform the skill IN THE LAB is:
   1. Very confident.
   2. Somewhat confident.
   3. Not confident.
   4. Unable to complete skill.

3. After completing this lab, I anticipate that I will be able to perform the skill IN A PATIENT SITUATION.
   1. Will complete without assistance.
   2. Will require some assistance.
   3. Will require complete assistance.
   4. Will not be able to complete.

APPENDIX E

QUESTIONNAIRE #2

PERFORMANCE AND CONFIDENCE SELF-RATING

QUESTIONNAIRE #2
PERFORMANCE AND CONFIDENCE SELF-RATING

1. After completing this laboratory AND viewing the videotape, I feel confident that I can perform the skill in a patient situation.

   1. Very confident.
   2. Somewhat confident.
   3. Not confident.
   4. Unable to perform the skill.

2. Performing the skill in the lab has affected my ability to successfully perform the skill in the patient situation.

   1. Agree.
   2. Disagree.
   3. Strongly disagree.
   4. Neither agree nor disagree.

APPENDIX F

QUESTIONNAIRE #3

POST-COMPLETION QUESTIONNAIRE

QUESTIONNAIRE #3
POST-COMPLETION QUESTIONNAIRE

1. After completing this lab, I will need to: (may choose more than one)
   1. Review the procedure in the text.
   2. Review the videotape.
   3. Practice the procedure again.
   4. Do nothing.

2. Performing this skill in the lab has affected my stress level related to the performance of this skill in the patient situation.
   1. Increased stress level.
   2. Decreased stress level.
   3. Neither increased nor decreased stress level.
   4. Not sure.

BIOGRAPHICAL SKETCH

Ann Elizabeth Tyrrell is a native of New York State. She received her diploma in Nursing in 1971 from Misericordia Hospital School of Nursing, Bronx, New York. She received her Bachelor of Science Degree in Nursing from New York University in 1981, under the auspices of the New York State Regents External Degree Program. She has been active in the nursing profession for twenty-five years and is currently the Clinical Nurse Educator for the Department of Surgery at Good Samaritan Regional Medical Center, Phoenix. She is a Commissioned Officer in the United States Army Reserve Nurse Corps, and a member of the ARISTA Nursing Honor Society of Grand Canyon University. She resides in Phoenix with her husband and three children.