THE EVALUATION OF A FOURTEEN WEEK
CONTINUING EDUCATION COURSE
IN CRITICAL CARE NURSING

by

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B.S.N., The University of British Columbia, 1970

A THESIS SUBMITTED IN PARTIAL FULFILLMENT OF
THE REQUIREMENTS FOR THE DEGREE OF
MASTER OF ARTS

in the Department
of
Adult Education

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THE UNIVERSITY OF BRITISH COLUMBIA
September 1975
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ABSTRACT

This study reports on an evaluation of the first of two fourteen week continuing education courses in critical care nursing. It focuses on the thirteen nurses who completed the course, examining trends that might be used as predictors of performance in continuing education. The rationale for this approach was that short courses often intensify a learning experience, and because of time restrictions they are presented in a relatively structured way. This particular course was extended in time and also added a clinical learning experience. The study looks at the method and techniques used to determine whether prior knowledge of course participants could affect these, and whether a structured approach can meet the learning requirements of the course participants.

The methodology employed evaluation instruments designed for the course which measured performance. This included a knowledge pretest and posttest, a clinical performance appraisal, and program evaluation questionnaires. The pretest-posttest design used the same questions on both tests in order to measure knowledge gains. The pretest was administered on the first day of the course. The posttest was given on the second last day. Clinical performance was assessed on an ongoing basis and a final assessment and score was determined in the last
week of the course. A measure of confidence was determined along with each written test by asking the nurse to indicate her degree of confidence in each answer she selected. In addition, a psychological measure of belief in locus of control (the Rotter I-E Scale), was administered at the beginning of the course. This measure determines the extent to which a nurse might take responsibility for her own learning, and whether that would ultimately affect her performance in a continuing education course.

Analysis of the data revealed certain factors which affected gains in knowledge as a result of participation in the course, and which could be used as predictors of performance. In particular, age, background work experience and the locus of control concept significantly relate to knowledge gains. Younger nurses achieved greater gains. Nurses who had had more experience in critical care nursing performed better than those who had had little or no experience. No significant correlations were found among these variables which influenced clinical performance scores. Confidence in answers given on written tests was found to positively correlate with the actual score obtained.

The implications for the findings of this study are important to continuing education course planners. Based on the significant predictors of performance, selection of students for courses can be
made on these factors. Age and background experience are known prior to the course and should be considered when making selection. The pretest performance revealed areas of strength and weakness in the group and could be used effectively for planning the development and emphasis of course content.

The locus of control concept deserves further study to determine its influence on course outcomes. The results of this study revealed that the greater the belief in internal control of reinforcement (one is responsible for what happens), the greater the gain achieved in the course. Further study as to how or why this influence exists could be very helpful to the field of continuing education.

As a beginning attempt at planning for more effective continuing education, this study points out significant areas for further investigation. In itself, it also has assisted in the planning for the second course in critical care nursing, as the evaluation for the course revealed areas of weakness in the presentation used for the first course.
"We dance 'round in a ring and suppose,
But the secret sits in the middle and knows."

Robert Frost
ACKNOWLEDGEMENTS

The author wishes to express appreciation to those people who assisted in the development of the idea, the implementation of the study and in the preparation of this report. The members of my thesis committee -- Dr. J.E. Thornton, Miss E.K. McCann and Dr. J.B. Collins -- each played a special role in the achievement of the objective. Thanks also go to Mrs. Sharon Turnbull, Director, Continuing Nursing Education at U.B.C., and Miss Marilyn Baines, Coordinator of the Critical Care Nursing Course, for their assistance in the development of the evaluation instruments. Special appreciation is expressed to Miss Barbara Lockyer, who provided invaluable assistance in the typing and editing of this report. And finally, the author wishes to thank Mr. Larry Truitt, who made me believe in the first place that this day would come.

Vancouver, B.C. September 1975

Ruth E. Robinson
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CHAPTER I - PURPOSE AND SCOPE OF THE STUDY

Introduction

The half-life of science and technology affecting nursing care methods is now between three and five years, according to Tobin's estimate. This statement alone can justify the need for increased concern and action in the area of continuing education for nurses. However, it appears that the logistical problems that affect the development of continuing education have not yet been overcome.

The National Commission for the Study of Nursing and Nursing Education has suggested that the problems of continuing education in nursing may be greater than in any other profession because of the variety of preservice educational programs used in the preparation of registered nurses. According to a report from the Western Interstate Commission for Higher Education, the assumption is made that "... more than 70 per cent of practicing nurses may not be pursuing planned programs to increase their competence as practitioners."

The American Nurses' Association has defined three distinct areas of education in nursing - formal academic study, continuing education and independent learning. It is the latter two which are the concern of this report. From the focus of a particular program in continuing education, some of the problems inherent in presenting continuing nursing education are examined, considering both the program itself and its
objective to motivate ongoing independent learning within the course participants.

The need for preparation of nurses to deal with the technological advances in medicine which affect nursing is critical. Intensive care units, coronary care units and emergency departments are faced with challenges every day which demand knowledge and expertise of the nurse. Additionally, specialized units such as those for patients with burns, renal conditions and neurosurgery require special skills of the nurse. Formal education and training programs to prepare nurses in these areas are minimal. Most nurses learn "on-the-job", with some help from inservice education programs, which at best can only provide the minimum for safety.

Dissatisfaction with this level of preparation led to the development of a continuing education course in critical care nursing at the University of British Columbia. This was the first of two courses to be offered, and concerns expressed not only by the course planners but by many educators both in nursing and elsewhere suggested the feasibility of an indepth study of selected problems related to continuing nursing education. This study presents an evaluation of the critical care nursing course, identifying trends becoming evident in planning such courses, using knowledge of the learners themselves as a means of studying what the nature of future courses should be if they would meet the needs of nurse practitioners.
As preparation for specialization in nursing becomes more important, and in fact a prerequisite to working in specialized areas, knowledge about the characteristics of nurses which would predict higher performance levels should help to answer whether courses should be more self-directed and facilitating, or more structured and directive.

A Continuing Education Course in Critical Care Nursing

A post basic course in Critical Care Nursing designed to enable nurses to acquire the theory and clinical skills necessary to provide nursing care to critically ill patients was identified as a need in 1973. An evaluation of two previous short courses in intensive and coronary care revealed the need for a course capable of providing more extensive knowledge in the field, and the opportunity to learn clinical skills, neither of which could be satisfied by typical short courses.

As a result, a 14-week course was developed and sponsored by the Division of Continuing Nursing Education at the University of British Columbia, in cooperation with the Registered Nurses' Association of British Columbia, Royal Columbian Hospital, Saint Paul's Hospital and Vancouver General Hospital. Financial assistance for the development and implementation of the course was provided by British Columbia Hospital Insurance Service, the University of British Columbia School of Nursing, and the Kellogg Project for Continuing Education for Health Professionals.
It was the intent of the course to assist nurses in learning the nursing process in caring for critically ill patients, and importantly to help nurses learn to identify their own learning needs and seek out ways of meeting them.

Classroom time was quite formal and directive initially, covering content basic to critical care nursing. As the course developed, the nurse students were encouraged to be more independent, and were expected to do more learning on their own or in small groups.

Clinical practice was provided concurrently with classroom learning. The nurse students spent two - three days each week in selected clinical areas under the supervision of clinical preceptors. As much as possible, clinical experiences were planned to match what was being taught in class. The majority of clinical experience time was spent in intensive care, coronary care and emergency departments.

A Description of the Students Who Attended

Fifteen nurses were selected representing thirteen smaller communities throughout the province. Preference in selection was given to areas having no easy access to regular continuing nursing education course offerings. Selection was based on a series of criteria pertinent to the projected course outcomes. (See Appendix A) Some of the criteria for selection included participation in continuing nursing education, involvement in ongoing hospital development activities, and
employment in a hospital providing opportunities for inservice education and/or staff development. Nurse applicants were sponsored by their employers and applications were required from both the nurse applicant and the employer. Points were given for information obtained from the application forms and a total score was determined for each nurse applicant. The top 15 scores were accepted for the course, with alternates named from the highest score of the remaining applicants. Application forms and criteria for selection forms can be found on file at the Division of Continuing Nursing Education, University of British Columbia.

The fifteen nurse students represented a variety of experiential backgrounds. Two were in supervisory positions responsible for critical care areas. Four had had no previous work experience in critical care. The remainder had some experience, and most of their preparation had been on-the-job learning.

Rationale

This study examines both the specific course on critical care nursing previously described and its learners in order to arrive at some substantiated conclusions that could be used by the course planners to enhance the effectiveness of a second course. Further, it became the intent to project these conclusions in order to identify trends that might be applicable to continuing nursing education courses in general. Through varied analyses this study undertakes to identify those predictors that
might be used both in the design of continuing education courses and in adapting such designs as they are implemented for a specific group of learners.

To accomplish this task, the study focuses on analyses of the following information:

1. Biographical information about the learners collected from application forms.

2. Formal tests and examinations prepared by course planners and designed to elicit knowledge in line with stated course objectives.

3. A measure of the confidence nurses have in their own answers given on a test of knowledge.

4. Selected diagnostic tests which were added to the course to elicit other kinds of information about the learners themselves. This included a test to identify the extent to which the learners believed in their ability to control their own experiences (the Rotter I-E Scale is described in detail later).

5. A battery of evaluation devices which were combined to identify levels of achievement in clinical performance. These included Critical Incident Technique, observations of the clinical preceptors and the Slater Nursing Competencies Rating Scale (all to be described later).
The analysis was designed to answer questions to which little attention has been given in previous studies. What is known about nurses in general that might help to predict learning gains in a program of continued learning? What is known about program development to help to achieve greater gains for individuals who attend? Is anything really to be gained from continuing nursing education programs which attempt to advance the knowledge and clinical skills of practicing nurses?

Figure A shows the development of the analyses used in this study which were planned to assist in answering these questions. It represents inputs to the course, the implementation of the course, and what measurable behaviour changes occurred as a result. Did the course have a positive or negative effect on knowledge gains or clinical performance? And knowing the results, could the course have been developed differently based on the known inputs for a specific group of learners?

**Assumptions and Limitations**

The study was restricted to 15 participants attending the first of two 14-week continuing education courses in Critical Care Nursing. As a result, it was restricted to the design and experiences provided in this first course. The smallness of the sample was recognized to possibly limit significance of the results.

It was an assumption in this study that the nurse students would have basic background knowledge about the areas of critical care nursing pro-
FIGURE A. MODEL OF COURSE INFLUENCES

Attendance at a Continuing Education Course
1. Theory Sessions
2. Clinical Sessions

COURSE INPUTS

- Biographical Data
- Clinical Performance Abilities
- Cognitive Styles

COURSE OUTPUTS

- Gains/Losses in Knowledge
- Gains/Losses in Performance
- Differences in Gains
vided in the course. This assumption was related to the ability and/or motivation of participants to identify needs, and also to the fact that their employers supported their applications and would place them in critical care areas upon completion of the course.

Finally, the evaluation tools used to measure performance in the course were approved by a panel of clinical experts. However, reliability and validity have not yet been tested.

Plan of the Study

With the background of the specific course being studied and the learners on whom the research was focussed covered in Chapter I, a review of the literature pertinent to the analysis is presented in Chapter II. The design of the study is outlined in Chapter III. Chapter IV presents the findings and the analysis of the data. This includes not only data related to the testing of hypotheses, but also other information which it was felt would have influence on course outcomes. In the final Chapter, a summary of the evaluation of the course is presented and some conclusions are drawn about this evaluation as it relates to the total picture of continuing nursing education. Recommendations are made for the second course, for future courses and for future research in evaluation of continuing nursing education courses.
A review of the literature was planned to cover several topics related to this evaluation study. It seemed appropriate to look at current thinking in continuing education for nurses, looking both at the need for it and what its planning should encompass. Program evaluation in general was also considered an area of the literature that should be reviewed. As this course included clinical experience for the nurse students, it was necessary to look at trends in performance appraisal in nursing. Readings on learning needs and how to meet them were done to explain individual differences among students and how this might affect course outcomes. Finally, as the study intended to identify the interrelationships between achievement, confidence and individual differences in perceived levels of control (the Rotter I-E Scale), selected literature pertinent to these measures was reviewed.

Continuing Education in Nursing

Participation in continuing education programs is a matter of attitude, motivation, and program relevancy. The concept of lifelong learning is defeated by the "terminal concept" of most education programs. Individuals are not geared to learning as a self-directed task. Motivation to attend continuing education programs may have
little or nothing to do with motivation to engage in learning. We need to know much more about participants in educational programs before we can determine the extent to which attendance is equivalent to motivation to learn.

Relevance is an even more valuable concept. Individuals will participate and learn if they see that a program offers opportunity for them to meet their learning needs. But what is not known is how able these individuals are to identify their own need for learning.

Programs offered in the past have been evaluated in varying degrees of completeness and tell us little about whether the program has met learning needs, identified learning needs, or had any degree of relevance in terms of whether the "right" people are attending; whether the different needs of graduates of different kinds of basic preparation programs are recognized; (30,16) or whether payment for continuing education should be the nurse's personal responsibility or the responsibility of her employing agency. (22)

The real question always seems to be, "Does continuing education make a difference?" There are many ways of looking at this question, although the generally accepted measure is improved nursing care. (22)

Most research on program evaluation in continuing education has been primarily exploratory. Those evaluations which have provided detail have used techniques which have made the results specific to the course. (33)
Curtis describes several techniques that have been used in continuing education course evaluations, including observations of simulated nurse-patient situations, analysis of process recordings and diaries, rating achievement of course objectives, satisfaction ratings such as the Kropp-Verner scale, and Firo-B, which is a measure of group compatibility. (15)

Measuring Clinical Performance

Clinical components to continuing education programs have been provided almost exclusively through inservice education. (45,31,5,3) At the same time, the potential for inservice education to aid in the development of clinical competence has hardly been touched.

Evaluation of clinical performance requires a great deal of planning and instruction. There are many forms of evaluation in existence and some are more successful than others. The developing trend in the literature seems to be towards the use of rating scales. (46,39,21)

Standards of nursing care and the use of a nursing audit has current popularity, although it involves a great deal of preparation time and it requires training in the use of the tool before it can be effective. (38)
Learning Needs

Bittell and Craig, \(^{(27)}\) in reference to industry, stated that training needs are determined for various reasons, including:

1. assisting people to be more productive on their present job and preparing them for advancement;
2. meeting requirements which will allow people to perform at an optimum level;
3. providing the chance for people to do a good job because they "can", "want to", and "will";
4. making sure that time, money and effort spent on training is based on real needs.

Some nursing surveys have been done which ask open-ended questions about "felt" learning needs. Although positions and types of agencies varied, expressed needs were quite similar. One of the most prominent needs was that of improving communication and management skills.\(^{(18,4,20,19,11)}\) Other learning needs that were considered priority were: newer dimensions in nursing care; legal aspects of nursing; and the changing role of the nurse.

In an Ontario Survey of Needs,\(^{(11)}\) employers of nurses in hospitals and public health agencies identified similar things. They also pointed out needs for courses to increase teaching skills, and to provide specialization in nursing, especially in the areas of intensive care nursing, chronic disease, mental health and rehabilitation.
Of particular interest to this study was an attempt to identify learning needs of nurses in two ways. Price (34) asked nurses to report a critical incident encountered the previous year which she considered of extreme significance and related to her lack of preparation. Then each was asked to identify the learning need which the nurse thought would best enable her to improve the quality of her nursing care. Price found that, while the nurses reported their greatest learning needs to be indirect patient care, most of the critical incidents related to direct patient care.

Related to needs, one of the most frequent requests relative to improving instructional methods and techniques was more learner participation. (4)

External versus Internal Control of Reinforcement

One factor which may affect the amount of influence that one person exerts over another in changing the latter's attitudes is the concept of internal versus external control of reinforcement. (37) This concept has developed out of social learning theory. Rotter (40) stated that reinforcements act to strengthen an expectancy that a particular behaviour or event will be followed by that same reinforcement in the future. The extent to which an individual feels that he controls his own destiny and is the effective agent in determining the occurrence of reinforcements is the extent to which he believes in
internal control of reinforcement. The more an individual believes that forces beyond his control are the influence on reinforcement, the more he believes in external control of reinforcement. Such forces might include fate, chance, powerful others, or the complexity of the world or its unpredictability. (37)

A number of studies have shown that expectancies are differentially affected when tasks are perceived as dependent on skill as opposed to chance or luck. (24, 25, 35, 36, 41) The first attempt to measure individual differences in a belief in control of reinforcement was begun by Phares. (35) After several changes, this measure is now a 29-item forced-choice scale, including six filler items.

This scale is developed to measure a person's generalized expectancy of how his reinforcements are controlled. The scale has satisfactory internal consistency, test-retest reliability, convergent validity, and discriminant validity. The scale is most suitable for investigations of group differences.

The internal versus external concept has shown relationships to a variety of behaviours, including those in learning situations, (10, 24, 35, 8) conformity situations, (14, 6) and risk taking. (29)

It is worth comment that Rotter's explanation of the IE (Internal-External) control construct included the concept of reward value as
affecting a person's expectancy that a given behaviour will result in an expected reinforcement:

$$\text{Behaviour Potential} = f (\text{Expectancy} + \text{Reward Value})$$

Jeffrey identifies an example of this by suggesting that a student may have a very internal attitude about studying for a course and getting a good grade, but if the course has little reward value to him, he is unlikely to study for the course.

Rotter comments that, theoretically, one would expect some relationship between internality and good adjustment but that the relationship is probably quite complex. Broskowski noted that extremely external and extremely internal persons will probably have a greater degree of difficulty in adjustment than those nearer the center of the continuum. His justification for this prediction is that extreme externals will not have feelings of guilt or responsibility, but may have increased debilitating anxiety. Extreme internality may produce guilt and an over-riding sense of personal responsibility, not to mention anxiety in the many fate-controlled or other-controlled situations in modern life.
Program Evaluation

In the foreword to *Evaluating Educational Performance*, J. Thomas Hastings emphasizes that those people involved in educational measurement must "cease to depend solely upon the methodologies of psychometrics, and correlation; rather to adapt and adopt procedures, instrumentation and logic from sociology, economics, history and elsewhere" if they are to better understand the complexities of education today. (48)

Evaluation is not an event, but rather a process. (23) It contributes to all aspects of program management by identifying needs, measuring achievement, assessing the learning climate, and determining change.

Cronbach (13) explained a judgmental strategy for evaluation. He outlined three types of decisions for which evaluation is used: course improvement; decisions about individuals; and administrative regulation.

He also identified four approaches to evaluation:

1. Process Studies - to examine what is happening during instruction;
2. Attitude Measures - to elicit feelings and beliefs, not just expressions of approval or disapproval;
3. Follow-up Studies - to attempt to observe ultimate educational contributions;
4. Proficiency Measures - to measure student performance by observation or by achievement on written tests.

Merwin (32) suggests that there are four considerations to evaluation: who (or what) should be evaluated; who should evaluate; how evaluations
should be conducted; and how evaluations can best be integrated into the educational process.

In a study of the Labour College of Canada, Dickinson and Lamoureux (17) considered five theoretical units to be crucial to program evaluation. Their study was concerned with educative temporary systems and how useful the programs were when participants returned to their work setting. Those five units were:

1. change in *participation behaviour* following the educative temporary system;
2. *participant satisfaction* with the design and management of the educative temporary system;
3. personal *goal attainment* by participants in the educative temporary system;
4. *cognitive achievement* within the educative temporary system;
5. *participant attitudes* related to the goals of the educative temporary system.

Barclay (7) states that a major problem in implementing new learning strategies in the schools is that learning is influenced by student, teacher, curriculum, parental and other environmental factors. As a result, when evaluating behaviours one must not only consider behaviours that relate to achievement, but also to self-competency, self-management, group interaction, motivation, and other affective and social variables.
Schulberg and Baker discussed two evaluation models that relate to Knutson's identification of the categories of evaluation as being organization oriented and personally oriented. The first model is a goal-attainment model, which is basically a measure of goal achievement. The second is a systems model of evaluation. It is concerned with establishing a working model of a social unit which is capable of achieving a goal.

Summary

This literature review points out several important points for consideration in the evaluation of the critical care nursing course. The first is that attendance at a continuing education course may not necessarily mean desire to learn. Given the premise that the locus of control concept may correlate to performance in the course, the nurse students attending the course may have an internal locus of control, but may have quite separate reasons for attending the course. Therefore the implications of the correlation may not be answered directly in the analysis.

Clinical performance evaluations have been researched a great deal; however, objectivity in such evaluations has never been satisfactorily achieved. It should be recognized at the outset that instruments were selected which it was hoped would be as objective as possible. However, the known difficulties of clinical
performance evaluation presented potential problems with part of the data analysis.

Individual learning needs are always a difficult part of the design of any education course. The literature reviewed on learning needs recognized by nurses indicates that nurses attending a continuing education course may have different expectations of what the course can offer to them. Although this particular course was designed with individual learning needs in mind, it was recognized that the course may still not meet the expectations of some of the nurse students.
CHAPTER III - METHODOLOGY

The rationale for the study was outlined in Chapter I. The main focus was to examine a group of students in a continuing nursing education course, how they performed in that course and what was known about them as learners and as people that would help to predict their performance. Factors related to knowledge of the subject, confidence in that knowledge, clinical performance in critical care nursing areas, and belief in internal-external locus of control were all used to predict achievement.

The particular appeals of the internal-external locus of control concept in understanding and explaining nursing performance in the learning and performing areas are that: 1) it helps to identify the initiative that might be taken by a nurse about the care of a critically ill patient; 2) it may serve as a predictor of a nurse's confidence in her/his ability to perform a given task; and 3) it may also predict a nurse's abilities to achieve greater gains as a result of participating in a continuing education course. Therefore, the locus of control concept assumed a central role in this study.
Hypotheses

Based on this rationale, the following hypotheses were proposed. They are expressed as null hypotheses (Ho) and alternate hypotheses (Ha). Testing was performed on the null hypotheses.

Hypothesis One

Ho₁: There is no significant correlation between the score obtained on a test of knowledge and the degree of confidence a student has in the answers given.

Ha₁: (i) Greater confidence in answers given on a test of knowledge will be associated with lower test scores.

(ii) Greater confidence in answers given on a test of knowledge will be associated with higher test scores.

Hypothesis Two

Ho₂: There is no significant correlation between the score on a test of knowledge and the belief in external control of reinforcement.

Ha₂: (i) Higher scores on knowledge tests relate to a belief in internal control of reinforcement.

(ii) Higher scores on knowledge tests relate to a belief in external control of reinforcement.

Hypothesis Three

Ho₃: There is no significant correlation between the degree of confidence in answers given on a test of knowledge and belief in external control of reinforcement.

Ha₃: (i) A higher degree of confidence in answers given on a knowledge test relates to a belief in internal control of reinforcement.

(ii) A higher degree of confidence in answers given on a knowledge test relates to a belief in external control of reinforcement.
Hypothesis Four  

**Ho₄:** There is no significant correlation between the gain in score between a knowledge pretest and a posttest and belief in external control of reinforcement.

**Ha₄:** (i) A greater gain in score between a knowledge pretest and posttest relates to belief in internal control of reinforcement.

(ii) A greater gain in score between a knowledge pretest and posttest relates to belief in external control of reinforcement.

Hypothesis Five  

**Ho₅:** There is no significant correlation between the performance of a nurse in a critical care nursing area and belief in external control of reinforcement.

**Ha₅:** (i) A higher level of performance of a nurse in a critical care nursing area relates to belief in internal control of reinforcement.

(ii) A higher level of performance of a nurse in a critical care nursing area relates to belief in external control of reinforcement.

Definitions

In order to avoid conflict or confusion in the use of certain terms in the study, the following definitions were used:

**Confidence** - the belief one has in one's own abilities. It leads to an expressed sense of security in knowledge and performance.

**Critically ill** - refers to a patient with acute problems threatening the following life-maintaining parameters: cardiovascular function, respiratory function, fluid-ion balance, central nervous system regulation. Such patients as those with traumatic injuries,
severe burns, respiratory failure and acute myocardial infarction require frequent to continuous specialized nursing care. (12) Such care involves complicated technological abilities as well as in-depth knowledge on the part of the nurse.

External control - the perception of positive and/or negative events as being unrelated to one's own behaviour in certain situations and therefore beyond personal control. (42) In the context of this study, such factors as the laid-on program, including content, methods and approach appear to the learner to be inevitable and immutable.

Internal control - the perception of positive and/or negative events as being a consequence of one's own actions and thereby under personal control. (42) The learner perceives the planned program as meeting needs or not, and applies herself to learning the laid-on content only to the extent that it seems useful to her.

Gain - refers to the addition, profit or advantage achieved as a result of something. (49) It represents the differences measured between the initial state of the learner and the end state in regard to knowledge and clinical skills in critical care nursing.

Knowledge - the range of understanding or information one has about something. (49) In this study, the limits of knowledge are restricted to the understanding of critical care nursing.
Evaluation Instruments

Knowledge Pretest. A pretest, consisting of multiple choice questions and completion items, was administered on the first day of the course. The questions were based on content to be covered during the 14 weeks of the course and included all subject areas: cardiovascular system, respiratory system, renal system, central nervous system, psychosocial aspects of nursing care, teaching patients and others, administration in nursing, and self learning. Because it was assumed that the nurse students would have basic knowledge in all these areas, that some would also have more indepth knowledge because of previous attendance at short courses on critical care nursing, and that some would have work experience in critical care areas, the purpose of the pretest was to establish the extent to which the nurse students already knew the content to be presented during the course. This would serve as a baseline from which knowledge gains could be measured as a result of the course.

The fifteen nurse students were divided into three groups of five and each group wrote a different pretest. Items on each test were matched for content, complexity and item types. The three pretests combined made up the posttest. This design was used to measure the gain in score for the nurse students from pretest to posttest. For the pretest, the questions were reviewed by a panel of clinical nursing experts, but were not tested for validity or reliability.
Confidence Measures. For each question on the pretest, the nurse students were asked to indicate their degree of confidence in their answers; that is, after each question they were asked to indicate on a scale of 1 - 4 whether:

1 - I have no idea what the answer is
2 - I guessed at my answer
3 - My answer may be right
4 - I am confident my answer is right

All confidence responses for the total number of pretest items were then summed. This measure was used to determine a confidence score for each nurse student. The ability to perform in a continuing education course of the design proposed was measured against the confidence of the nurse student as indicated on the knowledge test.

Knowledge Posttest. (See Appendix B) The final examination was administered on the second last day of the course to 13 nurses completing the course. The test consisted of items from the three pretests that were tested for validity and reliability by having a group of 40 nurses currently working in critical care areas write the test. Item analysis was done, and of the 119 items on the original posttest, 71 items were selected for scoring on the final examination. Forty-eight items were eliminated because of ambiguous stems, confusing distractor items, more than one right answer for selection, and negative differential discriminability (that is, items which selectively disadvantaged high performers and advantaged low per-
formers in the control group of 40 nurses). The thirteen nurse students were asked to answer all 119 items, but only the 71 items were counted for their final mark.

Figure B plots the number of correct responses for each of the 71 items on the revised posttest against the confidence expressed by the whole group of nurses in that question. In addition, the subject content of each question appears and demonstrates a range of difficulty for each subject covered. It also shows a 0.42 correlation between high confidence and easier questions and low confidence and more difficult questions. This correlation will be discussed in Chapter IV.

Rotter I-E Scale. This forced-choice questionnaire, which measures belief in internal versus external control of reinforcement, has been described in the literature review. It was administered on the morning of the second day of the course. The scale has 23 items plus six filler items. Scoring is based on answers reflecting belief in external control of reinforcement. That is, the higher the score, the more external the individual is. Items indicating externality on the scale include the belief that many of the unhappy things in people's lives are partly due to bad luck; that the world is run by the few people in power and there is not much the "little guy" can do about it; or that many times we might just
FIGURE B. PERCENTAGE OF CORRECT RESPONSES AND CONFIDENCE IN ANSWERS GIVEN ON 71-ITEM POSTTEST.

SUBJECT CONTENT
LEGEND
C-Cardiovascular System
R-Respiratory System
N-Central Nervous System
F-Renal System (Fluid-Ion)
P-Psychosocial Aspects
T-Teaching-Learning
A-Administration
65, 92, etc. - Test question number

PERCENTAGE ANSWERING CORRECTLY
as well decide what to do by flipping a coin. Items indicating internality on the scale include the belief that people are lonely because they don't try to be friendly; that there is really no such thing as "luck"; or that people's misfortunes result from the mistakes they make. The Rotter Scale can be found in Appendix C.

**Clinical Performance Evaluation.** A number of evaluation tools were used to assess clinical performance. Those tools included the Critical Incident Technique, (Appendix D) using standards of care for critically ill patients as guidelines, and a summary checklist of performance initiative. The final evaluation tool used was the standardized Slater Nursing Competencies Rating Scale (Appendix E). A final grade for clinical performance was determined by the researcher. It was based on a point system applied to the Slater Scale and other performance evaluation information. Clinical performance evaluation was carried out weekly by the clinical preceptors. Final evaluation was carried out during the last week of the course.

**Midterm and Final Evaluation Questionnaires.** These questionnaires provided information about the nature of the clinical experience, classroom learning and administrative aspects about the course. Parts of the results obtained from the questionnaires were used to
enhance the results of this study. As confidentiality in answering the questionnaires was ensured, some information that might otherwise have been helpful in this study could not be used. The questionnaires were lengthy and descriptive, and thus are not included in the Appendices, but can be found on file at the Division of Continuing Nursing Education at the University of British Columbia.

**Questionnaire to Obtain Background Information about Participants.**

The questionnaire was administered on the first day of the course. Data collected included:

- age and sex
- kind of basic preparation in nursing
- location and name of school (basic preparation)
- degree and diplomas held and dates received
- location and name of school(s) where any post-basic preparation was received
- total years working
- total time spent working in critical care area
- marital status
- number and ages of children
- most likely reasons for attending this course

**Design of the Study**

The list of variables used in the testing of the hypotheses is as follows:

**Target Variable:**

1. Gains in performance as a result of the course.
Predictor Variables:

1. Age (in years)
2. Years worked since graduation (in years)
3. Years worked in critical care (in years)
4. Pretest score
5. Posttest score
6. Confidence score on posttest
7. Clinical performance score
8. Rotter I-E Scale score.

Data analysis was carried out on two groups, sometimes jointly, sometimes independently. The group of 13 nurse students who completed the course constituted the experimental group. The group of 40 critical care nurses who wrote the posttest and also completed the Rotter I-E Scale and the questionnaire on background information formed the control group. Testing was done on the experimental group and on the experimental and control groups combined. This yielded information about the experimental group as a select group of nurses attending a continuing education course, and on the two groups together as a larger population of critical care nurses.

In addition to the testing of the hypotheses, this study examines information collected about the participants and attempts to determine trends relevant to continuing nursing education courses of this type. In effect, each participant's background, contribution and outcome was examined.
Data Collection and Analysis

Table 1 identifies all instruments used for data collection. Statistical analysis of the data included correlational and multivariate analysis. For the 13 nurse students' data analysis alone, correlations were tabulated using the Spearman Rank Order Method of analysis. Pearson Product Moment correlation was used in correlational analyses of data combining the 13 nurse students and the control group of 40 nurses. (Both of these are standard computer programs used at the University of British Columbia Computer Center.)

Tabulation of results of tests proceeded by means of OMR Multiple Choice Examination Answer Cards and the program OMR Mulmark, which tabulated all data and were used for all computer-run programs in the analysis of the data. (OMR Mulmark is also a standard program used at the University of British Columbia Computer Center.)

Sigma (z) scores* were tabulated to obtain gain scores between pretest and posttest. This was done in order to eliminate differences in pretests. Although the three pretests were matched for content, complexity and item types, the tests were not pretested for validity or reliability and therefore it was not known in advance whether the tests were in fact equal.

<table>
<thead>
<tr>
<th>Data Collection Instruments</th>
<th>Dates Used</th>
</tr>
</thead>
<tbody>
<tr>
<td>Questionnaire on Background Information</td>
<td>Day 1</td>
</tr>
<tr>
<td>Knowledge Pretest</td>
<td>Day 1</td>
</tr>
<tr>
<td>Rotter Scale</td>
<td>Day 2</td>
</tr>
<tr>
<td>Critical Incidents</td>
<td>Daily in Clinical Areas</td>
</tr>
<tr>
<td>Slater Nursing Competencies Rating Scale</td>
<td>Final Week in Clinical Area</td>
</tr>
<tr>
<td>Midterm Course Evaluation</td>
<td>Week 10</td>
</tr>
<tr>
<td>Knowledge Posttest</td>
<td>Week 14</td>
</tr>
<tr>
<td>Final Course Evaluation</td>
<td>Week 14</td>
</tr>
</tbody>
</table>
CHAPTER IV - ANALYSIS OF DATA

General Summary of Program Outcomes

The overall opportunities and experiences of the course were reported by the majority to be useful. Thirteen of the fifteen nurse students completed the course. Two withdrew before completion. One was asked to leave because it was felt that she was not able to meet the course objectives. The second left voluntarily, as she felt that the course was not relevant to her particular needs. Course evaluation statistics are based on the thirteen students who completed the course.

Measures of Knowledge

As the pretests contained questions based on content that would be presented in the course, it was not expected that the nurse students would obtain high scores. Table 2 shows scores obtained on the pretests. (The two nurse students who withdrew from the course were in Pretest Group I.) Although the three pretests were presumably matched for complexity, this table demonstrates considerable differences among the three groups in results. In a pretest situation, where the students were grouped randomly, these differences may be explained by the premise that the groups happened to be divided into similar groups of natural ability, previous experience or other factors which would clarify the differences in scores. Alternately, it may be that Pretest Group III
### TABLE 2 - SCORES OBTAINED ON PRETESTS FOR EACH OF THREE PRETEST GROUPS

<table>
<thead>
<tr>
<th>Identification</th>
<th>Pretest Score* (in %)</th>
<th>Pretest Mean Score (in %)</th>
<th>Pretest Sigma Score (z)</th>
<th>Mean Sigma Score</th>
</tr>
</thead>
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<td></td>
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<td></td>
</tr>
<tr>
<td>1</td>
<td>33</td>
<td>38.3</td>
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<td>+0.36</td>
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<td></td>
<td>+1.77</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>33</td>
<td></td>
<td>-0.35</td>
<td></td>
</tr>
<tr>
<td>Pretest Group II</td>
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<td></td>
</tr>
<tr>
<td>2</td>
<td>35</td>
<td>31.5</td>
<td>+0.68</td>
<td></td>
</tr>
<tr>
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<td>+1.16</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>28</td>
<td></td>
<td>-0.77</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>33</td>
<td></td>
<td>+0.19</td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>25</td>
<td></td>
<td>-1.26</td>
<td></td>
</tr>
<tr>
<td>Pretest Group III</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
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<td></td>
</tr>
<tr>
<td>7</td>
<td>54</td>
<td></td>
<td>+0.31</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>41</td>
<td></td>
<td>-1.62</td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>59</td>
<td></td>
<td>+1.08</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>51</td>
<td></td>
<td>-0.08</td>
<td></td>
</tr>
</tbody>
</table>

*Because the test was constructed primarily in multiple choice format, with four alternative answers for each question, a pretest score of 25% should be expected by chance alone. Therefore, a student's on-hand knowledge of the course content should be regarded as the obtained pretest value minus the chance value (25%).
had the easiest test and Pretest Group II the most difficult. Without validity and reliability known for the pretests, the answer to this question of differences was not immediately known.

Table 3 shows some variables which may have affected the performance of the pretest groups. Pretest Group II, with the lowest mean score on the pretest (M = 31.5), also had had less previous work experience in critical care nursing. Group III, (M = 51.8), showed the most previous experience in critical care. However, it is interesting to note that their confidence scores on the pretest were considerably lower than the other two groups. This group may have been more aware of what they didn't know because of their experience, and would therefore be less confident in answers given on the pretest. Group III also revealed the most external scores on the Rotter Scale, (M = 11.4), possibly supporting the hypothesis that externals are less confident in their performance (Hypothesis $H_4$).

Age does not appear to be a notable factor in the differences in pretest scores.

On the basis of the information presented in Table 3, it may be possible to make some predictions about needs of the nurse students relative to the development of the course. Pretest results, as indicators of knowledge about critical care nursing already present, might predict the content that should be presented, or what parts of the subject content should be emphasized. On the basis of pretest
TABLE 3 - PRETEST SCORES AND POSSIBLE RELATED VARIABLES
TO EXPLAIN DIFFERENCES BETWEEN 3 PRETEST GROUPS

<table>
<thead>
<tr>
<th>Identification</th>
<th>Pretest Score (in %)</th>
<th>Pretest Confidence Mean</th>
<th>Age (Years)</th>
<th>Years Worked in Critical Care</th>
<th>Rotter Score</th>
<th>Pretest Sigma Score (z score)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pretest Group I</td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>33</td>
<td>3.42</td>
<td>34</td>
<td>2</td>
<td>4</td>
<td>-0.35</td>
</tr>
<tr>
<td>5</td>
<td>49</td>
<td>3.31</td>
<td>54</td>
<td>1</td>
<td>4</td>
<td>1.77</td>
</tr>
<tr>
<td>8</td>
<td>33</td>
<td>2.77</td>
<td>28</td>
<td>1</td>
<td>8</td>
<td>-0.35</td>
</tr>
<tr>
<td>M = 38.1</td>
<td>M = 3.17</td>
<td>M = 39</td>
<td>M = 1.3</td>
<td>M = 5.3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pretest Group II</td>
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<td></td>
<td></td>
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<td>2</td>
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<td>0.68</td>
</tr>
<tr>
<td>4</td>
<td>38</td>
<td>2.36</td>
<td>26</td>
<td>0</td>
<td>9</td>
<td>1.16</td>
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<td>9</td>
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<td>3.16</td>
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<td>0</td>
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<td>0.19</td>
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<td>0</td>
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<tr>
<td>M = 31.5</td>
<td>M = 3.02</td>
<td>M = 33</td>
<td>M = 0.4</td>
<td>M = 9.0</td>
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<tr>
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<tr>
<td>3</td>
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<td>7</td>
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<td>2.54</td>
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<td>2.92</td>
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<td>1.08</td>
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<td>12</td>
<td>51</td>
<td>2.95</td>
<td>22</td>
<td>1</td>
<td>9</td>
<td>-0.08</td>
</tr>
<tr>
<td>M = 51.8</td>
<td>M = 2.80</td>
<td>M = 29</td>
<td>M = 2.2</td>
<td>M = 11.4</td>
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<td>41.0</td>
<td>2.97</td>
<td>32.5</td>
<td>1.3</td>
<td>9.1</td>
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</tr>
</tbody>
</table>
scores, predictions could be made about performance on the posttest.

In the interest of drawing some conclusions about what information known prior to a continuing education course might prove useful in the development and success of the course for a particular group of learners, trends that evolved in this particular continuing education course in critical care nursing were reviewed.

Table 4 shows all scores obtained on tests and assignments throughout the course. Even though the pretest scores appeared to present possible significant differences between the three pretest groups, the pretest scores were included in the calculation of the average score for each nurse student on all written tests and assignments. Calculation of the mean score for each nurse student when the pretest score was not included showed little difference in results. This is best shown by indicating the rank of each nurse student when the pretest score was and was not included in the calculation of a total mean score. (See Table 5, page 40.) Despite differences between Pretest Groups as shown in Table 2, Table 5 indicates that pretest scores did not greatly affect the rank for each nurse student. The mean score of the differences between ranks is zero.

Mean scores calculated on all tests and assignments less pretest scores did, however, show a greater increase in scores for Pretest Group II than for either of the other two groups. (See Table 4.)
### TABLE 4 - SCORES ON ASSIGNMENTS AND EXAMINATIONS FOR 13 NURSE STUDENTS

<table>
<thead>
<tr>
<th>Identification</th>
<th>Pretest Score (%)</th>
<th>Midterm Test Score (%)</th>
<th>Posttest Score (%)</th>
<th>ASSIGNMENTS %</th>
<th>Total Score</th>
<th>Mean Score (%)</th>
<th>Mean Score Less Pretest (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Pretest</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
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<td></td>
<td></td>
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<tr>
<td>1</td>
<td>33</td>
<td>52</td>
<td>55</td>
<td>50 65 55 55 55</td>
<td>420</td>
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<td>55.3</td>
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<td>5</td>
<td>49</td>
<td>68</td>
<td>77</td>
<td>75 75 65 55 55</td>
<td>519</td>
<td>64.9</td>
<td>67.1</td>
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<td>8</td>
<td>33</td>
<td>52</td>
<td>61</td>
<td>65 65 65 75 70</td>
<td>486</td>
<td>60.8</td>
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<td><strong>Pretest</strong></td>
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<td>55 65 65 70 55</td>
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<td>62.4</td>
</tr>
<tr>
<td>7</td>
<td>54</td>
<td>71</td>
<td>76</td>
<td>75 85 85 75 75</td>
<td>596</td>
<td>74.5</td>
<td>77.4</td>
</tr>
<tr>
<td>10</td>
<td>41</td>
<td>53</td>
<td>63</td>
<td>70 65 70 70 75</td>
<td>507</td>
<td>63.4</td>
<td>66.6</td>
</tr>
<tr>
<td>11</td>
<td>59</td>
<td>71</td>
<td>70</td>
<td>70 65 70 75 75</td>
<td>555</td>
<td>69.4</td>
<td>70.9</td>
</tr>
<tr>
<td>12</td>
<td>51</td>
<td>73</td>
<td>79</td>
<td>70 75 75 75 75</td>
<td>573</td>
<td>71.6</td>
<td>74.6</td>
</tr>
<tr>
<td><strong>Total Group Means</strong></td>
<td>41</td>
<td>59</td>
<td>71</td>
<td>73 71 69 68 70</td>
<td>520</td>
<td>65.1</td>
<td>68.5</td>
</tr>
</tbody>
</table>
TABLE 5 - DIFFERENCE IN RANK FOR EACH OF 13 NURSE STUDENTS WHEN PRETEST SCORE IS INCLUDED AS A PART OF FINAL SCORE

<table>
<thead>
<tr>
<th>Identification</th>
<th>Rank on Total Score</th>
<th>Rank Less Pretest</th>
<th>Difference in Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Pretest Group I</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>13</td>
<td>13</td>
<td>0</td>
</tr>
<tr>
<td>5</td>
<td>6</td>
<td>7</td>
<td>+1</td>
</tr>
<tr>
<td>8</td>
<td>11</td>
<td>10</td>
<td>-1</td>
</tr>
<tr>
<td><strong>Pretest Group II</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>2</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>4</td>
<td>9</td>
<td>9</td>
<td>0</td>
</tr>
<tr>
<td>6</td>
<td>7</td>
<td>6</td>
<td>-1</td>
</tr>
<tr>
<td>9</td>
<td>4</td>
<td>3</td>
<td>-1</td>
</tr>
<tr>
<td>13</td>
<td>12</td>
<td>12</td>
<td>0</td>
</tr>
<tr>
<td><strong>Pretest Group III</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>10</td>
<td>11</td>
<td>+1</td>
</tr>
<tr>
<td>7</td>
<td>1</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>10</td>
<td>8</td>
<td>8</td>
<td>0</td>
</tr>
<tr>
<td>11</td>
<td>5</td>
<td>5</td>
<td>0</td>
</tr>
<tr>
<td>12</td>
<td>3</td>
<td>4</td>
<td>+1</td>
</tr>
</tbody>
</table>
Although the rank of each nurse student was not affected by the pretest, Group II, having the lowest mean pretest score, probably also had the most difficult pretest.

Seven nurse students reported on the final course evaluation questionnaire that they felt the final examination was not satisfactory in providing adequate feedback for their learning needs, while only two felt the pretest and the midterm were unsatisfactory. All but one student increased their score from midterm to posttest. The one nurse student whose score dropped only dropped by 1%, whereas increases in scores ranged from 3% to 30%. (See Table 4.)

Table 6 identifies the variables that were tested for both groups of nurses. The group of 13 nurse students (experimental group) and the group of 40 critical care nurses (control group) were relatively similar in many respects. Their ages, marital status and number of children were similar, as was the number of years worked since graduation. The control group had had significantly more years of experience in critical care nursing than had the experimental group, which was to be expected as the course was designed to prepare the nurses to work in critical care. The experimental group showed a more external mean on the Rotter Scale, but not significantly different from the control group. There was a significant difference between the experimental and control groups on the scores obtained on the total posttest and the 71 item posttest. The experimental group scored higher in both instances. The
<table>
<thead>
<tr>
<th>Variable</th>
<th>Possible range</th>
<th>Actual range</th>
<th>Grand mean</th>
<th>Grand standard deviation</th>
<th>Experimental mean (N = 13)</th>
<th>Control mean (N = 40)</th>
<th>Significant difference E vs. C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age in years</td>
<td>0 - ?</td>
<td>22 - 54</td>
<td>30.2</td>
<td>7.2</td>
<td>32.5</td>
<td>29.4</td>
<td>0.18</td>
</tr>
<tr>
<td>Marital status*</td>
<td>1 - 2</td>
<td>1 - 2</td>
<td>1.39</td>
<td></td>
<td>1.53</td>
<td>1.34</td>
<td>0.20</td>
</tr>
<tr>
<td>Number of children</td>
<td>0 - ?</td>
<td>0 - 5</td>
<td>0.7</td>
<td>1.4</td>
<td>1.2</td>
<td>0.5</td>
<td>0.14</td>
</tr>
<tr>
<td>Years worked since graduation</td>
<td>0 - ?</td>
<td>1 - 23</td>
<td>7.2</td>
<td>5.2</td>
<td>7.1</td>
<td>7.2</td>
<td>0.89</td>
</tr>
<tr>
<td>Years worked in critical care</td>
<td>0 - ?</td>
<td>0 - 12</td>
<td>3.3</td>
<td>2.8</td>
<td>1.3</td>
<td>3.9</td>
<td>0.002</td>
</tr>
<tr>
<td>Rotter score</td>
<td>0 - 23</td>
<td>0 - 16</td>
<td>8.7</td>
<td>3.3</td>
<td>9.1</td>
<td>8.6</td>
<td>0.67</td>
</tr>
<tr>
<td>Raw score on posttest</td>
<td>0 -100</td>
<td>30 - 76</td>
<td>54.8</td>
<td>8.7</td>
<td>61.8</td>
<td>52.9</td>
<td>0.0006</td>
</tr>
<tr>
<td>Adjusted score on 71 posttest</td>
<td>0 -100</td>
<td>27 - 90</td>
<td>63.4</td>
<td>12.1</td>
<td>71.1</td>
<td>60.9</td>
<td>0.007</td>
</tr>
<tr>
<td>Confidence in answers given</td>
<td>71 - 284</td>
<td>130 - 284</td>
<td>21.3</td>
<td>51.2</td>
<td>222</td>
<td>204</td>
<td>0.08</td>
</tr>
</tbody>
</table>

*1 = Single, separated, divorced or widowed
2 = Married.
experimental group could be expected to score higher because they had been reading and studying the subject content throughout the course. Confidence was higher for the experimental group, and although the difference between the groups was not significant, this higher confidence might be expected for two reasons. First, as they scored higher on the tests, the experimental group would likely have more confidence in what they knew. The control group, on the other hand, may be more aware of what they don't know, and therefore be less sure of the answers they gave.

One of the questions originally posed was whether the confidence a nurse has in her answers to questions on a test of knowledge has any relationship to how she performs on that test. That is, does a high degree of confidence mean that the nurse will score higher on a knowledge test about critical care?

For the 13 nurse students in the course, the correlation between their confidence and their score on a test of knowledge was 0.25 (Spearman rho). This is not significant at the .05 level. However, the correlation coefficient between confidence and test score for the total group of 53 nurses was 0.36 (Pearson Product Moment), which is significant at the .01 level (see Table 6). Thus, the more confidence the nurses have about their answers, the higher the knowledge score likely earned. This result, for the group of 53 nurses, rejects the null hypothesis $H_0$ and accepts the alternate hypothesis $H_a$ (ii) that
there is a significant positive correlation between confidence and the knowledge score.

The confidence indicated in each answer on the posttest was correlated with the percentage of people answering the question correctly. (See Figure B, page 28.) As might be expected, the correlation was 0.42 (Pearson Product Moment), positive and significant at the .01 level. If a question is relatively easy, it seems logical that most nurses will answer the question correctly and will have a high degree of confidence in their answer. What becomes interesting is why some questions were not answered correctly by the majority, but high confidence was expressed in the answer given. Question #14, which asked the nurse to interpret signs of cardiovascular changes, is an example of this, where the mean confidence score was 3.3, (above the mean confidence for the whole test), while only 40% answered the question correctly. Alternately, Question #56, which asked for understanding about the implications of subcutaneous emphysema after surgery in infants, was answered correctly by 91% of the nurses, but the confidence expressed was only 2.4, which was lower than the confidence scores on 87% of the test. Even though these questions were included after the item analysis was completed, something about the nature of the question caused a disparity between confidence and accuracy.

The knowledge test scores might also have been affected by the locus of control concept. If the nurses scored higher on the test, were they more internal or external in their belief in control of reinforcement?
For the group of 13 nurse students the Spearman rho correlation was -0.1, while for the 53 nurses, the Pearson r correlation was -0.07. Neither correlation is significant and therefore the null hypothesis must be accepted, that belief in internal or external control of reinforcement does not significantly relate to performance on a knowledge test. The negative direction of the correlation would suggest that high scores are more related to internal belief. At the same time, the lack of significance between these two variables might support the concept developed by Broskowski in Chapter Two, that those nearer the center of the continuum of the internal–external locus of control would adjust better to a given situation.

Since confidence was a predictor of test scores but the locus of control concept was not, it was then asked whether high confidence was a predictor of internality or externality, or vice versa. This correlation was not significant for either group, (N = 13, rho = -0.29; N = 53, r = -0.19), but the negative direction suggests that high confidence is more related to internals. The question of confidence and internality is difficult to predict within the confines of the methods used to test the variables in this study. Confidence as a personal and independent expression of ability, and not restricted to feelings about knowledge of test question content, might reveal more interesting results when correlated with the locus of control concept score. Whether such a measure exists and could be used was not investigated in this study.
Table 7 shows the correlation matrix for all variables tested for both groups of nurses. Significance at the .01 and .05 levels is noted. Other than correlations which have already been discussed in relation to the hypotheses tested, there are other significant correlations which are of potential interest. The performance on the test of knowledge of critical care nursing correlated more positively with years worked since graduation than years worked in critical care. This may be due to the fact that the subject content of the posttest demanded more general knowledge and judgment about nursing than specific knowledge about critical care nursing. It is also interesting to note that age correlated negatively with posttest scores. As the age of the nurse increased, her score on the posttest decreased. Detailed discussion follows, but it suggests that older nurses adapt less well to the restrictions imposed by a multiple choice examination for testing knowledge. It may also mean that older nurses know less, but more support would have to be offered to that supposition than this correlation alone.

Referring back to the 13 nurse students in the course, the next step was to look at the performance of these nurses at the end of the course and compare it to what we knew about them at the beginning of the course. If a nurse is more external or internal in her belief in control of reinforcement, does she improve more significantly as a result of a learning experience? If the answer to this is yes, why is it so? Table 8 shows the gain scores between pretest and posttest for each nurse student. The table separates the students into their original pretest groups to indicate group differences.
TABLE 7 - CORRELATIONS OF VARIABLES TESTED USING COMBINED GROUP OF 13 NURSE STUDENTS AND 40 CRITICAL CARE NURSES

<table>
<thead>
<tr>
<th></th>
<th>Age in years</th>
<th>Marital status</th>
<th>Number of children</th>
<th>Years worked since graduation</th>
<th>Years worked in critical care</th>
<th>Rotter score</th>
<th>Score on 119 posttest items</th>
<th>Score on 71 posttest items</th>
<th>Confidence score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age in yrs.</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Marital status</td>
<td>0.17**</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of children</td>
<td>0.65**</td>
<td>0.47**</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Years worked since graduation</td>
<td>0.76**</td>
<td>0.21</td>
<td>0.59**</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Years worked in critical care</td>
<td>0.22</td>
<td>-0.06</td>
<td>0.23</td>
<td>0.45**</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rotter score</td>
<td>-0.19</td>
<td>0.02</td>
<td>-0.07</td>
<td>-0.06</td>
<td>-0.17</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Score on 119 posttest items</td>
<td>-0.27*</td>
<td>-0.30*</td>
<td>-0.45**</td>
<td>-0.36**</td>
<td>-0.35**</td>
<td>-0.06</td>
<td>1.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Score on 71 posttest items</td>
<td>-0.27*</td>
<td>-0.36**</td>
<td>-0.47**</td>
<td>-0.37**</td>
<td>-0.28*</td>
<td>-0.07</td>
<td>0.96**</td>
<td>1.00</td>
<td></td>
</tr>
<tr>
<td>Confidence score</td>
<td>-0.09</td>
<td>-0.03</td>
<td>-0.15</td>
<td>-0.04</td>
<td>-0.03</td>
<td>-0.19</td>
<td>0.41**</td>
<td>0.36**</td>
<td>1.00</td>
</tr>
<tr>
<td>Gain score***</td>
<td>-0.06</td>
<td>-0.03</td>
<td>-0.18</td>
<td>-0.06</td>
<td>-0.00</td>
<td>-0.17</td>
<td>0.47</td>
<td>0.49</td>
<td>0.56</td>
</tr>
</tbody>
</table>

*Significant at r.05  **Significant at r.01  ***Gain scores are based on computations for 13 nurse students only
<table>
<thead>
<tr>
<th>Identification</th>
<th>Pretest Score (%)</th>
<th>Posttest Score (%)</th>
<th>Gain Score (%)</th>
<th>Gain z Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pretest Group I</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>33</td>
<td>55</td>
<td>22</td>
<td>- 1.18</td>
</tr>
<tr>
<td>5</td>
<td>49</td>
<td>77</td>
<td>28</td>
<td>- 1.16</td>
</tr>
<tr>
<td>8</td>
<td>33</td>
<td>61</td>
<td>28</td>
<td>- 0.65</td>
</tr>
<tr>
<td>Pretest Group II</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>35</td>
<td>80</td>
<td>45</td>
<td>+ 0.05</td>
</tr>
<tr>
<td>4</td>
<td>48</td>
<td>69</td>
<td>21</td>
<td>- 1.37</td>
</tr>
<tr>
<td>6</td>
<td>28</td>
<td>76</td>
<td>48</td>
<td>+ 1.23</td>
</tr>
<tr>
<td>9</td>
<td>33</td>
<td>90</td>
<td>57</td>
<td>+ 1.60</td>
</tr>
<tr>
<td>13</td>
<td>25</td>
<td>54</td>
<td>29</td>
<td>- 0.41</td>
</tr>
<tr>
<td>Pretest Group III</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>54</td>
<td>76</td>
<td>22</td>
<td>+ 0.05</td>
</tr>
<tr>
<td>7</td>
<td>54</td>
<td>76</td>
<td>22</td>
<td>+ 0.05</td>
</tr>
<tr>
<td>10</td>
<td>41</td>
<td>63</td>
<td>22</td>
<td>+ 1.12</td>
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<td>11</td>
<td>59</td>
<td>70</td>
<td>11</td>
<td>- 1.15</td>
</tr>
<tr>
<td>12</td>
<td>51</td>
<td>79</td>
<td>28</td>
<td>+ 0.81</td>
</tr>
<tr>
<td>Total Group Means</td>
<td>41.0</td>
<td>71.1</td>
<td>29.0</td>
<td></td>
</tr>
</tbody>
</table>
Calculation of correlations between gain scores and belief in control of reinforcement revealed some unusual results. The correlation coefficient between these two variables using the gain score in percentage revealed a correlation -0.15, (Spearman rho), which is not significant. However, using gain z scores, the correlation coefficient became -0.61 (Spearman rho). That is, the more internal the individual, the greater was the gain in score from pretest to posttest. This correlation of -0.61 is significant at the .05 level.

The most likely explanation for this difference in correlations may be the difference in original pretests. Actual gain scores expressed as a percentage do not necessarily reflect significant changes, primarily because higher pretest scores had less opportunity to make significant gains to the posttest. The z scores, on the other hand, attempt to eliminate the differences between groups, and are therefore likely to be a better reflection of gain than are gain scores expressed as percentages.

It seems that nurses who have a greater belief in internal control of reinforcement apply themselves more to the learning at hand, and work harder to perform better in the course. It might also suggest that internals have a greater motivation to do better in the course as a result of pretest performance.
When all eleven variables tested for 53 nurses in Table 6 (page 42) are used jointly to predict the amount of gain from pretest to posttest for 13 nurse students, the statistics are considerably more encouraging. The single best predictor of nurses' gain scores is confidence itself and accounts for about 31% of the predictability of gain scores. The second best predictor (and indeed the only other one statistically significant) is the posttest score. Taken together, these two predictor variables accounted for 41% of the nurses' gain scores.

The fact that a posttest score is a better predictor than any of the pretest scores is encouraging. That suggests that it is the effectiveness of the course content, rather than the student's prior knowledge, that is the decisive factor. In short, how far the learner went in the course made more difference than the point from which she started.

The only other variables that approached significance as predictors of gain were age and the number of years worked in critical care, but both fell just slightly short of the .05 level of significance. The other variable critical to this study, Rotter's measure of internality, exhibits a partial correlation with gain scores of 0.15 -- far from the level needed for significance.
Measures of Clinical Performance

Several difficulties were encountered in the use of the evaluation instruments selected to measure clinical performance in the course. Some of the difficulty was probably related to the lack of clinical teaching experience of the clinical preceptors. Some difficulty was also due to the ambiguity of the instruments and the lack of opportunity for practice with the instruments by the clinical preceptors.

Differences were encountered in the scores obtained by the nurse students according to the clinical preceptor who evaluated the performance. Discussion with the clinical preceptors about the Slater Nursing Competencies Rating Scale revealed a lack of sufficient understanding about the meaning of the terms used for rating (e.g. "best nurse", "poorest nurse", etc.).

Despite these difficulties, final clinical performance results were considered representative of the performance of each nurse student. Recognizing the limitations of the subjective evaluation that was carried out, the researcher reviewed all evaluation materials on each nurse student, including a score calculated from the results of the Slater Scale. The group was then ranked from 1 (best performance) to 13 (poorest performance). Spearman rho correlations were carried out on this ranking.

The relationship between clinical performance and belief in control of reinforcement was of no significance. (rho = - 0.28). The direction of the correlation, however, suggests that better performance is...
seen in more internal nurses. Correlation of clinical performance with confidence again showed no significance (rho = -0.16). The direction suggests in this instance, however, that clinical performance is associated with lower confidence. Comparison of clinical performance with posttest score showed a Spearman rho correlation of 0.38.

Thus it seems that clinical performance does not have significance in relation to other knowledge about the nurse students in the course. A larger group, however, may begin to show stronger correlations which would support the concept that clinical performance could be used as a predictor for performance in a continuing education course. Alternately, Rotter scores and confidence in answers on a knowledge test may be predictors of performance in critical care nursing. These appear to be areas for further investigation, using more refined tools for measurement of performance.

Measures of Program Effectiveness

Midterm and final evaluation questionnaires provided, primarily, confirmation of problems or difficulties already identified informally. The design of the course was considered satisfactory, and content presentations were reported as positive. It was pointed out by some students that there would have been an advantage to having more resource people available for specific content areas.

Other than problems related to the lack of appropriate learning experiences in one clinical area, the clinical experience was good.
Several students identified a need for more experience in specific clinical areas related to their needs.

A significant result of the questionnaires was the identification of the need for more pre-course preparation by the students. A list of reading requirements and the identification of resource text books to be used during the course was considered to be most important. This was not done for the first course. Some students also reported that a more similar background experience would have made the teaching task easier and the learning experience more valuable.

The course length was generally considered satisfactory, although it was felt that more clinical time, together with more prior preparation of the students by pre-reading, would have made the total experience more worthwhile.
CHAPTER V - SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

This report has presented the results of the performance of 13 nurses attending the first of two 14-week continuing education courses in critical care nursing. The evaluation of the course has brought to light several pieces of information which should prove useful in planning the second course and indeed future courses which include clinical and classroom learning experiences.

Summary

The major focus of the study was on the gains achieved by the nurses as a result of attending the course. Specific measures of gain were tested to determine achievement in the areas of knowledge and performance. Factors which were felt to be predictors of performance were also tested. Analysis of the results revealed certain gains specific to the particular course and possibly gains that could be predicted for future courses. Figure A (page 8) represented a model of the intent of the study.

It was found that there were indeed certain pieces of information that could be obtained about nurses prior to a course which could predict performance in the course. Selection of students for this course was based on what were considered to be important criteria (see Appendix A). However, other factors were found to be just as important if not more so.
Age and the number of years worked in critical care nursing became significant predictors of performance. Both of these factors, although not considered in need of weighting for selection, were known prior to the course and may have played a part in the selection process.

A pretest given to the students on the first day of the course also helped to identify areas of strength and weakness in the knowledge each nurse had about critical care nursing. The test, made up of questions based on content to be presented in the course, could well have been used to plan for individualized learning experiences for the nurses.

A posttest administered at the end of the course provided important information about gains achieved in the course. The posttest consisted of questions that had been on the pretest, and therefore gave a significant measure of increases in knowledge as a result of attendance at the course. Also, by measuring confidence in answers given on the test, predictions could be made as to whether confidence is a predictor of performance on a knowledge test.

The internal-external locus of control concept (Rotter I-E Scale) was chosen for this study because it was considered a predictor of clinical performance ability, confidence in performance and gain. The results have shown that it was indeed a significant predictor of gain, but not statistically significant for confidence or clinical performance. Neither was it a significant predictor of test scores. Because the test group was very small (N = 13), and because there were
correlational analyses which were not significant for the experimental group but were for the experimental and control groups combined, further testing is needed of these variables using larger groups.

Five hypotheses were stated and the analysis of the results has revealed the following positive findings:

Greater confidence in answers given on a knowledge test will relate to higher scores. \((H_a_{1} (ii))\)

A greater gain in score between a knowledge pretest and posttest relates to belief in internal control of reinforcement. \((H_a_{4} (i))\)

**Conclusions**

Evaluation of a 14-week continuing education course in critical care nursing has demonstrated some positive findings. It has also revealed areas of weakness in planning such courses, and this study has identified some of these weaknesses and how they could be improved to achieve a better result. Further, prior knowledge about course participants can predict performance capabilities and can usefully affect the program design for a specific group of students. In the course just completed, several factors have been identified which might have improved the course for this group of learners. For instance, knowledge about the varied experiential backgrounds of the nurse students could have affected the clinical learning experiences and the value those experiences had to individual students. Although not directly reflected by course
results, the difficulty in adjusting to the concept of self-directed learning was stated as a problem more frequently by the older nurse students. Although it was attempted to give attention to individual needs, the group also had to function as a unit in order to accomplish the task in the time allowed. The two students who withdrew from the course both suffered from this need to conform to group norms, as they seemed to have greater and more individual needs than most of the other nurse students.

The difficulties encountered with the clinical performance evaluation instruments have already been discussed in Chapter IV. The need to develop inter-rater reliability and more objective instruments became evident early in this program. It also seemed important to concentrate on the assessment of each nurse as she came into the program and to attempt to plan for clinical experiences that would be most beneficial to her. Changes were made in the course for some students to provide for special learning experiences, but it was evident in the final course evaluation that this was not sufficient and that more could have been done to meet more individual needs.

The data analyses reported in this study have particularly identified factors which can affect achievement potential in a continuing education course. Those factors, more specifically, are:

- age
- previous experience in critical care nursing
- confidence
- belief in locus of control (Rotter I-E Scale)
- pretest score on course content.
Many times throughout the course it became evident that different approaches to evaluation would have revealed more significant results. Information collected about the nurse students on observation was invaluable in assessing and understanding their abilities, but was not documented in any way that could be used in the data analysis. Although this became a frustrating situation for the evaluation of the first course, it helped a great deal in making recommendations for the second and any subsequent courses.

Gains in knowledge have clearly been demonstrated as a result of attendance at a continuing education course. This is encouraging and supports the concept of a course such as the 14-week course described in this study. The more that can be determined through further study as to what factors can allow for optimum gain, the better such courses will become.

**Recommendations for the Second Course**

Selection of students for such courses may be one of the most important factors to consider, based on evaluation of the 15 nurses who began this particular course, problems that arose, and what was known about the nurses prior to the commencement of the course. There were similarities in the two nurses who withdrew from the course. Both were older (45 and 54 years). Both had very individual learning needs which apparently could not be met, even though the total class number was small.
Background experience in critical care nursing also seemed to affect learning performance in the course. The variety of backgrounds presented difficulty in setting out course material in the depth required and at the pace of learning that was set early in the course. On final evaluation, some nurses commented on the need to engage in extensive individual study in order to keep up with the material being presented in class.

Twelve of the 13 students completing the course felt that the course objectives were relevant to their learning needs. With respect to the evaluation instruments used, difficulties encountered in the first course resulted in the following recommendations for the second course:

1. **Content and structure of the written examination should be refined for the second course.** Major difficulties with the pretest and posttest appeared to be ambiguity within the structure of the questions, and confusion in the selection of distractor items.

2. **Clinical evaluation instruments should be revised in order to make them easier to use for the clinical preceptors.** Clinical preceptors were recognized to have ability in identifying problems and planning learning experiences. However, the differences between the preceptors in their ability to document observations objectively has already been discussed. It is recommended that in future, one course evaluator be used to keep documentation about the clinical performance of the nurse students. This does not solve the problem of inter-rater differences, but would give
more consistent results for the next course until more objective instruments and more preceptor training were available.

3. Attempts should be made to plan clinical learning experiences around the needs of each nurse and with consideration of the current experiences available in the clinical areas.

Recommendations for Further Study

This study has revealed information which can prove useful in the development of future courses in continuing nursing education. It has hopefully presented some explanation for the differences in nurse student performance in a continuing education course that can be used to plan more effectively for meeting individual learning needs of nurses attending such a course.

Most importantly, this study may be useful to others in determining needs for further study about nurses and their participation in continuing education. It has only touched the surface of planning and providing learning experiences to maintain competence. There is a long way yet to go. As mentioned in the introduction to this report, the logistical problems that affect the development of continuing education are still not overcome. However, the design of the 14-week critical care nursing course, and the evaluation of the nurses attending, have taken a first step in dealing with the problem.
Based on the results of the hypotheses tested in this study, recommendations for further study in certain areas of learning for nurses in continuing education courses are:

1. to examine the relationship between a nurse's belief in locus of control and her ability to perform in a directive or non-directive continuing education course;
2. to examine the relationship between a nurse's belief in locus of control and performance in clinical nursing areas;
3. to study factors related to past experience and age to determine their relationship to different abilities to perform in a continuing education course.

The needs of the future are increasing at a greater rate than the problems of the past are being solved. Although this sounds depressing, studies such as reported here and those recommended can clarify issues which have been hidden or unknown barriers to successful continuing education programs, not only in nursing but hopefully in other professional disciplines as well. Greater sensitivity to the individual and more alert tuning to differences between individuals, together with skillful application of known scientific methods for obtaining such data, suggest a challenging and fruitful future to those engaged in this vital educational field. This report and its implications should provide a guide for others in dealing with the problems and finding some solutions.
BIBLIOGRAPHY AND REFERENCES


46. Tate, B. "Evaluating the Nurse's Clinical Performance". Nursing Outlook, Jan. 1962, pp. 35-37.


APPENDICES
## CRITERIA FOR SELECTION OF PARTICIPANTS FOR THE CRITICAL CARE COURSE

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Has current British Columbia nursing registration.</td>
<td>8.0</td>
</tr>
<tr>
<td>Employed by hospital in need of critical care nursing staff.</td>
<td>7.5</td>
</tr>
<tr>
<td>Has had one year of recent (1972-1974) full time nursing experience giving direct care in acute care settings, e.g. medicine and/or surgery, emergency, P.A.R., coronary and intensive care.</td>
<td>7.0</td>
</tr>
<tr>
<td>Has participated in continuing education (including inservice and independent learning, e.g. reading) on a regular basis over the past five years.</td>
<td>6.0</td>
</tr>
<tr>
<td>Has been involved in ongoing hospital developmental activities (e.g. nursing policy and procedure committees; patient care committees.)</td>
<td>5.5</td>
</tr>
<tr>
<td>Employed by a hospital with supportive professional and technical resources (e.g. physicians, physiotherapists, laboratory technicians, laboratory equipment, monitoring equipment, respiratory equipment.)</td>
<td>3.5</td>
</tr>
<tr>
<td>Employed by a hospital which provides opportunities for inservice education and/or staff development.</td>
<td>5.0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>42.5</strong></td>
</tr>
</tbody>
</table>
CRITICAL CARE NURSING

Knowledge test

The following questions are a selection of multiple choice and completion items. The questions are designed to help you determine what your learning needs are in critical care nursing.

PART I: Multiple choice questions

For each multiple choice question, select the answer which best completes the statement or answers the question. Circle the letter of your chosen answer.

PART II: Completion questions

These items ask you to fill in the appropriate answer. Write your answer in the space provided.

Scoring is based on the number of right answers, so be sure to answer every question.

In addition, you are asked to indicate your degree of confidence in your answer. After each question, please circle the word that best describes how sure you are of your answer.

e.g. How sure are you?

No Idea Curious Sure \(\text{Confident}\)

If you are confident that the answer you have selected is correct, then circle the word "confident" after the question.

* Questions eliminated from 71 item posttest are marked "e". The correct answer for each multiple choice question is circled.
PART II: Multiple Choice Questions

1. The pharmacologic effect of morphine is to:
   A. block impulses at the synapses between two neurons.
   B. increase sympathetic impulses to the heart.
   C. stimulate the respiratory center in the medulla.
   D. depress pain perception in the cerebral cortex.
   How sure are you?
   No Idea Guessed Very Confident

2. Principles that should be observed when starting a vecuronium procedure are:
   A. Nurse should establish a baseline so all three care for the patient will use the same technique.
   B. Frequency of rotation is decided by the nurse in response to the patient's condition.
   C. Pulse distal to the tourniquet should always be checked after applying the tourniquet.
   D. No one.
   How sure are you?
   No Idea Guessed Very Confident

3. On an ECG tracing, ventricular repolarization is represented by:
   A. the QRS complex.
   B. the P wave.
   C. the T wave.
   D. the P-Q interval.
   How sure are you?
   No Idea Guessed Very Confident

4. Your patient is receiving rapid infusions for pretreatment with atropine which developed nausea and vomiting. The patient's order is to:
   A. stop infusion and order 5 ml of saline.
   B. continue infusion. Record CVP every 15 minutes and report if CVP is falling up to 1 cm.
   C. continue infusion. Record CVP every 15 minutes and report if CVP is falling up to 7 cm.
   D. stop infusion. Measure urine volume hourly and report if urine volume drops below 10 ml/hr.
   How sure are you?
   No Idea Guessed Very Confident

5. Mrs. Mack is a 44 year old woman who is being admitted to the ICU with an acute chest pain that has been present for 3 hours. She received aspirin and nitroglycerin and has normal blood pressure and heart rate. An ECG taken on admission to the unit indicated a definite acute anterior myocardial infarction. You are admitting Mrs. Mack to the ICU and have just attached her to the ICU monitoring system. Oxygen is being administered, and she is still complaining of pain. Your actions should include:
   A. administer morphine intravenously to relieve pain.
   B. stay with Mrs. Mack to observe for complications.
   C. if ECG strip does not change after morphine is given, lidocaine should be given.
   D. 1, 2, 3.
   How sure are you?
   No Idea Guessed Very Confident

6. A patient in the ICU becomes agitated and combative. Do not because he has to be fed, and angry at the night nurse because she takes his blood pressure. His major problem may be:
   A. he thinks he is strong enough to feed himself.
   B. he is slowly by nature.
   C. he is afraid of his family.
   D. the loss of income.
   How sure are you?
   No Idea Guessed Very Confident

7. Patients who are in shock and are receiving vasopressor agents:
   A. should have two nurses check the dosage site of administration.
   B. should have their blood pressure and pulse monitored.
   C. should have an intravenous infusion.
   D. should have their blood pressure and pulse monitored at least every 2 hours.
   How sure are you?
   No Idea Guessed Very Confident

8. An increase in the systolic pressure with a corresponding decrease in diastolic pressure is a sign of:
   A. decreased strength of cardiac contraction.
   B. inevitable death.
   C. a partially blocked artery.
   D. increased intravascular pressure.
   How sure are you?
   No Idea Guessed Very Confident

9. The nursing audit is a means of evaluating the degree of excellence in nursing care. An example of a retrospective audit is:
   A. a bedside audit.
   B. an open chart audit.
   C. a post-audit questionnaire.
   D. none of the above.
   How sure are you?
   No Idea Guessed Very Confident

10. The normal hematocrit is in the range of:
    A. 35 - 52 per cent.
    B. 25 - 35 per cent.
    C. 15 - 20 per cent.
    D. 50 - 74 per cent.
    How sure are you?
    No Idea Guessed Very Confident

11. Electrical signals from the heart can be picked up by electrodes placed:
    A. on the arm.
    B. on the chest.
    C. on the legs.
    D. anywhere on or in the body.
    How sure are you?
    No Idea Guessed Very Confident

12. Right ventricular failure is evident in a patient who has:
    A. ascites, weight loss, edema, dis tended neck veins.
    B. ascites, weight loss, edema, dis tended neck veins, weight loss.
    C. ascites, weight loss, edema, dis tended neck veins, weight loss.
    D. ascites, weight loss, edema, dis tended neck veins, weight loss.
    How sure are you?
    No Idea Guessed Very Confident
13. This ECG tracing is an example of:
A. ventricular tachycardia.
B. pacemaker rhythm.
C. atrial fibrillation.
D. ventricular fibrillation.
How sure are you?
No  Idea  Guessed  Sure  Confident

14. A patient exhibits atrial fibrillation on his ECG strip. If he has been hospitalized for a myocardial infarction and has been digitalized, it is reasonable to anticipate that the treatment for this arrhythmia would be:
A. change the diagnosis.
B. discontinue digitalis.
C. continue or increase digitalis.
D. arrange for elective cardioversion.
How sure are you?
No  Idea  Guessed  Sure  Confident

15. Serum potassium is normally:
A. 0.5 – 1.5 mEq/l.
B. 100 mEq/l.
C. 7.55 – 7.60 mEq/l.
D. 3.5 – 5.0 mEq/l.
How sure are you?
No  Idea  Guessed  Sure  Confident

16. Stress enhances sodium retention through the release of corticotropin from the anterior lobe of the pituitary gland. Corticotropin acts on the adrenal cortex to increase secretion, primarily, of:
A. mineralocorticoids.
B. glucocorticoids.
C. norepinephrine.
D. acetylcholine.
How sure are you?
No  Idea  Guessed  Sure  Confident

17. Digitalis toxicity often develops as a result of:
A. serum sodium depletion.
B. serum potassium depletion.
C. serum potassium increase.
D. serum sodium increase.
How sure are you?
No  Idea  Guessed  Sure  Confident

18. The purpose of a pulse generator is to:
A. improve the pulse when it is weak.
B. produce small voltage shocks.
C. provide emergency lighting in the event of a power failure.
D. pace a patient in ventricular tachycardia.
How sure are you?
No  Idea  Guessed  Sure  Confident

19. When you see this ECG tracing, your first action should be:
A. administer precordial thump.
B. administer precordial shock.
C. continue to observe.
D. do nothing, as this is a normal sinus rhythm.
How sure are you?
No  Idea  Guessed  Sure  Confident

20. Signs of cardiogenic shock include:
A. skin cool and flushed.
B. drop in central venous pressure.
C. oliguria.
D. all of the above.
How sure are you?
No  Idea  Guessed  Sure  Confident

21. Mr. Johnson was admitted to the coronary care unit 3 days ago. At that time, a definite diagnosis of inferior myocardial infarction was made. Subsequently, a temporary bypass pacemaker was inserted because of marked sinus bradycardia and mild hypotension. Effective pacing has been maintained for the last 3 days, and Mr. Johnson's vital signs have been normal. A recent check of the pacemaker demonstrated that it was set at a rate of 75 beats per minute, 2.5 minutes on demand pacing. Mr. Johnson has just finished mild exercise in the left upper extremity, prescribed to maintain mobility of the left shoulder. You enter his room and note the following rhythm on the monitor:

Your best action is to:
A. notify the physician immediately.
B. investigate to find out why the pacemaker isn't working.
C. not be concerned because this rhythm is normal for Mr. Johnson.
D. instruct Mr. Johnson not to do any more exercise today.
How sure are you?
No  Idea  Guessed  Sure  Confident

22. Mr. Ireland is a 7-year-old boy who was admitted to the coronary care unit with a recent inferior myocardial infarction. He has been pain-free for the last 3 hours, has experienced no arrhythmias, and has required no medication. He now calls you into his room complaining of chest pain. You notice that his respirations are a bit加快 at 15 breaths per minute. Vital signs remain normal. Is this:
A. an actual (real) problem?
B. a possible (probable) problem?
C. no problem?
How sure are you?
No  Idea  Guessed  Sure  Confident
This tracing is:
A. premature ventricular contractions.
B. sinus tachycardia.
C. paroxysmal atrial tachycardia with
block.
D. atrial fibrillation.
How sure are you?
No Idea Guessed sure Confident

24. In general, the higher the red blood
cell count:
A. the greater the blood viscosity.
B. the higher the blood pH.
C. the less the carbon dioxide content.
D. the lower the hematocrit.
How sure are you?
No Idea Guessed sure Confident

25. Adrenergic drugs produce:
A. cardiac acceleration.
B. peripheral vasoconstriction.
C. bronchodeconstriction.
D. all of the above.
How sure are you?
No Idea Guessed sure Confident

26. Parasympathetic innervation to the
pupillary sphincter is carried in:
A. Cranial nerve II.
B. Cranial nerve V.
C. Cranial nerve III.
D. Cranial nerve I.
How sure are you?
No Idea Guessed sure Confident

27. If a patient with a head injury has a
clear nasal discharge, your:
A. are not concerned.
B. apply a loosely slung bandage if
the patient is unable to blow his
nose.
C. report CSF leakage.
D. treat the discharge with Tetracycline.
How sure are you?
No Idea Guessed sure Confident

28. Under normal circumstances, cerebro-
spinal fluid is:
A. slightly cloudy.
B. clear.
C. pink-tinted.
D. white in color.
How sure are you?
No Idea Guessed sure Confident

29. In an emergency situation when no
physician was available, a patient was
hemorrhaging internally. The nurse
administered epinephrine. This was:
A. a reasonable action to arrest the
hemorrhage.
B. an unsafe action because it raised
the blood pressure.
C. a useless attempt at arresting the
hemorrhage.
D. a useless action because it had no
effect one way or the other on the
hemorrhage.

30. Prehospital measures for the prevention
of stress ulcers following a head injury
include:
A. nasogastric tube feedings.
B. acid therapy.
C. atropine administration.
D. all of the above.
How sure are you?
No Idea Guessed sure Confident

31. Following a craniotomy, the earliest
postoperative complication the nurse
should watch for is:
A. shock.
B. respiratory failure.
C. anaphylaxis.
D. paralysis.
How sure are you?
No Idea Guessed sure Confident

32. Sensory deprivation results partly from:
A. impairment in or reduction of
familiar environmental stimuli.
B. injury to the nervous system.
C. not allowing a patient to have
visitors.
D. the kind of illness the patient has.
How sure are you?
No Idea Guessed sure Confident

33. Unconscious patients with a head injury
should be:
A. kept lying flat at all times.
B. watched for pulmonary complications.
C. monitored for cardiac arrhythmias.
D. kept in a room near the nursing
station.
How sure are you?
No Idea Guessed sure Confident

34. Fibrillae触动 in small children
should be treated first by:
A. sedate with alcohol or alcohol.
spikes.
B. discontinue given intravenously.
C. all of the above.
D. none of the above.
How sure are you?
No Idea Guessed sure Confident

35. The most useful measure of the
severity of a head injury is:
A. skull x-ray.
B. clinical signs and symptoms.
C. gas score.
D. responsiveness.
How sure are you?
No Idea Guessed sure Confident

36. Tonic movements during a convulsion
are caused by:
A. contraction of extrinsic muscles and
relaxation of intrinsic muscles.
B. contraction of extrinsic muscles,
followed by relaxation.
C. alternate contraction of the flexor
and extensor muscles.
D. simultaneous contraction of the
flexor and extensor muscles.

(29) cont'd...
How sure are you?
No
Idea
Gussed
Sure
Confident

37. A patient with a head injury under observation may be given:
A. codine 32 mg. for pain.
B. codeine 120 mg. for pain.
C. morphine 10 mg. for pain.
D. no medication for pain.
How sure are you?
No
Idea
Gussed
Sure
Confident

38. Referred pain is:
A. the boat under the circumstances.
B. referred codeine 32 mg.
C. poorly because Miss R. knew that
D. no directive for pain.
How sure are you?
No
Idea
Gussed
Sure
Confident

39. Miss R. is a patient in the ICU. She
is 19 years old and was involved in a
motorcycle accident with her boyfriend. She has a fractured leg. She has multiple fractures. Two days ago, her
right leg was amputated above the knee
due to gangrene. Since the surgery she has been quieter than usual and very
colleaguer with the nurses. The
nurses have received cheerful and talkative
and provided as much reassurance
as possible. Their approach to Miss R.
was:
A. the best under the circumstances.
B. poor because Miss R. is not talkative.
C. neglectful of the grief and
mourning process.
D. goo, because Miss R. knew that
people still cared about her even
though she had lost her leg.
How sure are you?
No
Idea
Gussed
Sure
Confident

40. Sensory deprivation is demonstrated in
such behaviours as:
A. restlessness.
B. outbursts of crying.
C. talking constantly about past
experiences.
D. all of the above.
How sure are you?
No
Idea
Gussed
Sure
Confident

41. Regardless of their physical status,
all patients in a critical care unit
should be:
A. bathed daily to prevent skin
breakdown.
B. oriented to date, time and place.
C. both of the above.
D. none of the above.
How sure are you?
No
Idea
Gussed
Sure
Confident

42. The presenting symptoms of a new
patient in the unit are fatigue, muscle
weakness, muscle cramps, weakness and
vertigo. The skin shows age of tumor
and you cannot detect a peripheral
pulse. These symptoms are common signs of:
A. sodium depletion.
B. sodium excess.
C. potassium depletion.
D. potassium excess.
How sure are you?
No
Idea
Gussed
Sure
Confident

43. Eclampsia that accompanies a severe burn is a
result of the accumulation of inter-
stitial fluid in the and results of hypo-
proteinemia. This accumulation takes
place because of the alteration of a
primary factor of capillary dynamics, namely:
A. a reduction in the colloid osmotic pressure from 32 m. Hg to
6 mm. Hg.
B. an increase in tissue pressure from -7 mm. Hg to +7 mm. Hg.
C. an increase in the colloid osmotic pressure from 6 mm. Hg to
26 mm. Hg.
D. a decrease in the tissue pressure from +7 mm. Hg to -7 mm. Hg.
How sure are you?
No
Idea
Gussed
Sure
Confident

44. The most serious effect of hypocalcemia,
clinically, is:
A. cardiac flaccidity.
B. respiratory arrest in toxicity.
C. cardiac irritability.
D. hyperventilation.
How sure are you?
No
Idea
Gussed
Sure
Confident

45. Which of the following signs and symptoms of hypophosphaemia best represent the need for immediate action?
A. sweating.
B. insufficiency of urine.
C. slight increase in systolic pressure.
D. numbness about the mouth.
How sure are you?
No
Idea
Gussed
Sure
Confident

46. Fluid shifts are a great danger in the
patient with burns. Which of the following would be expected to occur?
A. increased fluid shifts after 4 hours, which result in irreversible
shock.
B. increased sodium and increase in blood potassium.
C. increased capillary permeability.
D. rise in blood volume.
How sure are you?
No
Idea
Gussed
Sure
Confident

47. Miss Gibson, 22 years old, was admitted
to the burn unit with second-degree
burns over 45% of her body and face,
which she received when her cotton
caught on fire. Which of the following
behaviours displayed by Miss Gibson
during her convalescent period would
dictate the nurse's?
A. removal of the mirror from the room.
B. requesting each of her visitors to
bring her food and drink.
C. crying and saying, "Why did this
care happen to me?"
D. refusing to see visitors.
How sure are you?
No
Idea
Gussed
Sure
Confident

48. To maintain Miss Gibson's (Question 47)
nutrition during convalescence, which
of the following measures would be most
important?
A. reduce protein intake so as not to
tax the kidneys.
B. limit caloric intake so as to de-
crease the work of the body.

... (48 cont'd) ...
encourage the intake of orange juice or other fluids containing Vitamin C.
D. encourage excessive intake of fluids.

How sure are you?
No	Pretty Idea Guessed sure Confident

Management of care for the burned patient is dependent on the following principles:
1. Burned patients require more hospital days, more nursing hours and more supplies than any other critical care patient.
2. Staffing in burn units is a major problem.
3. Burn care requires a competent physician with highly specialized knowledge if it can be an all successful case.
A. 1, 2, 3.
B. 1, 2.
C. 1, 3.
D. 2, 3.

How sure are you?
No	Pretty Idea Guessed sure Confident

When providing care to patients with acute renal failure, a major concern would be:
A. the prevention of pulmonary complications.
B. the diet.
C. the amount of exercise he is allowed.
D. pruritus.

How sure are you?
No	Pretty Idea Guessed sure Confident

The nephrotic syndrome characteristically includes:
A. edema.
B. polyclots.
C. both A and B.
D. neither A nor B.

How sure are you?
No	Pretty Idea Guessed sure Confident

A diabetic who has had surgery must be watched for:
A. diabetic acidosis.
B. diabetie shock.
C. diabetic acidosis or diabetie shock.
D. increased blood glucose levels.

How sure are you?
No	Pretty Idea Guessed sure Confident

66 mm. Hg. is a normal carbon dioxide pressure in:
A. alveolar air.
B. arterial blood.
C. atmosphere.
D. venous blood.

How sure are you?
No	Pretty Idea Guessed sure Confident

A patient with a trocheostomy is lying on his left side. It is time to suction. The first suctioning position should be:
A. have him lie on his right side.
B. suction him on his left side first.
C. have him sit up.
D. it doesn't matter which position he lies in first.

...(44 cent°)...

How sure are you?
No	Pretty Idea Guessed sure Confident

If an unconscious patient you are caring for presents with substernal respiration, intercostal retraction and severe cyanosis, he likely has:
A. a partially obstructed airway.
B. respiratory acidosis.
C. developed bronchospasm.
D. a completely obstructed airway.

How sure are you?
No	Pretty Idea Guessed sure Confident

In infancy, substernal emphysema following surgery is:
A. not as dangerous as it is in adults.
B. more serious than it is in adults.
C. not a concern as it rarely happens.
D. likely to result in death.

How sure are you?
No	Pretty Idea Guessed sure Confident

Mr. Jones, age 45, was admitted to the hospital with a history of dyspnea and dyspnea. On a previous occasion he was treated for a pneumonial infection. His temperature was normal. His pulse was regular and slow. At this he had been taking a digitalis preparation daily and received a maximal digitalis dose about a week from the public health nurse. He was diagnosed as having decompressing congestive heart failure and positive digitalis toxicity. This patient's hospitalization might have been prevented if:
A. the public health nurse had reported the symptoms.
B. Mr. Jones had received discharge teaching about digitalis and digitalis preparations.
C. Mr. Jones had been more carefully assessed on his previous admission.
D. none of the above. Nothing could have prevented this hospitalization.

How sure are you?
No	Pretty Idea Guessed sure Confident

Art in the substernal area of the neck and chest after chest surgery is:
A. unusual.
B. not unusual.
C. fatal.
D. uncomfortable for the patient.

How sure are you?
No	Pretty Idea Guessed sure Confident

Aspiration of the lungs is useful in:
A. air flow through the tracheobronchial tree.
B. the presence of fluid, mucus or obstruction in the air passages.
C. the condition of the surrounding lungs and pleural space.

How sure are you?
No	Pretty Idea Guessed sure Confident

Coughing grating sounds noted on chest auscultation:
A. are friction rubs.
B. originate from an inflamed pleura.
C. are not affected by coughing.
D. none of the above.

How sure are you?
No	Pretty Idea Guessed sure Confident

72
62. For patients with a tracheostomy, the best important nursing care measure is to:
   A. provide nutrition
   B. keep the tracheostomy tube patent
   C. maintain patency of the tube
   D. suction ever hour whether it is needed or not.
   How sure are you?
   No: Pretty Idea: Guessed: Sure: Confident

63. You have been caring for a patient with a tracheostomy. This patient also requires tube feedings. Which of the following precautions are important to remember when administering the tube feeding?
   A. The feeding should be heated.
   B. The feeding should be administered slowly.
   C. The feeding should be given via gravity.
   D. 2, 3.
   How sure are you?
   No: Pretty Idea: Guessed: Sure: Confident

64. Roles are most often found in patients who have:
   A. acute pulmonary edema
   B. left ventricular failure
   C. pulmonary edema
   D. ventricular tachycardia
   How sure are you?
   No: Pretty Idea: Guessed: Sure: Confident

65. A patient is suspected to have:
   A. hyper-ventilating
   B. hyperventilating
   C. hyperpnea
   D. all of the above
   How sure are you?
   No: Pretty Idea: Guessed: Sure: Confident

66. Tidal volume is a measure of:
   A. the volume of gas inspired with each normal breath
   B. the volume remaining in the lungs at the end of the normal expiration
   C. the total volume of the lungs at maximal inspiration
   D. the gas remaining in the lungs at the end of the normal expiration.
   How sure are you?
   No: Pretty Idea: Guessed: Sure: Confident

67. An increase in the pl level of the blood results from:
   A. respiratory acidosis
   B. an abnormal accumulation of acid products of metabolism
   C. hyperventilation
   D. none of the above
   How sure are you?
   No: Pretty Idea: Guessed: Sure: Confident

68. Increasing hyperventilation, followed by apnea, followed by hyperventilation, etc., is known as:
   A. Biel's breathing
   B. hypocapnia
   C. Cheyne-Stokes breathing
   D. none of the above
   How sure are you?
   No: Pretty Idea: Guessed: Sure: Confident

69. After thoracic surgery, deep breathing and coughing exercises should begin:
   A. as soon as the patient regains consciousness and should be repeated at least twice a shift
   B. as soon as the patient regains consciousness and should be repeated every hour for the first 24 hours
   C. as soon as the patient regains consciousness and should be repeated every 4 hours for 4 days
   D. 24 hours following the surgery
   How sure are you?
   No: Pretty Idea: Guessed: Sure: Confident

70. In the event that one of the thoracic tubes becomes dislodged during the period of necessary suctioning following chest surgery, your best action is to:
   A. notify the physician immediately
   B. clamp the tube immediately
   C. reconnect the tube and record the incident
   D. instruct the patient to breathe shallow breaths until the tube can be reconnected
   How sure are you?
   No: Pretty Idea: Guessed: Sure: Confident

71. If arterial blood gas studies reveal that the oxygen level is reduced, this means that:
   A. diffusion of O2 across the alveolar-capillary membrane is occurring
   B. diffusion of O2 from alveoli to capillaries is inhibited
   C. alveolar-capillary membrane thickness is increased
   D. alveolar-capillary membrane thickness is inhibited
   How sure are you?
   No: Pretty Idea: Guessed: Sure: Confident

72. Mrs. A. has been a patient in the CCU for one week. Her husband has been very irritable of the nursing care his wife has received and is classifying to go to the administration with a formal complaint. Mrs. A. tells you that her husband is oversensitive and that he really won't do anything. Your best response is to:
   A. thank Mrs. A. for explaining her husband's behaviour
   B. ask Mrs. A. why her husband feels the nursing care is so poor
73. Sensory deprivation has been known to cause:
1. no adverse effects on the patient's ability to cope with his illness.
2. acute psychotic reaction followed by extinction of delusions for several days.
3. severe depression and anxiety for a period of several weeks.
A. 1, 2, 3.
B. 1, 2.
C. 1, 3.
D. 2, 3.

75. Mr. B., a 20 year old professional baseball player, was involved in a severe automobile accident. He was admitted to hospital, paralyzed from the neck down. Mr. B. has gradually regained total function of the upper extremities. In order to understand and accept his disability, Mr. B. needs to develop a positive attitude. The first step in this development is known as receiving. The second stage is responding. What is the third stage?
A. accepting.
B. analysing.
C. valuing.
D. evaluating.

77. Mrs. Brown in a 37 year old woman who has been a patient in the ICU for 3 days. She was involved in a car accident and has 3 fractured ribs, a compound fracture of her right arm and a badly bruised hip. Mrs. Brown's injuries have been complicated by the fact that she has emphysema. Deep breathing and coughing exercises have been ordered 4:2:1. Mrs. Brown has been uncooperative and becomes upset when the nurse is to do the exercises. The nurse's best action is:
A. provide pain relief before the exercises, and encourage her while she is doing the exercises.
B. take her the exercises for a longer period so that her cough is more productive and she realizes the value of the exercises.
C. find out what Mrs. Brown knows about her emphysema and help her to understand the implications if she doesn't exercise.
D. tell her that she has to do the exercises or she will get pneumonia, and explain that abdominal breathing can help relieve pain afterwards.

79. When a patient does not appear to be accepting his illness, it is most important that the nursing staff:
A. not force him to do anything he does not want to do.
B. tell him that he has to learn to live with it.
C. be consistent in their approach with him.
D. give him reading material about his illness so that he can learn by himself at his own time.

80. Which of the following characteristics is NOT true of learning?
A. results in a change in behaviour.
B. occurs naturally.
C. produces a relatively permanent change.
D. can't be directly observed.

How sure are you?
No Pretty Idea Guessed sure Confident
31. Learning is an experience which occurs inside the learner and is activated by: 
A. the learner. 
B. the teacher. 
C. the environment. 
D. all of the above.

How sure are you? 
No 
Pretty 
Idea 
Guessed 
Sure 
Confident 

32. Learning tasks should proceed: 
A. from the familiar to the unknown. 
B. from the unknown to the familiar. 
C. as fast as the student can go. 
D. at a pace for children faster than for adults.

How sure are you? 
No 
Pretty 
Idea 
Guessed 
Sure 
Confident 

33. All patients should be taught about their illness:
A. when they are admitted to hospital. 
B. after they have recovered. 
C. when they indicate willingness to learn. 
D. none of the above.

How sure are you? 
No 
Pretty 
Idea 
Guessed 
Sure 
Confident 

34. Learning that is reinforced is: 
A. remembered forever. 
B. less likely to recur. 
C. more likely to recur. 
D. the only good kind of learning.

How sure are you? 
No 
Pretty 
Idea 
Guessed 
Sure 
Confident 

88. Nurses probably learn better from: 
A. other nurses. 
B. doctors. 
C. salesmen. 
D. it doesn't matter who teaches them.

How sure are you? 
No 
Pretty 
Idea 
Guessed 
Sure 
Confident 

89. A good group leader is one who does: 
A. assume the role of an expert on the topic. 
B. ask brief summaries of areas of agreement or disagreement. 
C. restate and ask pertinent questions. 
D. direct discussion toward the purpose.

How sure are you? 
No 
Pretty 
Idea 
Guessed 
Sure 
Confident 

90. A system called "primary nursing" was introduced by a head nurse to the R.N. staff on her unit. She encountered resistance to the change in many forms. Which of the following is an unreasonable expression of resistance? 
A. resentment at the way the change was introduced. 
B. apathy towards the entire system. 
C. expressed concerns that nursing care standards would deteriorate. 
D. complaints of lack of understanding of the way the system would work.

How sure are you? 
No 
Pretty 
Idea 
Guessed 
Sure 
Confident 

91. Which of the following are basic principles of motivation? 

1. Learning requires that the individual be in a state of experimental withdrawal, i.e., he has had experiences that made him ready to learn what is desired. 
2. Incentives motivate learning. 
3. Learning is most effective when an individual is ready to learn, that is, when he feels a need to know something.

A. 1, 2, 3. 
B. 1, 2. 
C. 1, 3. 
D. 2, 3.

How sure are you? 
No 
Pretty 
Idea 
Guessed 
Sure 
Confident 

92. The most important factor to consider in the motivation of a patient is his: 
A. age and occupation. 
B. diagnosis and prognosis. 
C. role in family and society. 
D. life style and attitudes.

How sure are you? 
No 
Pretty 
Idea 
Guessed 
Sure 
Confident 

93. A standard of care can best be defined as: 
A. criterion. 
B. goal. 
C. principle. 
D. motive.

How sure are you? 
No 
Pretty 
Idea 
Guessed 
Sure 
Confident
96. Staffing in an intensive care unit should be based primarily on:
   A. the number of beds in the unit.
   B. the number of staff members.
   C. the standards of nursing care expected.
   D. the patient's needs and amount of nursing care required.
   How sure are you?
   No  Idea  Guessed  sure  Confident

97. In assessing one's nursing practice, which of the following factors is most important?
   A. why I didn't do something.
   B. what I should have said but didn't.
   C. the benefit of what I did say to the patient.
   D. none of the above.
   How sure are you?
   No  Idea  Guessed  sure  Confident

98. You are the head nurse in an intensive care unit and it is one of your responsibilities to evaluate the performance of your staff. Which of the following would most concern you about one of your nurses? She:
   A. offers companionship to her patients without becoming involved in an emotional way.
   B. encourages her patients to take an adequate diet.
   C. goes ahead and defibrillates whenever necessary.
   D. establishes nursing goals for long-term problems only.
   How sure are you?
   No  Idea  Guessed  sure  Confident

99. Mixed ICU-CCU areas need special considerations over units which are separate. The most important consideration should be:
   A. to have monitors at every bed.
   B. to separate CCU beds as much as possible from the noise and congestion of other ICU beds.
   C. to provide an air system with all beds to the nursing station.
   D. all of the above.
   How sure are you?
   No  Idea  Guessed  sure  Confident

100. The nursing audit is a means of evaluating the degree of excellence in nursing care. An example of a retrospective audit is:
   A. a bedside audit.
   B. an open chart audit.
   C. a post-care questionnaire.
   D. none of the above.
   How sure are you?
   No  Idea  Guessed  sure  Confident

101. Nurses should never independently administer:
   A. a subcutaneous injection.
   B. IV medications, injections, and narcotics.
   C. an intravenous infusion.
   D. none of the above.
   How sure are you?
   No  Idea  Guessed  sure  Confident

102. When analyzing the process of change, one must consider:
   1. emotional reactions.
   2. the involvement of others.
   3. apathetic individuals.
   2, 3
   C. 2, 3
   D. 2, 3
   How sure are you?
   No  Idea  Guessed  sure  Confident
P A R T  I I:  C o m p l e t i o n  I t e m s

1. Breath sounds are decreased when air flow is

   How sure are you?
   - No
   - Idea
   - Guessed
   - Sure
   - Confident

2. An increased hydrogen ion concentration in body fluids stimulates the respiratory center to increase

   How sure are you?
   - No
   - Idea
   - Guessed
   - Sure
   - Confident

3. Identify this ECG tracing:

   How sure are you?
   - No
   - Idea
   - Guessed
   - Sure
   - Confident

4. A 5-year-old diabetic was admitted with a diagnosis of acute pulmonary edema. Emergency treatment has been carried out. The patient now states he is beginning to feel short of breath. He is using an oxygen mask. His blood pressure is 100/70, he is breathing at a rate of 20 respirations per minute, and his hands are cool, moist, and slightly blue. His cardiac monitor reads sino-bradycardia. Rank the following nursing actions by placing a number 1 beside the action you would take first, number 2 beside that you would do next, and so on.

   - A. take a blood sample to determine if he is hypoglycemic.
   - B. institute fluid balance measurement.
   - C. administer 1 mg. of atropine sulfate.
   - D. notify physician.

   How sure are you?
   - No
   - Idea
   - Guessed
   - Sure
   - Confident

5. The nursing process has four major steps. These are goal setting, determining

   How sure are you?
   - No
   - Idea
   - Guessed
   - Sure
   - Confident

6. Standards of care provide something from which success or failure may be measured. All standards must include desired or expected nursing

   and/or patient

   How sure are you?
   - No
   - Idea
   - Guessed
   - Sure
   - Confident

7. If you interpreted this rhythm as being ventricular tachycardia, and carried out appropriate actions for a patient in ventricular tachycardia, would you expect the patient's condition to improve? Answer yes or no.

   How sure are you?
   - No
   - Idea
   - Guessed
   - Sure
   - Confident

8. Write 2 nursing goals for the apneic patient who is receiving continuous

   pressure-controlled ventilation.

   1.
   2.

   How sure are you?
   - No
   - Idea
   - Guessed
   - Sure
   - Confident
9. Patients on peritoneal dialysis frequently experience pain during the outflow cycle. This can usually be controlled by___________________.

How sure are you?
No Idea Guessed Sure Confident

10. When developing a plan for teaching a patient about his illness, your first responsibility is to develop goals. Before you can go any farther, what must you do? _____________________

How sure are you?
No Idea Guessed Sure Confident

11. Define briefly what is meant by staff development: ____________________________

How sure are you?
No Idea Guessed Sure Confident

12. What is the best way of finding out whether your patient teaching task has been successful? ____________________________

How sure are you?
No Idea Guessed Sure Confident

13. The process of patient teaching involves the four steps of specifying objectives, the utilization of teaching techniques, evaluation and _____________________.

How sure are you?
No Idea Guessed Sure Confident

14. Goals of learning have been classified into three domains which encompass all possible learning outcomes that might be expected from instruction. The three domains are cognitive (knowing and understanding), affective (feelings or attitudes), and ____________________________.

How sure are you?
No Idea Guessed Sure Confident

15. Functional nursing as a method of assigning patient care is advantageous because ____________________________.

How sure are you?
No Idea Guessed Sure Confident

16. Write a nursing goal for a patient with symptoms of angina pectoris. ____________________________

How sure are you?
No Idea Guessed Sure Confident

17. What is the ventricular rate in this ECG strip? ____________________________

Question not counted.
ECG strip missing.

How sure are you?
No Idea Guessed Sure Confident

18. Four types of physiotherapy which aid to loosen and remove mucus secretions are deep breathing and coughing, clapping, postural drainage and ____________________________.

How sure are you?
No Idea Guessed Sure Confident
OBSERVATION GUIDELINES

The following items are provided as guidelines to observation of performance. Critical incidents should be written with these standards in mind.

To each question the observer should be able to answer:

Yes - the student did this (or accounted for it).
No - the student did not indicate consideration for this.
? - I don't know whether the student did or did not consider this.
N/A - This was not applicable to the situation.
I. THE PATIENT WITH A DEFICIENCY IN CARDIOVASCULAR FUNCTION

A. Patient Assessment

1. Has the nurse taken into account
   - medical history?
   - consultants' reports?
   - nursing history?

2. Have results of laboratory and radiological examinations been taken into account?

3. Has the nurse assessed the patient's status?
   a) The patient has optimum pump action
      - urinary output?
      - heart sounds?
      - arterial blood pressure?
      - central venous pressure?
      - jugular vein pressure?
      - pulses - peripheral?
      - apical?
      - pain?
      - cerebral perfusion?
      - breath sounds?
      - ECG - arrhythmias?
      - conduction defects?
      - ST segments T wave changes?
      - drug effects?
   b) The patient has optimum blood volume
      - all items in (a)?
      - temperature?
      - thirst?
      - skin turgor and colour?
   c) The patient has optimum vascular tone
      - all items in (a) and (b)?
      - level of consciousness?
      - skin temperature?
B. Problem Identification

1. Has the nurse correctly identified those items in assessment which are abnormal?

2. Has the nurse correctly identified the problems (potential, actual, possible) which can or have resulted from the findings?

3. Has the nurse correctly identified those problems which are priority? (i.e. has she/he ranked the problems?).

4. Has the nurse produced a problem list which outlines her/his findings?

C. Goal Specification

1. Has the nurse proposed a plan of nursing care?

2. Has she included all relevant data?

3. Has she outlined nursing goals?

4. Has she suggested an approach to goal achievement?

D. Nursing Approach

1. Within the scope of nursing practice, has the nurse provided care which will meet nursing goals?
   a) Basic care to patients.
   b) The patient has optimum pump action
      i) prophylactic therapy
         - I.V. route established and/or maintained?
         - volume and electrolyte control?
         - drug therapy as ordered?
         - oxygen and ventilation?
         - positioning of patient?
         - control of activity and rest?
         - control of environment - noise?
            - visitors?
            - lights?
            - electrical hazards?
      ii) emergency treatment
         Cardiac arrest
         - first aid resuscitation - precordial thump?
            - ventilation?
            - cardiac massage?
         - establish I.V. route?
         - drug therapy - prepared?
            - instituted?
         - assist physician in cardiac pacing?
         - defibrillation?
         Acute Pulmonary Edema
         - positioning patient?
         - oxygen and ventilation?
         - establish I.V. route?
- drug therapy - prepared?
  - instituted?
- rotating tourniquets?

**Cardiogenic Shock**
- positioning patient?
- oxygen and ventilation?
- establish I.V. route?
- drug therapy - prepared?
  - instituted?

**Cardiac Tamponade**

- Acute - hemodynamic support?
  - immediate notification of surgeon?
  - preparation for surgical intervention?

- Subacute - preparation for pericardial tap?

c) The patient has optimum blood volume.

  i) treatment for hypovolemia
  - obtains specimen for group and match?
  - appropriate fluid intake?
  - appropriate position?

  ii) treatment for hypervolemia
  - appropriate fluid intake?
  - drug therapy - prepared?
    - instituted?
  - rotating tourniquets?
  - phlebotomy as ordered?

- d) The patient has optimum vascular tone.

  i) Has the nurse carried out intervention measures to provide adequate pump support? (See #1, D)

  ii) Has the nurse carried out intervention measures to provide adequate volume control?

  iii) Has the nurse implemented
  - drug therapy - prepared?
    - instituted?
  - positioning of patient?
  - oxygen and ventilation?
  - temperature control - patient?
    - environment?

**E. Evaluation**

1. Has the nurse indicated that she has assessed her care by
   - reassessing the patient?
   - selecting new goals?
   - selecting new approaches?
   - justifying continuation of approach?
II. THE PATIENT WITH A DEFICIENCY IN RESPIRATORY FUNCTION

A. Patient Assessment

1. Has the nurse taken into account
   - medical history?
   - consultants' reports?
   - nursing history?

2. Have results of laboratory and radiological examinations been taken into account?

3. Has the nurse assessed the patient's status?
   a) The patient has a patent airway
      - free from obstruction (mechanical or physiological)?
   b) The patient has optimum ventilation
      - breathing movements?
      - breath sounds?
      - respiratory rate?
      - flaring nostrils?
      - indrawing of intercostal muscles?
      - secretions (nature and amount)?
      - patient's colour
      - restlessness?
      - euphoria?
      - level of consciousness?
      - pain?
   c) The patient has optimum alveolar capillary diffusion
      - all items in (b)?
      - nature of cough

B. Problem Identification

1. Has the nurse correctly identified those items in assessment which are abnormal?

2. Has the nurse correctly identified the problems (potential, actual, possible) which can or have resulted from the findings?

3. Has the nurse correctly identified those problems which are priority? (i.e. has she/he ranked the problems?)

4. Has the nurse produced a problem list which outlines her/his findings?

C. Goal Specification

1. Has the nurse proposed a plan of nursing care?

2. Has she included all relevant data?

3. Has she outlined nursing goals?

4. Has she suggested an approach to goal achievement?
D. Nursing Approach

1. Within the scope of nursing practice has the nurse taken measures to ensure
   a) Basis care has been given?
   b) The patient has a patent airway
      - positioned the patient?
      - loosened and removed secretions by appropriate means:
         - moisture?
         - inspired gas hydration?
         - deep breathing?
         - coughing?
         - physiotherapy?
         - removal - manually?
            - by suction?
      - prevented aspiration:
         - of vomitus?
         - use of gastric suction?
         - inflation of cuff of tracheal tube if in use?
      - gastric feed:
         - positioned properly?
         - administered properly?
      - for patients with tracheal tube maintained
         - patency?
         - suction?
         - correct position of tube?
         - appropriate moisture - patient hydration
            - inspiratory gas hydration
         - minimal cuff inflation
         - supplies for intervention in the event of accidental decannulation
   c) The patient has optimum ventilation
      - emergency ventilation?
      - used equipment for
         - assisted mechanical ventilation?
         - controlled mechanical ventilation?
         - maintenance of function of thoracotomy tubes?
            - patency?
            - seal?
         - maintenance of function of chest suction apparatus?
   d) The patient has optimum alveolar capillary diffusion
      - physiotherapy?
         - clapping?
         - vibration?
         - deep breathing and coughing?
         - postural draining?
      provided supportive therapy for pulmonary edema?
         - position?
         - oxygen?
         - I.V.?
         - medication?
- provided oxygen therapy by
  - recognizing altered $\text{PO}_2$?
  - interpreting blood gas analysis?
    - differentiated between problems of ventilation and diffusion?
  - administering oxygen correctly?
    - used lowest concentration of $\text{O}_2$ to maintain safe $\text{PO}_2$ levels?
    - used moisturized $\text{O}_2$?
    - continuous therapy essential to maintain safe $\text{PO}_2$ level?
  - prevented hazards of $\text{O}_2$ therapy?
    - prevented sustained high blood levels of $\text{O}_2$?
    - prevented high $\text{O}_2$ concentration for patients with chronic respiratory acidosis?
    - prevented fire hazards?

E. Evaluation

1. Has the nurse indicated that she has assessed her care by
   - reassessing the patient?
   - selecting new goals?
   - selecting new approaches?
   - justifying continuation of approach?
IV. THE PATIENT WITH A DISTURBANCE IN THE CENTRAL NERVOUS SYSTEM

A. Patient Assessment

1. Has the nurse taken into account
   - medical history?
   - consultants' reports?
   - nursing history?

2. Have results of laboratory and radiological examinations been taken into account?

3. Has the nurse assessed the patient's status?
   a) The patient has optimum level of consciousness, autonomic motor sensory and intellectual functions
      - neurological vital signs taken to measure intracranial pressure?
      - aroused patient by voice and/or touch?
      - assessed level of consciousness-orientation as to person, time, place?
      - checked pupil size and reaction?
      - assessed patient's response to auditory and visual stimulation?
      - blood pressure, pulse, respiration?
      - temperature?
      - motor function?
         - hand grip?
         - arm and leg movement?
      - nervous system integrity?
         - bladder functions?
         - special senses?
         - speech?
         - ability to reason?
         - memory?
         - swallowing - gag reflex?
      - CSF drainage?
      - headache?
      - vomiting?
      - seizures?
         - pattern?
         - duration?
         - presence or absence of incontinence?
         - presence or absence of aura?

B. Problem Identification

1. Has the nurse correctly identified those items in assessment which are abnormal?

2. Has the nurse correctly identified the problems (potential, actual, possible) which can or have resulted from the findings?

3. Has the nurse correctly identified those problems which are priority? (i.e. has she/he ranked the problems?)

4. Has the nurse produced a problem list which outlines her/his findings?
C. **Goal Specification**

1. Has the nurse proposed a plan of nursing care?
2. Has she included all relevant data?
3. Has she outlined nursing goals?
4. Has she suggested an approach to goal achievement?

D. **Nursing Approach**

1. Within the scope of nursing practice, has the nurse taken measures to ensure that
   a) Basic care has been given?
   b) The patient has optimum level of consciousness, autonomic motor, sensory and intellectual functions
      - promptly reported changes?
      - identified and prevented potential hazards?
      - inappropriate analgesia and sedation?
      - environmental factors?
      - patient disability?
      - special consideration for the unconscious patient?
      - position?
      - hearing?
      - verbal stimuli?

E. **Evaluation**

1. Has the nurse indicated that she has assessed her care by
   - reassessing the patient?
   - selecting new goals?
   - selecting new approaches?
   - justifying continuation of approach?
III. THE PATIENT WITH A DEFICIENCY IN RENAL FUNCTION

A. Patient Assessment

1. Has the nurse taken into account
   - medical history?
   - consultants' reports?
   - nursing history?

2. Have results of laboratory and radiological examinations been taken into account?

3. Has the nurse assessed the patient's status?
   a) The patient has optimum body water volume
      - volume of water gain known?
      - volume of water loss known?
      - urine
      - gastrointestinal - vomiting
        - suction
        - diarrhea
      - wound drainage
      - hemorrhage
      - perspiration
      - hyperventilation
      - ascites
      - burns
      - daily weight?
      - cerebral signs?
        - headache?
        - twitching?
        - convulsions?
        - coma?
      - mucous membrane?
      - thirst?
   b) The patient's body fluids have optimum saline content?
      - saline gain?
        - gastrointestinal?
        - parenteral?
        - renal?
      - saline loss?
        - urine?
        - gastrointestinal?
        - hemorrhage?
        - perspiration?
        - plasma extravasation?
      - signs of plasma volume change?
        - hemodynamic?
        - extracellular fluid? (CVP, JVD, BP, urine)
        - edema?
        - skin turgor?
        - sunken eyeballs?
   c) The patient's body potassium is at optimum level
- potassium gain?
  - gastrointestinal?
  - parenteral?
  - renal?
- potassium loss?
  - gastrointestinal?
  - renal?
- mental state?
- muscle tone?

**d)** The patient has optimum acid-base balance
- observed for acidosis?
  - hypoxia?
  - renal failure?
  - hypoventilation?
  - gastrointestinal \( \text{HCO}_3^- \) loss?
    - diarrhea?
    - small intestine fluid loss?
    - pancreatic fistula?
    - metabolic production of acids?
- observed for alkalosis?
  - excess alkali intake?
  - gastrointestinal loss?
    - emesis?
    - gastric suction?
  - hyperventilation?
  - low body potassium?
- mental state?
- convulsions?
- headache?

**B. Problem Identification**

1. Has the nurse correctly identified those items in assessment which are abnormal?

2. Has the nurse correctly identified the problems (potential, actual, possible) which can or have resulted from the findings?

3. Has the nurse correctly identified those problems which are priority? (i.e. has she/he ranked the problems?)

4. Has the nurse produced a problem list which outlines her/his findings?

**C. Goal Specification**

1. Has the nurse proposed a plan of nursing care?

2. Has she included all relevant data?

3. Has she outlined nursing goals?

4. Has she suggested an approach to goal achievement?

**D. Nursing Approach**

1. Within the scope of nursing practice, has the nurse taken
measures to ensure
a) Basic care to patients
b) The patient has optimum body water volume
   - planned fluid requirements according to route of intake?
   - distributed fluid intake over an appropriate period of time?
   - initiated and/or monitored
     - parenteral therapy?
     - gastric feedings?
     - dialysis?
   - re-evaluated water requirements and reported same?
c) The patient's body fluids have optimum saline content
   - implemented and maintained administration of saline as prescribed?
   - transmitted data which indicated a change of orders?
   - adjusted the administration of saline according to assessed needs?
d) The patient's body potassium is at optimum level
   - implemented and maintained intake of potassium as prescribed?
   - distributed intake over an appropriate period of time?
   - performed or assisted with procedures to control body potassium?
     - parenteral therapy?
     - gastric feedings?
     - dialysis?
     - drugs?
e) The patient has optimum acid-base balance
   - implemented and maintained ventilation to achieve $O_2$ and $CO_2$ levels within the patient's normal range?
   - correct cause of acid base disturbance?
   - administered prescribed medications?

E. Evaluation

1. Has the nurse indicated that she has assessed her care by
   - reassessing the patient?
   - selecting new goals?
   - selecting new approaches?
   - justifying continuation of approach?
V PSYCHOSOCIAL ASPECTS

A. Patient Assessment
   1. Has the nurse assessed the patient's psychological status?
   2. Have socio-demographic factors been considered?

B. Problem Identification
   1. Has the nurse correctly identified those items in assessment which are abnormal?
   2. Has the nurse correctly identified the problems (potential, actual, possible) which can or have resulted from the findings?
   3. Has the nurse correctly identified those problems which are priority? (i.e. has she/he ranked the problems?)
   4. Has the nurse produced a problem list which outlines her/his findings?

C. Goal Specification
   1. Has the nurse proposed a plan of nursing care?
   2. Has she included all relevant data?
   3. Has she outlined nursing goals?
   4. Has she suggested an approach to goal achievement?

D. Nursing Approach
   1. Within the scope of nursing practice, has the nurse provided care to meet nursing goals?
      a) The patient has optimum psychosocial reaction to illness?
      b) The patient experiences optimal effect from the environment?
      c) The patient experiences beginning process of rehabilitation?

E. Evaluation
   1. Has the nurse indicated that she has assessed her care by
      - reassessing the patient?
      - selecting new goals?
      - selecting new approaches?
      - justifying continuation of approach?
SLATER NURSING COMPETENCIES RATING SCALE

Name being rated: ____________________________ Rater (name or No.): ____________________________

JHO-SOCIAL: INDIVIDUAL
Actions directed toward meeting psycho-social needs of individual patients.

1. Gives full attention to patients . . . . ( ) ( ) ( ) ( ) ( )
2. Is a receptive listener . . . . . . . ( ) ( ) ( ) ( ) ( )
3. Approaches patient in a kind, gentle and friendly manner . . . . . . . . ( ) ( ) ( ) ( ) ( )
4. Responds in a therapeutic manner to patient's behavior . . . . . . . ( ) ( ) ( ) ( ) ( )
5. Recognizes anxiety in patient and takes appropriate action . . . . . . . . ( ) ( ) ( ) ( ) ( )
6. Gives explanation and verbal reassurance when needed . . . . . . . . . . ( ) ( ) ( ) ( ) ( )
7. Offers companionship to patient without becoming involved in a non-therapeutic way . . . . . . . . ( ) ( ) ( ) ( ) ( )
8. Considers patient as a member of a family and of a society . . . . . . . . ( ) ( ) ( ) ( ) ( )
9. Is alert to patient's spiritual needs . . . . . . . . . . . ( ) ( ) ( ) ( ) ( )
10. Identifies individual needs expressed through behavior and initiates actions to meet them . . . . . . . . ( ) ( ) ( ) ( ) ( )
11. Accepts rejection or ridicule and continues effort to meet needs . . . . . . ( ) ( ) ( ) ( ) ( )
12. Communicates belief in the worth and dignity of man . . . . . . . . . ( ) ( ) ( ) ( ) ( )
13. Utilizes healthy aspects of patient's personality . . . . . . . . . . . ( ) ( ) ( ) ( ) ( )

E: To facilitate identification, Best, Average, and Poorest Nurse columns are those with the parens marking spaces.
14. Creates an atmosphere of mutual trust, acceptance, and respect, rather than showing concern for power, prestige, and authority ................................ ( ) ( ) ( ) ( )

15. Is well informed about current events and common interests that can be shared with patient ................................ ( ) ( ) ( ) ( )

16. Chooses appropriate topics for conversation ................................ ( ) ( ) ( ) ( )

17. Offers purposeful experiences and activities that will help the patient to participate and communicate with others ................................ ( ) ( ) ( ) ( )

18. Conducts herself with same professional demeanor when caring for an unconscious or non-oriented patient as when caring for a conscious patient ................................ ( ) ( ) ( ) ( )

PSYCHO-SOCIAL: GROUP

Actions directed toward meeting psycho-social needs of patients as members of groups.

19. Conveys warmth and interest in group situations with patients ................................ ( ) ( ) ( ) ( )

20. Helps groups of patients accept necessary limits to freedom ................................ ( ) ( ) ( ) ( )

21. Encourages patients to participate in planning their own group living experiences ................................ ( ) ( ) ( ) ( )

22. Delegates responsibility to patients according to their capabilities ................................ ( ) ( ) ( ) ( )

23. Proposes activities appropriate to interests and needs of various patients within group ................................ ( ) ( ) ( ) ( )

24. Changes activities to meet priority needs in group, even though it would be easier to continue with activity already begun ................................ ( ) ( ) ( ) ( )

25. Structures activities for the purpose of helping patients vent their emotions in a socially acceptable way ................................ ( ) ( ) ( ) ( )
26. Participates in group activities without dominating the situation  

27. Gives praise and recognition for achievement according to individual's needs and with respect for others in the group  

28. Conducts activities with enthusiasm and without emphasizing individual competition  

29. Converses with patients during group activities  

30. Shares time with all patients in group  

31. Guides group discussion when this is desirable  

32. Adapts nursing procedures to meet needs of individual patients for daily hygiene and for treatment  

33. Attends to daily hygienic needs for cleanliness and acceptable appearance  

34. Utilizes nursing procedures as media for communication and interaction with patients  

35. Identifies physical symptoms and physical changes  

36. Recognizes physical distress and acts to provide relief for the patient  

37. Encourages patient to observe adequate rest and exercise  

38. Encourages patient to take adequate diet  

39. Recognizes and reports behavioral and physiological changes that are due to drugs
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<tr>
<th></th>
<th>Best Nurse</th>
<th>Between</th>
<th>Average Nurse</th>
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<th>Poorest Nurse</th>
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<tbody>
<tr>
<td>40. Adjusts expectations of patient's behavior according to the effect the drug has on the patient</td>
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<td>41. Demonstrates understanding of both medical and surgical asepsis</td>
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<td>42. Recognizes hazards to patient safety and takes appropriate action to maintain a safe environment and to give patient feeling of being safe</td>
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<td>43. Carries out safety measures developed to prevent patients from harming themselves or others</td>
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<tr>
<td>44. Carries out established technique for safe administration of medications and parenteral fluids</td>
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**GENERAL**

Actions that may be directed toward meeting either psycho-social or physical needs of patients, or both at once.

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<tr>
<th></th>
<th>Best Nurse</th>
<th>Between</th>
<th>Average Nurse</th>
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<th>Poorest Nurse</th>
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<tr>
<td>45. Utilizes patient teaching opportunities</td>
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<td>46. Involves patient and family in planning for care and treatments</td>
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<td>47. Protects sensitivities of the patient</td>
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<td>48. Encourages patient to accept dependence/independence as appropriate to his condition</td>
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<td>49. Utilizes resources within the milieu to provide patient with opportunities for problem solving</td>
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<td>50. Allows patient freedom of choice in details of daily living whenever possible and within patient's ability to make choice</td>
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<tr>
<td>51. Encourages patient to take part in activities of daily living that will stimulate his potential for positive growth</td>
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<tr>
<td></td>
<td>Best Nurse</td>
<td>Average Nurse</td>
<td>Poorest Nurse</td>
<td>Not Applicable</td>
<td>Not Observed</td>
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<td>52.</td>
<td>Adapts activities to physical and mental abilities of patients</td>
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<td>53.</td>
<td>Adapts nursing care to patient's level and pace of development</td>
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<td>54.</td>
<td>Provides for diversional and treatment activities appropriate to patient's capabilities and needs</td>
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<td>55.</td>
<td>Allows for slow or unskilled performance without showing annoyance or impatience.</td>
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<td>56.</td>
<td>Establishes nursing care goals within the framework of the therapist's plan of care</td>
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<td>57.</td>
<td>Adapts to and works with varied approaches to treatment</td>
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<tr>
<td>58.</td>
<td>Relates with patient within the framework of the therapeutic plan</td>
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<td>59.</td>
<td>Watchfulness is carried out in an unobtrusive manner</td>
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<td>60.</td>
<td>Responds appropriately to emergency situations</td>
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**Communication**

Communications on behalf of patients

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<tr>
<th></th>
<th>Best Nurse</th>
<th>Average Nurse</th>
<th>Poorest Nurse</th>
<th>Not Applicable</th>
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<tbody>
<tr>
<td>61.</td>
<td>Communicates ideas, facts, feelings, and concepts clearly in speech</td>
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<tr>
<td>62.</td>
<td>Communicates ideas, facts, feelings, and concepts clearly in writing</td>
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<td>63.</td>
<td>Establishes a well-developed nursing care plan</td>
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<td>64.</td>
<td>Gives accurate reports, verbal/written, of patient behavior, including behavior that involved interaction with herself</td>
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<td>65.</td>
<td>Participates freely in ward patient care conferences</td>
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<td></td>
<td>Best Nurse</td>
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<td>Poorest Nurse</td>
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<tr>
<td>66.</td>
<td>Communicates effectively and establishes good relationships with other disciplines</td>
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<td>67.</td>
<td>Attends to patient's needs through use of referrals, both to departments in the hospital as agency and to other community agencies</td>
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**PROFESSIONAL**

Actions directed toward fulfilling responsibilities of a nurse in all facets and varieties of patient care situations.

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<tr>
<td>68.</td>
<td>Is self-directing: takes initiative and goes ahead on own</td>
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<tr>
<td>69.</td>
<td>Makes decisions willingly and appropriately</td>
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<tr>
<td>70.</td>
<td>Makes decisions that reflect both knowledge of facts and good judgment</td>
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<tr>
<td>71.</td>
<td>Gives verbal evidences of good insight into deeper problems and needs of patients</td>
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<td>72.</td>
<td>Contributes as nurse member of medical team to planning and evaluating care</td>
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<td>73.</td>
<td>Spends time with patients, rather than with other nurses or hospital personnel</td>
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<td>74.</td>
<td>Reliable: follows through with responsibilities</td>
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<td>75.</td>
<td>Stays with assigned patients, or knows where and how they are</td>
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<td>76.</td>
<td>Impresses others with sincerity of interest and nursing effort</td>
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<td>77.</td>
<td>Gives continued interest and encouragement to various-level programs, whether directed to care of patients of her immediate concern or institution-wide programs</td>
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</table>
78. Participates in staff meetings . . . . ( ) _ ( ) _ ( ) _

79. Avails self of opportunities for learning . . . . . . . . . . . . . . ( ) _ ( ) _ ( ) _

80. Is a good follower (helpful, cooperative) . . . . . . . . . . . . . . ( ) _ ( ) _ ( ) _

81. Is a good leader (constructive) . . . . ( ) _ ( ) _ ( ) _

82. Is helpful to ward personnel . . . . . . . . . . . . . . . . . . . . ( ) _ ( ) _ ( ) _

83. Cooperates with ward routines and hospital regulations . . . . . . . . ( ) _ ( ) _ ( ) _

84. Accepts authority situations with understanding . . . . . . . . . . . . . . ( ) _ ( ) _ ( ) _
THE ROTTER SCALE

Instructions

This is a questionnaire to find out the way in which certain important events in our society affect different people. Each item consists of a pair of alternatives lettered a or b. Please select the one statement of each pair (and only one) which you more strongly believe to be the case as far as you're concerned. Be sure to select the one you actually believe to be more true rather than the one you think you should choose or the one you would like to be true. This is a measure of personal belief; obviously there are no right or wrong answers.

Your answers to the items on this questionnaire are to be recorded in the box to the left of your choice. For example, if you choose (a) as the statement that is more true, place an X in the box to the left of the (a) statement.

Please answer these items carefully but do not spend too much time on any one item. Be sure to find an answer for every choice. Select the statement you believe to be more true and place an X in the box to the left of it.

In some instances you may discover that you believe both statements or neither one. In such cases, be sure to select the one you more strongly believe to be the case as far as you're concerned. Also try to respond to each item independently when making your choice; do not be influenced by your previous choices.

1. □ a. Children get into trouble because their parents punish them too much.
□ b. The trouble with most children nowadays is that their parents are too easy with them.

2. □ a. Many of the unhappy things in people's lives are partly due to bad luck.
□ b. People's misfortunes result from the mistakes they make.
3. □ a. One of the major reasons why we have wars is because people don't take enough interest in politics.  
□ b. There will always be wars, no matter how hard people try to prevent them.

4. □ a. In the long run people get the respect they deserve in this world.  
□ b. Unfortunately, an individual's worth often passes unrecognized no matter how hard he tries.

5. □ a. The idea that teachers are unfair to students is nonsense.  
□ b. Most students don't realize the extent to which their marks are influenced by accidental happenings.

6. □ a. Without the right breaks one cannot be an effective leader.  
□ b. Capable people who fail to become leaders have not taken advantage of their opportunities.

7. □ a. No matter how hard you try some people just don't like you.  
□ b. People who can't get others to like them don't understand how to get along with others.

8. □ a. Heredity plays the major role in determining one's personality.  
□ b. It is one's experiences in life which determine what they're like.

9. □ a. I have often found that what is going to happen will happen.  
□ b. Trusting to fate has never turned out as well for me as making a decision to take a definite course of action.

10. □ a. In the case of the well prepared student there is rarely if ever such a thing as an unfair test.  
□ b. Many times exam questions tend to be so unrelated to course work that studying is really useless.

11. □ a. Becoming a success is a matter of hard work, luck has little or nothing to do with it.  
□ b. Getting a good job depends mainly on being in the right place at the right time.
12. □ a. The average citizen can have an influence in government decisions.
   □ b. This world is run by the few people in power, and there is not much the little guy can do about it.

13. □ a. When I make plans, I am almost certain that I can make them work.
   □ b. It is not always wise to plan too far ahead because many things turn out to be a matter of good or bad fortune anyhow.

14. □ a. There are certain people who are just no good.
   □ b. There is some good in everybody.

15. □ a. In my case getting what I want has little or nothing to do with luck.
   □ b. Many times we might just as well decide what to do by flipping a coin.

16. □ a. Who gets to be the boss often depends on who was lucky enough to be in the right place first.
   □ b. Getting people to do the right thing depends upon ability, luck has little or nothing to do with it.

17. □ a. As far as world affairs are concerned, most of us are the victims of forces we can neither understand, nor control.
   □ b. By taking an active part in political and social affairs the people can control world events.

18. □ a. Most people don't realize the extent to which their lives are controlled by accidental happenings.
   □ b. There really is no such thing as "luck".

19. □ a. One should always be willing to admit mistakes.
   □ b. It is usually best to cover up one's mistakes.

20. □ a. It is hard to know whether or not a person really likes you.
   □ b. How many friends you have depends upon how nice a person you are.
21. a. In the long run the bad things that happen to us are balanced by the good ones.
   b. Most misfortunes are the result of lack of ability, ignorance, laziness, or all three.
22. a. With enough effort we can wipe out political corruption.
   b. It is difficult for people to have much control over the things politicians do in office.
23. a. Sometimes I can't understand how teachers arrive at the grades they give.
   b. There is a direct connection between how hard I study and the grades I get.
24. a. A good leader expects people to decide for themselves what they should do.
   b. A good leader makes it clear to everybody what their jobs are.
25. a. Many times I feel that I have little influence over the things that happen to me.
   b. It is impossible for me to believe that chance or luck plays an important role in my life.
26. a. People are lonely because they don't try to be friendly.
   b. There's not much use in trying too hard to please people, if they like you, they like you.
27. a. There is too much emphasis on athletics in high school.
   b. Team sports are an excellent way to build character.
28. a. What happens to me is my own doing.
   b. Sometimes I feel that I don't have enough control over the direction my life is taking.
29. a. Most of the time I can't understand why politicians behave the way they do.
   b. In the long run the people are responsible for bad government on a national as well as on a local level.