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Sources of Stress in Associate Degree Nursing
Education and the Effect on Stress of a
Structured Approach to Data Collection
in the Clinical Area

A Dissertation Presented

by

Mary Claire Stevens

Submitted to the Graduate School of the
University of Massachusetts in partial fulfillment
of the requirements for the degree of

DOCTOR OF EDUCATION

FEBRUARY 1987

EDUCATION


SOURCES OF STRESS IN ASSOCIATE DEGREE NURSING EDUCATION
AND THE EFFECTS ON STRESS OF A STRUCTURED APPROACH
TO DATA COLLECTION IN THE CLINICAL AREA

A DISSERTATION PRESENTED

by

MARY CLAIRE STEVENS

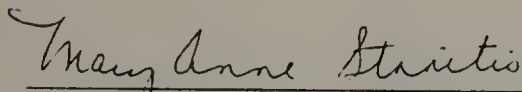
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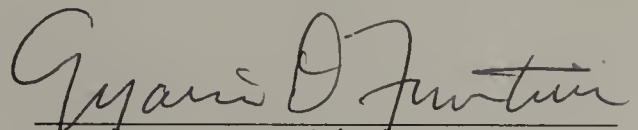
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DEDICATION

To my husband -- for the love and understanding he gives
and the support and gentleness in our lives together

and

To my children, Lee and Lisa, who are beautiful gifts in my
life and who constantly challenge me to live doing what
I value -- all my love.

Reach out - Reach out!
We all can do so much
With a little bit of self-esteem
And a little bit of touch.

From the song Sing Out
by Annie S. Garfield
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Mary Claire Stevens

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I would like to express my thanks to the many special people who provided me with love, support, guidance, and assistance in completing this dissertation. Special thanks are given to Charlotte Rahaim, Professor and Co-ordinator of my doctoral program of study, who had a dream of making doctoral education available to more people and helped make my dream a reality for me; to the student nurses in the Massachusetts community colleges, particularly Bristol Community College, who participated in this study and who continue to challenge me to teach nursing as a caring person; to Barbara L'Heureux and Marie Marshall, faculty members in the nursing program at Bristol Community College, for their assistance in identifying patient needs and problems for part of this study; to Lillian Desrosiers, reference librarian at Bristol Community College, who gave me much assistance in acquiring the many articles and books that I requested and doing so in such a cheerful and caring way; to Mary Anne Stanitis, Professor of Nursing at the University of Massachusetts at Amherst, for her guidance and constructive suggestions from the preparation of the research proposal through the writing of the dissertation itself; to Cliff Donath, research consultant, for his many hours of work making sense of all my pieces of data; to Nancy Dredge, editor and patient listener; and lastly, to

Sid Simon, Professor of Education at the University of Massachusetts at Amherst and my mentor--to him I owe a deep sense of love and respect for the encouragement and support he gave me in such a way that made me believe I could move mountains.

ABSTRACT

Sources of Stress in Associate Degree Nursing Education and the Effect on Stress of a Structured Approach to Data Collection in the Clinical Area

February 1987

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Information on the sources of stress experienced by nursing students in associate degree nursing programs is limited. The purpose of this study was to examine both the sources of stress in associate degree nursing programs and the perceptions of nursing students as to how well they coped with that stress. The study also examined the effect of using a select structured format for data collection and preparation of a nursing care plan on the level of stress experienced by student nurses.

Data was collected by means of a questionnaire; by timing the collection of data and preparation of nursing care plans; and by evaluating the list of needs and problems produced by students. Data were analyzed by the use of descriptive statistics.

The students in the nursing programs studied varied demographically across the colleges studied. Use of the

structured format for data collection was not found to save time in either data collection or preparation of the nursing care plan, nor did it result in more thorough nursing care plans prepared by students. There was no significant decrease in state anxiety levels in the experimental group. The experimental group, however, did feel that it would be worthwhile to incorporate the structured tool for data collection into the nursing program.

Seventy-nine percent of the respondents indicated that they experience more than normal levels of stress at the end of their first year of nursing, and forty percent felt that they were not coping well with the stress they were experiencing.

Nursing programs should be presented in ways that will lessen the high levels of stress experienced by students without decreasing the programs' quality. It is recommended that areas of nursing education that are found to be highly stressful be addressed and that alternate ways of teaching that will improve the educational environment of the adult learner continue to be researched.

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C H A P T E R 1

INTRODUCTION

To prepare for a nursing career, student nurses must take many courses that will help them handle many clinical procedures and will provide them with expansive amounts of knowledge to deal with the technological advances of the last decade. Student nurses must also acquire skills that will assist them with interpersonal relationships in a positive manner.

The quality of nursing education is supervised and controlled by the National League for Nursing (NLN). The content of the nursing courses in a community college setting must be comprehensive. The inclusion of a large volume of nursing theory, as well as the necessity of meeting the guidelines set by the NLN for clinical practice, creates a fast-paced, challenging nursing program. The self-discipline and time commitment inherent in such a program create stressful situations for students.

A significant number of nursing students enrolled in a community college program are middle-aged adults. Research has shown that middle-aged students are particularly vulnerable to stress (Levinson, 1978; Sheehy, 1976).

Motivation to learn is very important in education. In nursing education, it is generally assumed that students will be self-motivated to achieve their desired goals. In a basic nursing education program, the material is presented from the simple to the complex, with each additional piece of theory building on previously presented data. For this reason, structure within the program is important. Insuring that student anxiety is kept at a controllable level will aid this "building-on" process in nursing theory. MacMaster (1979) proposes that the task of educators is to structure the environment to keep stress at a level favorable to students' development.

MacMaster further proposes that stress can interfere with the learning, retention, and recall of concepts. In the clinical setting, stress can impair the performance of student nurses as they struggle with multiple tasks.

Studies abound on stress in nursing education. One study in the area of clinical nursing by Fox and his associates (1965) found that stress is related to several factors: entering a new experience or clinical unit and having to deal with the problems associated with procedures; clinical evaluation; and responsibilities involved in work assignments. That clinical experience is a source of stress for nursing students is also shown in studies by Elfert (1976) and Garrett, Manuel, and Vincent (1976).

In working with nursing students in a community college program, this researcher found that several areas of their education created high levels of stress in them. These students were adults who had only a limited amount of time that they could devote to their studies. However, they had a great desire to succeed and a great deal of determination to acquire the pieces of knowledge and expertise that would provide them with the means to reach their professional goal--that of becoming a registered nurse.

In a pilot study, this researcher found that the preparation of nursing care plans was one area of nursing education that took a good deal of the students' time. The nursing care plan is a structured format that communicates the nursing process. It includes assessing the patient's needs, setting goals for the patient, establishing nursing interventions, implementing those interventions, and evaluating and revising the process (Lamonica, 1979).

This researcher felt that students needed both assistance in preparing better nursing care plans and a decrease in the amount of time spent preparing those plans. If students were helped in this way, they would experience less stress in completing their plans.

In the section on review of the literature in Chapter 2, the researcher will discuss various studies having to do with stress, particularly stress in nursing education.

The concept of stress can be viewed from various perspectives, among which are the conceptual framework of Hans Selye, which addresses the physical and biochemical levels of stress, and that of Richard Lazarus, who views psychological stressors as the basis of stress.

This study will also address the psychological prototype as it applies to associate degree nursing students who are subject to stress resulting from role changes and values conflicts, the pressure of assimilating large quantities of technical information in relatively short periods of time, and the interactions of students with peers, patients, instructors, and staff who have varying and conflicting expectations of them.

The person-environment model, proposed by Lazarus, provides a useful framework for analyzing the psychological stress experienced by students. The combination of the educational environment and the students' psychosocial backgrounds provides the essential components to understand stress among students.

Statement of the Problem

In five years of dealing with student nurses at the community college level, this researcher became more and more aware of the stress that nursing students experience in both the educational and clinical settings. Two areas

in particular seemed to create a high frequency of stress for students: the collection of data for clinical experiences and the formulation of nursing care plans based on the nursing process. There was no apparent systematic attempt by either nursing students or the nursing faculty to decrease the amount of stress that appeared inherent in these two activities. Students' physical and mental exhaustion from pre-clinical preparation resulted in a decrease in the quality of clinical performance, a decrease in self-esteem, and impaired mental activity. This overall reduction in performance further added to the students' stress and developed into a cycle where no relief seemed within their reach.

It seemed plausible that some format for the collection of data needed to be developed that would systematize and enhance the process, thereby decreasing the stress caused by preparing nursing care plans. Because a high percentage of nursing students in associate degree programs have jobs, families, and responsibilities other than the educational program in which they are enrolled, ways of decreasing stress in the programs should be considered.

Judging by the considerable number of studies of stress in nursing education and on the adult learner that exist, several factors seem to have an impact on the quality of preparation of nursing students.

The first factor--the issue of decreased self-esteem--is not a problem peculiar to community college nursing students alone. Students must deal with altered self-images caused by conflicts and shifts in their values. Conflicts occur when the roles that students assume and the values that they hold compete with each other. Students experience shifts in their values as they move back and forth from one role to the other, while trying to hold onto the values that belong to each role. The change in role from worker, parent, and/or spouse to that of student has a significant impact on one's self-esteem. A student's self-esteem is affected by his or her failure to do well in all of these roles at the same time. If a student functions poorly in any of these roles, he or she experiences decreased self-esteem. On the other hand, Simon (1972) says that if a person can consciously choose beliefs and establish certain patterns of behavior to act on these beliefs, that person will experience increased self-worth and a sense of identity. Students will be better able to deal with their educational programs and will be able to enhance their learning, improve their patient care, enhance their professional image, and improve their stress-management abilities if they can learn to deal positively with the issues that cause conflicts in values.

A second problem has to do with differing expectations in clinical applications of nursing faculty

members compared to those of the nursing staff. A study by Dyer et al. (1975) shows that nurses with positive self-images seem to give better patient care than nurses with negative self-images.

A successful learning experience enhances self-esteem even when the task accomplished is a difficult one. Nursing education programs in different colleges ascribe to similar courses of study, although emphasis is placed upon different aspects of the curriculum from program to program. It is felt that the differing emphasis placed on particular aspects of the program alters or affects the way in which students view their programs. Furthermore, students in programs where great emphasis is placed on the preparation of the nursing care plans would express feelings of stress in that particular area of their educational program more so than in other areas.

Hypotheses of the Study

1. The identification of selected stressful areas in the nursing program in the fourteen state-funded community colleges as perceived by the student population will differ from program to program.
2. The implementation of a structured format for the collection of data in the clinical area will decrease

the amount of time necessary for data gathering by nursing students.

3. The use of a structured format for the collection of data in the clinical area will result in a more thorough identification of actual and potential problems in the formulation of a nursing care plan that uses the nursing process.
4. There will be a significant difference in the amount of stress experienced between the control and experimental groups in preparing for clinical experience.

Definition of Terms

In order to provide a clear meaning of the terms used in this study, the following operational definitions are presented.

ADULT LEARNER - A person who has returned to a learning environment and has had significant life experiences other than education--for example, a profession or a family.

ANXIETY - A psychological response to a specific stressor, including threats to one's self-concept, independence, or control, which can be measured by the State-Trait Anxiety Inventory Scale.

ARTICULATION - A close-fitting relationship of an associate degree nursing program and a baccalaureate degree nursing program for the goal of allowing those graduate nurses who are interested and qualified to pursue advanced nursing education built on the knowledge and experience gained in an earlier nursing education program.

ASSOCIATE DEGREE NURSING PROGRAM - A program that combines education in the theory and practice of nursing with general education in the humanities and the behavioral, biological, and physical sciences.

Associate degree nursing programs, which are located in community colleges or junior colleges, in general consist of four or five semesters of study and practice.

BACCALAUREATE DEGREE NURSING PROGRAM - A nursing program that builds upon a liberal arts and science education base in preparing the graduate to function in a variety of nursing roles and health care settings. Baccalaureate degree nursing programs, which are located in colleges or universities, consist of four or five years of study leading to a bachelor's degree in nursing.

CLINICAL EXPERIENCE - That portion of nursing education that takes place in the practical setting--usually a

hospital--where nursing students learn about how to care for patients.

DIPLOMA NURSING PROGRAMS - A nursing program that is affiliated or housed in close relationship with a hospital. These programs are generally three years in length.

NATIONAL LEAGUE FOR NURSING (NLN) - The educational accrediting body of nursing programs in the United States.

NEED - A requirement of a person, which, if supplied, relieves or diminishes immediate distress or improves his or her immediate sense of adequacy and well-being.

NURSING CARE PLAN - A structured approach to patient care, used as a learning tool to assist nursing students in the application of the nursing process in the clinical area.

NURSING PROCESS - The application of scientific principles to the care given to a person in need. These include assessment, planning, intervention, evaluation, and revision.

NURSING STUDENTS - For the purpose of this study, students enrolled in an associate degree nursing program at a community college. The students are both male and female students between the ages of seventeen and

fifty-five and at the end of their second semester of nursing education.

STATE ANXIETY (A-state) - A transitory emotional state of an individual that is characterized by subjective, consciously perceived feelings of tension and apprehension, with heightened autonomic nervous system activity (Spielberger, 1983).

STRESS - A subjective state that varies with each individual not only in how a person perceives it but also in its physiological and psychological manifestations. Stress results from a demand to adapt or change, from a perceived threat, from a challenge to one's ability to cope or perform, or from an unmet need.

STRESSORS - Situations or experiences that create anxiety or stress.

STRUCTURED FORM FOR COLLECTION OF DATA - A one-page format for identifying various aspects of a patient's history and problem areas upon which the nursing care plan is formulated.

TRAIT ANXIETY (A-trait) - The relatively stable individual differences between people in their tendency to respond to situations perceived as threatening with elevations in A-State intensity (Spielberger, 1983).

Limitations of the Study

Conclusions drawn from this study are applicable only to the population from which the sample population was drawn. The study could be applied to similar populations of students if the internal and external validity areas are addressed. This study has direct implications and applications for similar populations of nursing students.

This study does not address stress in nursing education in diploma or baccalaureate programs. It does not address stress in associate degree programs that are not accredited by the National League for Nursing, since these programs may have content and focus of presentation quite different from nursing program that are NLN accredited.

C H A P T E R 2

REVIEW OF THE LITERATURE

Introduction

The Chinese word for crisis is a combination of the symbols for two words, one representing danger and the other representing opportunity. It can be both at the same time. Whether a situation is a threat or a challenge, or whether it is both, is largely a matter of individual perception.

(Flynn, 1980, p. 98)

Interest in the stresses of modern life and how people cope or fail to cope has increased over the recent years. Three basic types of stress have been identified: physiological or systemic stress, social stress, and psychological stress. Systemic stress is primarily concerned with the disturbances seen in the body's tissue systems. Psychological stress and social stress involve cognitive factors.

Some researchers feel that the three types of stress are related. This section will present an overview of the theories of Selye and Lazarus, eminent researchers in the areas of physiological and psychological stress, respectively.

Selye spent most of his life investigating the physiological mechanisms of adaptation to the stress of life. His studies were influenced by the work of Walter B. Cannon, a Harvard physiologist. Cannon is credited with coining the term "homeostasis"--the power to maintain constancy in living beings. He felt that the body fights to maintain the homeostatic balance of body tissues when it is attacked by disease (Cannon, 1932). Intrigued by the work accomplished by Cannon, Selye began to work on his own, studying the response of the body to various situations, such as heat, cold, or forced muscular exercise. During his early research, he was able to identify three specific reactions to these situations in the bodies of research animals: enlargement of the adrenal cortex, atrophy of the thymus, spleen, lymph nodes, and other lymphatic structures; and formation of deep, bleeding ulcers in the stomach lining and duodenum. He discovered that these symptoms occurred regardless of the agents that created the stress in the animals. (Selye defined stress as "the non-specific response of the body to any demand.") In light of this data, Selye described the non-specific reaction as the general adaptation syndrome, or G.A.S.

Selye refers to the syndrome as "general" because only agents that have a general effect upon large portions of the body can generate it. He called it "adaptive" because of the syndrome's ability to stimulate the body's

defenses to return to a homeostatic state. Finally, he used the term "syndrome" to express the coordination and partial dependency of the significant manifestations upon each other.

The G.A.S. is composed of three stages: (1) the alarm reaction, (2) the stage of resistance, and (3) the stage of exhaustion (Selye, 1976). The following is an explanation of these three phases:

The Alarm Reaction - The body shows the changes characteristic of the first exposure to a stressor. At the same time, its resistance is diminished, and if the stressor is sufficiently strong (for example, severe burns or extremes of temperature), death may result.

Stage of Resistance - Resistance ensues if continued exposure to the stressor is compatible with adaptation. The bodily signs characteristic of alarm reaction virtually disappear, and resistance rises above normal.

Stage of Exhaustion - Following continued exposure to the same stressor to which the body has become adjusted, adaptation energy is eventually exhausted. The signs of the alarm reaction appear, but now they are irreversible, and the individual dies (Selye, 1974).

Selye's first paper, published in 1936, was entitled "A Syndrome Produced by Diverse Nocuous Agents." In this first publication, he altered his previous definition of stress as "reference to bodily reactions" because public

opinion held that stress implied nervous strain. It was at this time that he introduced the term general non-specific response syndrome.

Selye observed that there is also a specific response in tissues that are more directly affected by stress. For example, the response of the area where pathogenic micro-organisms enter the body is to become inflamed. He called this response the local adaptation syndrome, or L.A.S. Selye made a distinction between the specific effects induced by a stressor agent and those effects induced by stimulation that are not specific to it. For example, if both heat (a vasodilator) and cold (a vasoconstrictor) are applied intensely enough or long enough, the effects are similar and therefore not specific to either stimulus. These common reactions, taken together, constitute the stereotypical response pattern of systemic stress.

Selye operationally defined stress as "a state manifested by a syndrome which consists of all non-specifically induced changes in a biological system" (Cofer & Appley, 1964, pg. 442).

Selye's main concern in his research was physiological stress. In addition to observing the negative or pathological effects of stress on the body, Selye proposed that not all stress is negative and unpleasant. On the contrary, at times stress is quite pleasant--for example, when playing a game or having a

sudden joyful experience. In his writing, Selye identifies the need to "choose between syntoxic and catatoxic behavior in daily life" (Selye, 1974). This statement indicates the need to make the choices that are more likely to provide us with the pleasant stress of fulfillment and victory, thereby avoiding the self-destructive distress of failure and frustration.

Lazarus identified stress as a situation in which environmental demands, internal demands--or both--tax or exceed the resources of systems to adapt, whether that system be an individual, a social system, or a tissue system (Monat & Lazarus, 1977). In essence, Lazarus disagreed with Hans Selye's "general adaptation syndrome." Selye posited that the G.A.S. is a universal biological defense reaction aroused by any physically noxious agent.

Lazarus (1966) and Mason (1971) pointed out that coping processes are continuously shaping the hormonal system's response to stressor conditions. They contend that it is necessary for cognitive appraisal of harm, via cerebrally controlled processes, to be present to initiate the body's defensive adrenal cortical response. This contention raises the question of whether it is the psychological significance of injury rather than its physiologically noxious effects that produce the adrenal cortical changes associated with stress.

Lazarus (1983) identified eight coping methods that are available to an individual who is psychologically stressed. These methods include one that is problem-focused (analyze the problem and prepare a plan of action) and seven that are emotion-focused (wishful thinking, distancing, emphasizing the positive, blaming oneself, reducing tension, isolating oneself, and seeking social support). In addition, Lazarus proposed that people draw upon different coping processes depending upon the stressful situation.

Coping or dealing with psychological stress can be approached in various ways (Lazarus, 1983). One major approach is biological, wherein the treatment consists of pharmacological and somatic measures. A second approach holds that dynamic intervention is possible with Freudian or psychoanalytical theory. In a third--behavioral or affective intervention--anxiety is treated with desensitization, or classical conditioning. In this approach, new behavior patterns are shaped or self-control is enhanced. In the fourth approach--the cognitive--therapy revolves around teaching new facts, ideas, and thoughts to change behavior.

The coping processes identified by Lazarus are an extension of the theory presented in his previous work (Lazarus, 1979). In that publication, he discussed the difference between an individual's efforts at changing a

situation (problem solving) and an individual's personal response to dealing with the environment (emotion-focused coping factors).

Equally crucial is whether a "threat" or stressor is really perceived as such by the individual. What makes an event stressful is the degree to which it is perceived as threatening, harmful, or challenging. This question prompted Lazarus to seek additional information about the relationship between various personality types and their reactions to stress. According to Lazarus (1952), the successful understanding of an individual's performance under stress depends upon some way of measuring the kinds and strengths of his motivation and relating them to the characteristics of the situation in which he must perform.

It is apparent from the literature that with few exceptions the kind of situation that arouses a stress response in a particular individual must be related to significant events in that person's life (Lazarus, 1970). Lazarus believes that "cognitive processes determine the quality and intensity of an emotional reaction and that such processes also underlie coping activities which in turn continually shape the emotional reaction by altering the ongoing relationship between the person and the environment" (pg. 146).

It would be desirable to alter students' perception of the preparation for clinical work and the compilation of

nursing care plans from one of high stress to one of lesser stress. The change to a more manageable level of stress would enhance the learning process and assist students to deal more effectively with the task at hand.

Stress in Nursing Education

Interestingly enough, the very phenomenon studied so exhaustively by Selye and Lazarus is manifested to a startling degree in the field of nursing. The health care providers whose task it is to minimize the effects of stress in their patients are finding that their own lives are fraught with stressful situations. An examination of the reasons for this state of affairs, a description of the present situation in nursing education, and suggestions for improvement are therefore in order.

Although some sources of stress are unique to certain types of nursing education programs, stress abounds in all types of nursing education. Individuals experience stress differently, depending on how a particular stressful situation affects their present status and their coping abilities at that particular time. Students who live in dormitories have problems inherent to dormitory life that commuting students do not encounter. Commuters, however, have to deal with transportation, rapid role changes, and time management problems. In addition to these kinds of

stress, however, students in nursing programs experience stress linked directly to the nature of nursing education and clinical responsibilities.

From hereon in this thesis, this researcher will address various aspects of stress that the student nurses experiences, focusing on the adult learner, the typical student in a community college nursing program. These aspects of stress include the application of stress theory to nursing education, stress and clinical practice in nursing students and new graduates, responses of nursing students to the clinical area, stress and educational preparation for nursing students, and responses of nursing students to role change from student to graduate nurse.

Application of Stress Theory to Nursing Education

A large percentage of today's nursing students are adults, who, for whatever reason, have decided to embark upon a career in health care. A considerable amount of research has been done in regards to how adults learn. Research from the field of psychotherapy offers models for teaching adults. Rogers (1951) proposes that the main task in teaching should be to facilitate the student's learning. This approach allows for a different type of student-learner relationship, a focusing on process rather than on product. In addition, Rogers feels that people

learn that what they perceive will enhance the self. For this reason, he feels that learning must be made relevant to the learners. This idea is in agreement with Combs (1979) and Knowles (1970). In addition, Knowles (1970) has identified four main assumptions of andragogy (the teaching of adults). He states:

These assumptions are that, as a person matures, his self-concept moves from one of being a dependent personality toward one of being a self-directing human being; he accumulates a growing reservoir of experience that becomes an increasing resource for learning; his readiness to learn becomes oriented increasingly to the developmental tasks of his social roles; and his time perspective changes from one of postponed application of knowledge to immediacy of application, and accordingly his reorientation toward learning shifts from one of subject-centeredness to one of problem-centeredness. (pg. 39)

Knowles feels that adults have an innate ability to learn if the learning needs of that adult are met. He further says that learning is an internal process that involves the entire being--physiologically, emotionally, and intellectually.

In her research on nurses, Kubat (1975) collected data on professional activities and opinions about continuing education. The results of this research indicate that the perceptions of nurses as to whether they needed further education affected whether or not they engaged in courses or workshops. Kubat believes that the primary motivation for continued competence must derive from sources extrinsic to the nurse. This philosophy has direct implications for the education of nurses.

The studies of Clark (1976) and Farley (1979) indicate that programs for nurses must address the question of learning orientation as well as the relationship of learning orientation to the level of competence in nursing. Tough (1971) studied adults from two perspectives: how they learn and what they obtained from the learning. She concluded that by having guidance provided or learning facilitated, adults gain increased competence with successive phases of activities.

An understanding of the learning process adults go through should allow for the development of a nursing program that would enhance learning rather than create blocks to learning. Frustration hinders the learning process. It increases anxiety, which becomes evident in physical as well as psychological symptoms of stress. Absence from the educational environment due to illness or time needed to attend to other priorities creates additional stress, and the cycle begins again.

While examining the stress levels of students, particularly adult students, it is necessary to understand the relationship between adults and learning. McClusky (1970) proposes an idea that he calls the concept of margin, which has significant implications for planning educational programs that meet the adult learner's needs. His theory integrates concepts of power, load, and margin. McClusky sees power as the sum of abilities and resources

that an individual possesses to manage the tasks of living. Load refers to the demands made upon a person, or that individual's responsibilities. These responsibilities consist of external demands, such as the roles of parent and wife, in conjunction with internal demands, such as the need to succeed or expectations imposed on oneself. Margin is the ratio between load and power. If a person's responsibilities (load) are greater than his capabilities (power), that individual has a less than desirable degree of coping abilities.

Having margin allows an individual to undertake new challenges or to deal with stresses. In the case of the student nurse, it is imperative that a balance be created in which educational demands are either decreased or altered in some way to make them more manageable. In addition, the ability of the student to deal with the stresses that he/she brings to the educational setting and to lessen the fears that the student experiences as a result of returning to school will enable the student to handle the situations differently than if these changes were not made.

McClusky's margin parallels Lazarus's coping ability and must be considered while assessing stress in nursing education. The concept of margin can help explain some of the phenomena in the education of adults. It helps to understand that adult learners are busy people with many

demands on their time and energy. A balance between what is educationally ideal and what is realistic for nursing students must be maintained.

Critical to developing an educationally sound program that meets the needs of nursing students is an assessment of learning needs. Cross (1976) has undertaken a thorough review of the studies of the needs and characteristics of adult learners. Her research indicates that adults are motivated primarily by a desire to solve immediate and practical problems. It also concludes that adults are less tolerant of the educational system than children. Furthermore, they bring to the educational setting a reservoir of life experiences that has a profound effect on their participation in learning. This body of experiences should be taken into account and built upon by educational programs designers.

It is difficult to specify the sources of stress for college students because they comprise a diverse group located at a large number of institutions. In their research in this area, Blaine and McArthur (1971) state that "50% of the college students who seek counseling complain of difficulty studying or of anxiety, tension, and depression related to poor grades or fear of doing poorly in courses" (p. 163).

Knox's (1977) concept of development, which refers to the orderly and sequential changes in characteristics and

attitudes that adults experience over time, discusses potential stress-producing scenarios. Changes in role relationships bring about changes in perspective that encourage individuals to re-interpret previous experiences and feelings. For example, adults generally view many changes not as isolated problems but as part of the total life cycle. They see these changes in the context of the experiences that preceded them and those that will follow them. Such a perspective helps individuals to recognize that they have more options. Because adults typically are aware of their own expectations and the expectations of others, it is important to provide a climate that allows this widening of perspective to happen. An approach to education that inhibits this concept will decrease the connectedness that students experience between what they are learning and how it fits into their total picture. As nursing students learn more advanced and more complex theoretical content and procedures, it is appropriate for instructors to help them integrate the previously learned pieces of theoretical content into the total educational plan.

Passages (Sheehy, 1976) deals with the concept of life stages. The adult student--aged 20-50 years--has or is experiencing many life stages: leaving the family, entering the adult world, perhaps settling down, perhaps even going through mid-life transition. The usual stresses

that accompany these life stages are only compounded by the stresses concerned with formal education. For an adult in particular, formal education involves taking risks both with one's self-esteem and one's sense of self. However, because faculty members do not know what particular life stage that a student might be in, they will be unable to understand the particular stresses that that student experiences outside of the educational setting. Failure to acknowledge and relate to adult students who have significant demands on their lives in addition to those of the educational program results in poor faculty/student communication. This lack of communication, in turn, increases the stress that students experience.

Little research has centered on the stress that the nursing student undergoes as an individual. It is apparent, however, that the external and internal responsibilities of the adult learner, the inadequacies of the traditional college models to meet their needs, and the lack of attention to the stress levels of entering students create additional stresses that can impede learning and goal realization.

The role of the educator can have a significant impact on the level of stress that the adult learner experiences in nursing education. Knox (1977) states, "In facilitating the approach that adults make to learning activities, it is perhaps most important to establish a

rapport and climate that encourages and allows learners to consider their own expectations and those of others" (pg. 429).

Sources of Stress in Nursing Education

It is evident that the change in the age of college students has an impact on the degree of stress experienced by nursing students. No longer is the freshman class primarily composed of eighteen to twenty-one year olds. Today adults twenty-five to fifty years of age are beginning education for nursing careers. Students want and need increased involvement in the educational process. Mauksch (1972) believes that learning is most effective when the learner is maximally involved. Many leaders in education agree with this premise. The adult learner needs to have input into the assessment and improvement of educational programs. Scheidman (1973) addresses the need for nursing educators to listen to the comments and criticisms of the students.

Research has shown that an individual's mode of responding to a learning task influences both his/her state anxiety and performance. In general, the mode of responding to a learning task appears to influence how difficult the task is perceived to be. More demanding response modes cause students to perceive the learning

itself as more difficult, resulting in higher levels of state anxiety. Conversely, researchers have shown that reduction in state anxiety facilitates performance on learning tasks.

The role of the adult nursing student creates stress within the educational program. Palmer (1981) has identified ten major conditions that commonly lead to role stress. He states, "In many instances it is not any one of a person's roles that in itself causes stress. Rather stress may result from the relationship among several of one's roles. A person's array of roles may be such that each is at least moderately rewarding, yet the overall effect is simply one of too many demands on time and energy" (pg. 19).

For the adult learner, nursing education seems to demand a stripping away of other roles and replacing them with the highly restrictive role of the nursing student. Many nursing faculty members are not concerned about a student's marital or parental status. If the student has some background in nursing, some personal interest may be directed towards that student, but unless the student's personal life can be used in the educational program, it is ignored, as is the effect it has on the day-to-day life of the student nurse. In a helping relationship between teacher and learner, the needs, feelings, values, and perceptions of both individuals are recognized, as well as

the fact that interactions between the two individuals can be either positive or negative. Levinson (1978) proposed that to understand specific aspects of a person's life, such as his occupation or his marital relationship, we must employ a perspective that treats the individual as a developing, changing adult.

Studies by Fox (1963a, 1963b, 1964) have identified several areas of stress in nursing education, as perceived and experienced by nursing students. These areas include clinical experience, informal evaluation by faculty, conflict between staff and faculty expectations of students, and academic class load. Students also reported fear of being dismissed from the program and a lack of definition of their role in the clinical setting as two other causes of stress. Although Fox's studies only examined the stress inherent in diploma and baccalaureate programs, it is highly probable that these areas of stress are also experienced by the nursing students in associate degree education.

Besides the clinical aspects of learning, students identified preparation for their learning activities as a highly stressful area. A great deal of preparation is necessary for working in a clinical facility caring for patients. Theory provided in the academic setting sets the groundwork for the specific pieces of information necessary to plan, implement, and evaluate care given to any one

patient. Fox (1963b) found through his data that students experienced conflicts between what they were taught in class and what they were asked to do on the units.

Students also reported conflicts when two staff members asked them to do different things. Fox (1963a) found that "although students generally have a favorable reaction to their relationships with people in the hospital, they are frequently placed in conflict situations because of the different perceptions of and expectations for student performance by different groups." It appears, then, that a major stress for nursing students results from confusion over where they should align themselves at any one time. Students are caught between the different perceptions and expectations of faculty and staff.

Elfert (1976) was interested in the responses of nursing students during the first two years of a new baccalaureate program in nursing. She analyzed reports of the students at the end of each of four semesters. Her findings indicated that evaluations and grades in courses were stressful early on in the program. Students reported that stressful episodes in clinical practice were experienced with high frequency after the first term.

Because research has shown that stress in clinical experiences increases after the initial fundamentals of the nursing course, it might behoove nurse educators to initiate some kind of format to assist students to deal

with the increases stresses in the more advanced classes before students find themselves unable to cope.

Several recent studies have suggested that nursing students should be provided with some knowledge of stress theory. These studies hope that, with a better understanding of stress and its effects, students will be able to deal with potential stress-creating situations more positively.

As early as 1967, Martucci (1968) presented the idea of including information on human relations in baccalaureate nursing curricula. She felt that by analyzing situations that students experienced as stressful, they would have an increased awareness of human responses and an increased ability to cope. Students were encouraged to assess their responses in situations with individual patients, families, and groups.

Callahan (1982) demonstrates a similar approach to changing the response of the student in stress-producing situations. In studying the relationship between knowledge of stress theory and management of stress in the lives of students in an associate degree nursing program, Callahan used both counseling interviews and a video-taped module about knowledge of stress based on the theories of Selye and Lazarus. Her findings supported the hypothesis that nursing students can be helped to cope more effectively

with stress by using a cognitive approach of increased knowledge of stress theory.

Morad (1985) is presently analyzing the results of a study that examined the effect of intervention by faculty presentation of stress theory information to students via support group discussions on the level of state anxiety experienced by students.

Similar to Morad's research is that of Weaver (1979). Weaver studied the effects of a modified interpersonal coping skills training program on social competence and socio-evaluative anxiety levels of second-year nursing students in a baccalaureate program. The findings of her research indicate that students experienced a reduced fear of negative evaluation from others and an increase in leadership ability, persistence, and social initiative. Students also reported a decrease in distress and social avoidance.

Charlesworth et al. (1981) also investigated the area of stress management skills for nursing students. Results of their research indicate that "improvement in generalized [i.e., trait] anxiety consistently occurred with nursing students trained in the application of relaxation as an active coping skill for managing stress" (p. 289).

Nursing educators need to understand the basic concepts of stress theory. Nowhere more than in the education of adults are the very real life experiences that

create stress response more evident. The opportunity exists to provide dynamic interventions to alter the existing dilemmas and create an educational milieu that promotes personal growth, physical and psychological health, and an atmosphere of understanding.

In discussing preparation of nursing care plans as sources of stress, Clark (1977) proposes that part of this stress is due to the time and effort it takes to develop a comprehensive nursing care plan. She states:

Because of time and work pressures, nursing care plans in some hospitals are not comprehensive. The student may experience mixed feelings about what is taught in nursing class about nursing care plans and those nursing care plans which are actually in effect on the hospital units. (pg. 77)

The research to date in looking directly at specific behaviors that relate stress to performance among students is inadequate. Whitman (1984) feels that

One way of understanding how stress might relate to students' performance is to look at the literature that focuses on cognitive problems in relation to stress and decision making. Another way to understand this issue is to look at the literature on human performance. (p. 17)

Nursing education can be presented in ways that will decrease stress and facilitate learning. Sieber (1977) suggests that anxiety can be reduced by redefining the task itself or by modifying social interactions. She also proposes that one can decrease anxiety by changing the anxious person's reaction to the situation, such as through

desensitization. Lastly, she suggests that educators can decrease stress by providing mechanisms for coping with responses detrimental to performance by reducing task-irrelevant responses and teaching needed skills.

The need for addressing the causes of stress in nursing education is essential. However, one must provide the means of altering the stress-producing situations that nursing students experience if decreasing the stress levels is to occur. It is important to remember that some stress is a motivator for learning; absence of stress is not the ultimate goal. What is needed is a level of stress that encourages rather than hinders learning.

Stress in Nursing Students and Graduate Nurses in the Clinical Setting

As early as 1949--and very likely even before that--researchers were studying the emotional needs of student nurses. Babcock (1949) stated that teachers and supervisors in nursing schools need to understand the problems of adolescence with which nursing students must cope. Babcock's article was appropriate to the times because the age at which one entered nursing school was seventeen or eighteen. At that time, the typical student nurse was educated in a diploma school of nursing. Educators in nursing were encouraged to plan their programs

to meet the physical and emotional needs of their students. Fortunately, many excellent diploma schools existed for a good number of years that taught student nurses not only the necessary nursing care material and provided clinical experience that student nurses needed but also dealt with the areas of self-esteem and interpersonal relationships.

Diploma schools of nursing offered student nurses the opportunity to work regular clinical shifts on a frequent basis over a period of two years or more. This practice provided students with familiarity with the hospital's practices and procedures and with a sense of belonging that comes from functioning as a regular member of a health team. It also provided the hospital with additional personnel to assume responsibility for patient care.

Hospital environments have changed significantly since 1949. The environment of a hospital has a considerable impact on both patients and nursing staffs. Specialized types of clinical units have arisen. Along with new types of technical equipment and technical knowledge, the activity level in hospitals has exploded. There has also been a drastic change in the approach to nursing education that is reflected in the absence of nursing students who formerly provided hospital staffing needs.

Nursing education today still takes place in diploma schools of nursing although to a much lesser degree. With the establishment of the associate degree curriculum for nursing education in 1952 and the growth seen in the number of programs since then, many attempts have been made to differentiate between the performance of graduates of diploma ADN and BSN programs.

In 1960, there were 57 ADN programs in the U.S. (ANA, 1961). By 1976, the number had increased to 642 ANA programs and 390 diploma programs. However, by 1980 the number of associate degree programs had grown to more than 650, but the number of diploma programs had decreased to about 340 (DeChow, 1980).

Montag (1951) intended to create a difference between the associate degree and baccalaureate degree nurse. It was never her intention that they become one. In 1965 the American Nurses Association Position Paper on Education further clarified the difference between the two levels of study and functions. Unfortunately, there is currently a discrepancy between the educational background and assigned duties in the institutions and agencies where nurses function. In studies designed to identify the difference between the two levels of graduates in the hospital environment, head nurses and supervisors frequently were unable to be specific as to the differences they observed or even expected.

In a study by Waters (1972), twenty-two head nurses interviewed indicated that "baccalaureate graduates know more, see more, and problem solve more, but the value systems of the head nurses do not necessarily include such qualities as being important for the real world of nursing" (pg. 129). Perhaps the fact that many head nurses and supervisors were diploma graduates who held to the traditional values was what enabled them to admit that baccalaureate nurses seemed to have more knowledge but weren't necessarily better nurses in the practical sense.

The knowledge base and skills required to provide high quality, competent nursing care have changed over the past twenty years. With the growth of the associate degree and the baccalaureate nursing programs, graduates of the diploma school have had to integrate these new graduate nurses in large numbers into the hospital environment that was formerly predominantly diploma graduate turf. The 1965 position paper published by ANA did not address the diploma graduate nurse, an omission that created stress in many a diploma graduate nurse. One diploma graduate of 1962 feels that her educational experience prepared her to be a "professional nurse" (Winters, 1965). Her article, entitled "I Am Not a Technician," indicates that she does not identify with the associate degree or "technical" nurse but rather with the baccalaureate or professional nurse. Regardless of the educational backgrounds for preparation

for licensing as a registered nurse, the graduates are all too often regarded as having the same qualifications.

In addition to stress resulting from discrepancies in educational backgrounds, students experience conflict when their value systems and the predominant value systems in the work world are dissimilar. Students must follow the guidelines set for them by their instructors. These guidelines are often in conflict with the expectations of the charge nurse or other nursing staff. For example, a student nurse may have validated with her instructor the decision to medicate a patient for pain and allow the patient to rest for one-half hour before assisting that patient with morning hygienic care. The charge nurse, on the other hand, may instruct the student nurse to give the medication later and go ahead immediately with the bed bath. The conflicting directions often result in distress on the part of the student nurse. If conflicts are not handled well, the student becomes upset and perhaps angry. A student can jeopardize the confidence that a patient has in his/her ability to give nursing care because the patient may feel that the student did not make a wise decision initially. The patient may also become angry at the nursing student if the pain medication promised to him is withheld. Although it is the role of the instructor to intervene should this scenario occur, the student is affected by the stress of the situation. Patient care can

become less effective if the relationship between the patient and the student nurse is jeopardized.

Kramer (1977) describes ways in which nursing students deal with these conflicts. They include dropping idealistic school-bred values and taking up the work values, refusing to take up any or too few work values and holding firm allegiance to the school values, and withdrawing from the conflict and viewing nursing as just a job.

In trying to provide an approach to deal with the stress experienced by student nurses as a result of this conflict, Jones (1978) suggests providing a comprehensive counseling service for them. In his research, he identified two specific situations that seem to cause the most stress for nursing students in the clinical portion of their education: 1) having to carry out complex tasks for the first time and 2) receiving instructions that are contrary to what they were taught in school.

As described in Kramer's work (1974), students placed in such a situation are immediately faced with a conflict that they must deal with and have two alternatives: they can either give the patient care as they were taught and risk rejection by members of the health care team or they can follow the directions of their colleagues, knowing that the patient care is not the best they can give. Either

way, students experience conflict and a stress-producing situation.

Rottkamp (1968) studied attrition rates in nursing. As a result of her findings, she proposed that a strong counseling program be developed. This program would have two main purposes: to assist students towards greater self-understanding and achievement of professional maturity and to give them an outlet for discussing situations that give them personal concerns that might or do affect their performance.

Studies by Hardy and Conway (1978) further support the idea that there are stresses associated with the transition from being an individual to becoming a nursing student. Family members often cannot understand the time and commitment to study that nursing students must make. Spouses and children often feel that there has been a change in the dedication of their family member/nursing student to the family unit. In attempting to satisfy all the factions that demand time and attention, student nurses must identify for themselves how they will spend energy. If they are unsuccessful at satisfying their own needs as well as the needs of those who require their attention, they will find themselves coping poorly and will either fail from the nursing program or perhaps withdraw from either school or the family.

The demands on students in different types of nursing programs vary. Differences can be attributed to the length of the program, the level of study, and the complexity and amount of material to be learned. Fox and Diamond (1965), in their query into stress in nursing education, found that it was the vast amount of academic work, which students had not expected in their nursing education, that provided one of the main stresses. In a pilot research project, conducted among students who neared the completion of the first semester of an associate degree nursing program, this writer found that the amount of work, both academic and clinical, created the two most stressful areas of their nursing education. These findings are consistent with those of Fox and Diamond (1964, 1965).

In addition to the standard stresses of nursing education and role ambiguity, male nurses must contend with the Herculean myth that male nurses are necessary for lifting patients. Groff (1984) feels that his professional colleagues hold attitudes about male nurses that "leave something to be desired." It is common, he proposes, for people to feel that males enter nursing because they were not smart enough to be doctors. Thus, male nurses have added stress when working in hospitals and health care agencies. Some patients are not even sure how to relate to a male nurse. Female patients express embarrassment and on occasion refuse to be cared for by a male nurse. Even male

patients, exhibiting fear of the unfamiliar, are known to refuse care given by a male nurse. These responses add to the stress that the male nurse encounters, which are above and beyond the experiences of most female nurses.

Many factors have had an impact on nursing education as we know it today. Stress in the clinical aspect of the nursing program intensifies the pressures already felt by adult learners and adds to their feelings of distress. This stress decreases the enjoyment that they might receive from caring for patients.

Preparation for clinical functioning is a necessary part of the educational program in any nursing program. Students must understand significant amounts of material regarding their patients' diagnoses, pathophysiology, medications, and goals of treatment in order to provide quality patient care.

Reduction of stress in preparation for clinical experiences that does not reduce the quality of the students' preparation may provide a means of enhancing the effectiveness of student nurses in performing their clinical tasks. Students might then have more positive feelings about clinical experiences and find them more enjoyable, while at the same time increasing their knowledge and clinical expertise.

Stress and Associate Degree Education

In 1948 a document entitled "The Brown Report" was published. This report, sponsored by the Carnegie Corporation, called for a change in the methodology, preparation, and philosophy of nursing. To meet the increased demand for nurses during and after World War II, a shorter training period for nurses was recommended (Fagin, 1976). In response to this need, the model for the associate degree in nursing was formulated by Mildred Montag.

Associate degree programs were initially intended to educate nurses to perform technical functions that lay somewhere between simple procedures and complex professional functions. The AD programs were to provide nursing students the education to prepare them as technical nurses who would assist in the planning of nursing care for patients, give general nursing care with supervision, and assist in the evaluation of the care given. The AD program, as originally envisioned, was to provide formal education so that nurses could be employed immediately upon graduation. Even as Montag (1971) implemented the AD program, however, she saw that five to ten percent of the graduates would be motivated to seek further education.

The course curriculum of the AD programs, as comprehensive as it is, is designed to prepare nurses to

perform only the functions mentioned above. A discrepancy lies, however, in the philosophy behind associate degree education and what employers actually expect of the new graduates. The divergence in role perception between faculty members and nursing service directors promotes a situation in which students experience stress.

Over the years, many researchers have investigated the causes of stress in nursing programs. Most of their studies, however, were limited to nursing students in baccalaureate and diploma nursing programs. In the past ten years, however, studies of stress among nursing students have included or focused on associate degree nursing education. It has become apparent that here is a discrepancy between the educational preparation and the work roles of the associate degree graduate. An ADN graduate is expected to function as a staff nurse and at times in nurse-leadership positions without having had the clinical experience or training in leadership skills that are part of the ADN educational program.

A survey of associate degree graduates, conducted to identify the professional behaviors of the graduates as well as the expectations of directors of nursing service, showed that the directors expected graduates to have administrative capabilities at the time they were employed (Fiorentino, 1969).

Miller (1974) studied graduates of three new associate degree programs in Tennessee to identify the capacities in which the graduates were functioning. Using a questionnaire format mailed to graduates, he found that from a respondent sample of ninety-four, forty-two reported that they functioned as charge nurses, eleven as supervisors, and eight as head nurses. Only twenty of the ninety-four reported that they still worked solely on a staff or general duty level.

These findings of Fiorentino and Miller support Hallinan's (1973) belief that associate degree nurses are often placed in administrative and supervisory capacities for which they were not educationally prepared. Hallinan believes that the role of the associate degree graduate should not be expanded beyond that proposed by Montag.

The expectations of nursing directors and hospital staff place stress on both student nurses and new graduates. Students choose to enter a two-year program for many reasons. Wren (1971) has found that these students are in general older than students in diploma or baccalaureate programs. They are married or have been married, did not have previous college experience, plan to work in a hospital after graduation, and chose the associate degree program because of its low cost and proximity to home. Wren also found a high percentage of licensed practical

nurses in his sample who entered the program as a means to a career ladder.

Much controversy exists about the upward mobility of graduates of associate degree programs. Many baccalaureate nursing programs have provided career ladder programs; others have initiated articulation programs that encourage and enable the AD nurse to complete her BSN. The Board of Regents in Massachusetts has suggested an articulation process between the associate and baccalaureate degree institutions. Many hospitals and agencies are signaling the beginning of an all BSN staff. All these factors put additional stress on associate degree students by giving them the message that although they may find a job after graduation, they may not be eligible for advancement without additional educational preparation. The need to obtain satisfactory grades for admission to a program in a baccalaureate institution creates additional stress for students.

Currently, due to faculty attempts to provide a program that will meet the needs of the graduate for employment in hospitals, the AD curriculum has changed to include material on leadership, professionalism, and managerial skills. The additional theoretical content placed on an already full schedule of academic and clinical courses is an attempt to prepare the graduate for entry

into practice, taking into account the expanded demands of nursing directors.

This increased content is in line with the description of entry level competencies of associate degree nurse graduates as outlined by the Council of Associate Degree Programs of the National League for Nursing. As these roles are presented in the 1978 position paper, it appears they are well beyond the scope of the AD graduate pictured by Montag.

Five interrelated roles have been identified for graduates of associate degree nursing programs. These roles include care provider, client teacher, communicator, manager of client care, and member of the profession of nursing (NLN, 1978). With the broadened scope of nursing functions for which AD graduates must be prepared and the differences of opinion as to how AD nurses should function, what they should be called, and who is responsible for providing the theoretical skills that they need in order to satisfy those who will employ them upon graduation, there is no doubt that AD students feel the stress of having to perform to meet everyone's expectations. AD nurses are respected by some individuals; however, they may be looked down upon by those who feel that they are inferior to a baccalaureate student. Depending upon how well they may adapt to others' expectations of them, they may or may not

be welcomed by those with whom they work in the clinical units.

The place of associate degree nurses is not understood by many. They are told that they are learning to be respected members of the health team as registered nurses. They are also given the impression that, even though they become registered nurses, they will need to seek further education. Kramer (1981), Bullough (1971), and Rogers (1973), leaders in the field of nursing education, feel that there is a significant difference between the two levels of nursing education. Kohnke (1973), on the other hand, claims that there is not a significant difference in the quality of the educational product. However, in spite of all the disagreements regarding the educational preparation for the associate and the baccalaureate degree, graduates of both programs take the same examination and receive the same license. Perhaps the leaders in the fields of education need to take a closer look at what associate degree programs do in fact teach instead of continuously returning to the concept set forth in the 1950s.

Because of the voluminous amount of material that associate degrees nursing students must incorporate into an understandable format, it would make sense to assist them in ways that would facilitate their learning process and, at the same time, decrease stress to a level that enhances

rather than hinders learning. Providing some structure for first-year nursing students may ease this process and provide a format that first-year students may use to deal with additional data. Because learning progresses from the simple to the complex, the format for presenting material and the sequencing of the material should also follow this continuum.

Stress in Faculty-Student Relationships

Community college nursing students are, on the whole, highly motivated, but they are not always highly qualified academically. Particularly in programs where there is an open door admissions policy, the faculty must provide learning experiences and educational modalities that will enhance the academic success of the student. Friere (1973) proposes that it is the role of the educator to help the student move towards a new way of thinking rather than just to fill the student with technical or general knowledge.

Both students and faculty need to focus on students as individuals rather than as objects to teach. Speaking as a student, Blakely (1975) reminds the reader that students, like instructors, are people first, with feelings, emotions, strengths, needs, and weaknesses. He feels that faculty members can provide role models to students to help them learn positive ways of interacting with others.

In his writings, Alschuler (1980) discusses the consequences of stress on teaching and suggests some cures for stress. These include preventing stress by being alert to its early signs and by helping others reduce the stressors, changing one's perception of the cause of the stress, managing one's physiological state, improving one's coping abilities, and counteracting stress. These preventive measures for stress are as important to the goal of decreasing stress in students as they are to preventing teacher burnout. Early in the nursing program, faculty members must use insight to assess where each student is and where he/she should be. Faculty members who use a humanistic approach to education will allow students to find that how they learn is as important as what they learn.

Rosendahl (1974) proposes that the role of the nurse educator is to be a facilitator, a resource person rather than a transmitter of knowledge. This idea agrees with the approach proposed by Knowles (1978), who coined the term "androgogy" to describe the art or science of helping adults learn.. He feels that it is the responsibility of the educator to develop an atmosphere that promotes learning. Judgmental and threatening attitudes, a lack of understanding of students' feelings, and a lack of openness cannot be tolerated in nursing education because they may interfere with the learning process.

Although nurse educators encourage students to use a humanistic approach with patients, they themselves often maintain a behavioristic approach with students. Carter (1978) states that instructors teach students that they must treat patients as individuals, but at the same time they delineate objectives for broad groups of students that do not allow for individual variations. Students quickly perceive the gap between what is preached and what is practiced. In studies by Jones and Jones (1977) and Olesen and Whittaker (1968), students identified the instructor as being the person most influential in helping define their nursing roles.

The concept of "nurse" held by the faculty has a direct influence on the priorities that the faculty members emphasize in nursing education. Students' values regarding higher education are influenced by the views held by faculty members. Some nurse educators are enthusiastic about career ladders and encourage students to pursue their highest level of ability. Other well-known nurse educators have voiced concern over what seeking career ladders would do to the quality of education. Yet many of these same educators were in fact nurses who took advantage of the opportunity of career advancement. Graduates of associate degree nursing programs enter upper level courses prepared in ways perhaps different from how the baccalaureate program would have prepared them. The issues of

professionalism and values may have been approached differently in ADN programs. Because of this, it seems clear that the upper level program needs to be altered to re-socialize or re-educate graduate nurses to its philosophy.

Schoenmaker (1976), in his research on male nurses and their perceptions of themselves, asked nursing educators what they perceived the problem areas in nursing were. One of the problem areas described by faculty members is male attitudes towards female authority figures. Because nursing is generally seen as a profession for women, male student nurses must fight many traditional stereotypes. They must encounter a series of obstacles that female nursing students do not and that pose additional responsibilities.

In a survey of classmates, Rogness (1976) reports many problems encountered by student nurses. Ten out of fifteen male student nurses in one baccalaureate nursing program reported that they felt they had been treated differently from their female peers by instructors. Eight out of fourteen felt that instructors had different expectations for them than they had for their female peers. They stated that they felt more was expected of them and that they were expected to be used as "live specimens" for the students' learning experiences, such as chest examinations and cardiac assessments. Twelve out of

fifteen male students felt that they would like to have some male nursing instructors. One student noted that the shortage of male instructors reflected the school's ambivalence about accepting men into nursing.

The uniqueness of each student and his/her strengths and weaknesses must be addressed by the faculty if a positive student-faculty relationship is to exist. Due to the special needs of adult learners, alterations in schedules and expectations must be considered. Flexibility on the part of instructors would enhance the learning experiences of adult learners while still providing high quality clinical experiences. Faculty members and students must reach a balance in the differing values, demands, and rewards of each participant.

Martin (1986) is presently studying the effect of an initial nursing course on students' cognitive stage levels. Her research is being conducted in an associate degree education nursing program. It is her hope to identify the learning styles of nursing students to begin to formulate ideas and identify teaching styles that can be implemented to better meet the needs of the adult learner.

Stress and Values Clarification in Nursing Education

Various methods of decreasing the stress in nursing education have been investigated: providing stress theory

to nursing students, altering programs so that students experience less stress, and increasing interactions with faculty members to minimize the stress inherent in particular situations. An additional approach identified in the literature is that of values clarification.

Raths, Simon, and Merrill (1966) present a problem-solving approach that enables one to sort through and analyze the values that cause one to perform in a particular way. When applied to the role of a student, this approach allows a student to identify conflict areas, examine alternatives, clarify goals, and perform accordingly. Considering the many stressful situations that they encounter, students would benefit from identifying what is most important to them at any given time and acting accordingly. This constant identification of what's most important would prevent lingering self-doubt and guilt, which add further stress to students.

Coletta (1978) and Uustal (1978, 1982) propose the values clarification approach in making decisions in nursing. Uustal indicates that the price individuals pay for unexamined values and value conflicts is confusion, indecision, and inconsistency. She further states that an individual's professional behavior is influenced by one's values, which are the basis for that individual's actions. For example, nursing students need to fully understand what quality of life, "no code" (a patient who is not given

cardiac-pulmonary resuscitation if his heart stops beating), abortion, and euthanasia mean to them. Can a student nurse give good quality care to a patient who has had food withheld according to doctor's order and not have conflict about the care given? Values clarification offers a process whereby the student can examine these issues.

This approach is also applicable to issues that students encounter both in the academic environment and in their personal lives. It offers an opportunity for strengthening self-esteem and personal growth. It can provide a means to counteract some of the situations that cause students to leave nursing programs or to alleviate excessive pressures during the program.

The values clarification approach is somewhat similar to the approach of Parsons and Sanford (1979). They propose that through increased self-awareness individuals will get in touch with their personal sets of values and philosophies of living. This new self-awareness will then become the basis for their functioning as nurses.

As students use the clarification of values approach and identify behaviors with which they are comfortable, they can relate more effectively to others. This idea supports Selye's (1956) "adaptation energy" theory. Cannon et al. (1984) introduced a values clarification technique in a course addressing culturally bound values in a baccalaureate program. In evaluating the course, the

faculty and students felt that it would increase their sensitivity to their clients' needs. Swanson and Hurley (1983) also address the application of values clarification to nursing education both in theory and in clinical practice. They see a need for more attention to the cultural context of values. They believe that the process of examining the values orientations of others encourages students to reflect on their own personal values. Once students are more aware of values orientation, the strains and conflicts connected with values are more available for examination and resolution.

Nursing students frequently find conflicts between their roles as students and their current family or work situations. Workload, family pressures, and home life often conflict with the demands of clinical preparation. The way an individual perceives a situation will determine whether it is stressful or satisfying. Becoming more actively in control of a situation helps individuals to alleviate many interpersonal conflicts. The amount of stress that one perceives in a situation is related to the positive mental set that one has in dealing with environmental demands.

In conflict-laden situations--for example, when the demands of head nurses are contradictory to those of nurse educators--it is imperative that faculty members feel comfortable with the values that they wish to present to

students. Furthermore, faculty members must act on those values when students become entangled in conflicts between what they've been taught and what a head nurse or staff person expects of them.

In a study aimed at determining the criteria that nurse educators and head nurses use to evaluate nursing students' performance, Smith found discrepancies in nursing role values. She states that "these discrepant conceptions of nursing create for the nursing student a climate in which she is continually exposed to two disparate and positively sanctioned patterns of behavior" (Smith, 1965, pg. 201). Nurse educators must be aware of these areas of discrepancy in order to help students deal effectively with such conflicts.

Conclusions

Many nursing schools continue to be influenced by the hierarchical traditions of hospital schools of nursing. It is important that the educational climate encourage increased assertiveness and independence in students' learning behavior. Faculty members, on the other hand, need to encourage students' development of autonomy, self-realization, and self-directedness. The role of the educator is of primary importance in dealing with stress in the learning environment of nursing students.

Much research has addressed the various areas of nursing education that are sources of stress for nursing students. Writers occasionally have offered ideas that can be implemented as integral parts of nursing programs, thus helping to decrease stress for the nursing student.

The stress that students experience in the academic and clinical areas, coupled with the stress that comes from shifts and conflicts in students' roles, creates an educational milieu that may interfere with learning, as well as being behind many negative experiences that undoubtedly affect students' self-esteem.

Changes must be made to alter this situation. Faculty members and students alike must have input into where these changes occur. Many studies support the idea that being in control and perceiving oneself as being in control of one's life have the effect of reducing stress.

The person-environment model, as proposed by Lazarus, appears to be the most appropriate for understanding stress among students. A crucial aspect of a student's appraisal of whether or not a situation is highly stressful is influenced by his/her degree of control in the situation. The approach taken by students in the experimental group demonstrated an active or problem-focused method of coping. If students can have some control of their environment, they are able to decrease the stress emanating from that environment.

In order to survive, students develop strategies for and styles of coping with the stress of nursing education, often at the expense of themselves and those nearest to them. Students need to learn to develop positive coping mechanisms, which should result in confining stress to moderate levels where learning is optimal.

CHAPTER 3

METHODOLOGY

This study was done to investigate stress in the lives of student nurses in the state-funded associate degree nursing programs in Massachusetts and to ascertain whether using a structured format for data collection in the clinical component of the educational program would save time and decrease stress.

For the first part of the study, the sample population was drawn from twelve of the fourteen community colleges that offer the ADN Program. The students sampled were near the end of the second semester of nursing.

Letters were sent to divisional chairpersons of the fourteen nursing programs in state-funded community colleges in Massachusetts requesting permission to have some of their students complete a questionnaire. Permission to do so was received from twelve of the fourteen programs. Questionnaire packets and a letter explaining the purpose of the study were mailed to the program directors with instructions for completion of the questionnaires. Included were stamped envelopes for return of the completed questionnaires to this researcher.

Students filled out a questionnaire (Appendix C) concerning areas of the nursing program that they perceived

as stressful, as well as coping/support systems that they employ to counteract stress.

To assess the time needed to collect data and identify the needs and problems of selected patients, the sample population, consisting of fourteen students, was drawn from those students who had completed the fundamentals course and had completed or nearly completed the second semester of nursing in the first year of an associate degree nursing program located at Bristol Community College in Southeastern Massachusetts. The sample, which was random, included both male and female students between the ages of eighteen and fifty-five who volunteered for this research. There were seven students in each of the experimental and control groups.

Using a structured format, the experimental groups collected data in preparation for a hypothetical clinical experience (see Appendix A). They then used this format to identify patient needs and actual or potential problems and to prepare a partial nursing care plan that employed the nursing process.

The control group, on the other hand, collected data in preparation for a hypothetical clinical experience using no structured format--just as they had used in the past. Basically, this kind of data collection consists of reproducing much of the data in the patient's chart, including medication, nursing, and nutrition kardexes.

Much of this information, which is recorded by students on eight to twelve pages of paper, is repetitious. The control group also prepared the partial nursing care plans, identifying patient needs and actual and potential problems. Data provided by the students in the experimental and control groups from the review of the patient charts were analyzed.

Design

The responses of nursing students in one state-funded associate degree program were compared to the collective responses of students in the twelve programs studied with regard to areas perceived as stressful by students. (See Appendix B)

A post-test experimental design was used in the area of the study that pertained to measuring time. The time necessary for data collection in the two groups was compared. One group used a structured format (Appendix A); the control group did not have a structured format. Six sessions of data collection, which used copies of actual patient charts, were completed by each group. Any identification of patients was deleted to protect their privacy.

The data collected from the student researchers was analyzed to identify the specific patient needs and

problems listed by them. These lists were then compared to the patient needs and problems identified by this researcher and two nursing faculty members on the faculty of one of the fourteen state-funded community colleges in Massachusetts.

The following diagram illustrates the design used in the section of the study on collection of data and identification of needs and problems:

Post-test <u>Only</u> Design			
Time			
	1 (Pre)		2 (Post)
Experimental Group	R	X	O
Control Group	R		O

R = Randomization
 X = Treatment: Intervention of Structured Format for Collection of data in preparation for clinical experience.
 O = Observation of Measurement

The internal validity of the data was accounted for by the random assignment of individuals from the pool of volunteer subjects to treatment and control groups. The content validity of the data was addressed by using other faculty members as raters to determine the quality and/or the

inclusiveness of the prepared lists of needs and problems of each group. Using this systematic approach, the reliability of this study was assured because of the agreement of faculty members on what should be included in the nursing care plan of a particular patient.

In the section of the study on change in stress levels as identified by the State-Trait Anxiety Inventory (STAI), the following pre-test/post-test design was used:

	1 (Pre)		2 (Post)	
Experimental Group	R	O	X	O
Control Group	R	O		O

The STAI is composed of two sections--the State (S-Anxiety) and Trait (T-Anxiety) anxiety scales. Trait anxiety refers to relatively stable differences in individuals in anxiety proneness, as well as differences between people's tendency to perceive stressful situations as dangerous or threatening (that is, higher than one's coping skills to handle them). Response to such situations results in elevated S-anxiety. According to Spielberger (1983), the stronger the anxiety trait, the more probable the increase in state anxiety.

Although T-anxiety scores cannot predict differences in emotional reactions to personal dangers, persons with high T-anxiety generally respond with greater elevations in S-anxiety to threats to their self-esteem than do low T-anxiety persons.

The reliability of the S-anxiety and T-anxiety scales has been documented. Spielberger (1983) states, "The test-retest correlations for the T-anxiety scale were .73-.86 for college students. For the S-anxiety scale, the stability coefficients for college students ranged from .16 to .63 with a mean reliability coefficient of only 0.33." In another study by Spielberger (1983), alpha coefficients for the Form Y S-anxiety and T-anxiety scales were above .90 for working adults, students, and military recruits, with a mean coefficient of .93.

Stability, as measured by test-retest coefficients, is relatively high for the T-anxiety scale and low for the S-anxiety scale. These results would be expected for a measure that assesses changes in anxiety resulting from situational stress.

The purpose of this study was four-fold. First, common areas of stress perceived by first-year nursing students in Massachusetts state-funded community colleges were identified. Second, the effect of using a structured format for data collection was assessed. The use of a structured format, it is assumed, would save nursing

students time and may provide for more complete data collection. (It is presumed that less time spent in preparation for clinical experience means less stress in the lives of nursing students because they then have more time to give to other areas of their lives.) Third, the accuracy with which nursing students identify patient needs and problems, both actual and potential, was ascertained. Lastly, the study measured the amount of stress experienced by each group of students.

Hypotheses

This researcher predicted that the nursing students in the various nursing programs at the fourteen state-funded community colleges would perceive the stress in their programs differently. It was also predicted that the use of a structured format for data collection would save time in data collection and the preparation of the nursing care plan. It was predicted that use of a structured format for data collection would result in a more thorough identification of needs and problems in the formulation of a nursing care plan. Lastly, it was predicted that there would be a significant difference in the amount of stress experienced between the experimental and control groups in preparing for clinical experience.

Students in Bristol Community College were asked to volunteer for a research study that would address two areas of the nursing program that students have identified as stressful. The student volunteers were assigned randomly to either the experimental or the control group.

The experimental group and control groups met for six sessions. The structured format for data collection was described and instructions for using it were given. No structured format was given to students in the control group. Students in both groups were clocked as they completed the assignments. After completing the sixth session, the students in both groups underwent the STAI once during their summer vacation break and again while preparing for their first clinical experience in the third semester of nursing.

Instruments

The instruments used in this study were the teacher-made Perceived Stress Questionnaire, the State-Trait Anxiety Inventory (STAI), the structured form for data collection devised by this researcher, and a questionnaire that measured the response of the experimental group to the use of the structured format for data collection devised by

this researcher in conjunction with her graduate research consultant at U. Mass/Amherst.

The Perceived Stress Questionnaire

The Perceived Stress Questionnaire (PSQ) (see Appendix C) was used to identify those areas of stress that students in associate degree nursing programs experience. The ten areas identified as stressful were derived from the observations of faculty members as well as the comments of first-year nursing students who were experiencing stressful periods while in the program. The PSQ simply asks students to identify the frequency with which each of the ten identified items creates stress for them, using a five-point Likert scale ranging from "never" to "very frequently." Students were not limited to listing areas of stress related to academics but could also comment on both personal and social stresses, which allowed the identification of free-response perceptions of stressful factors experienced by the students. Bailey (1956), Fox (1963), and Bailey et al. (1980) used a similar approach to study sources of stress and sources of satisfaction identified by nursing students and intensive care nurses.

In addition, the PSQ allows for the collection of significant data related to demographics. The PSQ also allows students to identify the perceived level of coping

that they perceive they have and provides for "free response" in identifying those aspects of their lives that enhance their coping responses. Results of the data in both these areas were analyzed.

Content validity of the PSQ was determined by a panel of experienced faculty members in the field of nursing education at the associate degree level.

The State-Trait Anxiety Inventory Scale

The State-Trait Anxiety Inventory Scale (STAI) was used to identify differences in students' anxiety states created by their perceived stress in preparing for clinical experience. The STAI is composed of two parts, each consisting of twenty questions. Both parts are comprised of self-reporting scales for measuring anxiety. Students completed the STAI on two separate occasions, the first of which was at a time when they were relatively relaxed or low-stressed. The second testing was done when students were preparing for their first or second clinical experience on their return to school for the next semester. A comparison of state and trait anxiety scores was made between the students in the experimental group and the students in the control group during the time of low-stress and the time when they were preparing for

clinical experience, which is proposed as a time of increased stress.

The Structured Form of Data Collection

The Form for Data Collection was used as a means of structuring the process of data collection in an effort to decrease the time taken for this task and to provide more complete data collection from which to prepare a partial nursing care plan. The structured format was created from a basic data collection sheet used by several faculty members at one associate degree nursing program. Additional areas of focus were added by this researcher to provide a tool that focused the attention of the student on specific pieces of information that were necessary to adequately prepare the nursing care plan.

Perceptions of Use of Structured Format

The questionnaire Perceptions of Use of Structured Format (Appendix D) was used to identify the responses of the students in the experimental group. According to Lazarus, an individual's perception of a specific event determines the amount of stress involved in that situation for that individual. Using the structured format approach for data collection should have caused students to

experience less stress with regards to this particular task because they would feel more in control of the situation and would have had adequate pieces of data from which to develop the nursing care plan on which they would be evaluated.

There are 426 NLN-approved community colleges with ADN programs in the United States (NLN, 1984). In the Commonwealth of Massachusetts alone, there are fourteen state-funded community colleges that offer associate degree nursing programs. In these fourteen programs, a total of 1,976 nursing students may be having both satisfactory and stressful experiences.

It is very likely that the use of a structured format could decrease the amount of time students must spend in preparing for clinical practice without jeopardizing the quality of that preparation. Such a format would enable students to spend more time in activities that might create positive memories for them and increase their self-esteem. The benefits of spending positive time on themselves would then be reflected in a higher quality of nursing care, in improved decision making, and in improved mental acuity in nurse-to-patient, nurse-to-nurse interactions.

The structured format for data collection would also decrease student anxiety about omitting crucial elements in the data gathering process. By using the structured format, students have some guidelines for collecting

necessary data. Considering the frequency with which nursing students must prepare for clinical experiences, collect data, and prepare nursing care plans, saving time and decreasing stress are highly desirable.

In the fall of 1982 and 1983, this researcher conducted a pilot study to obtain some statistical background data on first-year nursing students in a state-funded associate degree-granting community college and to study areas of stress perceived by the student nurses within the educational program (Appendix E). Over the two-year period of the study, questionnaires were distributed to 144 nursing students upon the completion of their fundamentals nursing course. The questionnaire concerned itself with sixteen areas reported as stressful to nursing students in various other studies. Pilot study findings indicated that the three most stressful areas of the nursing program being studied were clinical research, which consisted of data collection on one assigned patient, preparation of the nursing care plan, and quizzes and exams. These findings are consistent with verbal comments by these students, as well as with the studies by Fox (1966) and others.

The pilot study questionnaire also provided for demographic data collection. It disclosed that the classes were composed of a high frequency of married and working students, a fact that would account for the greater demand

on their time and energy and making the time necessary for preparation for clinical assignments and studying for examinations more difficult to obtain. These findings also indicated that the typical adult student in this community college program is similar to that described by Levinson (1978) and Sheehy (1976).

Relatively little research has been done in the area of stress in associate degree nursing programs compared to the amount of research that has been done in baccalaureate and diploma nursing programs. Few researchers call for changes in the nursing programs that would decrease the stress that is known to exist. Research by Morad (1985) and Callahan (1982) addressed attempts to decrease stress using interpersonal stress-reduction techniques.

Overall, there is an increased emphasis on attempting to decrease stress for nursing students in an effort to enhance their educational performance.

Data Analysis

After the post-tested difference scores for each group were computed, a comparison of mean scores for the experimental and control groups was computed for both time needed for data collection and the quantitative identification of patient needs and problems.

The results of the differences in stress levels, as identified by the STAI, were computed using covariance analysis.

They are as follows:

1. Systematic quantification table - To assess the areas of stress, as identified by students, within the chosen nursing programs in this study, as identified by students, a systematic quantification of responses was computed. Items were ranked, then tabulated by inverse weightings. This approach was used for each individual program, and a composite of the results of all fourteen programs is identified (Appendix C).
2. Time - The amount of time needed for collecting data and identifying needs and problems was clocked and tabulated. The amount of time the two groups took to complete these tasks was compared.
3. Comparison of formats - To assess for frequency of identification of needs and problems addressed using the two different formats (structured and non-structured), the items addressed by students and those identified by three freshmen-level faculty members in an ADN program were compared.
4. After completion of six sessions using the structured format, students in the experimental group were given a questionnaire (Appendix D). The results were computed using the systematic quantification

approach. The results of this questionnaire provided a subjective evaluation of the intervention.

5. Lastly, students in both the experimental and control groups completed the State-Trait Anxiety Inventory (STAI) (Appendix B). The STAI is comprised of separate self-report scales for measuring two distinct anxiety concepts, state anxiety and trait anxiety. Students first completed the STAI at a time of relatively low anxiety during the summer vacation break and then completed it a second time in September when they were preparing for their first or second clinical experience.

The A-trait scale was used to identify individuals who vary in their disposition to respond to psychological stress with different levels of A-State intensity. The A-State scale was used to determine the actual levels of A-State intensity induced by a stressful experimental procedure--in this situation, the collection of data and the formulation of part of the nursing care plan.

Studies have shown that correlations of the STAI scales with other anxiety scales give evidence of validity. The A-trait scale has been shown to correlate with the IPAT Anxiety scale and the Taylor Manifest Anxiety scale with a range of .85 to .73, indicating that the A-trait scale measures essentially the same concept and may be interpreted in the same context.

The subjects of this study were volunteers. Each student received an explanation about the nature and purpose of the study. Each participant in the study signed a consent form (see Appendix F) prior to participating.

RESULTS

In Massachusetts, as in many other states, community colleges offer excellent programs in nursing education at the associate degree level. Because much nursing theory, clinical experience, and supportive sciences--psychology and elective courses--are completed in the span of two academic years, considerable stress is inherent at this level of nursing education.

The purpose of this study was to investigate the relationship between stress and various facets of nursing education. Questionnaires were mailed to freshmen nursing students in day programs at twelve of the fourteen NLN-approved Massachusetts state-funded community colleges that offer nursing programs. Five hundred and twenty-nine students, or approximately 85%, completed the questionnaires.

Nursing students at Bristol Community College, one of the fourteen NLN-approved state-funded community colleges studied, collected data and completed a list of patient needs and problems, which constitutes the initial stages of formulating a nursing care plan. With one group using a structured format for data collection and the other group using no structured format, students were timed to assess

how long it took for both data collection and the identification of a list of patient needs and problems.

The results of problems identified for each of six charts, both individually and within each group, were tallied and compared. Both groups were given a pre-test and a post-test of the State-Trait Anxiety Inventory. Students in the experimental group then completed a questionnaire to assess their perception of the value of the structured format for the collection of data.

Hypothesis One

It was hypothesized that different content areas of the nursing programs would be identified as stressful by students from college to college. The following responses to the first question reflect the nursing students' perception of stress as it relates to ten areas of nursing education.

Research Question One

The first question addressed various facets of nursing education. Ten areas of the nursing program were identified as potentially stress-producing by three nursing faculty members of the associate degree nursing program of Bristol Community College in Fall River, Massachusetts.

The first question sought to determine which area(s) were perceived by students to be sources of stress in their nursing education program.

Findings revealed that the three most stressful areas of the program included tests and quizzes, the amount of reading required, and the preparation of nursing care plans.

Tests and quizzes was chosen as the most stressful of the ten areas, with a mean score of 4.235. The amount of reading required in nursing education was the second most frequently stressful area identified, with a mean score of 4.040. Nursing care plans was the third most frequently stressful area identified, with a mean score of 3.977. These data are presented in Table 1. The mean scores of the remaining seven aspects of nursing education identified are also presented in Table 1.

The rank order of nursing education content areas that students identified as stressful is presented in Table 2. This table shows the combined scores in percentage of the ratings 4 (frequently stressful) and 5 (very frequently stressful).

The rank ordering of this content is important because it can be used to suggest areas in nursing programs that need to be examined with the purpose of reducing stress.

Table 1

Rank Order of Means of Content Areas of
Nursing Education That Students
Identified as Stressful

Area of Nursing Education	Mean Score
1. Tests and quizzes	4.235
2. Amount of reading required	4.040
3. Nursing care plans	3.977
4. Time spent studying	3.759
5. Actual clinical practice	3.415
6. Research for clinical practice	3.156
7. Independent learning	2.977
8. Number of hours of nursing classes per week	2.774
9. Lecture format	2.706
10. Time of day class is scheduled	2.586

n = 527

Note: Content areas ranked from 5 (very frequently) to 1 (never).

Table 2

Rank Order of Nursing Education Content Areas
That Students Identified as Stressful

Content Areas	Combined Score of 4 and 5 in Percentage
Tests and quizzes	79.8
Amount of reading required	73.1
Nursing care plans	68.9
Time spent studying	60.4
Actual clinical practice	44.8
Research for clinical practice	35.0
Independent learning activities	27.9
Hours of nursing classes per week	18.9
Lecture format	17.5
Time of day class is scheduled	14.5

n = 527

Note: Content areas ranked from 5 (very frequently stressful) to 1 (never stressful).

To identify the differences in the twelve programs that responded to the first question, a comparison of frequencies and percentages of responses by combining scores of 4 (frequently stressful) and 5 (very frequently stressful) was made in each of the three highest rate content areas.

In the content area of tests and quizzes, the findings ranged from a high of 99.4% in program number 12 to a low of 57.2% for program number 11. This finding indicates that students in some nursing programs experience significantly higher levels of stress than students in other nursing programs.

In the content area of amount of reading required, the findings ranged from a high of 94.2% in program number 02 to a low of 55.4% in program number 03.

In the content area of nursing care plans, the findings ranged from a high of 91.5% in program number 10 to a low of 28.3% in program number 03.

The results of Table 3 in the area of nursing care plan preparation show a wide variation in the responses of school number 03, with a combined 4+5 scores of 28.3%, and school number 10 with the highest combined 4+5 scores of 91.5%. (See Table 1.) Research for clinical practice placed sixth in perceived stress in nursing education.

There is a direct correlation between the combined 4+5 scores for research for clinical experience and the

Table 6

Numbers and Percentage of Students in Programs by Age

Age	School	01	02	03	04	05	06	07	08	09	10	11	12
17-20	n	8	1	1	16	9	10	4	3	7	4	5	6
	%	13.1%	2.8%	18.0%	41.0%	24.3%	16.4%	11.8%	7.0%	15.6%	8.5%	18.5%	15.0%
21-24	n	9	16	8	4	3	12	7	7	5	10	5	11
	%	14.8	44.4	14.0	10.3	8.1	19.7	20.6	16.3	11.1	21.3	18.5	27.5
25-30	n	21	7	17	7	9	12	7	17	14	13	9	13
	%	34.4	19.4	29.8	17.9	24.3	19.7	20.6	39.5	31.1	27.7	33.3	32.5
31-34	n	14	4	10	7	7	7	7	8	10	8	4	6
	%	23.0	11.1	17.5	17.9	18.9	11.5	20.6	18.6	22.2	17.0	14.8	15.0
35-40	n	3	6	15	3	6	13	8	6	4	9	3	3
	%	4.9	16.7	26.3	7.7	16.2	21.3	23.5	14.0	8.9	19.1	11.0	7.5
41-45	n	4	2	4	2	3	5	1	2	5	2	1	1
	%	6.6	5.6	7.0	5.1	8.1	8.2	2.9	4.7	11.1	4.3	3.7	2.5
46-50	n	2	0	0	0	0	1	0	0	0	1	0	0
	%	3.3	0.0	0.0	0.0	0.0	1.6	0.0	0.0	0.0	2.1	0.0	0.0
50+	n	0	0	2	0	0	1	0	0	0	0	0	0
	%	0.0	0.0	3.5	0.0	0.0	1.6	0.0	0.0	0.0	0.0	0.0	0.0

Raw Chi Square = 113.82681
 Degrees of Freedom = 77

Sig. = .0033
 n = 527

combined 4+5 scores for preparation of nursing care plans for schools number 03 and number 10. The results of analysis show that school number 03 scored twelfth among the twelve schools in response to both of these aspects of the nursing curriculum, while school number 10 scored first among the twelve schools in both of these aspects of the nursing curriculum. These data are found in Table 4.

Because the preparation of nursing care plans is so closely related to research for clinical experience (data collection), it would be beneficial to reduce the amount of time expended or stress that students experience in the area of data collection.

The first research question, which sought to determine which areas of nursing education were perceived as sources of stress, provided data that were presented and analyzed in both written and graphic forms. The three content areas that were found to be the most stressful were tests and quizzes, the amount of reading required, and the preparation of nursing care plans.

In his research, Fox (1963a, 1963b, 1964) identified several areas of stress in nursing education as perceived and experienced by nursing students. These areas included clinical experience, informal evaluation by members of the faculty, and academic class load.

It is possible that the findings of this investigator's research differ from those of Fox's because

Table 4

Percentage of Combined Scores of 4 (Frequently Stressful) and 5 (Very Frequently Stressful) by Nursing Program for Nursing Care Plans and Research for Clinical Experience, along with Programs from Highest to Lowest Scores

School	Care Plans		Research for Clinical	
	Combined Scores	Rank	Combined Scores	Rank
01	80.4	4	29.5	8
02	52.8	8	54.3	2
03	28.3	12	18.6	12
04	79.5	5	36.8	5
05	61.7	11	35.3	11
06	78.7	6	36.6	6
07	70.6	7	54.1	3
08	88.4	2	28.0	9
09	86.7	3	26.7	10
10	91.5	1	55.3	1
11	42.3	10	29.6	7
12	50.0	9	42.4	4

of the many changes that have taken place in nursing education since the early 1960s. Today, nursing students must learn an increased amount of nursing theory and other scientific and technological knowledge, which probably provides students with a better foundation on which to approach clinical experience, thereby lessening stress in this aspect of nursing education. Fox also found that students experienced conflict between what they were taught in class and what they were asked to do on the units. Due to the newer approaches to the education of nursing students that employ clinical laboratories in the academic setting, students might be better prepared to perform in the clinical unit than they were previously. Nursing students used to rely on the clinical agency as a learning laboratory much more than they do today.

Along with the clinical aspects, the students in Fox's study identified preparation for their learning activities as one of the highly stressful areas, a finding consistent with those of this study. Elfert (1976) also found that course grades were highly stressful early on in the nursing program. The results of her research, which was conducted with baccalaureate degree nursing students, are consistent with the findings of this study conducted in associate degree nursing education.

The second question sought to identify the age range and frequency of students at the time of this research. Of the 527 students in the sample, 14% (n=74) were 17-20 years old; 18.4% (n=97) were 21-24; 27.5% (n=146) were 25-30; 17.5% (n=92) were 31-34; 15% (n=79) were 35-40; 6.1% (n=32) were aged 46-50; and 0.6% (n=3) were over 50 years of age. 66.22% (n=317) of the class falls into the 25-40 age group; 45.20% (n=238) of the class falls in the 25-35 age group. These data are found in Table 5.

Program number 04 had the highest percentage in the 17-20 year age group (41% of the class), while program number 02 had only 1.8% of the class in this age group.

Programs number 03 and 06 had 15% and 13%, respectively, of their freshman class in the 35-40 year old age group, while four programs--01, 04, 11, and 12--had only three students each in this age group. These data are found in Table 6.

Tables 5 and 6 give evidence that the greatest percentage of students fall within the 25-35 year old age group. These findings are consistent with the age statistics of the student who is described in literature as the non-traditional college student. There was considerable range in ages in the student population from college to college.

Table 5

Comparison of Frequency and Percentage of Students
in the Sample Population Regarding Age

Age in Years	Frequency	%
17-20	74	14.0
21-24	97	18.4
25-30	146	27.7
31-34	92	17.5
35-40	79	15.0
41-45	32	6.1
46-50	4	0.8
50 +	3	0.6

n = 527

Table 8

Comparison of Actual Numbers and Percentage
by Gender in the Sample Population

		School												
		01	02	03	04	05	06	07	08	09	10	11	12	Total
<u>MALE</u>														
n	4	0	1	2	4	5	6	2	5	5	6	2	42	
%	6.6	0.0	1.7	5.1	10.5	8.5	17.6	4.8	11.1	10.6	22.2	5.0	8.0	
<u>FEMALE</u>														
n	57	36	57	37	34	54	28	40	40	42	21	38	484	
%	93.4	100.0	98.3	94.9	89.5	91.5	82.4	95.2	88.9	89.4	77.8	95.0	92.0	

Raw Chi Square = 21.07103
 Degrees of Freedom = 11
 Sig. = .0326
 n = 526

The learning needs of the individual students within these age groups may vary widely, however, and need to be addressed to provide for the educational environment that will be of maximum benefit to the nursing students.

Research Question Three

The third question addressed the gender of the student population. Of 526 respondents from the twelve nursing programs, 42 students, or 8%, were male and 484, or 92%, were female. These data are found in Table 7.

Male students were enrolled as freshmen in eleven of the twelve programs assessed. One program had no male students, three had five male students, and two programs had six male students. These data are found in Table 8.

Research Question Four

This question addressed the marital status of the student population in the sample. The question contained four possible responses: single, divorced, married, or widowed. An analysis of the 527 responses to this question shows that 212 students, or 40.5%, are single; two students, or 0.4%, are widowed; 235 students, or 44.8%, are married; and 75 students, or 14.3%, are divorced. These data are found in Table 9.

Table 7
Number and Percentage of Students
in Programs by Gender

Frequency	Percentage	
	8%	92%
	42	484
	male	female

n = 526

Table 21

Comparison of the Percentage of Students by Program of the
Sample Student Population of their Perceptions
of How Well They Were Handling Stress

	School											
	01	02	03	04	05	06	07	08	09	10	11	12
Not Coping	1.9	11.4	1.7	7.7	2.7	13.1	9.1	7.0	9.5	11.1	12.0	10.5
Coping Adequately	79.6	82.9	87.9	87.2	83.8	77.0	84.8	76.7	83.3	71.1	88.0	81.6
Coping Very Well	18.5	5.7	10.3	5.1	13.5	9.8	6.1	16.3	7.1	17.8	0.0	7.9
n = 510												

Table 9
Comparison of Actual Numbers and Percentage
of Sample Population According to
Marital Status

Marital Status	Frequency	Percentage
Single	212	40.5
Widowed	2	0.4
Married	235	44.8
Divorced	75	14.3

n = 524

The number of single students ranged from a low of 24.1% of the student population in program number 03 to a high of 57.9% of the student population in program number 04. In the same two programs, the number of married students in program number 03 is the highest at 60.3%, while program number 04 is the lowest at 23.7%. These data are found in Table 10.

Research Question Five

This question sought to identify the number of children that students in the sample population had. Five hundred and twenty-six students reported having a total of 262 children. Two hundred and sixty-four students, or 50.2% of the sample population, reported having no children. These data are presented in Table 11.

Research Question Six

This question sought to identify the frequency of students who work outside of the home in addition to attending a two-year associate degree level nursing program. Five hundred and thirteen students responded to this question out of a sample of five hundred and twenty-nine. Seventy-three percent ($n=375$) of the sample population reported that they work outside of the home.

Table 10

Comparison of Frequency and Percentage of the
Sample Population by Nursing Program
According to Marital Status

School	Single		Divorced		Married		Widowed	
	n	%	n	%	n	%	n	%
01	23	37.7	13	21.3	25	41.0	0	0
02	19	52.8	3	8.3	14	38.9	0	0
03	14	24.1	8	13.8	35	60.3	1	1.7
04	22	57.9	6	15.8	9	23.7	1	2.6
05	17	44.7	6	15.8	15	39.5	0	0
06	30	50.0	6	10.0	24	40.0	0	0
07	16	48.5	6	18.2	11	33.3	0	0
08	12	28.6	8	19.0	22	52.4	0	0
09	16	35.6	5	11.1	24	53.3	0	0
10	13	27.7	9	19.1	25	53.2	0	0
11	12	44.4	2	7.4	13	48.1	0	0
12	18	46.2	3	7.7	18	46.2	0	0

Table 11

Comparison and Frequency of Student Population
With Children and Number of Children Reported

Numbers of Children	Frequency	Percentage
None	264	50.2
One	52	9.9
Two	109	20.7
Three	70	13.3
Four	25	4.8
Five	4	0.8
Six	1	0.2
Seven or more	1	0.2

mean = 2.165

n = 526

Twenty-seven percent (n=138) reported they did not work outside the home. Data results are found in Table 12.

The intensity of the associate degree nursing program coupled with the demands on the students created by children, parents, and jobs forces adult students to consistently use their time efficiently. Often one task or project must be placed aside in order to allow time to devote to more pressing matters. On occasion, the task that has the most immediate relevance at the moment receives the attention.

Research Question Seven

This question sought to identify the number of hours per week that students worked outside the home in addition to attending a two-year associate degree level nursing program. Three hundred and seventy-five students reported that they work outside the home: 17.9% (n=67) work up to 10 hours; 40.5% (n=152) work 15-20 hours; 25.1% (n=94) work 21-30 hours; 13.3% (n=50) work 31-40 hours; and 3.2% (n=12) work more than 40 hours per week while attending the associate degree nursing program. Data results are found in Table 13.

Table 12

Comparison of Frequency and Percentage of
Student Population Who Work
Outside of the Home

Response	Frequency	%
Yes	375	73
No	138	27

n = 513

Table 13

Comparison of Frequency and Percentage of Student
Population Reporting Number of Hours per Week
Worked Outside of the Home

Number of Hours Worked	Frequency	%
0 - 10	67	17.9
11 - 20	152	40.5
21 - 30	94	25.1
31 - 40	50	13.3
41 +	12	3.2

n = 375

This question sought to identify whether or not students were the main source of income for themselves or their families. Five hundred and seven students responded to this question. 35.7% (n=181) reported that they were the main source of income. 64.3% (n=326) reported that they were not the main source of income for themselves or their family. These data are found in Table 14.

Compared to the findings of research question seven, which indicates that 73% of the sample population work outside the home, question eight shows that approximately one-third of these were the main source of income for their families. Two-thirds of those working outside of the home do so to supplement income from other sources.

Tables 10 through 14 addressed demographic data including marital status, number of children, and employment. Findings in the sample population are consistent with the description of the adult learner as described in the literature.

Research Question Nine

This question sought to identify the number of courses that students in the associate degree nursing programs were carrying in addition to the nursing courses.

Table 14

Comparison of Frequency and Percentage of Student
Population Reporting Main Source
of Income for Self/Family

Response	Frequency	%
Yes	181	35.7
No	326	64.3

n = 507

Of the student responses, 7.3% reported taking English, 26.2% reported taking psychology, 43% reported taking anatomy and physiology, and 25% reported taking other courses. These data are found in Table 15.

The second part of the question sought to identify the number of students who had been in the pre-professional program the previous year. Of the 456 first-year students who responded to this question, 42.1% had been in the pre-professional program during the previous year, while 57.9% had not. These data are found in Table 16.

Research Question Ten

This question sought to identify the distance that community college nursing students needed to travel to school (one-way). Of the 512 students who responded to this question, 18.6% (n=95) traveled less than five miles, 26.0% (n=133) traveled 5-10 miles, 20.3% (n=104) traveled 11-15 miles, and 18.9% (n=97) traveled more than 20 miles to attend the nursing programs. The mean driving distance to campus is 2.910, or approximately 10-15 miles each way. These data are found in Table 17.

Table 15

Percentage of Students Taking Supportive Courses
in Addition to Nursing Courses

Course	Percent
English	7.3 %
Psychology	26.2 %
Anatomy and Physiology	43.0 %
Other	25.0 %

Table 16

Comparison of Frequency and Percentage of Student
Population Reporting to Have Been in the Pre-
Professional Program the Previous Year to
Those Beginning Nursing Studies at the
Time of the Study

Response	Frequency	%
Yes	192	42.1
No	264	57.9

n = 456

Table 17

Comparison of Frequency and Percentage of
Student Population Reporting Distance
to Campus in Miles (one way)

Distance One Way	Frequency	%
Less than five miles	95	18.6
5-10 miles	133	26.0
11-15 miles	104	20.3
16-20 miles	83	16.2
More than 20 miles	97	18.9

n = 512 mean = 2.910

This question sought to identify the amount of stress that the sample population experienced, or perceived that they experienced, during the last few weeks of the first year of the associate degree nursing program. The question allowed for one of three responses: less than normal stress, normal stress, and more than normal stress.

Of the 514 students who responded to this question, 0.6% (n=3) reported experiencing less than normal stress, 25.5% (n=131) reported experiencing normal stress, and 73.9% (n=380) reported experiencing more than normal levels of stress. These data are found in Table 18.

When levels of stress were compared to the gender of the individual, a higher percentage of men (2.6%) than women (0.4%) reported experiencing less than normal stress, while a higher percentage of men (76.9%) also reported experiencing more than normal stress than women (73.5%). These data are found in Table 19. These findings are consistent with the theory offered by both Groff (1984) and Rogness (1976) that male students have additional stresses to those experienced by females in nursing education.

Table 18

Comparison of Frequency and Percentage of
Student Population Reporting Having
Experienced Levels of Stress

Experience of Stress	Frequency	%
Less than normal	3	0.6
Normal stress	131	25.5
More than normal stress	380	73.9

Mean = 2.733
n = 514
St. Dev. = .456

Table 19

Comparison of Percentage of Sample Population
Experiencing Levels of Stress by Gender

Level of Stress	Male	Female
Less than normal stress	2.6	0.4
Normal stress	20.5	26.1
More than normal stress	76.9	73.5

Males n = 39

Females n = 472

This question sought to identify how well nursing students felt they were handling the stress that they were experiencing. Of the 510 students who responded to this question, 40 students, or 7.8%, reported that they were not coping well with the stress; 416 students, or 81.6%, reported they were coping adequately; and 54 students, or 10.6%, reported they were coping very effectively. These data results are found in Table 20.

Because 40 students, or 7.8% of the 510 students, reported that they were not coping well, a comparison of the percentage of students not coping well was made by program.

In the group that reported that they were not coping well, results showed a range of 1.7% for program number 03 to a high of 12% for program number 11. These data are found in Table 21.

It is interesting to note that there is a relationship between the various programs (see Table 3) and the percentage of students who felt they were not coping effectively with stress (see Table 21). For example, program 03 scored very low in stress levels in all areas of the program (Question 1) compared to other schools. Program 03 had a low percentage (1.7%) of students who reported that they were not coping effectively. In

Table 20

Comparison of Frequency and Percentage in the Total
Sample Population of Students' Perceptions
of How Well They Were Handling Stress

Category of Stress	Frequency	%
Not coping well	40	7.8
Coping adequately	416	81.6
Coping very effectively	54	10.6

Mean = 2.027

St. Dev. = .429

Table 25

Raw Scores of Participants in Their Identification of Patients' Needs and Problems in the Experimental and Control Groups

		Student Numbers													
		Experimental Group							Control Group						
Student		1	2	3	4	5	6	7	1	2	3	4	5	6	7
Chart															
1		11	11	8	10	6	8	4	9	8	9	5	7	9	8
2		9	9	6	7	8	9	6	8	9	7	7	5	6	7
3		9	9	5	7	5	6	7	6	5	6	3	7	7	5
4		11	9	10	9	12	8	12	9	11	6	6	7	10	10
5		5	7	6	4	5	4	5	7	4	5	4	4	5	5
6		3	3	2	3	2	3	2	2	2	2	2	4	3	3
Total		48	48	37	40	38	38	36	41	39	35	27	34	40	38

Maximum number possible = 58

contrast, program 02, which scored high in two of the three highest areas of stress, also had a high percentage of students (11.4%) who felt that they were not coping effectively.

To determine if a student's gender affected his or her perception of how well he or she was coping, a comparison of percentages by gender was computed. From a sample of 507 respondents, 15.4% of the male students compared to 7.3% of the female students reported that they were not coping well. Approximately twice as many male as female students perceived that they were not coping effectively with the stress they were experiencing. These data are found in Table 22.

Hypothesis Two

It was hypothesized that the implementation of a structured format for the collection of data in the clinical area would decrease the amount of time nursing students need for clinical data gathering and the identification of patient needs and problems.

Fourteen students from the nursing program in one of the fourteen state-funded community colleges in Massachusetts participated in the study, which had as its hypothesis that implementing a structured format would decrease the time student nurses had to spend to collect

Table 22

Comparison of Frequency and Percentage of Students in
the Sample Population by Gender of Their Perceptions
of How Well They Were Handling Stress

	Male		Female	
	n =	%	n =	%
Not coping	6	15.4	34	7.3
Coping effectively	28	71.8	385	82.3
Coping very well	5	12.8	49	10.5

Male n = 39
Female n = 468

Raw Chi Square = 3.67
Degrees of Freedom = 2
Sig. = .1589

data. Students were divided into two groups of seven students each by random sampling. Students were timed to see how long it took to collect data from each of six charts, data that they felt they would need to begin formulating a nursing care plan.

The two groups of students were divided into experimental and control groups. The seven students in the experimental group were given a structured format for data collection. The format consisted of one page of paper that was divided into columns and sections into which the students would put appropriate data (see Appendix B). It was felt that this approach would provide structure in the data collection process and may decrease the time it took for both data collection and the preparation of the nursing care plan.

Analysis of the findings show no significant difference in the means between the experimental and control groups in the amount of time it took for data collection or preparation of the nursing care plan. These data can be found in Tables 23 and 24.

Hypothesis Three

It was hypothesized that the use of a structured format for collection of data would result in a more thorough identification of actual and potential problems in

Table 23

Means, Standard Deviations, and T-values of the
Time Necessary for Data Collection for the
Experimental and Control Groups

Chart	Experimental group n = 7		Control group n = 7		t
	\bar{x}	SD	\bar{x}	SD	
1	25.42	9.19	17.00	6.50	-1.98
2	23.42	6.16	20.00	5.77	-1.07
3	18.00	6.00	15.42	4.46	-.91
4	22.42	6.29	21.00	7.16	-.40
5	13.00	5.77	8.85	3.53	-.62
6	8.28	3.54	8.00	3.83	-.14

There were no significant differences in the means between the experimental and control groups.

Table 24

Means, Standard Deviations, and T-values of the Time Necessary for Preparation of the Partial Nursing Care Plans for the Experimental and Control Groups

Chart	Experimental group n = 7		Control group n = 7		t
	\bar{x}	SD	\bar{x}	SD	
1	21.14	6.59	25.28	5.82	1.25
2	20.57	5.74	19.57	7.56	-.28
3	23.57	5.79	20.42	6.28	-.97
4	23.28	6.23	19.28	4.99	-1.38
5	11.71	5.52	12.14	4.25	.16
6	10.28	2.28	11.14	5.66	.37

There were no significant differences in time necessary for preparation of the partial nursing care plan for the Experimental and Control groups.

the formulation of a nursing care plan that incorporates the nursing process.

Six patient charts, with all identification removed to protect patients' privacy, were obtained from a hospital. The researcher's coding was compared with that of two associate degree nursing faculty members, and the percentage of intercoded agreement was calculated as a measure of reliability.

The raw scores of participants in the identification of patient needs and problems in both the experimental and control groups for individual charts and on the combined scores for the six patients charts that were used indicate no obvious differences in the number of patient needs and problems identified by the student population. These data are found in Table 25.

Content analysis of the responses provided by the students in the list of patient needs and problems were computed. Means, standard deviations, and t-values of the number of actual and potential problems were identified for both the experimental and control groups. The findings from participants' responses reveal no significant difference in the number of actual and potential problems identified by the experimental and control groups. Although it is not statistically relevant, it is interesting that a greater number of problems was identified by the experimental group (285 problems) than by

Table 27

Comparison of Raw Scores for State Anxiety (SA) and Trait Anxiety (TA)
between the Experimental and Control Groups

		Control Groups								Experimental Group							
Student		A ₁	A ₂	A ₃	A ₄	A ₅	A ₆	A ₇	Total	E ₁	E ₂	E ₃	E ₄	E ₅	E ₆	E ₇	Total
Pre-test	SA	23	24	35	46	21	22	20	191	33	32	40	36	23	22	26	212
	TA	23	32	42	37	23	32	38	227	36	34	41	33	33	26	42	212
Post-test	SA	52	57	53	59	47	48	50	366	35	38	44	67	58	52	75	369
	TA	28	30	41	46	34	35	38	252	36	36	44	38	34	28	39	255

the control group (254 problems). These data are found in Table 26.

Hypothesis Four

It was hypothesized that there would be a significant difference between the control and experimental groups in the amount of stress experienced while preparing for clinical experience.

Students in the experimental and control groups completed the State-Trait Anxiety Inventory Questionnaire (STAI) during the summer school vacation, a time assumed to be of low or normal stress. They then took the STAI again after completing their first nursing care plan after their return to the nursing program from summer vacation. Raw scores for each individual and the combined scores within the experimental and control groups were analyzed.

The findings show that there was an obvious increase in the raw scores for state anxiety in the post-test in both the control and experimental groups. These data are found in Table 27.

Further analysis of the pre- and post-Trait results show no significant differences in the means and standard deviations of the pre- and post-Trait Anxiety Levels in the control and experimental groups. These data are found in Table 28.

Table 26

Means, Standard Deviations, and T-values of the Number of
Actual and Potential Problems Identified for the
Experimental and Control Groups

Chart	Experimental group		Control group		t
	\bar{x}	SD	\bar{x}	SD	
1	8.28	2.62	7.85	1.46	-.38
2	7.71	7.71	7.00	7.00	-1.00
3	6.85	1.67	5.57	1.39	-1.56
4	10.14	1.57	8.42	2.07	-1.74
5	5.14	1.06	4.85	1.06	-.50
6	2.57	.53	2.57	.78	0.00

Table 27

Comparison of Raw Scores for State Anxiety (SA) and Trait Anxiety (TA)
between the Experimental and Control Groups

		Control Groups								Experimental Group							
Student		A ₁	A ₂	A ₃	A ₄	A ₅	A ₆	A ₇	Total	E ₁	E ₂	E ₃	E ₄	E ₅	E ₆	E ₇	Total
Pre-test	SA	23	24	35	46	21	22	20	191	33	32	40	36	23	22	26	212
	TA	23	32	42	37	23	32	38	227	36	34	41	33	33	26	42	212
Post-test	SA	52	57	53	59	47	48	50	366	35	38	44	67	58	52	75	369
	TA	28	30	41	46	34	35	38	252	36	36	44	38	34	28	39	255

Table 28

Mean Differences and Standard Deviations of
Pre- and Post-Trait Anxiety Levels between
Control and Experimental Groups

	Control	Experimental
Pre	$\bar{X} = 32.4286$ $SD = 7.323$	$\bar{X} = 35.0000$ $SD = 5.416$
Post	$\bar{X} = 36.0000$ $SD = 6.245$	$\bar{X} = 36.2486$ $SD = 4.894$
	$t = .471$	$t = .109$

Analysis of the findings of the mean differences of pre- and post-state anxiety levels shows a significant increase in the means for both the control and experimental groups, with significance at the $p < .05$ level. Upon closer analysis of the standard deviations of the post-test findings, there is a much greater variability of deviation in the experimental group. These data are found in Table 29.

As evidenced in Tables 27 and 29, the mean differences in the control and experimental groups were 52.2857 and 52.7143, respectively. Yet the standard deviation of 4.461 for the control groups and 14.919 for the experimental group suggest that there may have been one or two individuals within the experimental group who were highly stressed at the post-testing, which might account for the high standard deviation. Table 27 identifies two individuals with relatively low post-state anxiety and two with high post-state anxiety scores. These findings did not occur in the control group.

Table 29

Mean Differences and Standard Deviations of
Pre- and Post-State Anxiety Levels between
the Control and Experimental Groups

	Control	Experimental
Pre	$\bar{X} = 27.2857$ $SD = 9.656$	$\bar{X} = 30.2857$ $SD = 6.800$
Post	$\bar{X} = 52.2857$ $SD = 4.461$	$\bar{X} = 52.7143$ $SD = 14.919$
	$t = .000^{**}$	$t = .018^*$

* $p = <.05$

** $p = <.01$

C H A P T E R 5

DISCUSSION, SUMMARY, AND RECOMMENDATION

This chapter deals with the results and findings of this study, which investigated the sources of stress perceived by freshman nursing students in twelve associate degree nursing programs in Massachusetts state-funded community colleges. The findings from the implementation of a structured format for data collection regarding patient needs and problems for inclusion in a nursing care plan will also be discussed. This discussion will take into account the amount of time involved in both the data collection and nursing care plan process. In addition, the findings related to stress levels measured before and immediately after the formulation of a nursing care plan are described. This chapter will also relate the findings of this study to other studies that have previously been documented in the review of the literature.

Sample Data

Twelve of the fourteen Massachusetts state-funded community colleges that offer nursing programs at the associate degree level were studied for the portion of the study dealing with sources of stress. After receiving permission from the appropriate administrative individuals

at each of the community colleges, questionnaires were mailed to students in the nursing programs during the last month of the first year of the nursing program. After these questionnaires were returned to this researcher, the findings were computed and analyzed. The number of responses to this study was 85%, a high percentage for a questionnaire distributed through the mail. The high rate of responses to this study could be an indication that students perceive a need to identify and decrease the sources of stress in nursing education at the associate degree level. There have been no studies conducted to date on the implementation of a structured approach to data collection to decrease stress in the clinical area of nursing education.

Studies conducted by Fox (1964), Garrett (1976), Elfert (1976), Jones (1978), and Sobol (1978) examined the stress in nursing education at the diploma and baccalaureate levels. Stathas (1975), Weaver (1978), and Charlesworth (1981) studied stress in nursing students and attempted to decrease stress during nursing education by altering coping styles. Their findings will be contrasted throughout this discussion with those of this study.

The type of institution in the study was Massachusetts state-funded community colleges. The size of the nursing programs in these colleges ranged from 27 to 90 freshmen students. The nursing programs were located from

Cape Cod at the southeastern tip of the state to the northwest corner.

Student Characteristics

Students in the nursing programs in the twelve community colleges studied were similar to those identified in the literature as typical community college students. Findings show that the students range in age from seventeen to 50-plus years and have a variety of marital statuses. Many of these students have children, and a high percentage of them commute a significant distance to school. Students were also shown to be divided in the number of credits for which they were enrolled. Eight percent of the sample population was male. Seventy-three percent of the students worked outside of the home in addition to attending the nursing programs. Forty percent of these worked more than twenty hours per week. More than one-third of the sample reported to be the main source of income for self/family.

Perceived Stress Questionnaire

The questionnaire addressed ten aspects of nursing education that students rated on a Likert scale of one to five, reflecting the degree to which that particular aspect of nursing was stressful for them. The remainder of the

questionnaire included statistical data about the student population. Students were also given the opportunity to explore their stress levels and coping abilities. The questionnaire also allowed students to identify stressful events in their lives that affected their roles as nursing students.

Each of these questions and the implications of the findings will be discussed in this section of this chapter.

Research Questions

The first research question addressed various facets of nursing education. Ten areas of the nursing program were identified as stress-producing by three nursing faculty members with master's degrees in the associate degree nursing program at Bristol Community College in Fall River, Massachusetts. This question sought to determine which area(s) were perceived by students to be sources of stress in the nursing education programs.

Five hundred and twenty-seven nursing students near the end of the first of two years of study in NLN-accredited associate degree nursing programs identified tests and quizzes as the most frequent stress producer of the ten aspects of nursing education listed on the questionnaire. In his research on stress in nursing education, Fox (1964) found that nursing students perceive

stress as coming primarily from the educational aspect of the nursing programs. Stein (1969) also found that students rated their early nursing courses as highly stressful. Elfert (1976) found that students related stress to exams and assignments. These three researchers, however, did not implement any innovative techniques to reduce stress or alter the environment in any way.

Stathas (1975) was interested in lowering test anxiety and increasing academic performance in nursing students in associate degree education. His research on systematic desensitization was effective in reducing test anxiety in nursing students. In his research on associate degree nursing students, McDonald (1983) also found stress linked to test anxiety among nursing students and initiated an intervention aimed at study skills. The findings of this researcher that tests and quizzes create high stress for nursing students corroborates those of other studies. Students who receive an academic grade lower than C are not allowed to continue the next semester. They must reapply for readmission to the nursing program the following year but are not certain of acceptance. Failure in a nursing course may mean the end of the pursuit of a nursing career for many at the associate degree level.

The second most stressful of the ten aspects of nursing education listed on the questionnaire was the amount of reading required. Seventy-three percent of the

527 students reported this amount of reading to be stressful frequently or very frequently. Considering the amount of reading required in the courses that nursing students must take in the two-year course of study in addition to the reading in the nursing course itself, students must often forego some of the required reading to give adequate time to other commitments. Uustal (1984) proposes that nursing education should include values clarification to assist students to deal creatively and decisively with values conflicts. McDonald (1983) found that values clarification provided students with help in time management and in setting priorities. Whatever approach is used, it is imperative to assist students to find effective coping mechanisms for decreasing the stress associated with the amount of reading that they have to do.

The third most stressful of the ten aspects of nursing education listed, as reported by 527 nursing students, was nursing care plans. Sixty-nine percent of the nursing students identified this area as being frequently or very frequently a source of stress. Nowhere in the literature did studies show any attempt to decrease stress in this area, even though it is the one aspect of nursing education that is consistently practiced in day-to-day nursing situations even after graduation. In Fox's study (1964), nursing students reported that much of nursing education was apprenticeship training without the

basic essentials of a good apprenticeship. Perhaps this perception indicates that students feel that they lack the tools on which they must build their nursing careers.

Nursing education today puts much emphasis on the fact that nursing is a scientific approach to providing care to a patient who is seen as a biopsychosocial being. Whatever nursing theory is employed in the educational program, freshman nursing students need assistance in formulating the beginning steps of the nursing care plan.

The wide span of responses among nursing students to the issue of dealing with nursing care plans may be accounted for by the differing degree of emphasis put on nursing care plans in various nursing programs. For example, one particular associate degree nursing program not in this sample requires the completion of only eight nursing care plans within a semester, while another nursing program requires two or three nursing care plans per week. Poor performance in the area of nursing care plans is the basis for clinical probation in this latter program. Other nursing programs fall somewhere between these two extremes. The degree of academic or clinical weight given nursing care plans affects students' perception of this activity as a source of stress. For those programs where the formulation of nursing care plans creates high levels of stress, this researcher strongly agrees with Martucci (1968) that not only is it important to enhance satisfying

situations, but it is also important to resolve or modify those situations that create stress in the interest of providing more effective learning experiences.

The second through tenth research questions addressed the demographics of the student population in the twelve associate degree programs studied. Findings from this study are consistent with those of McDonald (1983), who found that the student population of an associate degree nursing program in South Carolina consisted of a similar breakdown of student characteristics--that is, non-traditional students with an average age range of 25-28 years, married, with family responsibilities, and working full- or part-time. Callahan (1982) also found that the student population of an associate degree nursing program in which she studied stress and its relationship to knowledge of stress theory had similar characteristics.

The variety of ages and differences in educational environments prior to entering the nursing programs suggests that there may be a range of educational approaches to which students were accustomed.

Many older students enter the educational process and culture of nursing ignorant of what is to be expected of them. The demands of their role as students must compete with the demands of home, family, children, and jobs. Younger students may still be dealing with the issues of adolescence. They often find themselves to be expected to

function clinically at a level of responsibility not commensurate with their age. Studies have shown that peer support groups and values clarification help young students to deal with the many values conflicts that are part of each student's personal life, not to mention the values conflicts that are a significant aspect of the clinical situations in which they find themselves. Meichenbaum (1977) proposes the concept of "stress inoculation," which includes informing students in advance of what difficulties they might face and encouraging them to develop their own strategies to achieve personal goals. Stress inoculation helps students to feel in control, thereby reducing the unpleasantness of a situation.

Developing positive coping strategies to meet their emotional needs is necessary for all individuals in order to handle stress.

The eleventh research question sought to identify the amount of stress that the sample population perceived or experienced. Of the 514 students responding to this question, 380 students, or 79.3%, reported experiencing more than "normal" levels of stress. Because this questionnaire was completed during the latter part of the second semester of the first year of the nursing program, it is possible that, in addition to the usual stresses of the nursing programs, students may also have been experiencing additional stresses caused by end of semester

papers and approaching final exams in both nursing and other courses.

The twelfth research question sought to identify how well nursing students felt they were handling the stress that they were experiencing. Of the 510 students who responded to this question, 40% felt they were not coping well with the stress they were experiencing. Students' reports of levels of stress experienced and levels of coping is very interesting. In nursing programs where students felt low levels of stress overall, they also perceived themselves as coping more effectively. Conversely, in those programs where students experienced higher levels of stress, more students reported not coping as well with the stresses. It is important to note that twice as many men as women perceived that they were not coping effectively.

In situations where the threat of the educational process overshadows the coping abilities of the individual, distress among students affects performance and learning. Additionally, negative aftereffects on performance are magnified when the student does not feel in control of the situation.

Findings From Students' Responses

The first research question gave students the opportunity to identify suggestions for change within the nursing program and/or suggestions of ways to lessen stress. Approximately 50% of the respondents had some comments in this area. Students' responses were coded, and findings show that the responses fell into four basic categories: classroom or theory-based responses, dealing with stress, faculty-student relationships, and miscellaneous.

In the category of class-related responses, students indicated a desire for more frequent test-taking, improved class outlines, more organization of lecture material with syllabi, and a schedule of early morning classes that would begin at 10 A.M. rather than 8 A.M. Suggestions were also made to correlate school vacations with public school vacations from many students who are also mothers with children in school. A large number of students suggested having increased help with nursing care plans preparation.

A second area in which students had comments dealt with stress. Students voiced a desire for learning ways to deal with stress, for learning relaxation techniques, and for taking a course on coping mechanisms.

The third area of concern for students, which had a large number of responses, was faculty-student

relationships. Students wanted faculty members to delineate more precisely what they expected from students in the clinical setting. They also indicated a desire for more understanding by faculty of the stresses--both in school and in their home/personal lives--that affect their self-esteem and performance levels. Students indicated a desire for increased patience, calmness, and uniformity of expectations from faculty members. They wanted an upgraded quality of instruction from faculty members with a focus on promoting learning rather than exhibiting authoritarian attitudes.

Into the fourth category of responses--the miscellaneous category--fell suggestions for change and/or lessening stress. For example, students suggested ideas such as taking a speed reading course and getting helpful advice from the administration and/or faculty about such things as taking non-nursing courses early in order to lighten the course load while in the nursing program. Other students suggested trying not to worry about housework as one means of lessening stress. One student even suggested that a cleaning lady be assigned to each nursing student.

The comments and suggestions made by the nursing students reflect the findings of much published research on stress in nursing education. This researcher feels that a great deal can be done to lessen the areas of stress

identified in the first three categories delineated by students.

First, faculty members and administrators need only be aware and then exhibit a willingness to change some of the problems surrounding class schedules and syllabi. The organization of material and clarity of presentation is well within the scope of responsibility of nursing faculty members.

Second, the suggestions for information and courses on dealing with stress and learning coping mechanisms is easily obtainable if only nursing faculty members exert some effort in this area. Studies by Charlesworth (1981), Weaver (1978), Stathas (1975), and McDonald (1983) have shown how effective are the application of stress theory and other approaches that assist nursing students to develop coping strategies.

Third, faculty-student relationships, which are seen as stress-promoting by many nursing students, can change for the better if faculty members are willing to acknowledge the problems that exist and identify ways of changing faculty-student interactions.

Stein (1969), in her research on nursing students, found similar dissatisfactions with poor student-faculty relationships. Sobol (1978) found that nursing faculty members have historically exercised little foresight in planning learning experiences that assist students to cope

with stress. As many as fifty years ago, Torrop (1939) found that nursing students felt a lack of rapport between faculty and students--students voiced fear of sarcasm and temper on the part of the instructors. Fifty years later, these problems still exist. Nursing educators have the power and ability to change this situation to promote better student-faculty relationships.

The twelfth research question gave students the opportunity to identify stressful areas in their lives that affected them as nursing students. Responses from the nursing students were coded and placed into one of five categories: home life, personal life, finances, time management, and self-image.

In the category of home life, stressors were identified as trying to maintain relationships with husband/wife, children, siblings, boyfriends, and live-in mothers-in-law. Family deaths and illnesses were also cited as sources of stress. The illness or impending death of a grandparent was seen by some students as stressful. Other students found household responsibilities such as cleaning, shopping, and laundry to be highly stressful. A number of students mentioned that scheduling baby sitters was often difficult. This may be due to the fact that class and clinical schedules often vary from day to day and week to week.

A second category was identified as personal life stresses. This category included comments such as not being able to get enough sleep, lack of time for personal friends and hobbies, concerns regarding weight increase, the demands of moving, impending or new marriages, and divorce.

In the category of finances, students mentioned decreased income due to quitting jobs or decreasing the numbers of work hours and increased expenses for tuition, books, uniforms, baby sitters, and travel.

The category of time management contained comments related to the stress of finding time to study, chauffeuring children, helping children with their homework, and finding time to prepare for and attend special family celebrations and holiday festivities. The common everyday preparations for a child's birthday party take on new dimensions when they compete with preparing a nursing care plan or studying for a test.

Overall, time management was seen as a critical factor in the stress experienced by nursing students.

The last category--self-image--was frequently mentioned by nursing students. Fear of failure, low self-esteem, and guilt about spending time and energy on themselves at the expense of sleep, family relationships, and personal satisfaction were noted by the respondents.

It is possible to provide students with resources for increased coping abilities to handle the stresses that they experience. The values-clarification approach recommended by Simon (1972), Uustal (1984), and implemented by McDonald (1983) have shown this approach to be useful in decreasing stress in individuals by helping them to identify their values, set priorities, and then to function accordingly. Results of this approach are decreased value conflicts and increased self-esteem.

Summary

A brief summary of the results of the sample and institutional characteristics in this study and of the questionnaire responses are as follows:

1. Nursing students experience a significant amount of stress in nursing education programs that may affect the outcome of their learning activities both in the educational and clinical settings.
2. Tests and quizzes, the amount of reading required, and nursing care plans were the three areas that caused students the most stress of the ten content areas of nursing education.
3. Students reported that, in addition to the ten content areas listed on the questionnaire, home

life, personal life, finances, time management, and self-image were other areas of stress that affected their roles as nursing students.

4. The clarity of nursing theory, class schedules and syllabi, and class lectures, as well as improved student-faculty relationships, were cited as areas that needed to change in order to decrease stress in nursing programs.
5. A large proportion of the nursing student population in the community college programs were experiencing stresses and crises that are common to the adult learner population.

Once the problem areas were identified as possible stressors, a study was undertaken to test an intervention that might lessen stress in the area of data collection and preparation of the initial stages of the nursing care plan.

Fourteen students volunteered to participate in this study, which was conducted during the summer break after the first year of the associate degree nursing program. Students were randomly assigned to the experimental and control groups. Those in the experimental group used a structured format for data collection created by this researcher, while those in the control group did not use such a structured format. Student participants in both groups were timed to determine how long it took them to collect data from six actual patient charts. Participants

were also timed to determine how long it took them to identify a list of patient needs and problems, which constitute the initial steps in the development of a nursing care plan. These findings and the quantitative responses in each list of patient needs and problems were analyzed. Desired responses for these lists were previously agreed upon by this researcher and two faculty members with master's degrees who were employed at the same community college.

Statistics on Research Participants

Of the fourteen student volunteers, five students, 35.71%, were 21-24 years old; four students, or 28.57%, were 25-30 years old; and one student, or 7.14%, was in the 31-34 age group. Three students, or 21.43%, of the participants were male. Eleven students, or 78.57%, were female. Ten of the student participants, or 71.43%, were single, and four students, or 28.57%, were married. No students reported being divorced or widowed. Using a Likert scale with a range of 5--which indicated very frequently stressful--to 1--which indicated never stressful--student responses to the question of stress in research for clinical analysis of findings show a mean score of 2.857. With response to the question on stress in

preparation of nursing care plans, findings reveal a mean score of 4.215.

A comparison of the findings for the time it took for data collection and the completion of a list of patient needs and problems showed that there was no significant difference in the mean scores between the control and experimental groups, either by an individual student or by the combined scores within the group. It is possible that the brevity of two of the six charts, which were provided by the hospital records room for this study, affected the time it took to collect the data and identify the patient needs and problems.

A pre-test and post-test was given to research participants to determine the possible change in state anxiety levels as a result of the intervention of the structured format for data collection. The Spielberger State-Trait Anxiety Inventory Scale (STAI) was given to assess the levels of anxiety experienced by the research participants. The pre-test was given during the summer break at a time when students were not directly affected by the stresses of the nursing program. The second test was given after students had completed their first nursing care plans after the summer break at the beginning of their second year of the nursing program. An analysis of the results of the post-test show no significant difference in the mean scores of the students in the experimental and

control groups compared to the results of the pre-testing. It appears that the structured format for data collection used by the experimental group did not significantly reduce the state anxiety of the students.

Additional Questionnaire Findings

The student participants in the experimental group were asked to complete a rating questionnaire on their perceptions of the value of the structured format for data collection (see Appendix D). Using a Likert scale, ratings ranged from 5 (strongly agree) to 1 (strongly disagree). Two questions were asked in the negative to incorporate validity into the questionnaire. Seven students completed the questionnaire.

The first question related to whether or not students found the structured format for data collection helpful. Four of the seven students rated this question with a score of 5, and three students gave it a score of 4. This resulted in a mean score of 4.57 out of a possible 5.0. The seven students perceived the structured format for data collection to be helpful.

In the second question, students were asked to identify whether they perceived themselves to spend less time than normal in data collection for clinical assignments. Again, four of the seven students gave a

rating of 5 for this question, while three students rated it with a score of 4. The mean score for this question was 4.57 out of a possible 5.0. It appears that students perceived themselves to spend less time collecting data while using the structured format for data collection.

The third question addressed the students' perception of whether or not the use of the structured format for data collection was helpful to them in data collection. This question had conveyed the same content as the first question but was stated in a negative format. An analysis of the findings shows that three students gave this question a rating of 2, while four students rated their response with a 1. The mean score for this question was 1.42 out of a possible score of 5.0. Responses validate the findings in the first question.

The fourth question addressed the students' perception of whether or not the use of the structured format for data collection saved time in collecting data. Three of the seven students gave a rating of 5 to this question, while three students gave it a rating of 4. One student rated his/her response 3. The mean score for this question was 4.28. Students felt that the use of the structured format for data collection saved time in completing this task.

The fifth question addressed the students' perceptions of the value of recommending the structured

format for data collection as part of an introduction to nursing care plan preparation. Analysis of the responses shows that five of the seven students strongly disagreed with this statement, which was stated in a negative format, and rated the question with a 1.0 score. Two students disagreed with this statement and gave it a score of 2 as their response. The mean score for this question was 1.28. Students felt that they would recommend using the structured format for data collection as part of an introduction to the nursing care plan preparation. Five of the seven students also gave comments and suggestions, saying that they felt that the structured format for data collection had helped them to organize the data they had collected.

Although hypotheses numbers II, III, and IV were not supported by significant statistical analysis, the findings from the students' responses to the last questionnaire indicate that this structured format for data collection does have value. Its value lies in the perceptions of students, who regarded it as an instrument that would help them cope with one of the stressful aspects of nursing education.

Conclusions and Implications of the Study

This section includes the major findings from the study and the conclusions, implications, and recommendations for further research.

Major Findings

The major findings from this study are as follows:

1. The use of the structured format for data collection for clinical experiences did not save students time in the collection of data or the completion of a list of patient needs and problems.
2. The use of the structured format for data collection for clinical experiences did not result in a statistically significant quantity of identified patient needs and problems.
3. There was no statistically significant difference in the reduction of state anxiety in the experimental group.
4. There was a perceived value of the structured format for data collection in the experimental group that used the structured format for data collection.

Conclusions

It is clear from the major findings in this study that stress in associate degree nursing education is experienced by a large percentage of nursing students. Evidence is also given that specific aspects of nursing education are more likely to be sources of stress for students. In spite of the findings that 79% of the sample experience stress in nursing education, it cannot be concluded that this stress is related solely to the educational process. The type and amount of nursing theory, the format used for teaching the theory, the quality of the presentations, the amount of time spent in each aspect of the various areas of the program of nursing education, the educational preparation of the faculty, and the response of the faculty to student stress will vary from one nursing program to another.

That stress in associate degree nursing education is seen as expected and unavoidable may affect the amount of acknowledgement by faculty members of the need or even desire to lessen stress. This is not to say that nursing faculty members do not acknowledge the presence of stress within nursing programs or that they are unaware of the stresses in the lives of student nurses outside of the nursing program. Rather, because stress was identified most frequently in the areas of tests and quizzes, the

amount of reading required, and nursing care plans, faculty members must take more responsibility in planning their programs in ways that would reduce stress to assure the optimal milieu for learning. To do this, they must assess the extent of stress in various aspects of the nursing program in which they teach and begin planning to decrease that stress by changing the external environment for test-taking and the scheduling of tests within the program of study, by guiding students to develop coping strategies that would help them identify alternate ways of dealing with the amount of reading required, and by providing a structured approach for the use of the fledgling nursing students as they attempt to prepare nursing care plans. The nurse educator must also become familiar with the principles of learning theory that would allow them to identify the learning needs of specific individuals and provide approaches to learning that meet those needs.

Implications of the Study

This researcher believes that nursing faculty members can have a profound effect on the lives of students within the nursing program. Nurse educators currently spend much time and effort in curriculum development in response to accreditation pressures brought to bear by the National League for Nursing. Little response or input from students

is sought except in the area of choice of texts. The implications of this study for nursing educators and student involvement center on the identification of stress areas and the alteration of programs as they presently exist. First, the nursing faculty must identify and address the areas of nursing education that students find highly stressful. This identification cannot be done without a willingness to change. Faculty members must begin to discuss what changes they foresee. They must be willing to attend seminars, workshops, and courses in stress theory and planned curriculum changes. This type of supplemental education should prepare faculty members to address the basic concepts of stress education and to employ basic teaching techniques that have been found to be effective. In addition, regional meetings of nurse educators across the state would allow faculty members to gain knowledge and expertise shared by their colleagues in other community colleges.

Another implication of this study for nursing education is that the degree of effectiveness and flexibility of teaching techniques presently employed by faculty members to meet the needs of adult learners needs to be addressed.

The final implication of this study, that of addressing the alteration of the nursing programs as they are currently presented, involves economic considerations.

Funding for the continuing education of faculty, consultants to work with faculty, the planning and execution of projects that use interdisciplinary faculty members to address both faculty and students on stress concepts, and planning for educational change and for the purchase of teaching materials must be sought both from within and beyond the institution in the form of grants or from supportive financial resources.

Recommendations for Nursing Education

Findings from the stress questionnaire, in addition to the results of the State-Trait Anxiety Inventory Scale, indicate that the levels of stress in nursing education are at a level that produce a climate not conducive to learning. The following recommendations are made with the intent of decreasing stress in the educational programs of nursing in areas that have shown over and over to be highly stressful by both this research and other studies.

Because the sample population of associate degree nursing students (529) represents a wide range of ages, marital statuses, and other demographic backgrounds that are consistent with the description of the adult learner in higher education, it is recommended that program schedules be flexible enough to meet the needs of the adult learner. Included in the areas that might need rescheduling are

clinical rotations, class schedules, and other required activities of the nursing program. In addition, programs should be presented using a wide range of teaching methods to meet the learning needs of nursing students who have different learning styles. Testing of students to determine learning styles may need to be done to ascertain that what is offered does indeed meet their needs.

A second recommendation is to continue the beginning effort of nursing faculty members to close the gap between stated behavioral objectives--such as self-direction, creativity, and autonomous professional practice--and the actual educational process that frustrates or punishes such behaviors.

Another recommendation for nursing education is the consideration of incorporating approaches already studied and proven to decrease stress in nursing education. Sessions on values clarification would assist students to identify and deal with their own values and values conflicts. The collaboration of nursing faculty members with those of other disciplines, such as psychology, could help students to decrease anxiety in areas such as test-taking.

A fourth recommendation would be the inclusion of stress theory and coping strategies into the formal curriculum to enable students to gain a better understanding of the role that stress plays in their lives

and to foster in them the attitude that they are in control of their lives. Support groups to foster self-esteem and assist with learning better time management are also recommended.

Lastly, this researcher strongly recommends the inclusion of a structured format for data collection in the clinical area to help reduce the stress that begins early in the nursing program by helping students to cope with this one aspect of the nursing education.

Recommendations for Further Research

Further research to determine the extent of stress within associate degree nursing programs is necessary to identify additional areas or sources of stress. Such a study could use a questionnaire similar to the one used in this study.

Second, a study that would examine faculty members' perceptions of the sources of stress in associate degree nursing programs is strongly recommended. A third study, which could serve as a follow-up to this researcher's study, could examine the teacher approaches used in various associate degree nursing programs that have similar catalog descriptions yet have much lower student-perceived levels of stress. As a result of such research, faculty members might identify and share strengths within various programs

that affect decreasing stress within the student nurse population while providing an opportunity to identify significant weaknesses or inappropriate approaches within the nursing programs that deter students from getting the maximum overall education.

Lastly, a recommendation is made for research into innovative techniques used in associate degree nursing education. Educational approaches that differ from those used in the community colleges of Massachusetts might well fit in with the program objectives of the nursing programs without sacrificing the quality of the program.

In this final chapter, this researcher has summarized the major findings from this study and discussed conclusions and implications. Recommendations for nursing education and for further research have also been presented.

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APPENDIX A

Collection of Data Tool

COLLECTION OF DATA TOOL

Reason for Admission D/A	Pt. Name-Age-dx-Rel.	V/S	Activity	Diet/I&O	Allergies
	Rx Ordered	Abnormal Lab Work	Medications & Times Scheduled		
Pertinent Previous hx					
			Routine		
Additional Comments					
		Abnormal dx Tests	prn		
Surgery - Include date	Discharge Planning (independence)				

APPENDIX B

Self-Evaluation Questionnaire:
State-Trait Anxiety Interview Scale

SELF-EVALUATION QUESTIONNAIRE

Developed by Charles D. Spielberger

in collaboration with
R. L. Gorsuch, R. Lushene, P. R. Vagg, and G. A. Jacobs

STAI Form Y-1

Name _____ Date _____ S _____
Age _____ Sex: M ____ F ____ T _____

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

- 4 = Very Much So
- 3 = Moderately So
- 2 = Somewhat
- 1 = Not at All

1. I feel calm	1	2	3	4
2. I feel secure	1	2	3	4
3. I am tense	1	2	3	4
4. I feel strained	1	2	3	4
5. I feel at ease.	1	2	3	4
6. I feel upset.	1	2	3	4
7. I am presently worrying over possible misfortunes.	1	2	3	4
8. I feel satisfied.	1	2	3	4
9. I feel frightened	1	2	3	4
10. I feel comfortable	1	2	3	4
11. I feel self-confident	1	2	3	4
12. I feel nervous.	1	2	3	4
13. I am jittery	1	2	3	4
14. I feel indecisive	1	2	3	4
15. I am relaxed	1	2	3	4
16. I feel content	1	2	3	4
17. I am worried	1	2	3	4
18. I feel confused	1	2	3	4
19. I feel steady	1	2	3	4
20. I feel pleasant	1	2	3	4

SELF-EVALUATION QUESTIONNAIRE

STAI Form Y-2

Name _____ Date _____

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

- 4 = Almost Always
 3 = Often
 2 = Sometimes
 1 = Almost Never

- | | | | | |
|--|---|---|---|---|
| 21. I feel pleasant | 1 | 2 | 3 | 4 |
| 22. I feel nervous and restless | 1 | 2 | 3 | 4 |
| 23. I feel satisfied with myself | 1 | 2 | 3 | 4 |
| 24. I wish I could be as happy as others
seem to be | 1 | 2 | 3 | 4 |
| 25. I feel like a failure | 1 | 2 | 3 | 4 |
| 26. I feel rested | 1 | 2 | 3 | 4 |
| 27. I am "calm, cool, and collected". | 1 | 2 | 3 | 4 |
| 28. I feel that difficulties are piling up
so that I cannot overcome them | 1 | 2 | 3 | 4 |
| 29. I worry too much over something that
doesn't really matter. | 1 | 2 | 3 | 4 |
| 30. I am happy | 1 | 2 | 3 | 4 |
| 31. I have disturbing thoughts. | 1 | 2 | 3 | 4 |
| 32. I lack self-confidence. | 1 | 2 | 3 | 4 |
| 33. I feel secure | 1 | 2 | 3 | 4 |
| 34. I make decisions easily | 1 | 2 | 3 | 4 |
| 35. I feel inadequate | 1 | 2 | 3 | 4 |
| 36. I am content | 1 | 2 | 3 | 4 |
| 37. Some unimportant thought runs through
my mind and bothers me | 1 | 2 | 3 | 4 |
| 38. I take disappointments so keenly that
I can't put them out of my mind. | 1 | 2 | 3 | 4 |
| 39. I am a steady person. | 1 | 2 | 3 | 4 |
| 40. I get in a state of tension or turmoil
as I think over my recent concerns
and interests. | 1 | 2 | 3 | 4 |

APPENDIX C

Perceived Stress Questionnaire

PERCEIVED STRESS QUESTIONNAIRE

Please respond to each statement and rate each statement independently.

- 1) How frequently to you experience stress in the following areas of nursing education?

5 = Very Frequently

4 = Frequently

3 = Occasionally

2 = Seldom

1 = Never

1. Number of Hours of Nursing Class Per Week	5	4	3	2	1
2. Time Class is Scheduled	5	4	3	2	1
3. Amount of Reading Required	5	4	3	2	1
4. Nursing Care Plans	5	4	3	2	1
5. Actual Clinical Practice	5	4	3	2	1
6. Research for Clinical Experience	5	4	3	2	1
7. Time Spent Studying	5	4	3	2	1
8. Lecture Format	5	4	3	2	1
9. Independent Learning Activities	5	4	3	2	1
10. Tests and Quizzes	5	4	3	2	1

Comments/suggestions for change and/or to lessen stress.

2) Age as of September, 1984.	17-20	_____	35-40	_____
	21-24	_____	41-45	_____
	25-30	_____	46-50	_____
	31-34	_____	over 50	_____

- 3) Sex: Male _____ Female _____
- 4) Marital Status: Single _____ Divorced _____
Married _____ Widowed _____
- 5) Number of Children: None _____ Three _____ Six _____
One _____ Four _____ Seven or _____
Two _____ Five _____ more _____

6) Do you work outside the home?

Yes _____ No _____

7) If yes, number of hours/week:

0-10 _____ 21-30 _____
11-20 _____ 31-40 _____ 41 or more _____

8) Are you the main source of income for self/family?

Yes _____ No _____

9) School load - Please check next to the course(s) you are taking:

Nursing _____	Other Courses: _____
English _____	_____
Psych. _____	_____
A & P _____	_____

Were you in the pre-professional program last year?

Yes _____ No _____

10) How far do you live from campus (one-way mileage)?

_____ Less than 5 miles
_____ 5-10 miles
_____ 11-15 miles
_____ 16-20 miles
_____ More than 20 miles

11) How much stress do you feel you are experiencing at this point in your life? Please circle one answer.

- 1 Less than normal stress
2 Normal stress
3 More than normal stress

12) How do you feel you are handling the stress? Please circle one answer.

- 1 Not coping well
- 2 Coping adequately
- 3 Coping very effectively

List stressful areas in your life which affect you as a nursing student (optional).

_____	_____	_____
_____	_____	_____
_____	_____	_____

APPENDIX D

Perceived Value of Use of Structured Format Tool

PERCEIVED VALUE OF USE OF STRUCTURED FORMAT TOOL

Please respond to the following questions. Circle your choice. Read each question carefully.

- 5 = Strongly agree
- 4 = Agree
- 3 = Neutral
- 2 = Disagree
- 1 = Strongly disagree

- | | | | | | | |
|----|--|---|---|---|---|---|
| 1. | I found this format for
collection of data helpful
in organizing information. | 5 | 4 | 3 | 2 | 1 |
| 2. | I found I spent less time
than usual using this
format for collection of
data. | 5 | 4 | 3 | 2 | 1 |
| 3. | I do not feel this format
is helpful to identify needs
and problems for the nursing
care plan. | 5 | 4 | 3 | 2 | 1 |
| 4. | I found it took less time to
identify needs and problems
using this format for
collection of data. | 5 | 4 | 3 | 2 | 1 |
| 5. | I would not recommend using
this approach for data
collection as part of an
introduction to nursing
care plan preparation. | 5 | 4 | 3 | 2 | 1 |

Comments or suggestions:

APPENDIX E

Perceived Stress Questionnaire--Pilot Study

Perceived Stress Questionnaire--Pilot Study

Name _____

1) Age as of September, 1983.

17-20 _____
21-24 _____
25-30 _____
31-34 _____
35-40 _____
41-45 _____
46-50 _____
over 50 _____

2) Sex: Male _____ Female _____

3) Marital Status:

Single _____
Divorced _____
Married _____
Widowed _____

4) Number of Children:

None _____
One _____
Two _____
Three _____
Four _____
Five _____
Six _____
Seven _____
or more _____

5) Do you work outside the home?

Yes _____
No _____

6) If yes, number of hours/week:

0-10 _____
11-20 _____
21-30 _____
31-40 _____
41 or more _____

7) Are you the main source of income for self/family?

Yes _____

No _____

8) School load -- Please check next to the course(s) you are taking:

Nursing _____

English _____

Psych. _____

A & P _____

Other Courses: _____

Were you in pre-professional program last year?

Yes _____ No _____

9) How far do you live from campus (one-way mileage)?

Less than 5 miles _____

5-10 miles _____

11-15 miles _____

16-20 miles _____

More than 20 miles _____

10) Below are listed 10 aspects of the nursing course. Using #1 as the most stressful and #10 as the least stressful area for you, please identify all areas with a value number 1-10.

____ # hours in class/wk

____ research for clinical experience

____ time class is scheduled

____ time spent studying

____ amount of reading

____ lecture format

____ nursing care plans

____ independent learning activities

____ actual clinical practice

____ tests and quizzes

Comments/suggestions for change and/or to lessen stress.

APPENDIX F

Permission for Participation in Study

Permission for Participation in Study

My signature indicates that I am participating in this research study voluntarily and release the resulting data to Claire Stevens, to be used in her dissertation research and for possible publication. Confidentiality and anonymity have been assured, and I understand that I may withdraw from the study at any time without explanation. Research results will be made available to me at my request. All of my questions have been answered by Mrs. Stevens to my satisfaction.

Date

