

Occupational Stress and Burnout in Acute Care
Medical Surgical Nurses in a Rural Area

by

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Nurses in a Rural Area

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ABSTRACT

The purpose of this study was to investigate stress and burnout in acute care, medical and surgical nurses in a rural hospital setting. The relationships between age, level of education, years of nursing experience, marital status, shift worked, length of the shift, and full or part time status with stress and burnout were investigated. The relationship between stress and burnout was also studied. Hans Selye's General Adaptation Syndrome was the theoretical basis for the study.

The design for this study was a descriptive, correlational one, using a convenience sample of 84 registered nurses who worked on medical and/or surgical areas in a rural regional medical center in a mid-Atlantic state. Participation in the study was voluntary, and anonymity was guaranteed. The tools used in this investigation included a demographic questionnaire, the Nursing Stress Scale (NSS), and the Maslach Burnout Inventory (MBI).

Spearman Rho correlation coefficients were computed to examine the relationships between age, years of experience, stress and burnout. The relationship between the total stress score (NSS) and age was not significant. However, it was found that older nurses felt that they could not share experiences and negative feelings toward patients with their

co-workers ($r=.1950$, $p=.038$). Older nurses also felt less emotional exhaustion than younger nurses ($r=-.2533$, $p=.010$).

Statistically significant relationships were found between stress and burnout, including moderately positive relationships for emotional exhaustion and depersonalization with total stress ($r=.3682$, $p=.000$; and $r=.3255$, $p=.001$ respectively). A weak significant negative correlation existed between stress and personal accomplishment ($r=-.2382$, $p=.016$).

Mann Whitney U Tests, and Kruskal-Wallis one-way analyses of variance were used to test the differences between full and part time status, education, shift worked, length of the shift, and marital status with stress and burnout. Statistical significance was not reached at the .05 level on any of these compared differences.

Multiple regression was used to explain the effect of the demographic variables on stress and burnout. Inadequate preparation to deal with the emotional needs of patients and their families (Factor 3 of the NSS) was found to explain 18% of the variance in depersonalization scores ($p<.01$). This same factor explained 27.6% of variance in personal accomplishment scores at the $p=.0000$ level. Inadequate preparation, workload, and age accounted for 28.5% of the variance in emotional exhaustion ($p=.0000$).

Implications for nursing, including the need for staff support groups and education in conflict resolution was

suggested. Suggestions for further research, including the effect of personality hardiness on stress and burnout, were given.

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Chapter 1

INTRODUCTION

Statement of the Problem to be Studied

Since burnout was first described by Dr. Herbert J. Freudenberger in 1974, the burnout syndrome has been the focus of much clinical investigation (Ceslowitz, 1989).

According to Freudenberger (1985):

Burnout is a wearing down and wearing out of energy. It is an exhaustion born of excessive demands.... It is a feeling state which is accompanied by an overload of stress, and which eventually impacts on one's motivation, attitudes, and behavior. (p. 9-10).

Christina Maslach, who has done extensive research on burnout, describes it as "a syndrome of emotional exhaustion, depersonalization, and reduced personal accomplishment that can occur among individuals who do 'people work' of some kind" (1982, p. 3). There are many varied definitions of burnout, but all express the following themes:

decreased energy, shown by an inability to keep up the working pace; decreased self-esteem, manifested in a sense of personal failure related to work; output exceeding input, whereby the individual perceives a greater expenditure of him/herself into the job for an even smaller

profit or reward; a sense of helplessness/hopelessness... and a feeling of self-depletion. (Dolan, 1987, p. 3).

Since nurses deal directly with patients, families, and other professionals, and work in a very stressful environment, they are predisposed to burnout (Rich & Rich, 1987). "Burnout is a function of, and is intricately related to, work and the work environment" (Dolan, 1987, p. 4). Occupational stress and burnout have been cited by Lobb and Reid (1987) as causes of decreased job performance and job turnover.

Much research has been conducted on job stress as a source of burnout for hospital nurses (Ceslowitz, 1989; Dolan, 1987; Firth, McKeown, McIntee, & Britton, 1987; Gray-Toft & Anderson, 1981; Hare, Pratt, & Andrews, 1988; Kelly & Cross, 1985; Lobb & Reid, 1987; McCranie, Lambert, & Lambert, 1987; Motowidlo, Packard, & Manning, 1986; Packard & Motowidlo, 1987; Rich & Rich, 1987; Topf, 1989; Topf & Dillon, 1988; Williams, 1989). Lobb and Reid (1987) in their study found that "heavy workload, insufficient resources, and an inability to satisfy conflicting demands were major sources of job stress" (p. 61). Dolan (1987) cites fast turnover of hospital patients as a source of burnout in acute care hospital nurses. The rapid advancement of medical technology may be another source of increasing job stress for nurses.

Burnout is not only costly to the nurse experiencing it, but costly for "clients, employing agencies, the profession, and society" (Williams, 1989, p. 169). Being absent from work, being ill, and high turnover rates from jobs have been associated with work stress and burnout (Williams, 1989). In 1986, it was estimated that nurse turnover costs the institution approximately three-thousand dollars per nurse (Sullivan, 1986). With the cost of increasing technology, this seems to be a very modest estimate. Making nurses aware of the burnout syndrome and ways to prevent it would be beneficial to the profession of nursing.

"In March 1992, an estimated 2,239,816 individuals located in the United States held licenses to practice as registered nurses...." (Department of Health and Human Services, 1993, p. 1). In 1992, sixty-six percent of employed registered nurses worked in hospitals (USDHHS, 1993, p.3). Retention of nurses within the hospital setting has been a serious problem (Hutchinson, 1987). Occupational stress and burnout may well be factors associated with the retention problem.

Statement of Purpose

The purpose of this research project is to study stress and burnout in medical and surgical nurses in an acute care, rural hospital setting. Different types of nursing have different types of stress. Kelly and Cross (1985) studied

coping behaviors of intensive care and "ward based" nurses, and found that ward nurses had more stress than intensive care nurses. This contradicts the general population's view of nursing. Many people feel that critical care nursing is more stressful than medical/surgical nursing.

Rural areas do not have the abundant supply of nurses as urban areas, since many nurses move to urban areas for better pay, better career choices, more chances for advancement, etc. "As would be expected, most registered nurses are located in metropolitan areas. In 1988 as in 1984, 18 percent were in nonmetropolitan areas" (U.S. Department of Health and Human Services, 1990, p. VIII-15). Since rural areas do not have as large a supply of registered nurses to choose from, preventing stress and burnout and their consequences is crucial to this population. This would be beneficial in view of the current nursing shortage.

Chapter 2

REVIEW OF THE LITERATURE

Extensive research in recent years has been focused on nurse burnout. An important researcher in this field is Christina Maslach, who has written a book, Burnout- The Cost of Caring (1982). The Maslach Burnout Inventory (MBI), a popular tool used to measure burnout, was developed by Maslach and Susan Jackson in the early 1980's (Maslach, 1982).

The Maslach Burnout Inventory (MBI) is a standardized scale that "measures the three aspects of the burnout syndrome- emotional exhaustion, depersonalization, and reduced personal accomplishment" (Maslach, 1982, p. 8). The MBI is a tool that can be used to measure burnout in any of the helping professions (Maslach and Jackson, 1986). Several researchers have studied burnout in nursing using this tool (Ceslowitz, 1989; Dolan, 1987; Firth, et al., 1987; Hare, et al., 1988; Lobb & Reid, 1987; Topf & Dillon, 1988; Williams, 1989).

The Staff Burnout Scale for Health Professionals (Jones, 1980) is another tool to assess burnout, for particular use with health professionals only. This scale has been used in conjunction with other scales to assess nurse burnout (Topf & Dillon, 1988; Rich & Rich, 1987).

The Nursing Stress Scale (NSS), developed by Pamela Gray-Toft and James G. Anderson (1981) was developed

specifically to measure stress in hospital nurses. This tool identifies seven areas of occupational stress in nurses: death and dying, conflict with physicians, inadequate preparation to deal with the emotional needs of patients and their families, lack of staff support, conflict with other nurses and supervisors, work load, and uncertainty concerning treatment" (Gray-Toft & Anderson, 1981). Several studies have utilized the NSS (Cronin-Stubbs & Rooks, 1985; McCranie, Lambert, & Lambert, 1987; Topf, 1989; Topf & Dillon, 1988).

Rich and Rich (1987), while studying personality hardiness and burnout in female staff nurses, found that age and personality hardiness were significant predictors of burnout scores. The sample for their study consisted of 100 staff nurses at an acute care hospital in western Pennsylvania. Nursing units included in the study were "Pediatrics, Obstetrics, Behavioral Science, Medical Surgical, Operating Room, Critical Care, and Recovery Room" (p. 64). The tools used in this study were the Staff Burnout Scale for Health Professionals, and five scales measuring hardiness: "the Alienation from Work, Alienation from Self, and Powerlessness Scales of the Alienation Test..., the Internal versus External Locus of Control Scale..., and the Security Scale of the California Life Goals Evaluation Schedule" (p. 64). Using multiple regression, they reported that personality hardiness and age

"accounted for 41 percent of the variance in burnout scores" (p. 65).

Firth, et al. (1986) conducted a study to test if burnout and professional depression were similar concepts. Their sample consisted of 200 nurses from general hospitals, psychiatric hospitals, and "mental handicap" hospitals. One of the tools used in the study was the MBI. Using factor analysis, they found that five factors accounted for 64.1 percent of the variance in burnout scores. These five factors were "1 discouragement about work or 'professional depression', 2 lack of personal accomplishment, 3 emotional draining, 4 avoidance of problems, decisions, or changes, 5 an awareness of 'hardening' towards others" (p. 636).

Lobb and Reid (1987) conducted a study to examine nurses' perceptions of job stressors, and to identify which job stressors were associated with high levels of nurse burnout. Sociodemographic variables such as "age, race, marital status, number of children, religiosity...." were studied to see if a relationship existed between the variables and higher levels of burnout (p. 64). Using a linear regression analysis to measure these demographic variables in relation to stress and burnout, it was found that younger age was the only variable that was statistically significant. Williams (1989) studied empathy and burnout in helping professionals. Her sample of 525 subjects included nurses, social workers, and teachers.

Using the MBI as one tool in her study, demographic variables such as age, marital status, percentage of work time spent in direct practice, etc. were analyzed to test their relationships to burnout. Age and percentage of work time spent in direct practice were found to be statistically significant.

Motowidlo et al. (1986) reported two studies which identified stressful events in hospital nurses. For the first study they held group meetings with a total of 104 nurses from varied areas in four separate hospitals. These nurses wrote descriptions of events in which they felt stress in their jobs. Out of these 608 descriptions, the researchers compiled similar answers and constructed an 82 item questionnaire. This questionnaire was then administered to groups of nurses at four different hospitals in order to measure their job stress. Some of the events which correlated significantly with the stress index were "work overload, uncooperative patients, criticism, negligent co-workers, lack of support from supervisors, and difficulties with physicians" (p. 620).

Hare, et al. (1988) conducted a study to determine predictors of burnout in nurses and nursing assistants working in hospitals and nursing homes. The researchers "examined the relationship of interpersonal, intrapersonal, and situational (demographic) factors to burnout...." (p. 107). Personal demographics were a significant predictor of

depersonalization intensity (using the MBI subscale for depersonalization). The researchers entered the personal demographics (age, level of education, marital status, and family status) into the regression equation as a group. It was reported that these demographic variables together accounted for only 5.9 percent of the variance related to burnout. Since all variables were entered into the equation as a block, one cannot ascertain how much of the variance in burnout scores can be attributed to each characteristic.

Marital status appears to be a factor related to burnout in hospital nurses. Dolan (1987) in her study of the relationship between burnout and job satisfaction in nurses found that nurses who were married had lower burnout scores than those nurses who were not married. Burnout in her study was measured using the MBI. Her subjects consisted of 30 psychiatric staff nurses, 30 general staff nurses, and 30 administrative staff; from nine Dublin city hospitals. "The administrative group was older, had a much greater number of married respondents...." (p.11). She concluded that "the family fulfills many of the individual's needs for affection and approval...." (p. 10).

Kelly and Cross (1985) compared 102 registered nurses (intensive care and medical/surgical) at two urban acute care teaching hospitals "examining stress levels, the frequencies of stress factors, coping behaviors to deal with stress, and recommendations for coping effectively with

stress" (p. 322). The researchers designed and pilot-tested the questionnaire measuring stress and coping behaviors that they used for their study. The medical/surgical nurses "used crying, sleeping less, and eating, more frequently than did ICU nurses" as coping behaviors (p.326). Unless these kinds of behaviors "can be interrupted with more effective or generalized coping strategies, and decreased stressors, these ward nurses may well be highly vulnerable for burnout" (p. 326).

Cronin-Stubbs and Rooks (1985) conducted a research study comparing stress, social support, and burnout of nurses in hospitals. Their sample consisted of "296 staff nurses who worked in one of four specialty areas at one of three large (900 to 1100 beds) midwestern medical center hospitals" (p. 32). The tools used in this study were the Staff Burnout Scale for Health Professionals, the Nursing Stress Scale, the Life Experiences Survey, the Norbeck Social Support Questionnaire, and a Self-Report Questionnaire which was used "to collect demographic data and information about the nurses' job attitudes" (p. 34). Their results, utilizing stepwise multiple regression, indicated that there was no significant difference reported in occupational stresses between the medical nurses and critical care nurses in the three hospitals studied. "Thirty-five percent of the variance in burnout was accounted for by the combined effects of seven of the 14

variables" studied (p. 34). This study validated previous findings that stress in the workplace is associated with burnout.

Topf and Dillon (1988) studied noise-induced stress and its relationship to burnout in critical care nurses. The Nursing Stress Scale and the Maslach Burnout Inventory were two of the tools used in this study. Their samples included nurses in two separate research hospitals. Using Pearson correlation coefficients, it was found that the two hospitals were similar in relation to occupational stress. Significant differences were found in relation to stress and shift worked. Evening shift nurses were more distressed by noise than other nurses. Noise-induced stress was measured using Weinstein's Noise Sensitivity Scale. Nurses who rotated shifts experienced more emotional exhaustion, as measured using the emotional exhaustion subscale of the MBI.

McCranie et al. (1987) in their study regarding occupational stress and hardiness relating to burnout used the Nursing Stress Scale to measure the degree of perceived job stress in nurses. Their sample consisted of 107 registered nurses in a 700-bed community hospital in an urban area. Burnout was measured using the Tedium Scale developed by Pines and Anderson (1981). Results indicated that burnout correlated significantly with the total frequency of perceived job stress (as measured using the NSS).

Margaret Topf (1989) investigated occupational stress, burnout, and personality hardiness using a convenience sample of 100 critical care nurses from two large hospitals on the West Coast. Utilizing the NSS, she found lack of hardiness was associated with greater occupational stress scores. Hierarchical multiple regressions found no support for the hypothesis that greater stress is linked with greater burnout. There was, however, a marginally significant relationship between the interaction of occupational stress with hardiness and burnout.

Chapter 3

METHODOLOGY

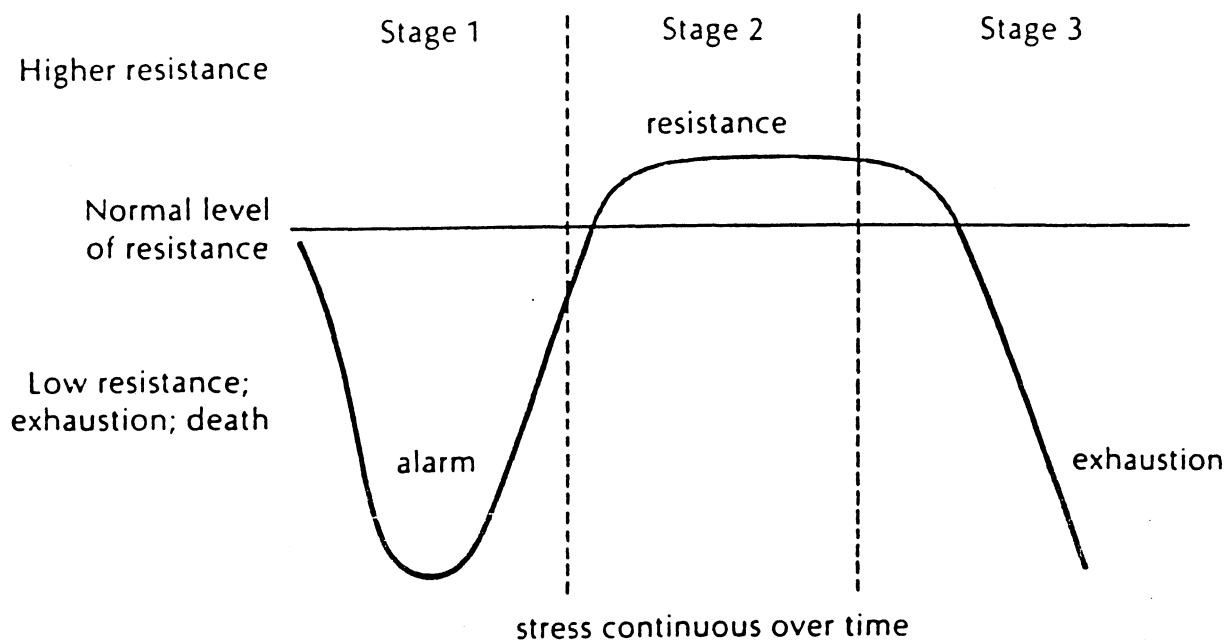
Theoretical Base for the Study

Stress theory, in particular Hans Selye's General Adaptation Syndrome, was used as the theoretical basis for this study. According to Selye, "stress is the nonspecific (that is, common) result of any demand upon the body, be the effect mental or somatic" (1983, p. 7). Selye, first describing the General Adaptation Syndrome (GAS) in 1936, later depicted the three phases (Figure I.). The syndrome involves three different stages in reaction to stress. Stage I, the alarm reaction, is the body's initial response to stress. In this stage the body's "physiological processes are alerted to fight or flight...." (Selye, 1982, p. 184). Stage II, the stage of resistance, is one in which adaptation to the stressor should occur. In Stage III, the stage of exhaustion, adaptation resources become depleted and the body becomes vulnerable to illness and possibly death. Stressors are defined as "external events or conditions that affect the organism" (Breznitz & Goldberger, 1982, p. 3).

Stress theory is an appropriate theoretical base for this study. It has been used by Topf and Dillon (1988) as the theoretical base for studying stress and burnout. Figure II depicts the stress reaction; modified by the researcher, as it relates to burnout. "Burnout" was added

Figure I. Selye's stress model- the general adaptation syndrome. The model exemplifies the stages of reaction to stress.

(Guy Lefrancois, 1980)



after "vulnerability" in the chain of events to depict where it occurs in the cycle.

Research Questions

The following research questions were posed:

1. What are the relationships between age, level of education, years of nursing experience, marital status, shift worked, length of the shift, full or part time status, and perceived levels of stress and burnout in medical/surgical nurses working in an acute care hospital setting?
2. Is there a relationship between perceived levels of high stress and occupational burnout?

Based upon these research questions, two hypotheses were formulated:

1. There are no significant differences in relation to the demographic variables of age, level of education, years of nursing experience, marital status, shift worked, length of the shift, full or part time status, and perceived levels of stress in medical/surgical nurses working in an acute care hospital setting.
2. There is no significant relationship between high levels of perceived stress and occupational burnout in medical/surgical nurses in an acute care hospital setting.

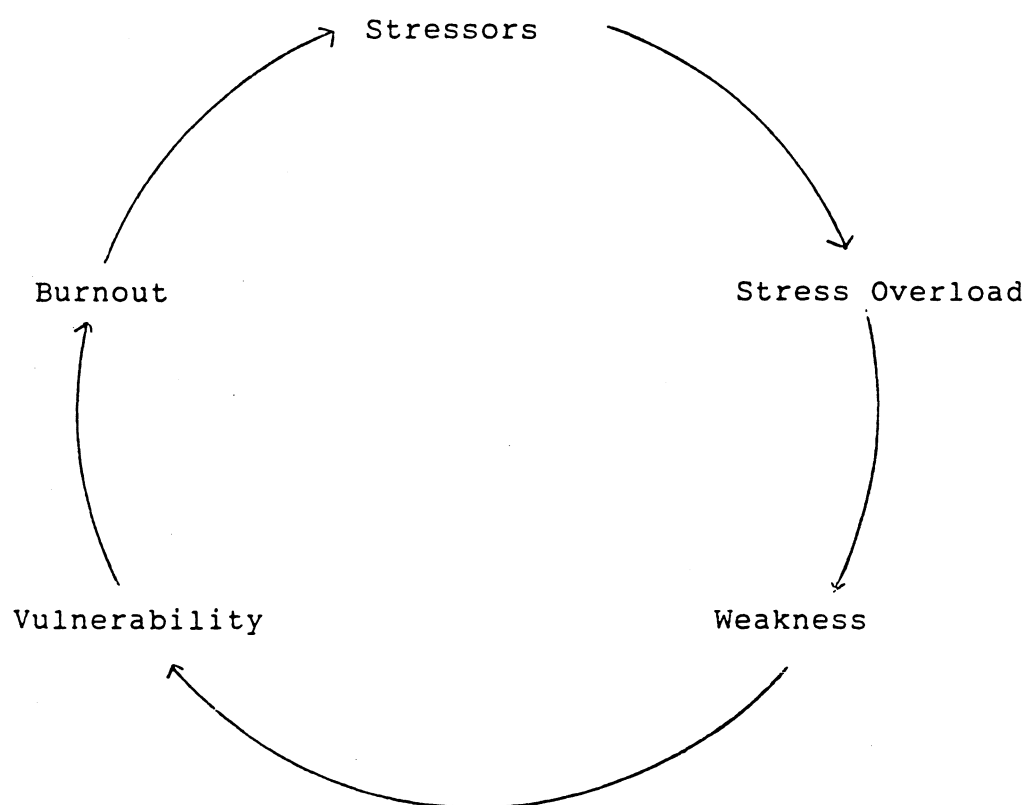
Operational Definitions

Independent Variables

1. Age. Age was measured in years, and was self-

Figure II. Model depicting stress reaction and burnout.

(Adapted and modified from Hans Selye, 1974)



reported by nurses on a written questionnaire.

2. Level of Education. This variable was self-reported on the questionnaire. Levels of education were divided into the following groups: 1. Diploma RN 2. Associate Degree RN 3. BSN 4. MSN or higher.

3. Years of Nursing Experience. Years of experience were self-reported by the nurses.

4. Marital Status. This variable was self-reported on the questionnaire. Groups for this variable were as follows:

1. Single 2. Married 3. Separated, Widowed, or Divorced.

5. Shift Worked. The shift worked by the nurses was self-reported. Groups for this variable were: 1. Day 2.

Evening 3. Night 4. Rotating Shifts.

6. Length of Shift. The length of the shift was reported by the nurses. There were two choices: 1. eight hours 2. twelve hours.

7. Full or Part Time Status. Whether the nurse works full or part time was self-reported. There were two choices in this category: 1. Full Time 2. Part Time.

Dependent Variables

1. Stress. The level of perceived stress as reported by the nurse was measured utilizing the total stress score obtained from the Nursing Stress Scale, and its seven subscales.

2. Burnout. This variable was measured using the Maslach Burnout Inventory, with the three subscales of emotional

exhaustion, depersonalization, and personal accomplishment.

Research Design

The design for this study was a non-experimental, correlational, descriptive one. Data were collected from a rural medical center, located on the Eastern Shore of Maryland, within a specific time period of one month.

Data Collection

Data were collected by use of a self-administered questionnaire. The questionnaire took approximately 20 minutes to complete. Data were collected on the nursing areas, during all nursing shifts to ensure proper shift representation. Nurses were given the option of completing the questionnaire at work, or taking it home and returning it to the researcher within one week. The nurse managers on the specified areas aided in distribution and collection of the questionnaires.

Instruments

Three instruments were utilized for data collection purposes. The first instrument, developed by the researcher, was a brief questionnaire collecting demographic information- age, sex, marital status, level of education, years of experience, shift worked, length of the shift, and full time or part time status (see Appendix A).

The second instrument utilized was the Nursing Stress Scale (see Appendix B). This tool has been used previously to assess nursing stress and burnout as described in the

review of the literature. The NSS is a 34 item tool that describes situations that have been identified as stressful for nurses in hospital settings. Subjects rate the responses on a four point scale as to how frequently they occur on their unit. There are seven subscales within the tool that measure different aspects of stress. These subscales are: 1. death and dying, 2. conflict with physicians, 3. inadequate preparation to deal with the emotional needs of patients and their families, 4. lack of staff support, 5. conflict with other nurses and supervisors, 6. work load, 7. uncertainty concerning treatment.

The NSS was developed using stressful situations identified from review of the literature, and interviews with nurses, physicians, and chaplains. Total scores range from 0 to 102, with higher scores indicating more frequent stress. Gray-Toft and Anderson (1981) discuss reliability and validity of the tool. Test-retest reliability obtained after a two week interval with a sample of 31 nurses found a reliability coefficient for the total scale of 0.81. Four measures of internal consistency were reported- Spearman Brown coefficient of 0.79, a coefficient alpha of 0.89, Gutman split-half coefficient of 0.79, and a standardized item alpha of 0.89. To test validity of the tool, the researchers investigated its relationship to other criteria to which stress is related- trait and state anxiety, job

satisfaction, and nursing turnover rates. Pearson product moment correlation coefficients were computed for the total score from the Nursing Stress Scale with both trait and state anxiety. These correlations were significant ($r=0.39$, $p<0.01$, and $r=0.35$, $p<0.01$, respectively).

McCranie et al. (1987) in their study on work stress and burnout utilized the Nursing Stress Scale. In their sample of 107 nurses internal consistency was 0.92 for the total scale, ranging from 0.55 to 0.85 for the seven individual subscales.

Topf and Dillon (1988) also discuss reliability and validity of the NSS. They reported a Cronbach's alpha for their sample as being 0.915.

The final instrument used in this study was the Maslach Burnout Inventory (see Appendix C). The MBI was used to determine the nurses' level of burnout. The MBI is a 22 item tool measuring three aspects of burnout: emotional exhaustion, depersonalization, and reduced personal accomplishment. Responses are measured on a 7 point Likert-type scale, ranging from (0) never to (6) every day. For emotional exhaustion, a score of 27 or more indicates a high level of emotional exhaustion; for depersonalization, a high score is 13 or more, indicating a high level of depersonalization; for personal accomplishment a score ranging from 0-31 indicates reduced personal accomplishment (Maslach and Jackson, 1986).

Reliability and validity of the tool were discussed by Maslach and Jackson. "Internal consistency was estimated by Cronbach's coefficient alpha ($n = 1,316$). The reliability coefficients for the subscales were the following: .90 for Emotional Exhaustion; .79 for Depersonalization; and .71 for Personal Accomplishment" (1986, p. 8). Correlational data were used for convergent validity. For their sample of 180 nurses, social service, and mental health workers, they found that the higher the emotional exhaustion, the less co-worker satisfaction ($r = -.16$, $p < .05$); the higher the depersonalization, the less co-worker satisfaction ($r = -.41$, $p < .001$); the higher the personal accomplishment, the more co-worker satisfaction ($r = .40$, $p < .001$) (1986).

A pilot study was conducted prior to implementation of the larger study in order to test administration methods and ask subjects for suggestions or need for clarification. The pilot study sample consisted of 13 registered nurses on a cardiac monitor unit in the same hospital in which the larger study was conducted. As a result of the pilot study, directions for completing the questionnaire were made more explicit.

Sample

Characteristics and Size

The study sample for this investigation was drawn from the population of registered nurses who work on a medical/surgical unit at a large Eastern Shore medical

center. This medical center was chosen as the site for this study because it is the regional medical center for the Eastern Shore of Maryland area, and is the largest employer of nurses in this rural area. From the population of 120 registered nurses, a convenience sample was drawn. All registered nurses who agreed to participate were included in the study.

Assumptions

Certain assumptions were made related to stress in nursing:

1. Stress is a component of the practice of nursing.
2. Although a certain level of stress is beneficial, extreme stress should be avoided.
3. It was also assumed that participants in the study would answer the questions honestly.

Limitations

This study also had certain limitations:

1. The use of a convenience sample and single setting limited the generalizability of the findings.
2. There was no attempt to obtain a representative group of male nurses in the study sample.
3. The contribution of life experiences to stress were not accounted for in this investigation.
4. Causality could not be established because of the non-experimental design.

Ethical Implications

A cover letter was attached to each questionnaire describing the purpose of the study, which was identified as assessing nurses' work experiences (see Appendix D). The letter explained that all information gathered would be anonymous and confidential. Voluntary participation in the study was emphasized. Completing and returning the questionnaire implied informed, voluntary consent. It was believed that written consent (having to identify oneself by name) might have decreased the number of nurses who were willing to participate. Questionnaires were coded to insure anonymity.

Approval was obtained from the Salisbury State University Committee on Human Volunteers (see Appendix E), and the Vice President of Patient Care Services at the medical center prior to implementation. The study was also presented by the researcher to nurse managers and the Director of Nursing for the medical/surgical areas involved before it was implemented. The researcher agreed that the results of the study would be shared with these managers.

Chapter 4

RESULTS

The purposes of this study were twofold; to examine the relationships between age, level of education, years of nursing experience, marital status, shift worked, length of shift, and full or part time status with perceived levels of stress in acute care, medical surgical nurses; and to determine if there was a relationship between perceived levels of high stress and occupational burnout. A demographic tool which was developed by the researcher, and two self-report questionnaires which have been used previously in the literature to study stress and burnout in nurses were utilized. Sample characteristics and detailed results of the research conducted will be described in this chapter.

Sample Characteristics

The sample used in this research consisted of a convenience sample of 84 registered nurses (70% of the total population) who worked on medical and/or surgical areas in an acute care hospital in a rural area. This study sample was drawn from the population of 120 registered nurses who worked on these areas. The mean age of the nurses was 38.52 years, with a mean of 13.03 years of nursing experience. Years of work on the area ranged from less than one year to seventeen years. Ninety-seven point six percent (97.6%) of the sample were female. Sex and years of work on the area

were collected and reported for demographic characteristics only. No further analyses were conducted using these variables. The majority of the nurses (40.5%) held Associate Degrees in nursing. Seventy-eight point six percent (78.6%) of the sample were married. Forty-four percent (44.0%) worked rotating shifts. The length of the shifts worked varied from 8 hours (45.2%) to 12 hours (39.3%). Sixty point seven percent (60.7%) worked full time at the hospital. Tables 1 and 2 further describe the characteristics of the sample.

Research Question 1

In order to examine the relationships between age and years of nursing experience with perceived levels of stress and burnout, Spearman correlation coefficients were computed. Mann-Whitney U Tests were used to determine whether differences exist between full and part time status with respect to stress and burnout. Kruskal-Wallis one-way analyses of variance were used to determine whether differences exist between education levels, shift worked, length of shift and marital status with respect to stress and burnout. Frequencies and percentages were obtained on all independent variables, and each individual item on the Nursing Stress Scale and the Maslach Burnout Inventory.

The Nursing Stress Scale

The NSS is comprised of seven factors (subscales) that measure different aspects of stress. The results of the

Table 1

Means, Standard Deviations, Ranges of Age, Years Experience, and Years on Area

Variable	N	Mean	SD	Minimum	Maximum
Age	84	38.52	10.34	23	68
Years Experience	84	13.03	9.23	1	36
Years on Area	81	6.12	4.83	0	17

Note. Different Ns resulting from missing data.

Table 2

Percentages for Sex, Nursing Education, Marital Status, Shift Worked, Length of Shift, and Full Time/Part Time Status (N=84)

Variable	Number of Staff Nurses	Percentage of Sample
Sex: Female	82	97.6
Male	1	1.2
Missing cases	1	1.2
Nursing Education:		
Diploma	22	26.2
Associate	34	40.5
BSN	27	32.1
MSN or higher	1	1.2
Marital Status:		
Single	9	10.7
Married	66	78.6
Separated,	9	10.7
Widowed or		
Divorced		
Shift Worked: Day	22	26.2
Evening	7	8.3
Nights	18	21.4
Rotating	37	44.0
Length of Shift:: 8 hours	38	45.2
12 hours	33	39.3
Both	5	6.0
Missing	8	9.5
Full or Part Time Status:		
Full time	51	60.7
Part time	33	39.3

Nursing Stress Scale are described below. The ordering of items was inadvertently changed in this study.

Factor 1 Death and Dying

Questions 1 through 7 of the NSS deal with issues related to death and dying. Forty-six point four percent (46.4%) of the sample found performing procedures that patients experience as painful to be stressful frequently, while 36.9% reported this situation as stressful occasionally.

Fifty-one point two percent (51.2%) of the sample reported feeling helpless in the case of a patient who fails to improve as stressful occasionally, while 33.3% reported this situation as stressful frequently.

Listening or talking to a patient about his/her approaching death was reported as occasionally stressful for 61.9% of the nurses, while 25.0% reported this as being stressful frequently. Sixty point seven percent (60.7%) of the nurses felt that the death of a patient was stressful occasionally; 27.4% reported this feeling frequently. When the nurse had developed a close relationship with the patient who had died, 48.8% reported feeling stress occasionally; 29.8% frequently. In the case of a physician not being present when a patient dies, 31.0% reported this as a stressful situation occasionally, while 27.4% felt stressed very frequently. Watching a patient suffer was felt to be stressful frequently by 42.9%, and very

frequently by 35.7% of the sample.

Factor 2 Conflict with Physicians

Questions 8 through 12 deal with conflict with physicians. Most nurses in the sample reported criticism by a physician as being stressful at least occasionally (46.4%). Almost half of the sample (48.8%) reported conflict with physicians as being occasionally stressful. Twenty-three point eight percent (23.8%) reported feeling this very frequently. A large percentage of the sample (48.8%) felt that fear of making a mistake in treating a patient was occasionally stressful. Twenty-three point eight percent (23.8%) reported feeling this frequently.

The vast majority of nurses sampled had experienced disagreement concerning the treatment of a patient occasionally (65.5%), while 19.0% reported this occurring frequently. Exactly one-half of the sample reported having to make a decision about a patient without a physician available as being stressful occasionally. Thirty-five point seven percent (35.7%) had experienced this frequently.

Factor 3 Inadequate Preparation

Questions 13 through 15 deal with inadequate preparation to deal with the emotional needs of patients and their families. Over one-half of the sample (53.6%) reported that they did not feel adequately prepared to deal with the emotional needs of a patient's family occasionally. Twenty-five percent (25.0%) reported this as stressful

frequently.

The majority of the nurses (58.3%) reported that being asked a question that they could not answer satisfactorily was stressful occasionally. Thirty-one percent (31.0%) reported this as stressful frequently. Not being prepared to help with the emotional needs of a patient was viewed as occasionally stressful 59.5% of the time.

Factor 4 Lack of Support

Items 16 through 18 deal with lack of support available to the nurses while working to talk about problems and express feelings. Fifty percent (50.0%) of this sample reported a lack of opportunity to talk with others on the area about problems as being occasionally stressful. Nineteen percent (19.0%) viewed this as never causing stress; 19.0% reported this as being stressful frequently. Over half of the nurses (53.6%) felt occasional stress as a result of a lack of opportunity to share experiences and feelings with their co-workers. Twenty point two percent (20.2%) reported never having this feeling; 20.2% reported this as a frequent occurrence. An opportunity to express negative feelings toward patients with unit personnel was reported by over half (56.0%) of the sample as occasionally occurring. Thirty-one percent (31.0%) responded never to this item.

Factor 5 Conflict with other Nurses

Items 19 through 23 deal with conflict with other

nurses. Conflict with other nurses was viewed by the majority of the sample as occurring at least occasionally. In fact, fifty-three point six percent (53.6%) reported conflict with a supervisor as occasionally causing stress; 54.8% reported difficulty with working with a nurse or nurses on other units as occasionally causing stress; 60.7% reported difficulty with working with a particular nurse or nurses on the unit as occurring and causing stress occasionally. Criticism by a supervisor was reported as occasionally causing stress by 40.5%, and never causing stress by 40.5% of the nurses surveyed. Forty-one point seven percent (41.7%) of the sample reported that floating to different nursing units that were short-staffed occasionally made them feel stress. Twenty-five percent (25.0%) of the sample felt this stress very frequently.

Factor 6 Work load

Items 24 through 29 deal with factors in the environment that cause stress for nurses. The breakdown of a computer was reported as occasionally being stressful by 70.2% of the nurses. Twenty-two point six percent (22.6%) reported this as never causing stress. Unpredictable staffing and scheduling occasionally caused stress in 41.7% of the nurses. One-third of the respondents answered "frequently" to the item "not enough staff to adequately cover the unit"; 38.1% responded "very frequently". Thirty-nine point three percent (39.3%) felt that too many

nonnursing tasks made them feel stress frequently. Thirty-two point one percent (32.1%) responded "occasionally" to this item.

Not enough time to provide emotional support to the patient was reported by 40.5% of the sample as occurring very frequently. Thirty-nine point three percent (39.3%) reported this as happening frequently. Not having enough time to complete all of their nursing tasks was reported as being stressful frequently by 45.2% of the sample.

Factor 7 Uncertainty Concerning Treatment

The remaining items deal with uncertainty concerning the treatment of patients. Almost half of the sample (47.6%) reported that not having adequate information from a physician regarding the patient's medical condition caused stress occasionally. This was reported as a frequent occurrence for 28.6% of the sample.

Over half surveyed (59.5%) felt stress occasionally when they believed the physician had ordered a treatment that was inappropriate. A physician not being present in a medical emergency caused stressful feelings occasionally for 46.4% of the sample; frequently for 33.3%.

Not knowing what a patient or his/her family ought to be told about the patient's condition and treatment made nurses feel stress "on occasion" 54.8%; and "frequently" 33.3%. Specialized equipment and feeling uncertain how to operate it was reported as occasionally causing stress by

over two-thirds of the sample (66.7%). See Table 3 for percentages of responses for individual items of the NSS.

Gray-Toft and Anderson reported a mean for the total on the NSS for registered nurses of 92.46 (1981, p.21). The mean in this sample was 48.80. See Table 4 for descriptive statistics for the NSS, and each Factor 1 through 7.

The Maslach Burnout Inventory

The MBI measures the three aspects of burnout using three subscales. The results for this study are reported by the individual subscales.

Emotional Exhaustion (EE)

Items numbered 1, 2, 3, 6, 8, 13, 14, 16, and 20 deal with emotional exhaustion. Over one-fourth of the sample (28.6%) felt emotionally drained from their work a few times a month; 26.2% reported this feeling a few times a week. Over one-fourth (27.4%) felt "used up at the end of the workday" a few times a week; 22.6% reported feeling this way every day. Nineteen percent of the sample (19.0%) reported feeling fatigued when they got up in the morning and were facing another day on the job "a few times a month"; 19.0% reported this feeling once a week. Over one-third of the sample (40.5%) reported never feeling that working with people all day was a strain for them. Over one-fourth of the sample (27.4%) reported feeling this way a few times a year or less.

Over one third of the nurses (35.7%) reported feeling

Table 3

Percentage of Responses For Individual Items on The Nursing Stress Scale - Grouped By Factors (N=84)

Factors	Responses			
	0	1	2	3
Factor 1: Death and Dying				
1. Performing painful procedures	1.2	36.9	46.4	15.5
2. Feeling helpless	6.0	51.2	33.3	8.3
3. Listening or talking about death	3.6	61.9	25.0	9.5
4. Death of a patient	3.6	60.7	27.4	7.1
5. Death of close patient	7.1	48.8	29.8	14.3
6. MD not present when patient dies	22.6	31.0	19.0	27.4
7. Watching suffering	1.2	20.2	42.9	35.7
Factor 2: Conflict with Physicians				
8. Criticism by MD	2.4	46.4	28.6	22.6
9. Conflict with MD	6.0	48.8	21.4	23.8
10. Fear of mistake in treatment	8.3	48.8	23.8	19.0
11. Disagreement of treatment	4.8	65.5	19.0	10.7
12. Decision when MD is unavailable	6.0	50.0	35.7	8.3

Note. Frequency 0 Never to 3 Very Frequently

Table 3

Percentage of Responses For Individual Items on The Nursing Stress Scale - Grouped By Factors(continued) (N=84)

Factors	Responses			
	0	1	2	3
Factor 3: Inadequate Preparation				
13. Inadequate with the emotional needs of patient's family	14.3	53.6	25.0	7.1
14. Question without satisfactory answer	4.8	58.3	31.0	6.0
15. Inadequate with emotional needs of patient	10.7	59.5	28.6	1.2
Factor 4: Lack of Support				
16. Lack of opportunity to talk openly about problems	19.0	50.0	19.0	11.9
17. Lack of opportunity to share experiences/ feelings	20.2	53.6	20.2	6.0
18. Lack of opportunity to express my negative feelings	31.0	56.0	11.9	1.2

Note. Frequency 0 Never to 3 Very Frequently

Table 3

Percentage of Responses For Individual Items on The Nursing Stress Scale - Grouped By Factors(continued) (N=84)

Factors	Responses			
	0	1	2	3
Factor 5: Conflict With Other Nurses				
19. Conflict with a supervisor	26.2	53.6	13.1	7.1
20. Floating to other units	21.4	41.7	11.9	25.0
21. Difficulty in working with nurse outside the unit	31.0	54.8	8.3	4.8
22. Criticism by a supervisor	40.5	40.5	9.5	9.5
23. Difficulty in working with a nurse on the unit	17.9	60.7	13.1	8.3

Note. Frequency 0 Never to 3 Very Frequently

Table 3

Percentage of Responses For Individual Items on The Nursing Stress Scale - Grouped By Factors(continued) (N=84)

Factors	Responses			
	0	1	2	3
Factor 6: Work Load				
24. Computer breakdown	22.6	70.2	6.0	0.0
25. Unpredictable staffing/scheduling	2.4	41.7	32.1	22.6
26. Too many non- nursing tasks	4.8	32.1	39.3	21.4
27. Not time to provide emotional support	1.2	19.0	39.3	40.5
28. Not time to complete nursing tasks	1.2	26.2	45.2	27.4
29. Not enough staff to cover the unit	1.2	27.4	33.3	38.1

Note. Frequency 0 Never to 3 Very Frequently

Table 3

Percentage of Responses For Individual Items on The Nursing Stress Scale - Grouped By Factors(continued) (N=84)

Factors	Responses			
	0	1	2	3
Factor 7: Uncertainty Concerning Treatment				
30. Inadequate information from MD	11.9	47.6	28.6	11.9
31. A MD ordering inappropriate treatment	13.1	59.5	15.5	11.9
32. MD not present in a medical emergency	4.8	46.4	33.3	15.5
33. Not knowing what a patient or a patient's family ought to be told	1.2	54.8	33.3	10.7
34. Uncertainty regarding the operation of equipment	6.0	66.7	17.9	9.5

Note. Frequency 0 Never to 3 Very Frequently

Table 4

Means, Standard Deviations, Ranges For The Nursing Stress Scale (N=84)

Variable	Mean	<u>SD</u>	Minimum	Maximum
Total Stress Score	48.80	13.30	22.0	87.0
FACTOR 1	11.21	3.10	3.0	19.0
Death and Dying				
FACTOR 2	7.70	3.08	2.0	15.0
Conflict with Physicians				
FACTOR 3	3.83	1.80	0.0	8.0
Inadequate Preparation				
FACTOR 4	3.19	2.02	0.0	8.0
Lack of Support				
FACTOR 5	5.30	3.16	0.0	15.0
Conflict with other Nurses				
FACTOR 6	10.65	3.08	4.0	16.0
Work load				
FACTOR 7	7.11	2.97	1.0	15.0
Uncertainty concerning treatment				

"burned out from my work" a few times a year or less. Almost one-fifth (17.9%) reported feeling this a few times a month. Over one-fourth of the nurses (26.2%) reported feeling frustrated by their jobs a few times a month; 22.6% reported feeling frustrated a few times a week.

For the item "I feel I'm working too hard on my job", 28.6% of the sample responded "a few times a month"; 22.6% responded "a few times a week". Most nurses responded "a few times a year or less", or "never" to the statement "working with people directly puts too much stress on me" (35.7% and 35.7% respectively). Most nurses also reported feeling like they were "at the end of their rope" only a few times a year or less (34.5% of the respondents); 28.6% responded "never" to this item.

Depersonalization (DP)

Items 5, 10, 11, 15, and 22 deal with feelings related to depersonalization. Most nurses did not feel that they treat some patients as impersonal objects (42.9% never; 32.1% a few times a year or less). The majority of the sample (51.2%) never felt that they had become more callous toward people since they began their job. They also did not feel that the job was hardening them emotionally (39.3% never; 28.6% a few times a year or less). The vast majority (79.8%) responded "never" to the statement "I don't really care what happens to some patients". Furthermore, over one-half of the nurses surveyed did not feel that patients blame

them for their problems (28.6% "never"; 27.4% "a few times a year or less").

Personal Accomplishment (PA)

Items numbered 4, 7, 9, 12, 17, 18, 19, and 21 deal with feelings of personal accomplishment of the respondents. Since these statements reflect positive feelings, they are scaled in the opposite direction when obtaining a personal accomplishment score, i.e., a high score equals high PA.

Exactly one-half of the sample (50.0%) felt that they understand how their patients feel about things every day. Slightly over one-half (51.2%) felt that they deal effectively with patients' problems every day. Two-fifths of the sample (40.5%) responded "a few times a week" to this item. Almost forty percent of the sample felt that they were positively influencing other people's lives through their work "every day"; 23.8% responded "a few times a month" to this item.

Almost forty percent of the sample (39.3%) felt "very energetic" a few times a week. Over one-third of the nurses (36.9%) felt that they create a relaxed atmosphere with their patients every day; 32.1% responded "a few times a week" to this statement.

Twenty-eight point six percent (28.6%) responded "a few times a month" to the statement regarding feeling "exhilarated" after working closely with patients; 25.0% felt this way "a few times a week". A little over one-half

of the sample felt that they had accomplished many worthwhile things in their jobs (26.2% "every day"; 25.0% "a few times a week"). The majority of nurses sampled felt that they dealt with emotional problems very calmly (33.3% "a few times a week"; 32.1% "every day"). See Table 5 for percentages of responses for individual items of the MBI. See Table 6 for means, standard deviations, minimum and maximum scores.

Correlations among the variables

Spearman Rho correlation coefficients were computed for age, stress (total score on the NSS), years of experience, individual factors of the NSS, and the three subscales of the MBI.

Relationship between age with stress and burnout

The relationship between age with the total stress score showed no significant findings ($r=.0281$, $p=.400$). However, age and Factor 4, lack of support did have a statistically significant correlation ($r=.1950$, $p=.038$). As age increased, Factor 4 (lack of support) scores also increased. Age and emotional exhaustion had a statistically significant negative correlation ($r=-.2533$, $p=.010$). This indicates that as age increases, one's emotional exhaustion decreases.

Relationship between years experience with stress and burnout

A Spearman's correlation showed that there was a

Table 5

Percentage of Responses For Individual Items of The MBI -- Grouped by Subscales (N=84)

ITEM	Responses						
	0	1	2	3	4	5	6
Subscale EE (Emotional Exhaustion)							
1. Emotionally drained from my work	1.2	6.0	14.3	28.6	20.2	26.2	3.6
2. Used up at the end of the workday	3.6	4.8	14.3	10.7	16.7	27.4	22.6
3. Fatigued when I get up in the morning	7.1	14.3	16.7	19.0	19.0	16.7	7.1
6. Working with people is really a strain	40.5	27.4	17.9	3.6	6.0	4.8	0.0
8. Burned out from my job	10.7	35.7	15.5	17.9	6.0	7.1	7.1
13. Frustrated by my job	2.4	17.9	11.9	26.2	9.5	22.6	9.5
14. I'm working too hard	6.0	8.3	8.3	28.6	11.9	22.6	14.3
16. Stressed working with people directly	35.7	35.7	14.3	7.1	6.0	1.2	0.0
20. I'm at the end of my rope	28.6	34.5	8.3	13.1	9.5	3.6	2.4

Note. Frequency 0 Never to 6 Every Day

Table 5

Percentage of Responses For Individual Items of The MBI -- Grouped by Subscales (N=84)

ITEM	Responses						
	0	1	2	3	4	5	6
Subscale DP (Depersonalization)							
5. I treat patients as impersonal objects	42.9	32.1	10.7	10.7	1.2	2.4	0.0
10. Callous toward people	51.2	21.4	8.3	7.1	7.1	2.4	2.4
11. I worry that this job is hardening me	39.3	28.6	13.1	8.3	4.8	2.4	3.6
15. I don't care what happens to patients	79.8	14.3	2.4	3.6	0.0	0.0	0.0
22. Patients blame me for some problems	28.6	27.4	11.9	11.9	8.3	7.1	4.8

Note. Frequency 0 Never to 6 Every Day

Table 5

45

Percentage of Responses For Individual Items of The MBI -- Grouped by Subscales (N=84)

ITEM	Responses						
	0	1	2	3	4	5	6
Subscale PA (Personal Accomplishment)							
4. Easily understand patient's feelings	0.0	3.6	0.0	9.5	10.7	26.2	50.0
7. Effectively deal with problems of patients	0.0	1.2	1.2	4.8	0.0	40.5	51.2
9. Positively influencing other people's lives	2.4	2.4	6.0	23.8	9.5	16.7	39.3
12. I feel very energetic	6.0	4.8	9.5	15.5	15.5	39.3	9.5
17. Create a relaxed atmosphere	2.4	2.4	4.8	7.1	14.3	32.1	3.9
18. Exhilarated after working with patients	6.0	7.1	8.3	28.6	14.3	25.0	9.5
19. Accomplished many worthwhile things	0.0	8.3	7.1	17.9	13.1	25.0	26.2
21. Deal with emotional problems very calmly	0.0	1.2	3.6	13.1	16.7	33.3	32.1

Note. Frequency 0 Never to 6 Every Day

Table 6

Means, Standard Deviations, and Ranges for the MBI Subscales (N=84)

Variable	Mean	<u>SD</u>	Minimum	Maximum
Emotional Exhaustion (EE)	23.71	10.40	5.0	45.0
Depersonalization (DP)	5.63	4.77	0.0	19.0
Personal Accomplishment (PA)	36.11	7.62	12.0	48.0

Note. Personal Accomplishment scored in opposite direction from EE and DP.

statistically significant negative correlation between years experience and emotional exhaustion ($r = -.1821$, $p = .049$). This indicates that as years experience increases, one's emotional exhaustion decreases. No other significant findings related to years experience existed.

Relationships between the MBI Subscales
and Factors of the NSS

Spearman's correlations were used to test the relationship between the MBI subscales and the NSS. There was a statistically significant correlation between the total stress score and EE ($r = .3682$, $p = .000$). A significant correlation also existed between the total stress score and DP ($r = .3255$, $p = .001$). A negative correlation existed between the total stress score and PA ($r = -.2382$, $p = .016$). These three statistically significant correlations, although moderately weak, indicate that there is a relationship between the three burnout subscales of the MBI and the Nursing Stress Scale.

Spearman correlations of Factors 1 through 7 of the NSS show that the factors are significantly intercorrelated with each other, and with the total stress score, with the exception of Factor 3 with Factor 6 ($r = .1251$, $p = .131$). This supports the internal consistency of the NSS, since Factors

1 through 7 comprise the total scale. See Table 7 for correlation coefficients for the total stress score and Factors 1 through 7.

Differences among full and part time

status with stress and burnout

Mann-Whitney U Tests were performed on stress by full time/part time status, emotional exhaustion by full time/part time status, depersonalization by full time/part time status, and personal accomplishment by full time/part time status. There were no significant differences at the .05 level in stress or burnout scores (EE, DP, PA) in relation to full time or part time status.

Differences between education, shift worked, length of shift and marital status with stress and burnout

Kruskal-Wallis one-way analyses of variance were performed to test the remaining demographic variables with stress and burnout. The following tests were performed: stress by education, emotional exhaustion by education, depersonalization by education, personal accomplishment by education; stress by shift worked, emotional exhaustion by shift worked, depersonalization by shift worked, personal accomplishment by shift worked; stress by marital status; stress by length of shift worked. No significant findings

at the $p=.05$ level were found. Therefore, there were no significant differences between different levels of each of these demographic variables with respect to the dependent variables of stress and burnout.

Research Question 2

To test if there was a relationship between perceived levels of high stress and occupational burnout, regression analyses were conducted. Using the three subscales of the MBI as the dependent variables, stress, together with age, level of education, years of nursing experience, marital status, shift worked, length of the shift, and full or part time status were used in the regression equation. Means and standard deviations were reported, and multiple regression was performed in keeping with relevant literature. The regression residuals indicated that the data at least appeared similar to a normal distribution.

Stepwise multiple regressions were performed using EE, DP, and PA as the dependent variables respectively. For emotional exhaustion, Factor 6 (workload) accounted for 18.57% of the variance associated in scores ($p=.0001$). Age was entered into the equation on step 2, with Factor 6 and age accounting for 24.17% of the variance seen in EE ($p=.0000$). Factor 3 (inadequate preparation) entered the

equation on step 3. Together these three variables accounted for only 28.5% of the variance ($p=.0000$). No other variables were statistically significant.

Using depersonalization as the dependent variable, Factor 3 (inadequate preparation) entered the multiple regression equation on step 1, accounting for 18% of the variance seen in DP scores ($p=.0002$). Factor 5 (conflict with other nurses) entered the equation next. Together these two variables accounted for 23.5% of the variance in DP scores ($p=.0001$).

When personal accomplishment was used as the dependent variable, Factor 3 (inadequate preparation) entered the regression equation first, accounting for 27.6% of the variance seen in PA scores ($p=.0000$). Factor 7 (uncertainty concerning treatment) entered the equation next. Together, these two variables accounted for 31.2% of the variance seen in PA scores ($p=.0000$).

Reliability

Cronbach's alpha was computed on the Nursing Stress Scale, the Maslach Burnout Inventory, and the three subscales of the MBI. The subscale of personal accomplishment was recoded to account for the difference in direction. These reliability coefficients were computed to

see if similar results were obtained for this sample as in other research using the same tools.

The Cronbach's alpha for the present sample for the NSS was .9014. Gray-Toft and Anderson reported a coefficient alpha of .89 when they developed the instrument (1981, p.17).

For the MBI, a Cronbach's alpha of .8936 was obtained. For the emotional exhaustion subscale, a reliability coefficient of .8913 was obtained. For the depersonalization subscale, the reliability coefficient was .6877. For personal accomplishment, an alpha of .8297 was reached. Maslach and Jackson reported the following coefficient alphas for the MBI: ".90 for Emotional Exhaustion; .79 for Depersonalization; and .71 for Personal Accomplishment" (1986, p. 8). These reliability coefficients indicate a high level of consistency for the tools used.

Factor analysis for the NSS and the MBI

A factor analysis was performed on the 34 items of the NSS to determine if the factors in this study were consistent with those found by Gray-Toft and Anderson (1981). Factors with eigenvalues greater than one were rotated using both quartimax and varimax rotations, using

the principal axis factoring method for factor extraction. Factor 3 (inadequate preparation) and Factor 4 (lack of support) emerged as they did in the development of the Nursing Stress Scale. The other factors had some variations. Using the quartimax rotation, Factor 5 of the NSS (conflict with other nurses) was divided into two separate factors; each consisting of only two items. Factor 9 of the present factor analysis consisted of only two items. Factors 10 and 11 were each comprised of only one item. In the final analysis, 7 factors had eigenvalues greater than one.

Likewise, a factor analysis was performed on the 22 items of the MBI. Using a varimax rotation, 5 factors emerged with eigenvalues greater than one. Principal components analysis was used as the method of factor extraction. The factors were fairly consistent with those reported by Maslach and Jackson (1986) with the exceptions of depersonalization being broken down into two separate factors, and the final factor emerging with two items.

Chapter 5

SUMMARY AND CONCLUSIONS

This descriptive, correlational study was designed to examine the relationships between various demographic factors and perceived levels of stress in acute care nurses, and to test if there was a relationship between high levels of stress and occupational burnout. This chapter will include a summary of the research findings, conclusions drawn from the findings, and implications for nursing. Recommendations for further study will also be given.

The Nursing Stress Scale

Results from the NSS yielded some interesting findings. High scores on some items of Factor 1, death and dying, suggest that the nurses find this extremely stressful. Perhaps a course in death and dying could be offered by the hospital. Counseling and support groups could be made available to the nurses as needed.

For Factor 3, inadequate preparation to deal with emotional needs of patients and their families, the majority of the nurses answered "occasionally" to the three items. Since the NSS is a Likert type scale, one is uncertain how often "occasionally" really is. It may be once a week for some nurses, or once every few months for others.

Therefore, the high frequencies of "occasionally" merit discussion. Utilizing the chaplain who is available 24 hours a day for patients and their families may be one way to help reduce the stress in these nurses related to inadequate preparation. A support group for families with a seriously ill member could be another option. In this support group families (and patients) could ventilate feelings and perhaps decrease frustration which may be displaced upon the nurse. These recommendations seem easily obtainable.

The majority of the responses for Factor 4, lack of staff support were "occasionally." As mentioned under Factor 1 (death and dying), support groups could be made available to the nurses weekly, or as needed. These groups could be used as avenues for nurses to talk about their problems and express their feelings.

For Factor 2, conflict with physicians, almost one-half of the nurses reported conflict with a physician, and criticism by a physician occurring at least occasionally. Over one-half reported disagreement with a physician concerning treatment occurring occasionally. An inservice program on conflict resolution could be given on a yearly basis, and could be incorporated into the orientation of all

new nurses. A brief assertiveness training class would also be valuable. This could easily be incorporated into an inservice day, or given for CEUs.

Factor 5, conflict with other nurses, had a majority of responses occurring "occasionally". As with Factor 2 (conflict with physicians), a class on assertiveness training and/or conflict resolution seems appropriate to help the nurses deal with stress related to these issues.

For Factor 6, workload, unpredictable staffing and scheduling caused occasional stress for almost one-half of the sample. This may not be easily amenable to change. It is common in staffing patterns for nurses to rotate among all shifts. Perhaps the management could examine staffing patterns and provide enough float nurses to cover staff needs as they arise.

For 70.2% of the nurses, the breakdown of a computer "occasionally" caused stress. A brief inservice on the back up system when this occurs would be valuable.

For the item "not enough staff to adequately cover the unit", 33.3% of respondents answered "frequently"; 38.1% responded "very frequently". A look at patient acuity levels may be warranted to see if nurse-patient ratios are adequate. Over one-third of the sample felt that too many

nonnursing tasks made them feel stress frequently. Providing enough ancillary staff may help alleviate this situation; however, budget constraints exist.

For Factor 7, uncertainty concerning treatment, not having enough information concerning the patient's medical condition, or believing that the physician had ordered an inappropriate treatment caused stress at least occasionally for over one-half of the sample. More communication is needed between physicians and nurses in regard to patient care. "Grand rounds" involving nurses and physicians may be one solution to this problem.

Since over two-thirds of the sample felt uncertain how to operate specialized equipment, and reported this as occasionally causing stress, inservices on new equipment for all employees are essential. Having the clinical nurse specialist available to answer questions may help alleviate this stress.

Gray-Toft and Anderson reported a mean score on the NSS of 92.46. Since the mean in the present study was only 48.80, a few explanations will be offered. The most obvious would be that in the present study nurses did not experience high levels of stress on their jobs, or if they did, they had found effective ways of dealing with it. A second

explanation may be that the subjects may have wanted to "look good" to the researcher, known as the "halo effect". Since the word stress appears in the directions for the questionnaire, the nurses were alerted to the nature of the questionnaire. Therefore, they may not have wanted to report a high level of stress, so that there may have been an underreporting on some items. Finally, nurses in rural areas may not have as high of a stress level as those in urban areas.

The Maslach Burnout Inventory

Emotional Exhaustion

Since 26.2% of the sample felt emotionally drained from their work a few times a week, and 22.6% reported feeling "used up at the end of the work day" every day, these findings warrant intervention. Development of peer support groups seem a possible way to help nurses deal with the emotional exhaustion of their jobs. Other ways to deal with stress, such as exercise, need to be reiterated to the nursing staff.

Over one-third (35.7%) reported feeling "burned out" from their work a few times a year or less; 17.9% reported this feeling a few times a month. Using the emotionally charged word "burnout" directly in the statement may account

for the low frequencies of responses for this item. However, having almost 18% of the registered nurse population sampled feeling this way is an important finding, since burnout has been associated with such negative factors as absenteeism and job turnover. Again, a support group of peers sharing their feelings may be a way for nurses to deal with their emotional exhaustion.

Almost one-fourth of the nurses in this sample reported job frustration "a few times a week". A job satisfaction survey may be used to pinpoint specific areas of the job that are causing frustration. Based upon the findings of the survey, some means may be found to increase job satisfaction. The range of scores for the Emotional Exhaustion subscale reported by Maslach and Jackson were the following: less than or equal to 18 equals low, 19 to 26 equals average, and greater than or equal to 27 equals high (1986). For this sample, a mean of 23.71 on the EE subscale represents a moderate score.

Depersonalization

Most nurses did not feel that they were becoming more callous toward people, or that they treated patients as impersonal objects. Most respondents answered "never" or "a few times a year or less" to the item "I worry that this job

is hardening me emotionally". The ranges of experienced burnout for depersonalization reported by Maslach and Jackson were the following: Less than or equal to 5= low, 6 to 9= average, and greater than or equal to 10= high (1986). The mean of the sample for this subscale, 5.63, is categorized as a low level of depersonalization. This is a positive finding.

Personal Accomplishment

Almost 40% of the sample felt they were positively influencing other people's lives through their work every day. A little over one-fourth felt that they had accomplished many worthwhile things in their jobs every day. These are just a few of the positive outcomes from this subscale. It seems reasonable that feelings of personal accomplishment in one's job may counterbalance emotional exhaustion and feelings of depersonalization. The range of scores for the Personal Accomplishment subscale reported by Maslach and Jackson were the following: greater than or equal to 40 equals low, 39 to 34 equals average, and less than or equal to 33 equals high (1986). The mean score for the present sample on PA was 36.11, an average score according to Maslach and Jackson. One must be cautioned that the "halo effect" may again be effecting the results.

Relationship between age with stress and burnout

As the age of the nurse increased, scores on Factor 4, lack of support, also increased. Older nurses felt a lack of opportunity to share experiences, feelings, and problems with co-workers. No definite conclusions can be made based on this relationship.

As the age of the nurse increased, the amount of emotional exhaustion decreased. Older nurses may have learned ways of coping with stress through years of experience. They may have learned through life events how to better deal with situations that lead to emotional exhaustion. Williams (1989) also reported a negative correlation between age and emotional exhaustion.

The relationship with age and the total stress score showed a very weak correlation that was not significant. This is inconsistent with the findings of Lobb and Reid (1987), who found job stress factors to be significant stressors for younger nurses. In addition, Rich and Rich also found "that age was a significant predictor of burnout scores" (1987, p. 66). The design of the study and tests used may not be sensitive enough to detect differences if they are present. Further study in this area is needed to determine if differences are found with a different

population.

Years experience with stress and burnout

As the number of years of nursing experience increased, the amount of emotional exhaustion decreased. This appears similar to the relationship between age and emotional exhaustion. The reader must be cautioned however, that some people are entering the nursing profession later in life, and years experience does not always correlate with age perfectly.

Relationships among stress with burnout

As the total stress score increased, emotional exhaustion also increased. As the total stress score increased, depersonalization also increased. Inversely, as the total stress score increased, personal accomplishment decreased. These findings indicate that a relationship does exist between stress and burnout. However, causation cannot be determined since the research was not experimental in design.

Using emotional exhaustion as the dependent variable in the multiple regression equation, age, factor 3 (inadequate preparation) and factor 6 (workload) together accounted for 28.5% of the variance seen. Emotional exhaustion is related to workload and inadequate preparation, two of the seven

subscales of the NSS. Again the need to provide nurses with some type of support services is suggested. It is crucial for nurses to be able to ventilate their feelings and share experiences. As stated previously, the workload of the nurses may not be easily changed.

When depersonalization was used as the dependent variable, factor 3 (inadequate preparation), and factor 5 (conflict with other nurses) accounted for 23.5% of the variance found. The strategy of teaching nurses conflict resolution may be helpful. This could be offered as part of an inservice day, or a class could be given for CEUs. It should also be part of the orientation of all new nurses. Using personal accomplishment as the dependent variable, factor 3 (inadequate preparation), and factor 7 (uncertainty concerning treatment) accounted for 31.2% of the variance in PA scores.

As clearly seen, inadequate preparation accounted for part of the variance in scores on all three subscales used to measure burnout. For DP and PA this factor explained the most variance in scores. The questions comprising this factor deal with emotional needs of patients and their families. This indicates the need for further study regarding factor 3 inadequate preparation and how it relates

to burnout in nurses.

It should be noted that the assumption of the dependent variable being measured on the interval-ratio scale for multiple regression was violated. Since it is a common practice to use a multiple regression on an attitude scale, and because the relevant literature also used a multiple regression, it was conducted for comparison. The reader is cautioned that the sample (N=84) did not have 10 subjects per variable, which is often used as a rule of thumb for multiple regression. The Spearman Rho correlations are emphasized for this sample rather than the multiple regression findings, since most of the variables are measured on an ordinal scale.

Differences between full and part time status
with stress and burnout

There were no statistically significant differences between full and part time nurses with respect to stress and burnout. This finding was contrary to what was anticipated. It was believed that full time workers would show higher levels of stress and burnout than part time workers, since they had more hours of direct contact with patients. Williams found that "for male subjects only, percentage of work time spent in direct practice was significantly related

... to depersonalization" (1989, p. 172-173).

Differences among education with stress and burnout

There were no significant differences between the various levels of education with respect to stress or burnout. Since 40.5% of the sample held AA degrees, and only one nurse held an MSN degree, more equal representation was needed in each group. This may or may not help explain why no significant differences were found.

Differences among shifts worked

with stress and burnout

There were no significant differences between the nurses on various shifts with respect to stress and burnout. Only 8.3% of nurses studied worked the evening shift, while 44.0% worked rotating shifts. This may have an effect on the results. Topf and Dillon (1988) reported that nurses who worked rotating shifts experienced more emotional exhaustion.

Differences between length of shift

with stress and burnout

There were no significant differences found between the length of the shift worked with respect to stress or burnout. There was a fairly even distribution of nurses who worked eight or twelve hour shifts; (45.2% and 39.3%

respectively). One can surmise that nurses like the flexibility that twelve hour shifts provide. Even though the hours per day are longer, they have more days off from work to be with their families or pursue other interests.

Differences between marital status
with stress and burnout

There were no significant differences found between the marital status of the nurses with respect to stress or burnout. The vast majority of the sample were married. The unequal representation of the groups may have played a role in these findings. Dolan (1987) found that married nurses had lower burnout scores than those who were not married.

Factor analysis for the NSS and the MBI

Since similar, although not exact results were obtained using factor analysis for the two instruments used in this study, this confirms the reliability and validity of the NSS and the MBI. This is extremely important, since results of research can only be as reliable as the tools used to gather the data.

One possible explanation for the different number of factors obtained for the two tools is that "the suggested minimum number of items having meaningful loadings on a factor varying [sic] between three and five, for the factor

to be deemed adequate for interpretation" (Pedhazur, 1991, p. 626).

For the Nursing Stress Scale, since Factors 6, 9, 10, and 11 had only one or two items, they may have been grouped with other factors in order to have meaningful loadings. For the Maslach Burnout Inventory, Factors 4 and 5 had only 2 items comprising them. They may also have been grouped with other factors by the researchers who developed the tool.

Implications for Nursing

The results of this study have important implications for nursing. As cited in the literature review, job stress and burnout have been found to correlate with decreased job performance and job turnover (Lobb and Reid, 1987). Absenteeism, illness, and high turnover rates have also been associated with work stress and burnout (Williams, 1989). It can be clearly seen how these factors would be costly to the employing institutions, since each new nurse hired must go through an extensive orientation program. It would be advisable for the institution to find ways of dealing with these problems so that they can keep the nurses that are already employed. Ways need to be found to break the "burnout" link in the stress reaction cycle. This is

especially important in rural settings where the pool of nurses to draw from may already be limited.

Almost one-fourth of the nurses reported job frustration "a few times a week". This area warrants further investigation since job frustration eventually leads to the nurse changing jobs, or leaving the profession entirely.

Work needs to be done to decrease job stress wherever possible, since increasing technology and decreased patient stays in hospitals are placing more stress on the nurses working there. This is extremely important in order to continue to provide high quality patient care.

Recommendations for Future Research

A similar study using a random sample would be beneficial since the sample would be more representative of the population being studied. With a larger sample conclusions could be drawn with more confidence since there would be less chance for error. Attempts need to be made to ensure an equal representation of males in the study; also to ensure equal representation of the other demographic variables studied.

As previously stated, the relationship between inadequate preparation to deal with the emotional needs of

patients and families needs to be explored further. Perhaps a qualitative study relating to this one factor could be done to see if any new ways of coping with this stress could be found.

The relationship between age with stress and burnout needs to be reexamined since differences were found in this study compared to the literature. A larger sample size would be beneficial, since the sample size may not have been large enough in this study to detect differences.

Finally, research could be conducted using nonparametric regression techniques to further explore the relationship between occupational stress and burnout.

Appendix A

Demographic Data Sheet

Please mark or write in the correct answer:

___ Age

___ Gender

Highest nursing degree obtained:

___ Diploma RN

___ Associate Degree RN

___ BSN

___ MSN or higher

Years of nursing experience ___

Number of years on this particular area ___

Marital status:

___ Single

___ Married

___ Separated, Widowed, Divorced

Shift worked:

___ Day

___ Evening

___ Night

___ Rotating Shifts

___ Are these 8 or 12 hour shifts? (indicate which)

Full or Part time

___ Full time

___ Part time

Appendix B

The Nursing Stress Scale

Below is a list of situations that commonly occur on a hospital unit. For each item indicate by means of a circle how often on your present unit you have found the situation to be stressful. Your responses are strictly confidential.

Responses: Never (0), Occasionally (1), Frequently (2), and Very Frequently (3)

- | | | |
|-----|---|---------|
| 1. | Performing procedures that patients experience as painful. | 0 1 2 3 |
| 2. | Feeling helpless in the case of a patient who fails to improve. | 0 1 2 3 |
| 3. | Listening or talking to a patient about his/her approaching death. | 0 1 2 3 |
| 4. | The death of a patient. | 0 1 2 3 |
| 5. | The death of a patient with whom you developed a close relationship. | 0 1 2 3 |
| 6. | Physician not being present when patient dies. | 0 1 2 3 |
| 7. | Watching a patient suffer. | 0 1 2 3 |
| 8. | Criticism by a physician. | 0 1 2 3 |
| 9. | Conflict with a physician. | 0 1 2 3 |
| 10. | Fear of making a mistake in treating a patient. | 0 1 2 3 |
| 11. | Disagreement concerning the treatment of a patient. | 0 1 2 3 |
| 12. | Making a decision concerning a patient when a physician is unavailable. | 0 1 2 3 |
| 13. | Feeling inadequately prepared to help with the emotional needs of a patient's family. | 0 1 2 3 |
| 14. | Being asked a question by a patient for which I do not have a satisfactory answer. | 0 1 2 3 |
| 15. | Feeling inadequately prepared to help with the emotional needs of a patient. | 0 1 2 3 |

- | | | |
|-----|--|---------|
| 16. | Lack of opportunity to talk openly with other unit personnel about problems. | 0 1 2 3 |
| 17. | Lack of opportunity to share experiences and feelings with other personnel on the unit. | 0 1 2 3 |
| 18. | Lack of opportunity to express to other personnel on the unit my negative feelings toward patients. | 0 1 2 3 |
| 19. | Conflict with a supervisor. | 0 1 2 3 |
| 20. | Floating to other units that are short-staffed. | 0 1 2 3 |
| 21. | Difficulty in working with a particular nurse (or nurses) outside the unit. | 0 1 2 3 |
| 22. | Criticism by a supervisor. | 0 1 2 3 |
| 23. | Difficulty in working with a particular nurse (or nurses) on the unit. | 0 1 2 3 |
| 24. | Breakdown of a computer. | 0 1 2 3 |
| 25. | Unpredictable staffing and scheduling. | 0 1 2 3 |
| 26. | Too many nonnursing tasks required, such as clerical work. | 0 1 2 3 |
| 27. | Not enough time to provide emotional support to the patient. | 0 1 2 3 |
| 28. | Not enough time to complete all my nursing tasks. | 0 1 2 3 |
| 29. | Not enough staff to adequately cover the unit. | 0 1 2 3 |
| 30. | Inadequate information from a physician regarding the medical condition of a patient. | 0 1 2 3 |
| 31. | A physician ordering what appears to be inappropriate treatment for a patient. | 0 1 2 3 |
| 32. | A physician not being present in a medical emergency. | 0 1 2 3 |
| 33. | Not knowing what a patient or a patient's family ought to be told about the patient's condition and its treatment. | 0 1 2 3 |
| 34. | Uncertainty regarding the operation and functioning of specialized equipment. | 0 1 2 3 |

Appendix C

Human Services Survey (MBI)

The purpose of this survey is to discover how various persons in the human services or helping professions view their jobs and the people with whom they work closely. Please read each statement carefully and decide if you ever feel this way about your job. If you have never had this feeling, write a "0" (zero) before the statement. If you have had this feeling, indicate how often you feel it by writing the number (from 1 to 6) that best describes how frequently you feel that way.

How Often: (0) Never, (1) A few times a year or less, (2) Once a month or less (3) A few times a month, (4) Once a week, (5) A few times a week (6) Every day.

How Often

0-6

Statements:

- | | |
|-----------|--|
| 1. _____ | 1. I feel emotionally drained from my work. |
| 2. _____ | 2. I feel used up at the end of the workday. |
| 3. _____ | 3. I feel fatigued when I get up in the morning and have to face another day on the job. |
| 4. _____ | 4. I can easily understand how my patients feel about things. |
| 5. _____ | 5. I feel I treat some patients as if they were impersonal objects. |
| 6. _____ | 6. Working with people all day is really a strain for me. |
| 7. _____ | 7. I deal very effectively with the problems of my patients. |
| 8. _____ | 8. I feel burned out from my work. |
| 9. _____ | 9. I feel I'm positively influencing other people's lives through my work. |
| 10. _____ | 10. I've become more callous toward people since I took this job. |
| 11. _____ | 11. I worry that this job is hardening me emotionally. |
| 12. _____ | 12. I feel very energetic. |
| 13. _____ | 13. I feel frustrated by my job. |
| 14. _____ | 14. I feel I'm working too hard on my job. |

15. _____ 15. I don't really care what happens to some patients.
16. _____ 16. Working with people directly puts too much stress on me.
17. _____ 17. I can easily create a relaxed atmosphere with my patients.
18. _____ 18. I feel exhilarated after working closely with my patients.
19. _____ 19. I have accomplished many worthwhile things in this job.
20. _____ 20. I feel like I'm at the end of my rope.
21. _____ 21. In my work, I deal with emotional problems very calmly.
22. _____ 22. I feel patients blame me for some of their problems.

Appendix D

Disclosure Statement

I am a graduate nursing student at Salisbury State University, and am working on my thesis. I am asking registered nurses who work on medical surgical units to assist me in my study. The questionnaire I am asking you to fill out is on assessing nurses' work experiences. By completing this questionnaire, you are helping to expand the knowledge base on nurses' work experiences.

The questionnaire should take no more than 30 minutes to complete. Participation is voluntary, and confidential. Please do not put your name on this questionnaire.

Once you have completed the questionnaire, please place it in the sealed envelope, and return it in the large envelope in the nurses' conference room. Float nurses may return their questionnaires to the supervisor's office. If you do not wish to participate, please return the unanswered questionnaire in the envelope provided.

Your participation is greatly appreciated. If you have any questions, please feel free to call me, Theresa Shockley, or my instructor Karen Badros at the numbers listed below.

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Statement of Approval
Committee on Human Volunteers
Salisbury State College

Date February 24, 1994

MEMORANDUM TO: Theresa Shockley

FROM : Chairman, Committee on Human Volunteers

SUBJECT : Occupational Stress and Burnout in Acute Care Medical Surgical
Nurses in a Rural Area
Title of Study

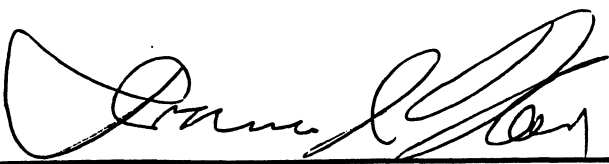
SSU Dept. of Educ. MED

Grant Application No. Sponsoring Agency

Theresa Shockley
Principal Investigator or Program Director

The Committee on Human Volunteers has considered the above application and, on the basis of available evidence, records its opinion as follows:

- (1) The rights and welfare of individual volunteers are adequately protected.
- (2) The methods to secure informed consent are fully appropriate and adequately safeguard the rights of the subjects (in the case of minors, consent is obtained from parents or guardians).
- (3) The investigators are responsible individuals, competent to handle any risks which may be involved, and the potential medical benefits of the investigation fully justify these studies.
- (4) The investigators assume the responsibility of notifying the Committee on Human Volunteers if any changes should develop in the methodology or the protocol of the research project involving a risk to the individual volunteers.


Chairman

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