Lycoming College

Department of Nursing

Honors Research Project

A Comparison of Occupational Stress Between ICU and Non-ICU Nurses in a Hospital Setting

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Running Head: STRESS

Abstract

This study focuses on the perception of occupational stress in nurses within a hospital setting. Since nursing has been regarded as a stressful profession, the need to explore occupational stress among nurses to promote an awareness of stress and its effects is apparent. The conceptual base for this study was drawn from Lazarus' general theory of psychological stress viewing stress as a transaction between the nurse and the occupational environment.

A comparative study was completed to determine the difference in occupational stress levels and stressors between ICU and non-ICU nurses within a hospital setting. A convenience sample of n=115 registered nurses was used at a large, acute care hospital in Northcentral Pennsylvania. Each subject was sent a sociodemographic questionnaire, and the Health Professions Stress Inventory (HPSI) which possessed adequate concurrent validity and internal consistency for purposes of this study. Informed consent was obtained from all participants representing a response rate of 39% (21 ICU nurses and 23 non-ICU nurses participated).

It was concluded that there was no difference in occupational stress levels between ICU nurses and non-ICU nurses. However, certain stressors from the HPSI were found to have a significant difference in frequencies between the ICU and non-ICU nurses. In general, the stressors receiving the highest frequencies by the non-ICU nurses were related to high nurse-patient ratios. The stressors rated at higher frequencies by the ICU nurses dealt with a highly technical environment, and lack of involvement in making decisions.

Since none of the demographic variables were shown to correlate with stress levels of the subjects, a factor analysis was used on the HPSI items and a stepwise multiple regression was performed to analyze the relationships between the demographics and the seven extracted factors. Only 'marital status' and 'age' entered any equations significantly ($p=.05$). The marital status of divorced was a predictor of stressors dealing with Amount of Satisfaction with Profession, Concern for Patient Care, and Involvement in Decision-making Process, whereas age was a significant predictor of the factor Concern for Patient Care.

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Chapter I

Introduction

Occupational stress is a widely studied area especially in the nursing profession. Nurses often enter the profession for the purpose of helping people, promoting optimal wellness, and caring for the sick and the dying. Nurses, however, are frequently placed in 'life and death' situations, understaffed units, and highly technical environments such as today's intensive care units. Other situations nurses are frequently faced with include hostile and demanding patients, constantly changing work environments, and competitive coworkers (Vincent & Coleman, 1986).

In the past, a popular belief held that the highly specialized area of the intensive care unit (ICU) produced a higher degree of occupational stress in the nursing staff in comparison to nurses in other areas of the hospital setting. This belief may have contributed to a greater shortage of nurses in this area since critical care units were among the first to experience the effects of the current nursing shortage (Hartshorn, 1989). Recently, however, there is a growing concern that other areas of the hospital setting such as the medical-surgical unit may also be particularly stressful (Anderson, Chiriboga, & Bailey, 1988).

The study was designed to provide a comprehensive view of the occupational stress that ICU and non-ICU nurses experience in an acute care hospital setting. Therefore the purpose of the study was to answer the following research questions: 1) What is the difference in the perceived occupational stress levels in ICU and non-ICU nurses?; 2) What are the differences in occupational stressors between ICU and non-ICU nurses?

Definition of Terms

ICU nurse: registered nurse employed in an intensive care unit within a hospital setting

Non-ICU nurse: registered nurse employed on a general medical-surgical unit within a hospital setting

Stress: tension perceived by an individual resulting from psychological forces such as fear and anxiety as measured by the Health Professions Stress Inventory

Stressor: an activity, event, or other stimulus that causes stress

Assumptions and Limitations

Limitations to the study included a limited sample size (n=115), low response rate (39.1%), and use of a convenience sample from only one institution. Thus generalizability of the findings was limited only to the institution studied.

A major assumption was that the subjects who chose to participate did not bias the results due to the voluntary nature of the study. Another assumption included that all subjects that participated in the study did so in an honest fashion.

Significance of the Study

Occupational stress is of great significance to the nursing profession. Although not all stress has negative effects, high levels can cause burnout in nurses which may compel them to leave the profession (Keane, Ducette, & Adler, 1985). In fact, the American Association of Critical Care Nurses has listed the study of stress as one of the top ten research priorities for the nursing profession (Lewandowske & Kositsky, 1983).

An assessment of occupational stress is an initial step in finding ways to successfully manage stress and initiate stress-reduction programs, thus helping to prevent burnout among nurses. An identification of the specific stressors of the two groups under study would give direction to the focus of such individualized programs. With this in mind, a review of the literature concerning occupational stress of ICU versus non-ICU nurses was performed to examine past findings and develop a conceptual framework for the study.

Chapter II

Review of Literature

Literature has revealed that nursing is regarded as a stressful profession. According to researcher June Bailey (1980), stress may have a negative effect on job performance as well as cause lowered morale, decreased energy levels, and a number of degenerative diseases. Researchers have also determined that the effects of stress may cause somatic complaints and frequent absenteeism (MacNeil & Weisz, 1983). While researchers agree that high levels of stress may produce negative effects, a consensus has not been reached regarding whether certain areas in the hospital setting produce greater levels of stress on the nursing staff. With this in mind, the findings of past research studies performed to assess the levels of stress and stressors among nurses in the hospital setting were reviewed.

Work done in 1982 by Gentry and Parks not only concluded that ICU nurses generally tended to exhibit more anxiety, hostility and depression than non-ICU nurses, but also that this "psychological strain seen in ICU nurses appeared to be a result of situational stressors (eg. overwhelming work load, too much responsibility, poor communication with fellow workers,

and limited work space)" (p. 43). The study revealed that ICU nurses appeared to be specifically stressed by work overload and issues of death and dying. However, the researchers feel there is no clear basis for determining that ICU nurses are collectively more stressed the non-ICU nurses.

A further review of the literature reveals other studies finding no difference between stress levels in ICU and non-ICU nurses. In 1985 Keane, Ducette and Adler found using the Staff Burnout Scale for Health Professionals that there was no indication that ICU nurses were more negative or felt more stressed about their jobs as compared with nurses in the other units sampled in their study. Moreover, a comparative study by Vincent and Coleman (1986) concluded that ICU nurses and non-ICU nurses were found to be similar in perceived levels of stress as well as in the rank-ordering of seven major stressors listed on the Stressors for Nurses form utilized by the researchers. However, the study showed ICU nurses had significantly higher frequencies in major stressor subcategories related to 'management of the unit' whereas non-ICU nurses had significantly higher frequencies in subcategories related to 'physical work environment.' Both groups ranked 'nature of patient care' as the

third major stressor category.

Contrary to Vincent and Coleman's work in 1986, an investigation utilizing The Stress Audit in 1988 by Anderson and her associates revealed 'management of the unit' to be the most frequently cited category of stressors for medical-surgical nurses under which 'inadequate staffing' was the most frequently mentioned item. 'Interpersonal relationships' emerged as the most frequently cited category of stressors for ICU nurses under which 'conflicts with physicians' was the most frequently cited stressor. According to Baggs (1989), the stress undergone by ICU nurses is related to interpersonal relations between nurses and physicians, which has been known to decrease job satisfaction.

Other researchers have found ICU nurses to be actually less stressed than nurses in other areas of the hospital setting. Interestingly, a recent study by Yu, Mansfield, Packard, Vicary, and McCool in 1989 which compared the perceived stress levels of 10 clinical areas, showed ICU ranking fifth behind the other areas of administration, cardiology, medical-surgical, and emergency room. 'Keeping track of many things' was the most frequently cited stressor listed on The Nurse Job Context Scale used in the research by

nurses in all clinical areas under study.

Other evidence by Dewe in 1988 showed medical, orthopedic, and continuing care unit nurses to experience more stressors more frequently in comparison to the ICU nurses in his study. Results indicated, however, that ICU nurses were more likely to experience 'difficulties involved in nursing the critically ill' than nurses on the nine other units in the study.

Another approach to measure occupational stress using an open-ended survey was taken by Milazzo in 1988 who compared ICU and non-ICU nurses in terms of their perceived stress-related symptoms such as sleep problems, usage of substances such as caffeine, alcohol and cigarettes, and physical and mental disorders. Results revealed that only 33% of ICU nurses reported stress-related symptoms as opposed to 53% of the non-ICU nurses. Therefore it was concluded that the non-ICU nurses experienced higher stress levels than the ICU nurses. This study was supported by Maloney's research in 1982 which also concluded that ICU nurses had fewer somatic complaints and were less anxious than non-ICU nurses.

A thorough review of past studies comparing occupational stress of ICU and non-ICU nurses has shown varied results. This inconsistency may be partially due

to the variety of different tools used in past studies to measure stress levels and various stressors nurses undergo. Although a lack of findings in past research is unable to support the past belief that ICU nurses experience greater stress than non-ICU nurses, the complexity of hospital nursing today makes it increasingly necessary to examine the stressors that these groups are experiencing. Therefore, this study is an attempt to create a more comprehensive overview of the occupational stress in nurses within a hospital setting. With the findings of past research in mind, a theoretical model for use in this study was developed.

Conceptual Framework

In the numerous research studies concerning stress, no universal definition of this condition has been agreed upon. Hans Seyle, physiologist and researcher in the field of stress, defined stress as "the nonspecific response of the body to any demand" (1976, p.15). The stimulus causing a disturbance in the homeostasis of the individual is known as 'the stressor.' Seyle described these changes induced in the body in terms of the general adaptation syndrome. The first stage is characterized by alarm, the second by resistance, and the third by exhaustion in which all adaptive mechanisms collapse (Seyle, 1956). The

psychoanalytic view adds that the stress response also can be initiated by psychosocial factors as well as physical stimuli.

For purposes of this study, the concept of stress will be built upon Seyle's work but also incorporates Richard Lazarus' theory of psychological stress. Lazarus views stress as a transaction between an individual and their internal and external environments. This theory contends that stress is a general label including the stimuli, the response, and the processes resulting between the stimuli and response. Psychological stress contains a threat that leads a person to anticipate a harmful condition. Two levels of appraisal are used by the individual to evaluate this condition. The first examines if there is a threat. The second level of appraisal determines coping strategies to handle this stress (Lazarus, 1966).

To understand the concept of stress, Lazarus maintains that perception of a stressor controls the stress reaction and varies among individuals (1966). For instance, some persons may consider a situation as threatening and others may view it as challenging; stressors may evoke a certain response in one nurse and a different response in another. Therefore situations

can only be considered stress-producing if they are perceived by the nurse as such.

With respect to occupational settings, stress is viewed as negative when such a psychological reaction occurs that is associated with an individual's perception of certain situations which exceeds their abilities. Past research showed such situations to frequently occur in a hospital setting (Yu et al., 1989, Anderson et al., 1988, Milazzo, 1988, Keane et al., 1985). Therefore this study was performed to assess the difference of the stressors and levels of stress as perceived by nurses in the intensive care unit and general medical-surgical area.

Chapter III

Methodology

Design. A pilot study was completed to determine the difference in stress levels between ICU and non-ICU nurses within a hospital setting. Utilizing a convenience sample of n=9 (5 ICU nurses and 4 non-ICU nurses), descriptive statistics revealed the stress level for the ICU nurses (mean=51.4, SD=9.2) to be lower than that of the non-ICU nurses (mean=73.3, SD=11.5). A two-tailed t-test was also completed. The result of t(8,.05) = 3.08 was large enough to conclude there was a significant difference in mean stress levels of the two groups under study (p=.023).

A comparative study was performed utilizing a larger sample to determine if there was a difference in perceived stress levels and stressors in ICU and non-ICU nurses. In order to assess the nurse's perceived occupational stress, a sociodemographic tool and structured questionnaire was administered to the subjects and the data analyzed and compared between the two groups under study.

Criterion of the population of ICU nurses included those employed full-time for at least one year as registered nurses in an intensive care unit within a hospital setting. Non-ICU nurses were those employed

full-time for at least one year as registered nurses on a general medical-surgical unit also within a hospital setting.

For purposes of this study, a convenience sample of n=115 was used at a large, acute care hospital in Northcentral Pennsylvania at which permission to perform the study was obtained from the Institutional Research Review Board. A list of nurses fitting the criteria for subjects was obtained from the Patient Care Managers on the units selected. Each of the nurses received a sociodemographic tool and questionnaire accompanied by a cover letter asking for their participation. This also served as a consent form to the study (see Appendix A).

The subjects in this study were guaranteed full protection of their rights for their participation. The study was not harmful to the subjects and they were assured of this in the cover letter as well as their right to self-determination. The subjects were also guaranteed the right to full disclosure at the conclusion of the study. Confidentiality, privacy and anonymity was held in high regard by the researcher and the subjects were assured of these before consent to the study was authorized. In order to protect privacy, the questionnaires were returned in closed envelopes.

A large collecting envelope was placed in an accessible place on each unit to facilitate ease of returning the questionnaires. A special coding system was developed to protect confidentiality and anonymity of the subjects' results. The results of individual subject's questionnaire or the identities of subjects were not discussed by the researcher.

Instrumentation. In order to assess and compare the occupational stress experienced between the ICU and non-ICU nurses, the Health Professions Stress Inventory (HPSI) developed by Alan P. Wolfgang (1988) was administered to the participants (see Appendix B). The HPSI contained 30 situations known to be sources of stress to nurses. Verbal consent was obtained from Wolfgang for use of the instrument in this study.

According to Wolfgang (1988), data analysis has shown the HPSI to possess concurrent validity and internal consistency. In order to assess concurrent validity, Wolfgang correlated scores between this index and those of Lyons' (1971, cited in Wolfgang, 1988) index of work-related tension. Correlations between scores on the inventory and Lyons' tension index were 0.78 for nurses ($p<.001$), showing adequate validity.

Data analysis also yielded internal consistency, measured by Cronbach's alpha coefficient, to be 0.89

for nurses. A coefficient of 0.80-0.89 is acceptable for personality measures according to guidelines provided by Gay (1985, cited in Wilson, 1989). Therefore the Health Professions Stress Inventory was shown to be adequately reliable and valid for the purpose of this study.

A sociodemographic questionnaire developed by the researcher was also administered to the participants (see Appendix C). These variables were chosen based on the findings of past research. For instance, in Dewe's 1988 study, 'age' (younger nurses) and 'clinical position' (staff nurses) have been shown to contribute to the frequency of nursing stressors. Regarding the questions of 'years as a practicing registered nurse' and 'years in current clinical area,' a study by Hartshorn in 1989 revealed job satisfaction to improve with length of employment among new nurses employed in a critical care unit. Chiriboga and Bailey's study of stress and burnout between critical care and medical-surgical nurses also showed nurses who had fewer years of work experience to be more likely to report feelings of burnout (1986). 'Marital status' also had a significant correlation with feelings of burnout in this study: married subjects were less likely and single subjects were more likely to report burnout. The

variable of 'highest level of education' can be justified by results of Keane and associates' study which revealed baccalaureate degree nurses to have somewhat higher levels of burnout in comparison to the diploma nurses in the study (1985).

Treatment of Data

A coding scheme was developed to organize the collected data. Each questionnaire was coded with a number which served as the subject identification number. The demographic variables and responses from the Health Professions Stress Inventory questionnaires also received specific coding. There were no circumstances of missing data.

Chapter IV

Data Analysis

Out of the 115 questionnaires distributed, a total of 45 (21 ICU and 24 non-ICU) respondents participated in the study representing a response rate of 39.1% . One questionnaire returned did not fit the population criteria and therefore was not used in data analysis. The sample characteristics of the two groups are shown in Table 1.

The sample was predominately female (95.5%) and employed as staff nurses (90.9%). More than one half were from diploma school programs (56.8%). The numbers of married and single nurses were equal and there was no significant difference in age between the two groups. The non-ICU nurses had slightly more experience as registered nurses and had worked longer in their clinical area than the ICU nurses. Most of the ICU nurses had worked in both a critical care setting and on a medical-surgical unit whereas most of the non-ICU nurses had not.

Table 1

Descriptive Data by Unit

	unit		
Data	ICU	non-ICU	Total
n in sample	21	23	44
age			
mean	29.8	30.7	30.3
SD	6.8	8.9	7.8
range	22-45	22-56	22-56
Years as RN			
mean	6.0	7.0	6.5
SD	4.4	8.4	6.7
range	2-15	1-36	1-36
Years in Clinical Area			
mean	4.1	5.2	4.7
SD	3.4	5.1	4.4
range	1-13	1-19	1-19
Gender (%)			
female	95.2	95.7	95.5
male	4.8	4.3	4.5
Marital status			
single	9	10	19
married	9	10	19
divorced	3	2	5
separated	0	0	0
widowed	0	1	1
Education (%)			
Diploma	57.1	56.5	56.8
Associate's	23.8	8.7	15.9
Baccalaureate	19.0	34.8	27.3
Master's	0	0	0
Clinical position			
staff nurse	20	20	40
manager	1	3	4
Worked in both settings (%)	76.2	17.4	45.5

Of the nurses with experience in both a critical care and medical-surgical setting, 25% of the ICU and 33% of the non-ICU nurses agreed that the medical-surgical area was more stressful due to high nurse-patient ratios. Forty-four percent of the ICU and 33%

of the non-ICU nurses felt that critical care was more stressful than a medical-surgical setting for reasons such as an increased patient acuity, having to deal with life-and-death situations, and working in a highly technical environment. Finally, 31% of the ICU and 33% of the non-ICU nurses with experience in both settings were not able to make a distinction between which setting they felt was more stressful.

The stress levels of all participants were computed using results from the completed Health Professions Stress Inventory questionnaires. The respondents were asked to rate how often they have found each of the 30 situations stressful on a five-point scale containing the following responses: never, seldom, sometimes, often, and very often. Each item was then scored from 0 to 4 respectively, thus total stress level scores may have ranged from 0 to 120. The means, standard deviations and ranges of the stress levels for the ICU and non-ICU unit nurses are presented in Table 2.

Table 2

Means, Standard Deviations and Ranges of Stress Level Scores by Unit

	unit		
	ICU	Non-ICU	Total
Mean	60.00	60.30	60.16
SD	14.12	14.11	13.96
Range	35-84	32-80	32-84

Table 3 shows the Pearson correlations between stress levels experienced by the subjects and those demographic variables that were either measured on an ordinal scale or were dichotomous. Choosing a significance level of .05, none of the variables were shown to significantly correlate with stress levels.

Table 3

Correlations Between Sociodemographic Variables and Stress Levels

Variables	Correlation With Stress Level
Age	-.0713
Years As RN	-.0188
Years in clinical area	.0486
Gender	.2477
Clinical position	-.1150
Worked in both settings	-.1462

The frequency of responses to the 30 items of the returned Health Professions Stress Inventory questionnaires are shown in Appendix D. The frequencies between the ICU and non-ICU nurses were

compared using the test of linear trend. Six of these differences were shown to be significant.

For instance, the non-ICU nurses rated 'not having enough staff to adequately provide necessary services' (p=.0045), 'having so much work to do that everything cannot be done well' (p=.0140), and 'not having opportunities to share feelings and experiences with colleagues' (p=.0495) at higher frequencies than the ICU nurses. The ICU nurses rated 'keeping up with new developments in order to maintain professional competence' (p=.0237), 'having nonhealth professionals determine the way you must practice your profession' (p=.0236), and 'experiencing conflicts with supervisors and/or administrators' (p=.0428) at higher frequencies than the non-ICU nurses.

The frequency scores of the 30 situations from the returned Health Professions Stress Inventory questionnaires were subjected to a factor analysis. This data reduction technique allowed for the 30 items to be clustered together into groups based on their inter-correlations. Table 4 shows the variables listed appropriately under the seven extracted factors.

Table 4

Factor Analysis of the Health Professions Stress Inventory Items

	factor loadings
Factor I: Amount of Satisfaction with Profession	
Not being challenged by your work	0.846
Not being able to use your abilities to the fullest extent on the job	0.669
Feeling that you are inadequately paid as a health professional	0.665
Feeling that opportunities for advancement on the job are poor	0.601
Not being recognized or accepted as a true health professional by other health professionals	0.526
Not receiving the respect or recognition that you deserve from the general public	0.354
Factor II: Concern for Patient Care	
Not knowing what type of job performance is expected	0.718
Feeling ultimately responsible for patient outcomes	0.714
Fearing that a mistake will be made in the treatment of a patient	0.673
Disagreeing with other health professionals concerning the treatment of a patient	0.581
Allowing personal feelings/emotions to interfere with the care of patients	0.300
Factor III: Knowledge Concerning Care of Patients	
Being uncertain about what to tell a patient or family about the patient's condition and/or treatment	0.685
Possessing inadequate information regarding a patients' medical condition	0.645
Dealing with "difficult" patients	0.482
Not receiving adequate feedback on your job performance	0.471
Being inadequately prepared to meet the needs of patients	0.439
Factor IV: Involvement in Decision-making Process	
Experiencing conflicts with supervisors and/or administrators	0.849
Having nonhealth professionals determine the way you must practice your profession	0.608
Not being allowed to participate in making decisions about your job	0.343
Factor V: Workload	
Not having enough staff to adequately provide necessary services	0.831
Having so much work to do that everything cannot be done well	0.693
Keeping up with new developments in order to maintain professional competence	-0.292
Having job duties which conflict with family responsibilities	0.250
Being interrupted by phone calls or people while performing job duties	<0.200
Trying to meet society's expectations for high-quality medical care	<0.200
Factor VI: Relations With Coworkers	
Experiencing conflicts with coworkers	0.707
Supervising the performance of coworkers	0.681
Not having opportunities to share feelings and experiences with colleagues	0.570
Factor VII: Patient Needs	
Caring for terminally ill patients	0.846
Caring for the emotional needs of patients	0.423

A stepwise multiple regression was performed to analyze the relationships between the independent variables (demographics) and each of the dependent variables (the seven extracted factors). Because a number of the independent variables utilized nominal scales, dummy variables were employed in the regression analysis. The independent variables were entered into the regression equation in order of the amount of variance explained until the f to enter new predictors was no longer significant. Results of this analysis are shown in Table 5.

The four factors of Knowledge Concerning Care of Patients, Workload, Relations with Coworkers, and Patient Needs did not produce any significant predictor variables. However, marital status (divorced) was the most powerful predictor variable for Amount of Satisfaction with Profession, Concern for Patient Care, and Involvement in Decision-making Process.

Table 5

Stepwise Multiple Regression Analysis of Demographic Variables Against Extracted Factors

	Multiple R	R^2	R^2 Change	F stat	P value
Factor I: **Amount of Satisfaction with Profession**					
Marital Status	0.4148	0.1720	0.1720	8.73	.01>p>.001
Factor II: **Concern for Patient Care**					
Marital Status	0.3073	0.0944	0.0944	4.38	.05>p>.01
Age	0.4466	0.1995	0.1050	5.38	.05>p>.01
Factor III: **Knowledge Concerning Care of Patients**					
(none significant)					
Factor IV: **Involvement in Decision-making Process**					
Marital Status	0.3428	0.1175	0.1175	5.59	.05>p>.01
Unit	0.4478	0.2005	0.0830	4.26	.05>p>.01
Factor V: **Workload**					
(none significant)					
Factor VI: **Relations With Coworkers**					
(none significant)					
Factor VII: **Patient Needs**					
(none significant)					

Chapter V

Discussion

The findings of this investigation have provided information about the perceived occupational stress among a convenience sample of intensive care unit nurses and non-intensive care unit nurses within an acute care hospital setting in northcentral Pennsylvania. The study was designed to answer the following research questions: 1) What is the difference in the perceived occupational stress levels in ICU and non-ICU nurses?, and 2) What are the differences in occupational stressors between ICU and non-ICU nurses?

From the data in Table 2, it is quite evident that there is not a difference in perceived occupational stress levels between ICU and non-ICU nurses. Descriptive statistics revealed the means and standard deviations of the stress levels for the two groups to be practically equal, therefore inferential statistics were not utilized to describe the data. These findings are not consistent with those from the pilot study, which showed the non-ICU nurses to have significantly higher stress levels than the ICU nurses. However, it is difficult to justify the validity of the findings from the previous pilot study due to the small number of participants (n=9), and differences in standard

deviations of the stress levels for the two groups (SD=9.2 for ICU nurses, SD=11.5 for non-ICU nurses). The findings do support research in 1986 by Vincent and Coleman and in 1985 by Keane, Ducette, and Adler whose studies concluded that ICU nurses and non-ICU nurses were similar in perceived levels of stress.

None of the demographic variables were shown to correlate with the stress levels of the subjects. Therefore it was not found that factors such as length of job experience, marital status, or age could influence a nurse's occupational stress level as shown in other studies such as by Chiriboga and Bailey in 1986. This may partially be due to the fact of the small sample size used.

In order to address the second research question, the frequencies of stressors from the returned Health Professions Stress Inventory questionnaires were examined. It was concluded that there are significant differences in stressors between ICU and non-ICU nurses.

In general, the highest rated stressors by the non-ICU nurses (not having enough staff to adequately provide necessary services, having so much work to do that everything cannot be done well, not having opportunities to share feelings and experiences with

colleagues) from the HPSI can all be related to work overload due to high nurse-patient ratios and understaffing of the units. These findings support the work of Anderson and her associates who found medical-surgical nurses to report a greater frequency of stressors involving 'management of the unit' under which 'inadequate staffing' was the most frequently cited item (1988). Responses of the subjects with experience in both settings who felt the medical-surgical area was more stressful to work in also support these findings. All of these nurses reported that high nurse-patient ratios and understaffing as the main source of stress.

The ICU nurses rated the stressor of 'keeping up with new developments in order to maintain professional competence' from the HPSI at higher frequencies than the non-ICU nurses. This source of stress may stem to the fact that the intensive care unit can be considered a highly technical environment in which the nurse needs to efficiently and effectively utilize sophisticated medical technology such as shown in Dewe's 1988 study. This conclusion is also supported by one nurse in the study who described the ICU as more stressful to work in than the medical-surgical unit due to higher educational needs and working with highly technical

equipment.

The other two items from the HPSI rated at higher frequencies by the ICU nurses (having nonhealth professionals determine the way you must practice your profession, experiencing conflicts with supervisors and/or administrators) both fell under the factor of Involvement in Decision-making Process during the factor analysis computed using the results from the completed HPSI questionnaires. The unit variable (ICU) was also shown to be a significant predictor variable in the regression equation performed on this same factor. This source of stress significant to the ICU nurses may be related to a decreased sense of autonomy regarding making decisions about their patients. A review of stress literature by Crickmore (1987) revealed a study indicating that the administrative staff in a hospital setting may cause stress to the nursing staff in intensive care units. This is mainly because administrators do not fully understand and appreciate the realities of the ICU setting (Gardam, 1969, cited in Crickmore, 1987).

Since none of the demographic variables were shown to correlate significantly with overall stress levels of the subjects, these variables were subjected to a stepwise multiple regression analysis against the seven

extracted factors. As shown in Table 5, the marital status of divorced was shown to significantly enter the equations of three factors. Therefore it can be concluded the divorced status is a powerful predictor regarding these sources of stress in nurses. This may be due to the fact that divorcees lack the emotional support provided by a marital partner. In this case, one would expect the single status to also be such a significant predictor such as shown in Chiriboga and Bailey's 1986 study. However, this marital status did not enter any of the regression equations significantly. Table 5 also shows younger nurses as a predictor of the factor of Concern for Patient Care and therefore are subject to be prone to the stressors related to this factor. The association of increased stress with younger nurses has been shown in other studies (Keane, Ducette, & Adler, 1985, and Chiriboga & Bailey, 1988).

Implications for Nursing

With the findings of this and other studies in mind, the nursing profession will hopefully gain insight about stress and become more aware of the potential effects of stress on nurses within a hospital. Thus an awareness of the role of one's perception of stress within an occupational environment

may prove to be helpful. After an awareness has been developed, specific approaches to control high stress levels among nurses in a hospital setting may be implemented. One approach such as development of social networks in order to ventilate feelings and frustration may prove to be useful. Formal discussions with coworkers and the opportunity to consult with a mental health clinical nurse specialist within the hospital may also provide coping strategies for the nurse under stress.

The development of exercise groups is another established method of coping with stress. Nurses may tend to neglect their own physical well-being and seldom take the time to exercise regularly. Hospitals are becoming more aware of the benefits of exercise and are beginning to provide facilities for employees (Milazzo, 1988).

More specifically, the most frequently cited stressors by the non-ICU nurses which are related to work overload are needed to be dealt with by the nursing administration at the hospital where the study was conducted. Effective solutions to help resolve such stressors would be to increase staffing or improve current staffing patterns.

For the ICU nurses, continuing education is needed

so that the nurse will feel less inadequate or anxious about his or her competence or knowledge thus decreasing feelings of stress (Ashworth, 1976, cited in Crickmore, 1987). The other feelings of stress regarding Involvement in Decision-making Process felt more strongly by the ICU nurses may be dealt with according to particular stress management training modules as prescribed by June Bailey (1980). Specific training in areas such as communication skills, assertiveness, group process, and conflict resolution may be effective in learning to deal with stressors relative to interpersonal relationships (Bailey, 1980).

Future Research

Future research to identify the difference in occupational stress frequently undergone by ICU and non-ICU nurses in the hospital setting may provide valuable information to the profession. By exploring the relationship between those stressors and the perception of stress, management of the effects of stress may become more easily identified. The initial step in finding ways to manage stress among hospital nurses and initiate stress-reduction programs is provided by research studies assessing occupational stress levels among nurses such as this one. Generalizability of these findings are limited only to

the sample studied due to the small number of participants which were taken from only one institution. Additional studies with a larger sample which utilizes a variety of hospital settings needs to be performed in order to generalize findings to the populations addressed.

The information gained by this research was presented to faculty, staff, and students at Lycoming College via an oral presentation. The findings of this study was also presented at the Eastern Colleges Science Conference held at Manhattan College on April 22-23, 1990. The findings may prove to be of interest to health care professionals and hospital administrators by expanding their knowledge of the effects of stress and sensitizing them to the importance of stress management.

Appendix A

Subject Consent Form

March 12, 1990

Dear selected participant,

As a senior BSN student at Lycoming College in Williamsport PA, I am currently interested in studying the occupational stress levels experienced by employees in a hospital setting. Participation is voluntary but with your input my study will hopefully yield information useful to you as nurses.

Participation will consist of completing the enclosed sociodemographic questionnaire and 'Health Professions Stress Inventory' which will only require approximately ten minutes of your time. Confidentiality and privacy will be maintained as no one else will have access to the questionnaires. A special coding system also has been developed to ensure full anonymity.

If you agree to participate, place your signed consent form and completed questionnaires in the envelope provided and return to the large envelope provided to your PCM by March 23. If you have any questions about the nature of this research before agreeing to participate, or if you are interested in the findings, please do not hesitate to contact me at (717) 321-4799.

Thank you,

Cheryl R. Fisher

_____ _____

Date Subject's signature

_____ _____

Date Researcher's signature

Appendix B

The Health Professions Stress Inventory

1. Experiencing conflicts with supervisors and/or administrators

   never seldom sometimes often very often

2. Having so much work to do that everything cannot be done well

   never seldom sometimes often very often

3. Feeling ultimately responsible for patient outcomes

   never seldom sometimes often very often

4. Not receiving the respect or recognition that you deserve from the general public

   never seldom sometimes often very often

5. Being uncertain about what to tell a patient or family about the patient's condition

   never seldom sometimes often very often

6. Caring for the emotional needs of patients

   never seldom sometimes often very often

7. Disagreeing with other health professionals concerning the treatment of a patient

   never seldom sometimes often very often

8. Not having opportunities to share feelings and experiences with colleagues

   never seldom sometimes often very often

9. Experiencing conflicts with coworkers

   never seldom sometimes often very often

10. Having job duties which conflict with family responsiblities

    never seldom sometimes often very often

11. Allowing personal feelings/emotions to interfere with the care of patients

never seldom sometimes often very often

12. Keeping up with new developments in order to maintain professional competence

never seldom sometimes often very often

13. Feeling that opportunities for advancement on the job are poor

never seldom sometimes often very often

14. Trying to meet society's expectations for high-quality medical care

never seldom sometimes often very often

15. Supervising the performance of coworkers

never seldom sometimes often very often

16. Dealing with "difficult" patients

never seldom sometimes often very often

17. Not being recognized or accepted as a true health professional by other health professionals

never seldom sometimes often very often

18. Being inadequately prepared to meet the needs of patients

never seldom sometimes often very often

19. Possessing inadequate information regarding a patients's medical condition

never seldom sometimes often very often

20. Not receiving adequate feedback on your job performance

never seldom sometimes often very often

21. Not having enough staff to adequately provide necessary services

never seldom sometimes often very often

22. Having nonhealth professionals determine the way you must practice your profession

never seldom sometimes often very often

23. Not knowing what type of job performance is expected

never seldom sometimes often very often

24. Being interrupted by phone calls or people while performing job duties

never seldom sometimes often very often

25. Not being allowed to participate in making decisions about your job

never seldom sometimes often very often

26. Not being challenged by your work

never seldom sometimes often very often

27. Feeling that you are inadequately paid as a health professional

never seldom sometimes often very often

28. Caring for terminally ill patients

never seldom sometimes often very often

29. Not being able to use your abilities to the fullest extent on the job

never seldom sometimes often very often

30. Fearing that a mistake will be made in the treatment of a patient

never seldom sometimes often very often

Wolfgang, A.P. (1988). The health professions stress inventory. Psychological Reports. 62, 220-2.

Appendix C

Sociodemographic Questionnaire

code _____

1. Age _____
2. Years as a practicing registered nurse _____
3. Years in current clinical area _____
4. Gender
   - ____ female
   - ____ male
5. Marital status
   - ____ single (never married)
   - ____ married
   - ____ separated
   - ____ divorced
   - ____ widowed
6. Highest level of education
   - ____ Diploma program
   - ____ Associate degree
   - ____ Bachelor's degree
   - ____ Master's degree
7. Clinical ladder position _____
8. In your career as a professional nurse, have you worked on a medical/surgical unit and in a critical care setting?
   - ____ yes
   - ____ no

   If yes, which setting have you found to be more stressful and why? _____

   _____

Appendix D

Frequency of Stressors from the Health Professions Stress Inventory

	Unit	never	seldom	sometimes	often	very often
1.	ICU	4.8%	19.0%	57.1%	14.3%	4.8%
	non-ICU	13.0	34.8	47.8	4.3	0.0
2.	ICU	0.0	19.0	33.3	42.9	4.8
	non-ICU	0.0	4.3	21.7	43.5	30.4
3.	ICU	4.8	19.0	4.8	47.6	23.8
	non-ICU	0.0	13.0	17.4	60.9	8.7
4.	ICU	0.0	19.0	38.1	38.1	4.8
	non-ICU	4.3	21.7	34.8	30.4	8.7
5.	ICU	0.0	28.6	57.1	14.3	0.0
	non-ICU	0.0	26.1	56.5	13.0	4.3
6.	ICU	0.0	19.0	28.6	38.1	14.3
	non-ICU	0.0	8.7	47.8	26.1	17.4
7.	ICU	0.0	42.9	42.9	9.5	4.8
	non-ICU	0.0	39.1	39.1	21.7	0.0
8.	ICU	4.8	66.7	23.8	4.8	0.0
	non-ICU	4.3	39.1	34.8	17.4	4.3
9.	ICU	0.0	42.9	33.3	19.0	4.8
	non-ICU	0.0	26.1	60.9	13.0	0.0
10.	ICU	9.5	33.3	23.8	23.8	9.5
	non-ICU	13.0	34.8	30.4	17.4	4.3
11.	ICU	19.0	38.1	33.3	4.8	4.8
	non-ICU	8.7	60.9	30.4	0.0	0.0
12.	ICU	0.0	14.3	47.6	33.3	4.8
	non-ICU	13.0	30.4	34.8	21.7	0.0
13.	ICU	4.8	14.3	28.6	33.3	19.0
	non-ICU	4.3	17.4	56.5	17.4	4.3
14.	ICU	0.0	23.8	47.6	28.6	0.0
	non-ICU	4.3	13.0	21.7	39.1	21.7

15.	ICU	19.0%	28.6%	23.8%	28.6%	0.0%
	non-ICU	8.7	13.0	52.2	13.0	13.0
16.	ICU	0.0	0.0	28.6	52.4	19.0
	non-ICU	0.0	13.0	21.7	60.9	4.3
17.	ICU	9.5	33.3	38.1	9.5	9.5
	non-ICU	13.0	43.5	30.4	11.4	4.5
18.	ICU	4.8	76.2	9.5	9.5	0.0
	non-ICU	13.0	43.5	39.1	4.3	0.0
19.	ICU	0.0	66.7	19.0	14.3	0.0
	non-ICU	4.3	34.8	52.2	8.7	0.0
20	ICU	9.5	28.6	47.6	9.5	4.8
	non-ICU	8.7	26.1	43.5	17.4	4.3
21.	ICU	0.0	9.5	33.3	28.6	28.6
	non-ICU	0.0	4.3	0.0	30.4	65.2
22.	ICU	0.0	14.3	42.9	28.6	14.3
	non-ICU	8.7	34.8	34.8	17.4	4.3
23.	ICU	19.0	52.4	28.6	0.0	0.0
	non-ICU	21.7	52.2	21.7	4.3	0.0
24.	ICU	0.0	4.8	38.1	28.6	28.6
	non-ICU	0.0	17.4	21.7	34.8	26.1
25.	ICU	0.0	42.9	14.3	19.0	23.8
	non-ICU	0.0	26.1	43.5	30.4	0.0
26.	ICU	23.8	52.4	19.0	4.8	0.0
	non-ICU	17.4	52.2	26.1	4.3	0.0
27.	ICU	0.0	9.5	33.3	19.0	38.1
	non-ICU	4.3	8.7	43.5	30.4	13.0
28.	ICU	4.8	19.0	47.6	19.0	9.5
	non-ICU	0.0	17.4	26.1	34.8	21.7
29.	ICU	0.0	57.1	28.6	14.3	0.0
	non-ICU	8.7	43.5	17.4	30.4	0.0
30.	ICU	0.0	38.1	42.9	19.0	0.0
	non-ICU	0.0	26.1	47.8	17.4	8.7

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