

1998

A Comparison Between Emergency Nursing Stress and Completion of the Emergency Nursing Pediatric Course

Sheryl L. Veurink-Balicki
Grand Valley State University

Follow this and additional works at: <https://scholarworks.gvsu.edu/theses>



Part of the [Nursing Commons](#)

ScholarWorks Citation

Veurink-Balicki, Sheryl L., "A Comparison Between Emergency Nursing Stress and Completion of the Emergency Nursing Pediatric Course" (1998). *Masters Theses*. 362.
<https://scholarworks.gvsu.edu/theses/362>

This Thesis is brought to you for free and open access by the Graduate Research and Creative Practice at ScholarWorks@GVSU. It has been accepted for inclusion in Masters Theses by an authorized administrator of ScholarWorks@GVSU. For more information, please contact scholarworks@gvsu.edu.

**A COMPARISON BETWEEN EMERGENCY NURSING STRESS
AND COMPLETION OF THE EMERGENCY NURSING
PEDIATRIC COURSE**

By

Sheryl L. Veurink-Balicki

A THESIS

**Submitted to
Grand Valley State University
in partial fulfillment of the requirements for the
degree of**

MASTER OF SCIENCE IN NURSING

Kirkhof School of Nursing

1998

Thesis Committee Members:

Linda Nicholson Grinstead, Ph.D., C.P.N., R.N.

Cynthia Coviak, Ph.D., R.N.

Jeffrey Jones, M.D.

ABSTRACT

A COMPARISON BETWEEN EMERGENCY NURSING STRESS AND COMPLETION OF THE EMERGENCY NURSING PEDIATRIC COURSE

By

Sheryl L. Veurink-Balicki

A descriptive, retrospective, correlational study design was used to determine emergency nurses' perceptions of stress before and after completion of the Emergency Nursing Pediatric Course (ENPC). A sample of 93 randomly chosen emergency nurses completed the Modified Clinical Stress Questionnaire.

Using the paired t-test, differences were found between the before and after mean scores on stress, threat, and challenge ($p < .01$). Scores were lower after ENPC for stress and threat, but higher for challenge. The t-test was used to compare the mean scores of nurses with and without certification in emergency nursing. The only significant difference between the two groups was on the threat score after ENPC, with the certified group reporting lower perception of threat ($t = -2.40, p = .02$). Overall, lower perception of stress was reported in all groups following ENPC.

Acknowledgments

The author would like to express sincere thanks to the following individuals:

To my thesis partner, Diana Ropele, whose continual encouragement was instrumental in helping me to finally complete this project.

To Linda Scott, who provided valuable assistance with the data analysis.

To Dr. Cindy Coviak and Dr. Jeff Jones, my thesis committee members, who provided helpful feedback throughout this project.

To Dr. Nikki Grinstead, my committee chairperson, who helped me to believe that I really could get this done.

To my wonderful husband, Dave Balicki, who bought me software, took care of all the computer problems, endured many nights of not having access to “his computer”, ate many meals alone while I was working, and never stopped encouraging me to persevere until this thesis was completed.

Table of Contents

List of Tables.....	vi
List of Figures.....	vii
List of Appendices.....	viii

CHAPTER

1	INTRODUCTION.....	1
	Purpose.....	5
2	CONCEPTUAL FRAMEWORK AND LITERATURE REVIEW.....	6
	Conceptual Framework.....	6
	Review of Literature.....	12
	Stress.....	12
	ENPC, certification, or verification.....	16
	Summary and Implications for Study.....	19
	Research Questions.....	20
	Definition of Terms.....	20
3	METHODS.....	22
	Design.....	22
	Sample and Setting.....	23
	Instruments.....	26
	Procedure.....	28

4	RESULTS.....	30
	Procedures.....	30
	Research Questions.....	30
5	DISCUSSION AND IMPLICATIONS.....	36
	Discussion.....	36
	Limitations.....	41
	Implications.....	43
	Recommendations.....	45
	APPENDICES.....	47
	LIST OF REFERENCES.....	54

List of Tables

Table 1	Characteristics of the Subjects.....	25
Table 2	Individual Questions on the MCSQ.....	31
Table 3	Stress, Threat, and Challenge Scores.....	33
Table 4	Comparison of CEN and non-CEN Nurses on the Modified Clinical Stress Questionnaire.....	35
Table 5	Comparison of Age and Experience of CEN and non-CEN Nurses.....	40

List of Figures

Figure 1	King's conceptual framework for nursing	7
Figure 2	King's process of human interactions	9
Figure 3	A comparison of Lazarus' Theory of Stress and King's Process of Perception	13

List of Appendices

Appendix A	Demographic Tool.....	47
Appendix B	Modified Clinical Stress Questionnaire - Before.....	48
Appendix C	Modified Clinical Stress Questionnaire - After.....	49
Appendix D	Permission Letter from Dr. Pagana.....	50
Appendix E	GVSU Approval.....	51
Appendix F	Informational Letter for Participants.....	52
Appendix G	Reminder Postcard.....	53

CHAPTER 1

INTRODUCTION

An estimated 30,000,000 children are treated annually in American emergency departments, accounting for about one-third of all emergency department visits (Fredrickson, Bauer, Arellano, & Davidson, 1994). Concern about the care of these patients has grown and in 1984 Congress passed the Emergency Medical Services for Children Act, making funding available for development of support programs to improve the care of this population (Durch & Lohr, 1993; Inouye, 1992). The specialty of pediatric emergency medicine has developed rapidly over the last ten years, with the American Academy of Pediatrics and American Board of Emergency Medicine actively defining training and credentialing requirements for physicians. Board Certification in this specialty became available as recently as November, 1992.

It has become imperative that emergency nurses also possess the knowledge and skills to care for pediatric emergency patients. The Emergency Nurses' Association 1995 policy statement on Pediatric Emergency Care suggests that to lessen the morbidity and mortality of children, emergency nurses must be knowledgeable and able to quickly recognize emergency situations and intervene appropriately. Several regulatory agencies now require age specific education or competencies. The Joint Commission for Accreditation of Health Care Organizations (1997) has specifically addressed the need

for pediatric competencies for all staff providing care for pediatric patients. The American College of Surgeons Committee on Trauma (1993) requires some type of pediatric education or credentials for nurses caring for pediatric trauma patients in any verified trauma center. Finally, several professional organizations, including the American Nurses' Association and the Emergency Nurses' Association have position statements addressing the need for a basic level of age-specific emergency education for nurses who participate in conscious sedation (American Nurses' Association, 1991; Emergency Nurses' Association, 1995).

Not only do regulatory agencies require competency in the care of pediatric patients, but emergency nurses themselves have requested more pediatric education. Many have felt stressed in caring for pediatric emergency patients, and are dissatisfied with their knowledge and skills for caring for this population. The complexity of the care of the pediatric patient requires specialized education (Emergency Nurses' Association, 1995), yet most emergency nurses lack this. In addition, most emergency nurses have limited experience in pediatrics. A random telephone survey of 603 nurses working in 55 Florida emergency departments, revealed only 25 (4%) had some training in pediatric care, either during hospital orientation or previous experience. Only 28 of the 603 had taken the Pediatric Advanced Life Support course. All 603 expressed an interest in attending a course in pediatric emergency nursing (Taylor & Soud, 1991). In surveying two local emergency departments to which this researcher had access, similar deficiencies were found where only 5 of 131 (4%) of emergency nurses had pediatric nursing experience prior to employment in the emergency department.

Phipps (1988) has suggested that physicians and nurses who practice in the emergency setting are exposed to severe stress a majority of the time. Although there are various sources of stress, one may be the lack of knowledge and skills in caring for the pediatric emergency patient. Fredrickson, Bauer, Arellano, & Davidson (1994) studied emergency nurses' perceived knowledge and comfort in caring for this population, and their findings suggested that lower levels of knowledge were associated with higher levels of discomfort.

Historically, there have been few options available to nurses seeking specialty education in pediatric emergency nursing. The Emergency Medical Services for Children Report of 1993, as cited by Durch and Lohr (1993), reports that current nursing curricula offer little or no pediatric emergency education or experience at the undergraduate level. Although Pediatric Advanced Life Support (PALS, American Heart Association) and Advanced Pediatric Life Support (APLS, American Heart Association) have been available, they do not focus on the role of the nurse. Instead, these courses focus primarily on pediatric resuscitation which is required by only a small percentage of pediatric patients seeking emergency care.

In 1991, the Emergency Nurses' Association formed its pediatric committee in response to a request from its membership for a greater focus on pediatric emergency care. This committee conducted a needs assessment which overwhelmingly supported the need for a pediatric emergency course. Thus, the Emergency Nursing Pediatric Course (ENPC) was developed and implemented in 1993. The goal of the ENPC is to improve the care of the pediatric patient as well as to improve the skill and confidence of the nurse providing the care in the emergency department setting (Haley & Baker, 1993).

If these goals are achieved, the emergency nurse should experience less stress when caring for this patient population.

The Emergency Nurses' Association has published a brochure stating that ENPC is designed to teach nurses all aspects of pediatric care, including, but not limited to, pediatric trauma. This course is the first and only one available on the national and international level that is directed specifically toward emergency nurses. The sixteen hour course is designed to provide core level pediatric knowledge and psychomotor skills. Criteria have been established for successful completion of the written test and each skill station, with limited opportunities for retesting.

As a consequence of increasing regulations, nurse managers are increasingly requiring specialty education or credentials for currently employed or prospective employees (Nielsen, 1989; Tenney, Golden-Baker, DeMoucell, & Wians, 1993). Many have chosen to use the ENPC for this purpose. Since its inception in August of 1993, 816 students have taken this course in Michigan. Emergency department budgets are under close scrutiny, as are all health care budgets. Nurse managers responsible for filling positions and maintaining professionally competent staff must evaluate all educational expenditures. The cost of ENPC is generally less than or comparable to that of PALS and APLS. However, the ENPC verification remains current for a period of 4 years as opposed to 2 years for the others. This makes ENPC a cost effective choice.

Despite the fact that ENPC may assist in meeting the regulatory agency requirements, and that it is both more cost-effective and comprehensive than either PALS or APLS, there have been no studies conducted to investigate whether the registered nurse perceives any benefits from this course. One specific unanswered question is

whether the registered nurse perceives less stress when caring for the pediatric emergency patient after completion of this course.

Purpose

This study was conducted in collaboration with another researcher. The purpose of both studies was to evaluate the effectiveness of the Emergency Nursing Pediatric Course (ENPC). This study evaluated the effectiveness of the ENPC in reducing stress for Registered Nurses caring for pediatric emergency patients.

CHAPTER 2

CONCEPTUAL FRAMEWORK AND LITERATURE REVIEW

Conceptual Framework

Imogene King's theory of Goal Attainment was used in this study. To understand this theory, one must have an understanding of King's conceptual model. King views nursing as three interacting systems - personal, interpersonal, and social (see Figure 1). The personal system is composed of individuals who are open systems interacting with the environment. Six concepts interact within this system: perception, self, body image, growth and development, time, and space. Another system is the social system which encompasses the multiple forces within society which influence one's social behavior, interaction, perception, and health (Griffith-Kenney & Christensen, 1986).

King's theory of Goal Attainment (1981) is derived from within the interpersonal system. The interpersonal system is composed of two or more individuals interacting with one another. Concepts of importance within this system are role, interaction, communication, transaction, and stress. Role is a set of behaviors that are expected from an individual within the social system. It may include rules, regulations, rights, or obligations applicable to an individual with a particular position within the system. Interaction refers to a process of perception and communication between two individuals or between an individual and the environment, which is directed toward a goal.

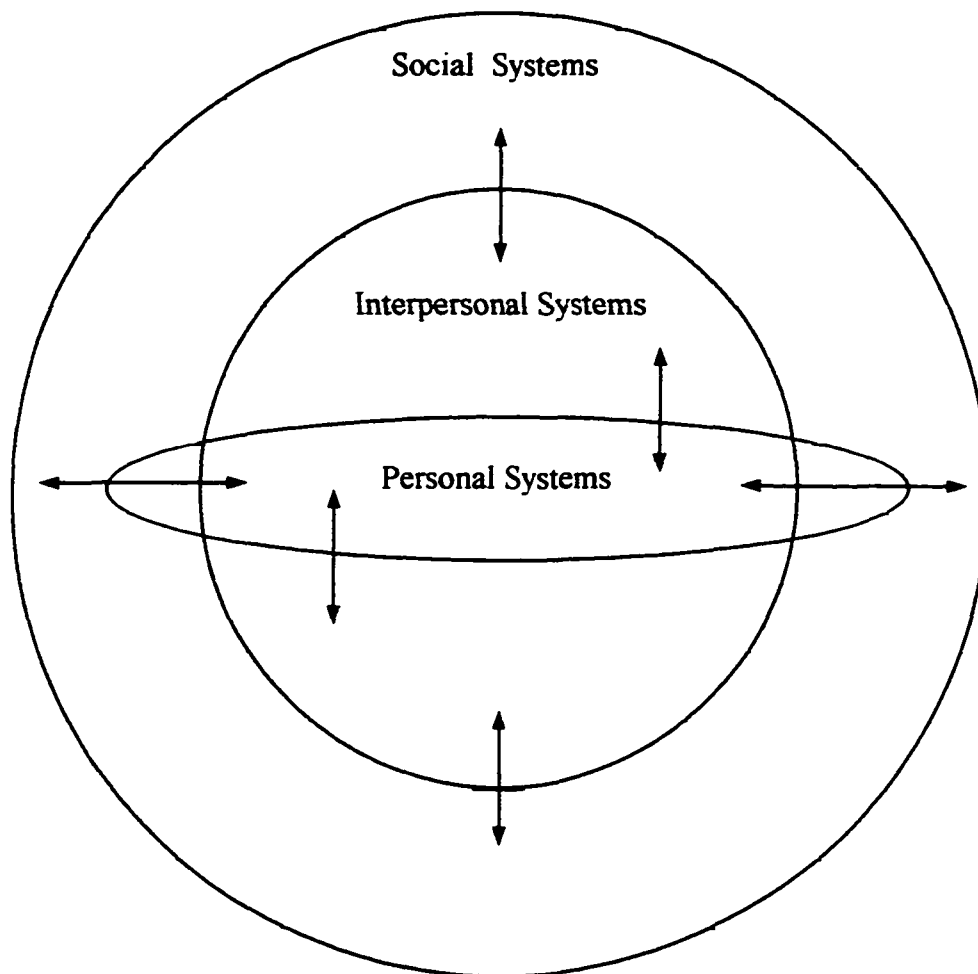


Figure 1. King's conceptual framework for nursing

Communication is the exchange of information between two individuals, by any means.
Transaction is the observable behavior of individuals interacting with their environment.
Stress is the dynamic state in which an individual interacts with the environment to maintain balance for growth, development, or performance (King, 1981.)

Nursing, as it occurs within these systems, is viewed as a process of human interactions between the nurse and client whereby each perceives the other and the situation, goals are set, and plans are developed to achieve these goals (King, 1981).
Health is viewed as a dynamic experience in which the individual continuously adjusts to the stressors in both the internal and external environment to achieve maximum potential.

King includes the concepts defined above within the theory of Goal Attainment. In addition she includes the concepts of growth and development and perception. Growth and development refer to the continuous changes that occur in individuals both from a physiologic and psychological perspective. Perception, according to King (1981), is each person's representation of reality. It involves the following: import of energy from the environment, transformation of energy, processing of information, storing of information, and exporting information to overt behaviors. Past experiences, education, self-concept, biological inheritance, and socioeconomic group all influence one's perception. She states, "Perception is each person's subjective world of experience." (p. 145)

Figure 2 shows King's process of human interaction and the relationships of these concepts in nurse-patient interaction, a crucial process in her Theory of Goal

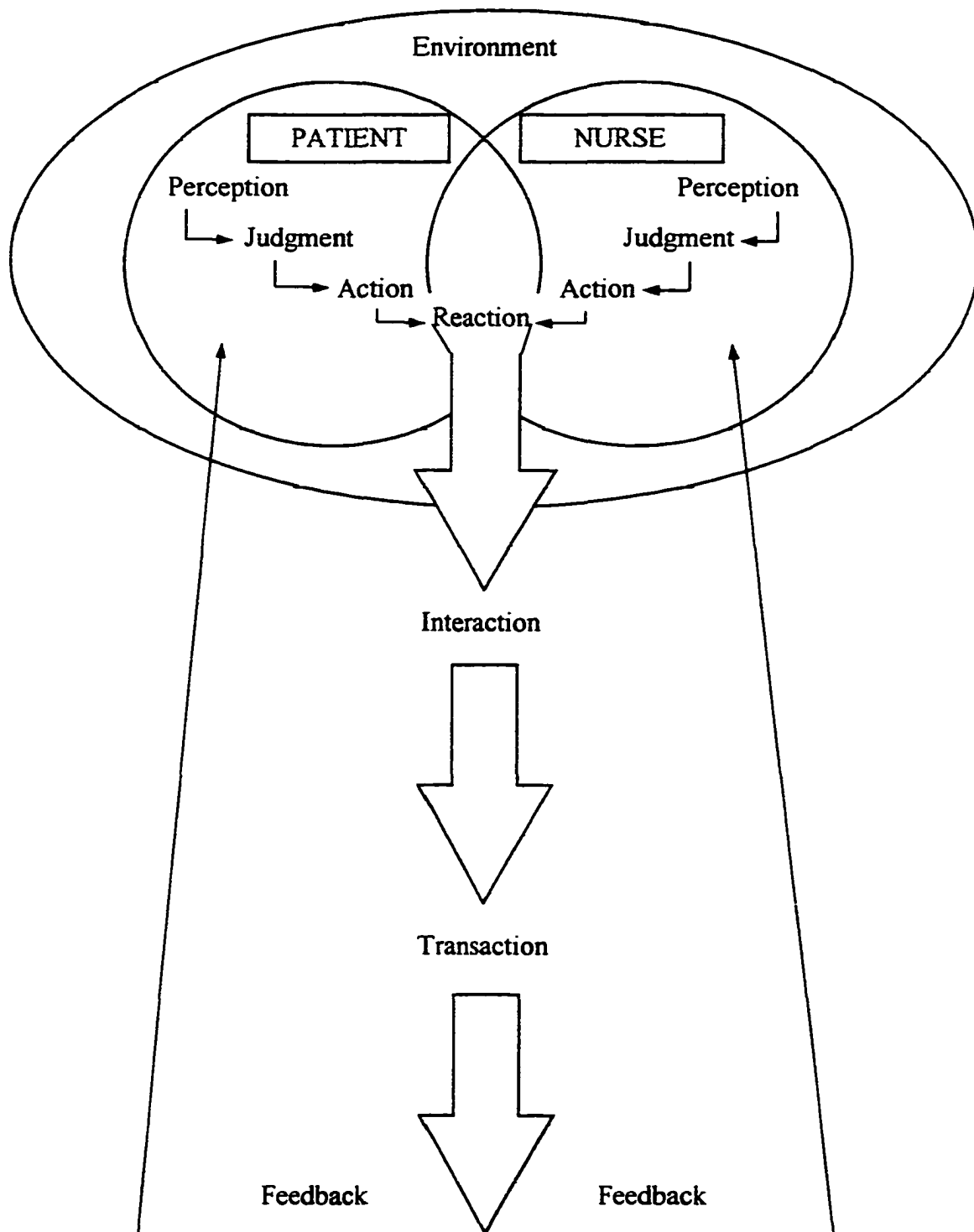


Figure 2.

King's process of human interaction

Attainment. For this study, only the concept of perception will be addressed, and this will only be from the perspective of the nurse.

Richard Lazarus' theory of stress and coping was also used as a framework for this study. In stress and coping theory according to Lazarus (1966), stress is viewed as a transaction between the person and the environment that taxes or exceeds that person's resources and endangers personal well being. Each person has a unique perception of every situation. This perception transacts with the situation and with the response to it, so that each influences the other. The evaluation of the situation is influenced by many factors from within the person and from the situation itself.

The individual is constantly transacting with the environment which contains many potential stressors. These transactions are mediated by cognitive appraisal and coping (Lazarus, 1966.)

Through cognitive appraisal, the individual evaluates these transactions and determines to what extent the transactions are stressful. As the individual performs the primary appraisal, the individual determines whether the encounter falls into one of three categories: irrelevant, benign-positive, or stressful. Those that are irrelevant have no implications for the individual's well-being. Those that are benign-positive are associated with preservation or enhancement of the individual's well-being. Those that are appraised as stressful can be further categorized as harm/loss, threat, and challenge. The harm/loss situations are those in which some damage has already been sustained. Threat includes harms or losses that have not yet occurred, but are anticipated. Harm/loss and threat are usually perceived together. Challenges are generally associated with more positive emotions and focus on the individual's potential for gain or growth in

the situation. Threat and challenge can also be perceived in the same situation. (Lazarus & Folkman, 1984)

Coping is the process whereby the individual manages the stressful demands of the interaction with the environment, whether it was perceived as harm/loss, threat, or challenge. The methods used to enact this process vary depending on the situation, the personality of the individual, and the capabilities of that individual (Lazarus, 1966).

Next the individual conducts the secondary appraisal. This is an evaluative process in which the individual assesses personal coping options and determines to what extent the selected options can be applied to the situation to manage it effectively. In addition, the individual appraises what is at stake in the situation if the coping methods are ineffective.

There are both situational factors and individual factors that influence appraisal. These situational factors include such factors as the novelty of the situation, the predictability of the situation, and the uncertainty of the situation. Individual factors include personality characteristics such as need for approval, motivation, and strength (Lazarus & Folkman, 1984).

Following this cognitive appraisal, through coping, the individual manages the demands of the person-environment transaction. When the demands exceed the individual's coping resources, the person-environment transaction can be identified as stressful.

Lazarus' theory of stress and coping can be used in conjunction with King's theory of Goal Attainment. Lazarus' process of perception of the situation, cognitive appraisal with its primary and secondary assessment, and coping, can be viewed as

parallel with King's process of perception which involves import of energy from the environment, transformation of energy, processing of information, storing of information, and exporting of information to overt behaviors. The parallels between the two theories can be seen in Figure 3.

Review of Literature

There is a great deal of literature about stress or stressors for nursing in general, but very little could be found addressing stress from the perspective of the emergency nurse and no literature was found specific to the topic of stress in pediatric emergency nursing. No studies were found evaluating the ENPC or its impact, so the scope of the review of the literature includes information about certification or verification programs in general.

Stress

Although stress has been recognized for many years as a problem for emergency nurses (Caldwell, 1976; Keller, 1990; Phipps, 1988), very few studies have been conducted to explore stress from the emergency nurse's perspective. Burns, Kirilloff, and Close (1983) surveyed 104 emergency nurses to determine their sources of satisfaction and stress. The highest ranked stress category was staffing issues. Inadequate levels of all staffing as well as inexperienced, apathetic physician staff were cited as factors. The second category was patient care issues including critical emergencies, cardiac arrests, serious injuries or death of a child, and inability to meet patients' needs and expectations. The final category of stressful issues was interpersonal relationships. While these results may be of interest, it is unclear whether they would be

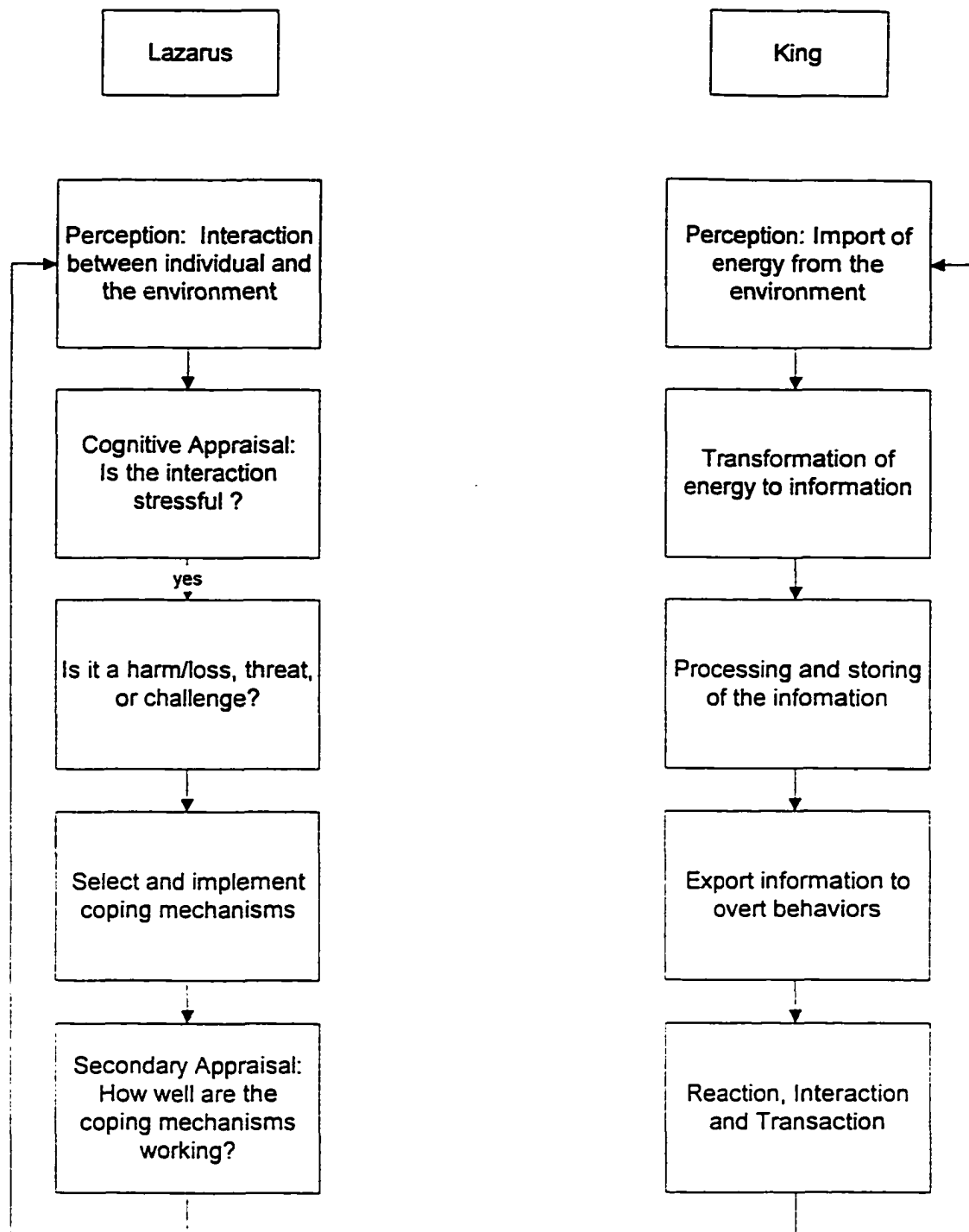


Figure 3. A comparison of Lazarus' Theory of Stress and King's Process of Perception

similar today. The practice of emergency nursing, like all other specialties in nursing, has changed significantly in the fifteen years since this study was conducted.

Hawley (1992) surveyed 69 Canadian emergency nurses to determine their sources of stress. The categories most frequently cited as the sources of the most stress included staffing practices, intergroup conflict, supervisory style, organizational structure, and qualitative overload. Staffing practices were further defined as shortage of staff, shortage of experienced staff, staff lacking emergency skills, and staff unfamiliar with the routine. Inexperienced medical staff also fell into this category. There was no specific reference to stress related to lack of pediatric emergency skills. However, because most emergency departments treat both pediatric and adult patients, the concerns of the nurses related to lack of experience, skill, and familiarity with the routine likely apply to both pediatric and adult patients. In the study, the sample size was relatively small, and represented only 4 urban Canadian emergency departments; therefore the results cannot be generalized for all emergency nurses.

Stress has also been studied in the emergency department in relation to critical incidents and stress debriefing. Burns and Harm (1993) conducted a descriptive study of 682 members of three state's Emergency Nurses' Associations for the purpose of identifying types of clinical events perceived as critical. Four of the top ten events identified involved a child. These included death of a child, injury to a child as the result of abuse or neglect by an adult, caring for a baby with sudden infant death syndrome, and sexual abuse of a child. In addition, greater than 50% of the respondents had encountered each of these in practice in the past year. Further, Wright, in her master's thesis at Washington State University in 1990, as cited by Burns and Harm (1993),

identified certain incidents such as death of a child, death of a co-worker, and caring for severely burned patients as acutely stressful for the emergency nurse. In both studies, the respondents identified very specific stressful events which occurred infrequently in practice, but did not identify stressors that occurred on a regular basis.

Just as there are few studies addressing pediatric emergency nursing stress, there are also very few studies examining stress of nurses caring for pediatric patients in any setting. Hinds, Quargnenti, Hickey, and Mangum (1994) interviewed 25 nurses who worked in pediatric oncology units. Nine were new to the clinical specialty and sixteen had more than 18 months experience. At 3 and 6 months post hire, the new pediatric oncology nurses reported their greatest stressors to be keen awareness about the lack of knowledge about working with patients and their families, concern about making clinical mistakes, concern about administering medications and treatments at the assigned times, doubts about one's abilities to handle job-related responsibilities adequately, and difficulty adjusting to shift work. These same nurses at 12 months post-hire identified stressors that were similar to the experienced nurses, with less focus on fears of inadequate knowledge, lack of skill, and inability to do the job. Although the results of the study are of interest, the sample size was very small with only 9 nurses in the new hire group. In another study, Emery (1993) surveyed 155 members of the Association of Pediatric Oncology Nurses and found that death of a child was the greatest stressor, followed closely by a workload too great to give quality patient care. The sample only included pediatric oncology nurses, therefore the findings may not be generalizable to other nurses caring for pediatric patients.

One study was found addressing physician discomfort in caring for pediatric emergency patients. Simon and Sullivan (1996) surveyed 117 emergency physicians to determine their comfort levels in performing emergent pediatric procedures recommended for competence for the pediatric emergency physician by the American Academy of Pediatrics. Over 50% of the 61 respondents were uncomfortable with performing life-saving procedures such as cardioversion, intubation, pericardiocentesis, cricothyrotomy, intraosseous line placement, and others. Over 25% of the respondents were uncomfortable with non-lifesaving procedures, including pain management. The sample size was relatively small, and only 53% of the respondents were board certified in emergency medicine, so these findings may not be generalizable to other emergency physicians.

In summary, very little information was found in the literature about stressors perceived by nurses caring for pediatric patients in the emergency care setting. Studies that were found were either very general or focused on specific stressors that occurred infrequently. A study of emergency physicians found that they are uncomfortable with life-saving procedures, and to a lesser extent, non-lifesaving procedures, however, there is no evidence to suggest that nurses would respond similarly or differently.

ENPC, certification, or verification

No studies were found in the literature regarding stress before or after the Emergency Nursing Pediatric Course. In addition, no studies were located that evaluated nurses' perceptions of other similar certification or verification courses such as Advanced Cardiac Life Support (ACLS), Basic Cardiac Life Support (BCLS), Basic Trauma Life Support (BTLS), Advanced Pediatric Life Support (APLS), or the Trauma

Nursing Core Course (TNCC). A few studies were obtained addressing physician knowledge or performance following ACLS, but they did not address the physician's perception of the course itself.

A few studies were found addressing the issues of knowledge and comfort levels for nurses. Fredrickson, Bauer, Arellano, and Davidson (1994) surveyed 362 emergency nurses from 51 hospitals in southern California to determine their knowledge and comfort levels regarding pediatric patients. Generally, results indicated that the higher the knowledge, the lower the discomfort ($r = -0.71, p < 0.05$). They also stated that self-reported knowledge was lowest and discomfort was highest in nurses with no pediatric education. Finally, they reported results of ANOVA testing that revealed mean knowledge scores were higher and mean discomfort scores were lower for nurses with PALS or CEN than for those without these certifications (F and df not reported, $p < 0.05$). There were no differences in scores for those with and without ACLS, BTLS, TNCC, or CCRN. In another study, Bidigare and Oermann (1991) surveyed 61 critical care nurses and found that higher knowledge scores correlated with an increased comfort level in approaching families for organ donation ($r = 0.358, p = 0.002$). They also reported that the mean knowledge scores for nurses with and without experience in organ donation were different ($F[1,58] = 5.54, p = 0.02$), with experience correlating with higher knowledge. Although higher knowledge correlated with higher comfort, there is no information in the study to indicate whether the nurses obtained their knowledge about donation through a formal educational program, through experience alone, or by other means.

The comfort levels of physicians caring for pediatric trauma patients in a third world country were studied by Kadish, Bolte, Santora, Espinoza, and Woodward (1996). They surveyed 43 physicians from Guatemala before a pediatric trauma course, and then immediately after and again at nine months after the course. Using the Wilcoxon signed-rank test, they found uniform improvement in the comfort levels of the physicians on both the immediate and the nine month post-tests compared to the pre-test ($p < 0.05$). In addition, 100% of their nurse and physician co-workers perceived that the physicians who participated in the course had better resuscitative skills at nine months after the course than they did prior to the course. Although the authors report that PALS is taught during pediatric residency programs in Guatemala, and 29 of the subjects were pediatric residents, there is no information about the pediatric education of the other physicians who participated in this study. This limits the generalizability of this study. There is also no evidence that nurses would perceive the same benefit from the educational program.

Controversy exists about the value of certification or verification programs for nurses. delBueno (1989) states that "Certification examinations sample only an individual's ability to select correct answers to questions about nursing practice, not nurse's performance". (p.9) She feels that there are more effective ways of measuring the nurse's ability to apply knowledge, not just acquire it. In contrast, Nielsen (1989) promotes certification as a credential that reflects competence in a specified area of practice and mastery of a specific body of knowledge.

Redd and Alexander (1997) surveyed 83 registered staff nurses to determine if there was any relationship between certification and job performance and self-esteem. In

addition, the supervisors were asked to rate each nurse's performance. Using the t-test, the authors found no difference in the performance scores between the certified nurses and those who were not certified. However, the supervisors' scores were different for the two groups with the certified nurse group scoring significantly higher in planning/evaluation ($p = .0141$), and tending to score higher in teaching/collaboration ($p = .0567$) and total performance ($p = .0579$). Analysis of the self-esteem scores for both groups using the t-test showed certified nurses scored significantly higher (no t and df reported, $p = .0018$). Although the study found higher self-esteem for the certified nurses, a valid question is whether these certified nurses had higher self-esteem before taking the certification exam or whether the self-esteem improved after the certification. A weakness of the study was that the sample size was small and included nurses from a variety of practice settings at only two hospitals, both over 450 beds, which is not reflective of most hospitals in the United States. Therefore the findings may not be generalizable to other settings or to specialty practices like pediatric emergency nursing.

Summary and Implications for Study

In summary, the literature review yielded few studies examining stress of the emergency nurse or of the emergency nurse caring for pediatric patients. All studies reviewed recommended further research on this topic. There were no studies found addressing ENPC or other similar verification or certification courses in relation to stress for nurses. There is also very little written about the outcomes of certification or verification in general. What is available seems to suggest that higher knowledge may correlate with lower levels of discomfort or stress.

This study contributes to the body of knowledge about the ENPC in general and its benefits for the emergency nurse, which may be useful in marketing the course, justifying its expense, and assisting the emergency nurse to decide whether the course would be useful professionally. In addition, it contributes in general to the knowledge about the value of certification or verification programs. Finally, it also contributes to the information about stress for emergency nurses caring for pediatric patients.

Research Questions

This research was conducted to answer the following questions:

1. Do emergency nurses who have successfully completed the Emergency Nursing Pediatric Course perceive lower levels of stress after taking the course than they recall experiencing before taking the course?
2. Do nurses without Certification in Emergency Nursing (CEN) report greater reduction in stress following successful completion of the Emergency Nursing Pediatric Course than nurses who have achieved CEN?

Definition of Terms

Emergency Nursing Pediatric Course - a core level pediatric course, developed by the Emergency Nurses' Association, that includes cognitive and psychomotor skill teaching and testing. It is taught by registered nurses who have completed both the ENPC provider and instructor courses. There are no prerequisites to the course. However, it is recommended that the participant have at least 6 months of emergency nursing experience.

Stress - the relationship between the person and the environment that is appraised by the person as taxing or exceeding that person's resources and endangering well being (Lazarus & Folkman, 1984).

Appraisal - cognitive process that intervenes between the encounter and the reaction through which the individual evaluates the significance of what is happening for that individual's well being (Lazarus & Folkman, 1984).

Coping - constantly changing cognitive and behavioral efforts to manage specific external and internal demands that are appraised as taxing or exceeding the resources of the person (Lazarus & Folkman, 1984).

Stressors - environmental demands that are perceived by the individual to impact on the person-environment relationship to the extent that exceeds the individual's coping abilities (Lazarus & Folkman, 1984).

Certification - the process by which an agency or authoritative body designates an individual as having achieved an identified level of competence in knowledge or practice.

Verification - acknowledgment that an individual has completed the requirements of a course or educational offering at a satisfactory level.

Perception - each human being's representation of reality. It is an awareness of persons, objects, and events. It gives meaning to one's experiences and represents one's image of reality and influences one's behavior (King, 1981).

CHAPTER 3

METHODS

Design

A cross-sectional, retrospective, correlational survey design was used to study registered nurses' perceptions of their stress levels in caring for pediatric emergency patients before and after successfully completing the Emergency Nursing Pediatric Course (ENPC). The variables examined included ENPC, stress, and Certification in Emergency Nursing.

Several potential problems with the design were identified and efforts were taken to minimize or avoid these. First, this study employed a retrospective survey design. Due to the passage of time, subjects who took the course several years ago may have had difficulty remembering how they felt prior to taking the course. In addition, responses of the subjects may not have been a true reflection of their feelings after taking the course because some may have obtained more experience and/or education related to pediatric patients between the time of ENPC completion and completion of the survey. To minimize this problem, the sample was selected from nurses who had taken the course within the past two years.

The lack of a control group in non-experimental studies has also been identified as a weakness (Talbot, 1995). For this study, the participants served as their own control.

Talbot (1995) also suggests that there is increased risk of erroneous interpretation of the results with this design. To reduce this risk, a large sample size was used. Another weakness of this design is that self-report data were used, therefore participants may have been hesitant to respond in a truthful manner. To reduce this risk, participants were informed that all responses were anonymous, therefore reducing hesitancy of the participant to be truthful. Since both “before” and “after” questionnaires were sent to the participants at the same time, confusion in answering “before” and “after” questions could have occurred. To minimize this problem, all “before” questions were on yellow paper and all “after” questions were on pink paper.

There is controversy about the value of the findings from studies in which there is no manipulation of the variables (Brockopp & Hastings-Tolsma, 1989; Polit & Hungler, 1995). Although there may be less confidence in inferring a cause and effect relationship with this study design, as the sample size increases, there is less likelihood that the observed findings are only due to chance. Therefore, a relatively large sample was used for this study.

One advantage of this study design was that it could be completed in a relatively short time frame. In addition, the subjects were able to complete the “before” and “after” questionnaires at one time so there was no loss of subjects due to failure to complete the second half of a study. From the cost perspective, this study was relatively inexpensive.

Sample and Setting

The sample consisted of registered nurses living in the state of Michigan who had successfully completed the ENPC in 1995 or 1996. Registered nurses who were not currently employed in an emergency care setting were eliminated from the study. The

Emergency Nurses Association (ENA) supported this study by providing a mailing list of 816 nurses who completed the course in 1995 or 1996. No other formal approval was required by this professional organization. Utilizing the Statistical Package for the Social Sciences (SPSS for Windows), 300 Registered Nurses, representing approximately 35% of the total, were randomly selected from this mailing list provided by ENA.

There were a few sample limitations for this study. Registered nurses other than emergency nurses may have taken the course. To assure that the sample represented only emergency nurses, only the responses of subjects who were currently working in emergency care were included in the data set. Also, if all subjects had been chosen from a certain geographic area, bias might have occurred. Additionally, bias related to recognition of the researchers could have occurred if all subjects had been chosen from the West Michigan area. A statewide sample was surveyed to reduce the likelihood of bias due to these factors.

Surveys were returned by 110 subjects, for a response rate of 36.7%. Of these, 15 subjects were no longer employed in the emergency care setting and were therefore eliminated from the study. Two were returned after the data analysis was complete, and therefore were not included. Therefore 93 subjects were included in this study.

The ages of the participants ranged from 27 to 60 years, with a mean of 42.3 years (SD 7.88). There were 82 female (88.2%), 9 male (9.7%), and 2 respondents of unknown gender (2.2%). The participants reported 0-30 years ($M=10.89$, $SD = 7.46$) of combined pediatric and emergency nursing experience. Total years of nursing experience ranged from 3-38 years ($M=17.85$, $SD= 8.68$). The subjects' education, current certifications, and reasons for taking ENPC are shown in Table 1.

Table 1

Characteristics of the Subjects
(N=93)

Characteristics	n	%
Education		
Diploma/Associate Degree in Nursing	50	53.8
Bachelor of Science in Nursing	37	39.8
Master of Science in Nursing	3	3.2
Unknown	2	2.1
Other	1	1.1
Current Certifications		
ACLS	83	89.2
TNCC	43	46.2
CEN	38	40.9
PALS	24	26.2
AACN	4	4.3
Primary Reason for taking ENPC		
Increase knowledge	26	28.0
Professional growth	19	20.4
Mandatory	15	16.1
Increase competency	14	15.1
Validate knowledge	11	11.8
Unknown	8	8.6

Instruments

The instruments used for this study included a demographic sheet and the Modified Clinical Stress Questionnaire (MCSQ). The demographic tool was designed to collect general demographic data as well as information related to past experience, educational background, certifications and the reason for taking the ENPC (see Appendix A). In addition, the ENPC Perception Questionnaire (EPQ) survey tool, being utilized in a related study, was included in the survey packet but was not used in this research.

The Clinical Stress Questionnaire (CSQ) was developed by Pagana (1989) for evaluating stress in the clinical experience of nursing students. It was modified with the permission of the author for use in this study with registered nurses currently in practice. This modification involved only a change in the instructions to the subjects and in the layout, but not to the content. The Modified Clinical Stress Questionnaire (MCSQ) is a 20 item inventory of emotions related to stress (see Appendix B). Each item is rated on five point Likert scale (0 = not at all; 4 = a great deal) to identify the extent to which the subject experienced that emotion when caring for pediatric emergency patients.

Reliability and validity of the CSQ were established by Pagana (1989). Using the responses of 246 nursing students, factor analysis was completed with all 20 items and four subscales were identified: challenge, threat, harm, and benefit. Factor loadings ranged from .31 to .81 for the four scales. Internal consistency of the instrument was established using Cronbach's alpha. This was .85 for the challenge scale, with item-to-scale correlations in the range of .66 to .79. Cronbach's alpha for the threat scale was .84, with item-to-scale correlations in the range of .71 to .77. Alphas for the other scales were not reported. No tests of stability were reported for this instrument.

Concurrent validity of the tool was established by comparing the scores on the threat and challenge subscales to coded responses to an open-ended question. Responses to the question “How do you view this experience?” were coded into one of four groups: threatening, challenging, neither threatening or challenging, or both threatening and challenging. Interrater reliability for this coding was .89 which is acceptable. These four groups were then compared using their scores on the CSQ challenge subscale. A one way ANOVA indicated there were significant differences between group means on the CSQ challenge scores ($F = 3.22, p = .02$). Next, using Scheffe’s post hoc test, differences were found between the neither threatened nor challenged group and the challenged group at the .05 level of significance. The group coded as challenged had the highest challenge scores on the CSQ.

Using the same method, the four groups were compared using their scores on the threat subscale of the CSQ. A one way ANOVA indicated there were significant overall differences ($F = 2.69, p < .05$) in the threat subscale means for the groups. The highest threat scores on the CSQ were seen in the group whose responses were coded as threatened. However, the Scheffe post hoc test indicated no two groups were significantly different at the .05 significance level. The Scheffe is one of the most stringent post hoc tests. A less stringent test may have produced different results.

For this study, the internal consistency of the entire MCSQ instrument as well as the threat and challenge subscales, both before and after ENPC, were established using Cronbach’s alpha. The overall stress scale, comprised of 20 items, attained a Cronbach’s alpha of .72 before ENPC and .75 after ENPC. For the threat subscale, comprised of six items, Cronbach’s alpha was .93 before ENPC and .92 after ENPC. Additionally, for the

challenge subscale, comprised of seven items, Cronbach's alpha was .77 before ENPC and .81 after ENPC. Item-to-scale correlations were not calculated. Polit & Hungler (1995) state that for most purposes a reliability coefficient above .70 is satisfactory. For the MCSQ for this sample, all reliability coefficients were above .70, and therefore satisfactory.

The EPQ survey tool was developed specifically to measure nurses' perception of their knowledge and skill in caring for pediatric emergency patients before and after taking the ENPC. The EPQ survey tool is a 12 item inventory of five levels of proficiency related to knowledge and skill. The EPQ survey data was not used for this study.

Procedure

The procedure followed for this study was as follows:

1. Using SPSS, three hundred thirty three names were randomly selected from the ENPC participant list from 1995 - 1996 provided by the ENA. Nurses who participated in an expert nurse review of the EPQ were eliminated from further participation.
2. Following Grand Valley State University Human Research Review Committee approval, a pilot of the EPQ survey tool was conducted by another researcher utilizing thirty three names from the list.
3. After completion of the pilot, a complete set of surveys were sent to the remaining 300 subjects.
4. Reminder post cards were sent to all subjects two weeks after the initial survey was sent.

5. Two weeks after the reminder was mailed, data collection for the formal study was terminated and analysis was begun.

Anonymity of all participants was assured by numerical coding of all forms after they were returned. There were no hazards or risks associated with this study because the participants were protected by anonymity and by voluntary participation. An informational letter was provided for all participants in the study (see Appendix F). Participants were supplied with study results upon request following completion of the study. Separate postcards were included for making this request.

One unanticipated problem with the study was that there were 26 incorrect addresses on the mailing list. Some of the participants had taken the ENPC over two years ago, had moved, and the forwarding order had expired for their mail. Other addresses were incorrect for unknown reasons. Because the return rate and the resulting sample size were appropriate for analysis, a decision was made not to mail to any additional subjects.

CHAPTER 4

RESULTS

Procedures

Data from all the returned surveys were entered into Microsoft Word, and then converted to a text file for use in the Statistical Package for the Social Sciences (SPSS for Windows). Analysis of the data gathered in this study was conducted using SPSS.

The variables studied were stress, ENPC, and CEN. The independent variables, ENPC and CEN, were measured at a nominal level. Stress was the dependent variable, and measured on a Likert scale for each item. Although the individual scores on each item were ordinal data, mean scores were calculated for each item and for each subscale. Only the mean scores were used for data analysis, therefore allowing the use of the t-test. Missing data or duplicate answers for a question were coded as unknown. For calculation of subscale and summation scores, only subjects who responded to all items in the subscale or summation were included.

Research Questions

The first question addressed by this study was whether emergency nurses who have successfully completed the Emergency Nursing Pediatric Course perceive lower levels of stress after taking the course than they recall experiencing before the course. Table 2 shows mean scores on each of the individual items on the MCSQ, both before

Table 2

Individual Questions on the MCSQ
(N=20)

		<u>Before ENPC</u>		<u>After ENPC</u>	
	Items	M	SD	M	SD
Challenge subscale	excited	1.99	1.10	1.88	1.17
	pleased	1.46	1.12	1.87	1.25
	hopeful	2.57	1.29	2.54	1.15
	eager	1.86	1.15	2.22	1.24
	exhilarated	1.18	1.19	1.51	1.31
	happy	1.19	1.18	1.32	1.28
	stimulated	2.44	1.03	2.58	1.00
Threat subscale	fearful	2.14	1.19	1.40	.96
	overwhelmed	1.18	1.31	1.14	.93
	anxious	2.18	1.17	1.56	.95
	intimidated	1.75	1.32	.97	.91
	apprehensive	2.07	1.25	1.31	.93
	worried	1.92	1.22	1.23	.94
Other items	disappointed	.66	.88	.42	.67
	guilty	.50	.82	.28	.54
	relieved	1.08	1.11	1.50	1.34
	disgusted	.41	.84	.29	.67
	sad	1.39	1.21	1.03	1.05
	confident	2.07	1.02	2.89	.79
	angry	.52	.92	.39	.80

and after ENPC. A scale of 0 (not at all) to 4 (a great deal) was used to describe the extent to which a particular emotion was experienced by the nurse when caring for a pediatric emergency patient. The emotions with the highest scores prior to ENPC were hopeful ($M=2.57$, $SD=1.29$), stimulated ($M=2.44$, $SD=1.03$), anxious ($M=2.18$, $SD=1.17$) and fearful ($M=2.14$, $SD=1.19$). Following ENPC the highest scores were reported for the emotions of confident ($M=2.89$, $SD=.79$), stimulated ($M=2.58$, $SD=1.00$), hopeful ($M=2.54$, $SD=1.15$), and eager ($M=2.22$, $SD=1.24$). The lowest reported scores, both before and after ENPC, were found for the emotions of guilt (Before $M=.50$, $SD=.88$; After $M=.28$, $SD=.54$), disgust (Before $M=.41$, $SD=.29$; After $M=.29$, $SD=.67$), and anger (Before $M=.52$, $SD=.92$; After $M=.39$, $SD=.80$).

Subscale scores were calculated for the seven items on the challenge subscale and for the six items on the threat subscale. A total stress score was calculated for all 20 items. A paired t-test was used to determine if there were differences in the means of the before and after ENPC scores for total stress, threat, and challenge. The results are shown in Table 3. There were significant differences between the before and after mean scores for stress and threat ($p<.01$), with lower scores on both following ENPC. The mean challenge scores also were significantly different before and after ENPC ($p<.01$), with higher scores following ENPC.

The second question addressed by this study was whether nurses without Certification in Emergency Nursing (CEN) report greater reduction in stress following successful completion of the Emergency Nursing Pediatric Course than nurses who have achieved CEN. The t-test for independent samples was used to determine if there was a

Table 3

Stress, Threat, and Challenge Scores

Scale	n	Before ENPC		After ENPC		t*	df	p
		M	SD	M	SD			
Stress	84	31.44	8.86	28.47	8.35	5.96	83	<.01
Threat	90	11.89	6.45	7.65	4.75	9.87	89	<.01
Challenge	85	15.74	5.99	18.25	6.61	-5.93	84	<.01

•Pooled variance was used for all analyses

difference in the group means between the CEN and non-CEN groups, both before and after ENPC.

Table 4 contains results of these analyses. There were no significant differences in the means of the CEN and non-CEN groups on stress, threat, or challenge before ENPC, although the non-CEN group tended to report higher scores. Following ENPC, there were no significant differences in the means of the stress or challenge scores between the CEN and non-CEN groups. On the threat subscale, however, there was a significant difference between the CEN and non-CEN groups ($t = -2.40, p = .02$), with the CEN group reporting lesser perceptions of threat. There was more variability in the scores of the non-CEN group for all scales, both before and after ENPC.

There was one finding of interest in the group of “other items” on the MCSQ. For the emotion “confident”, the respondents’ scores were significantly higher following ENPC ($t = -9.16, df 88, p < .01$), and the scores were less variable (SD before = 1.02; SD after = .79). T-tests were conducted on several other items on the challenge and threat subscales, and the findings were consistent with the findings for the particular subscale to which each item belonged.

Table 4

Comparison of CEN and Non-CEN Nurses on the Modified Clinical Stress Questionnaire

	CEN (n=38)		Non-CEN (n=54)				
Variables	M	SD	M	SD	t*	df	p
Before ENPC							
Stress	29.63	8.26	31.92	9.34	-1.18	85	.24
Threat	10.58	6.11	12.59	6.60	-1.46	88	.15
Challenge	15.43	5.25	15.94	6.50	-.39	86	.70
After ENPC							
Stress	26.48	7.04	29.55	9.08	-1.64	82	.10
Threat	6.16	4.25	8.57	4.90	-2.40	88	.02
Challenge	17.36	5.39	18.67	7.28	-.89	83	.38

*Pooled variances were used for all analyses

CHAPTER 5

DISCUSSION AND IMPLICATIONS

Discussion

One question that this study addressed was whether emergency nurses who successfully completed ENPC perceived lower levels of stress after taking the course than they recalled experiencing before the course. The participants indicated that their overall perception of stress did decrease after completion of the course. When evaluating the scores of the subscales, the threat score decreased, indicating that the nurses perceived less of the threat component of stress after taking ENPC. In contrast, the challenge score increased, indicating that the nurses experienced more of this component of stress following the course.

Applying Lazarus' stress theory, a nurse's successful completion of ENPC should influence that nurse's cognitive appraisal which is the determination of the extent to which caring for a pediatric patient is stressful. It should also influence coping, in which the nurse manages the demands of the situation, and the secondary appraisal, in which the nurse evaluates the risk involved if the coping mechanisms are ineffective in meeting the demands of the situation.

Lazarus identifies both a threat component and a challenge component to stress. Both can be perceived in the same situation. Challenge generally focuses on the

individual's potential for gain or growth, whereas threat is associated with the individual's perception of potential harm or danger to self (Lazarus & Folkman, 1984). As the nurse becomes more knowledgeable about the care of the pediatric emergency patient, there may be less perceived threat in that situation. The nurse may perceive that his/her own knowledge and skills are adequate to manage the situation. Specifically, there may be less fear of making a mistake, missing an assessment finding, or being unable to perform a psychomotor skill correctly. It may also include less concern about being viewed as incompetent by the patient and family or by other healthcare providers.

In contrast, as the nurse gains knowledge and skill in caring for the pediatric emergency patient, these care situations may be perceived as challenges. They may present an opportunity to use new knowledge and skills, an opportunity to improve the care of the pediatric patient and family, and an opportunity to gain credibility and recognition from peers.

According to King's theory of Goal Attainment, a variety of factors influence one's perception of a situation, including past experience, self concept, and education (King, 1981). Following completion of the ENPC, the nurse had at least some additional experience and education. Some may also have an improved self-concept as indicated by the reduced threat and improved challenge scores. As these factors positively influence the nurse's perception of the situation, the overt behaviors of the nurse and the nurse-patient interaction should also be influenced.

Although no studies of nurses were found that were similar to this study, the findings are consistent with those of Kadish, Bolte, Santora, Espinoza, and Woodward (1996) who found that physician comfort levels were increased both immediately and

nine months after taking a pediatric trauma course ($p < 0.05$). Although their study only examined physicians' comfort levels with pediatric trauma, the study is similar to the one reported here in the use of emergency care providers as the subjects, and pediatric education as an intervention or variable. Further comparisons cannot be made.

In a recent study by Oermann and Standfest (1997) 416 undergraduate nursing students from 10 baccalaureate programs were surveyed to determine their levels of stress, challenge, and threat in six different clinical courses. Using ANOVA they found significant differences across the clinical groups in stress ($F[5,399]=9.58, p < .01$), challenge ($F[5,402]=9.58, p < .01$) and threat ($F[5,402]=8.45, p < .01$). For each of these factors, care of pediatric patients ranked highest in inducing stress, with the challenge scores higher than the threat scores. These findings are also consistent with the current study in that both threat and challenge were perceived by the emergency nurses in caring for pediatric patients, with the challenge scores tending to be higher than the threat scores. Other comparisons cannot be made because the subjects and procedures were not similar.

The second question that this study addressed was whether nurses without Certification in Emergency Nursing (CEN) reported greater reduction in stress following successful completion of the ENPC than nurses who have achieved CEN. Because certification validates the emergency nurse's knowledge for patients across the age continuum, it can be anticipated that the nurse who has achieved certification has at least a basic level of knowledge and expertise in caring for pediatric emergency patients. However, because there are a variety of reasons for pursuing or not pursuing certification,

it cannot be assumed that nurses who are not certified would have lower knowledge or greater stress in caring for pediatric emergency patients.

Using Lazarus' theory, during cognitive appraisal the nurse determines the extent to which caring for a pediatric patient is perceived as stressful. If the certified nurse feels that knowledge of pediatric emergency care was tested and validated by successful completion of the CEN exam, that nurse may perceive less threat in a pediatric care situation. Instead, that nurse may feel knowledgeable and possibly even challenged. CEN status may also influence coping, in which the nurse manages the demands of the situation. Nurses with Certification in Emergency Nursing may tend to perceive less stress, since their knowledge of emergency nursing had been validated by this exam and that knowledge can be used to cope with the demands of the situation. In this study, although nurses without CEN had more variability in all their scores than nurses with CEN, both before and after ENPC, there was not a statistically significant difference between the means of the two groups for either stress or challenge.

In applying Lazarus' theory further, during the secondary appraisal, the nurse determines if individual coping mechanisms are adequate to meet the demands of caring for the pediatric emergency patient. Although there was not a statistically significant difference between the groups before ENPC, following ENPC the threat scores were different, with the CEN group scoring lower. These findings suggest that certified nurses may perceive less potential threat after the course than the non-certified nurses. It is unclear why the certified nurses had a greater reduction in threat. Possibly achievement of both CEN and completion of ENPC may have a synergistic effect, thereby reducing this negative component of stress by a greater degree than ENPC alone.

Although there were not significant differences between the certified and non-certified nurses on the mean stress and challenge scores in this study, there was less variability in all the scores for the CEN group. To understand the differences in the variability of the scores, the age and the years of nursing experience were examined for the CEN and non-CEN groups. The findings are shown in the table below.

Table 5

Comparison of Age and Experience of CEN and Non-CEN Nurses

Variable	CEN (n=38)			Non-CEN (n=54)			t	df	p
	M	SD	Range	M	SD	Range			
Age	41.86	7.35	27-58	42.65	8.28	27-60	-.46	89	.64
Years of nursing experience	17.27	8.13	5-38	18.25	9.08	3-36	-.51	87	.61

These results indicate that the CEN and non-CEN groups are not statistically different from one another in their mean age or years of nursing experience. Once again there was less variability for the CEN group, but the ranges were similar. Other factors such as additional certifications, educational preparation, or personal characteristics of those who chose to seek certification may account for the lower variability in the CEN group, but these were not examined in this study.

This study does not support the findings of Frederickson, Bauer, Arellano, and Davidson (1994) who found that nurses with PALS or CEN had lower discomfort levels when caring for pediatric patients than those without certification. In the current study, there were nurses who had PALS but not CEN, and were therefore included in the non-CEN group. If they had been included with the CEN group, more specific comparisons could have been made to their study.

No attempt was made in this study to determine the pediatric knowledge, skill, or experience level of the nurses who were certified in comparison to those who were not certified. Nor was the reason for taking ENPC taken into consideration. The non-certified group may have had equivalent knowledge and skill, but may not have chosen to pursue certification for a variety of reasons including fear of test taking, monetary issues, or no perceived value in the credential. This same non-CEN group may have had different motivation for taking ENPC. They may have been required to take ENPC (16.1% of subjects reported they took the course because it was mandatory), had the course paid for by their employer, taken the course at a reduced rate due to grant funding of the course, or perceived the ENPC credential to be of more value than certification.

Limitations

The major limitation of this study was that it relied on retrospective recall of the nurses' feelings before taking ENPC. To reduce the effects of the passage of time on the nurses' recollection, only those who had taken ENPC during the two years prior to the study were included in the sample. Even with this approach, the nurse may have had difficulty remembering how stressful caring for a pediatric patient was up to two years previously.

The nurses were also asked to report their levels of stress when caring for pediatric emergency patients after taking ENPC. All respondents had some additional clinical experience following the course and before completing this study. Some may have even attended other pediatric courses, inservices, or other educational offerings. All of these factors could have influenced the way that they responded to the questions.

Another limitation is that no attempt was made in this study to determine if the statistically significant differences found before and after ENPC were clinically significant. Some individual items on the MCSQ had an almost full point increase or decrease in the mean score after ENPC, but many items had smaller differences. This is a question that needs to be explored further.

Because this sample was recruited only from Michigan nurses who have taken ENPC already, the findings can only be generalized to that group. It is not known whether those who have already taken ENPC are a representative sample of emergency nurses throughout the state. Nor is it known whether the respondents for this study are similar to or different from non-respondents and those not selected. Although this is a nationally offered standardized course, no comparisons were done to determine if the Michigan nurses who took the course are representative of nurses in other states who have taken the course. Furthermore, because this is a new course, those who took ENPC during these years may be much more experienced as a group than those in the future, who will have the opportunity to take this course earlier in their careers.

When comparing the CEN and non-CEN groups, there was no effort made to determine if the groups were similar in their education, years of pediatric experience,

other certifications, or reasons for taking the course. This would have been a stronger study with those variables controlled.

A potential limitation of this study is the MCSQ tool itself. This tool was originally developed for use with nursing students and the factor analysis was done based on their responses prior to a medical-surgical clinical experience. It is unknown whether nurses with several years of clinical experience working in a specialty area such as emergency would respond in a similar manner to the nursing students. It is possible that emotions that were assigned to the threat scale for inexperienced students may actually be challenge emotions for the experienced emergency nurse.

Implications

The finding that nurses do perceive a benefit from successful completion of ENPC has several implications for emergency nurses, administrators or managers, and for researchers. For the emergency nurse caring for the pediatric patient, the overall reduction in perceived stress and threat may reduce job dissatisfaction, burnout, and turnover. The higher levels of perceived challenge may actually increase job satisfaction and contribute to a more positive work environment for the nurse.

In addition, there may be health benefits for the nurse in reducing job stress. Because pediatric patients are frequently seen in the emergency department, the nurse experiences this stressor on a regular basis. If the magnitude of this stress is reduced every day, there could be a significant positive cumulative effect on both the physical and psychological health of the nurse.

For the administrator dealing with stress-related issues such as job dissatisfaction, burnout, and turnover in an emergency department that deals with large numbers of

pediatric patients, providing ENPC may be one strategy to use to address these problems. However, this study only evaluated stress in caring for the pediatric emergency patient. Several other strategies may be necessary to deal with stress due to other factors.

For the manager selecting nurses to attend ENPC, the study findings suggest that the nurse with CEN perceives a reduction in stress and threat, and an increase in challenge following the course just as the non-CEN nurse does. Therefore CEN status alone should not be a criterion for determining if the nurse would benefit from the course, or be selected to attend the course.

The emergency department nurse manager evaluating the benefits of the course should be able to see the value of employing nurses who are less stressed or threatened and more challenged when caring for pediatric patients. The benefit of the reduced stress adds to the value of ENPC as a cost-effective strategy for meeting the JCAHO requirements for age-specific competencies. Although this study did not evaluate the skill or knowledge of the nurse following ENPC, the findings of reduced stress and threat along with increased challenge suggest that the nurse may provide better care for pediatric patients after ENPC. This too, can contribute to the benefits of the course from the cost perspective.

From the research perspective, further studies are needed to study stress for emergency nurses and the effectiveness of specific strategies to reduce this stress. This study specifically studied stress for the nurse providing care for the pediatric patient and found that ENPC was beneficial for reducing the perception of stress for this population. Other pediatric educational programs are available but the findings of this study cannot

be generalized to them. Nor can the findings of this study be generalized to educational programs targeted for other emergency patient populations.

Recommendations

Several recommendations can be made following this study. Emergency nurses, whether they are certified or not, should consider taking ENPC to reduce their stress and increase their perception of challenge when caring for pediatric patients. As a result they may have greater job satisfaction.

A similar study should be conducted with future ENPC participants. The MCSQ should be completed prior to taking the ENPC course so an actual representation of the nurses' stress before ENPC could be ascertained. Following ENPC, at a specified interval, the instrument should be completed again. Although it would be difficult to control for the type of experience the nurse achieved during that time interval, an attempt could be made to control for other educational activities. In addition, factor analysis should be repeated to assure that each of the items on the scale are assigned to the correct subscale for the emergency nurse population. These modifications to the study design would enhance the strength of the study.

It would also be valuable to study the relationship of the nurses' perceived stress to actual knowledge and skill after the course. One goal of the ENPC is to improve the quality of care for the pediatric patient. If the nurse perceives less stress, yet the knowledge and skill are not improved, the care of the pediatric patient may not improve and this goal may not be met.

Finally, it would be beneficial to compare the stress reduction benefit perceived by nurses with varying years of nursing experience. Because the course is relatively new,

many nurses in the course in 1995 or 1996 had many years of both nursing and emergency nursing experience. In this study, the nurses had on average almost 11 years of emergency nursing experience and almost 18 years of nursing experience. As new nurses are hired into the emergency departments, they have the opportunity to take this course earlier in their careers. They may perceive even more benefit from this course than the more experienced group.

In summary, nurses in this study reported a reduction in stress and threat following successful completion of ENPC. In addition, they reported higher levels of challenge following the course. Nurses with CEN and without CEN perceived similar levels of stress and challenge both before and after ENPC. Although both groups were similar in their perception of threat before ENPC, those with CEN perceived greater reduction in threat following the course. All nurses included in this study perceived benefit from ENPC.

Caring for pediatric emergency patients is stressful for many nurses. Strategies to reduce that perception of stress may be beneficial to both the giver and the recipient of emergency nursing care. This study has shown that ENPC may be an effective strategy to reduce this stress. The ENPC should be available to all providers of pediatric emergency nursing care.

APPENDICES

APPENDIX A

APPENDIX A

Demographic Tool

Demographic Information

ID _____
(1-5)

Are you currently working in an emergency care setting?

YES _____ please continue to fill out this survey and return by _____ in the envelope provided.

NO _____ please stop and return this questionnaire in the envelope provided.

Age at last birthday: _____ (4,5)

Indicate number of years of your current and past employment in the following:

Sex: M _____ F _____ (6)

Highest nursing degree achieved (7)

1. _____ Diploma/A.D.N.
2. _____ BSN
3. _____ MSN
4. _____ Other

Combined Adult & Ped ED (21-24)

Ped ED (25-28)

PICU (29-32)

PEDS UNIT (33-36)

PEDS CLINIC (37-40)

MED CENTER (41-44)

SCHOOL NURSE (45-48)

Current

Past

Certifications/Verifications

Current

Past

ACCN (8,9)

CEN (10,11)

ENPC (12,13)

TNCC (14,15)

ACLS (16,17)

PALS (18,19)

Years of nursing experience in ED (49)

1. _____ 0-2
2. _____ 3-5
3. _____ 6-10
4. _____ 11-20
5. _____ >20

Total number of years as an RN _____ (50,51)

The main reason I attended an Emergency Nursing Pediatric Course: (check one) (20)

1. _____ Mandatory (required to maintain job)
2. _____ Personal growth
3. _____ Professional growth
4. _____ Increase knowledge
5. _____ Validate level of knowledge
6. _____ Increase competency
7. _____ Obtain continuing education credits

What is your primary current position? (choose one) (52)

1. _____ Staff Nurse
2. _____ Nurse Educator
3. _____ Management
4. _____ CNS/Nurse Practitioner
5. _____ Other

APPENDIX B

Appendix B

Modified Clinical Stress Questionnaire - Before

Modified Clinical Stress Questionnaire

For each of the emotions listed below, please rate the extent to which you experienced these when caring for an emergent pediatric patient **BEFORE TAKING ENPC**.

0 = not at all
1 = a little
2 = moderately
3 = quite a bit
4 = a great deal

- | | |
|-----------|------------------|
| 0 1 2 3 4 | 1. excited |
| 0 1 2 3 4 | 2. pleased |
| 0 1 2 3 4 | 3. hopeful |
| 0 1 2 3 4 | 4. fearful |
| 0 1 2 3 4 | 5. overwhelmed |
| 0 1 2 3 4 | 6. disappointed |
| 0 1 2 3 4 | 7. guilty |
| 0 1 2 3 4 | 8. eager |
| 0 1 2 3 4 | 9. exhilarated |
| 0 1 2 3 4 | 10. relieved |
| 0 1 2 3 4 | 11. anxious |
| 0 1 2 3 4 | 12. intimidated |
| 0 1 2 3 4 | 13. disgusted |
| 0 1 2 3 4 | 14. sad |
| 0 1 2 3 4 | 15. happy |
| 0 1 2 3 4 | 16. stimulated |
| 0 1 2 3 4 | 17. apprehensive |
| 0 1 2 3 4 | 18. worried |
| 0 1 2 3 4 | 19. confident |
| 0 1 2 3 4 | 20. angry |

APPENDIX C

AppendixC

Modified Clinical Stress Questionnaire - After

Modified Clinical Stress Questionnaire

For each of the emotions listed below, please rate the extent to which you experienced these when caring for an emergent pediatric patient AFTER TAKING ENPC.

0 = not at all
1 = a little
2 = moderately
3 = quite a bit
4 = a great deal

- | | |
|-----------|------------------|
| 0 1 2 3 4 | 1. excited |
| 0 1 2 3 4 | 2. pleased |
| 0 1 2 3 4 | 3. hopeful |
| 0 1 2 3 4 | 4. fearful |
| 0 1 2 3 4 | 5. overwhelmed |
| 0 1 2 3 4 | 6. disappointed |
| 0 1 2 3 4 | 7. guilty |
| 0 1 2 3 4 | 8. eager |
| 0 1 2 3 4 | 9. exhilarated |
| 0 1 2 3 4 | 10. relieved |
| 0 1 2 3 4 | 11. anxious |
| 0 1 2 3 4 | 12. intimidated |
| 0 1 2 3 4 | 13. disgusted |
| 0 1 2 3 4 | 14. sad |
| 0 1 2 3 4 | 15. happy |
| 0 1 2 3 4 | 16. stimulated |
| 0 1 2 3 4 | 17. apprehensive |
| 0 1 2 3 4 | 18. worried |
| 0 1 2 3 4 | 19. confident |
| 0 1 2 3 4 | 20. angry |

APPENDIX D

APPENDIX D

Permission Letter from Dr. Pagana



LYCOMING COLLEGE
WILLIAMSPORT, PA 17701-5192

April 2, 1997

Sheryl Veurink
861 Parkhurst N.W.
Grand Rapids, MI 49504

Dear Sheryl:

Enclosed please find a copy of my Clinical Stress Questionnaire. The qualitative (pages 1 & 2) and quantitative (page 3) aspects of this scale can be used together or separately. The qualitative data analysis is described in "Stresses and Threats Reported by Baccalaureate Students in Relation to an Initial Clinical Experience" (*Journal of Nursing Education*, 27(9), 418-424, 1989). This article describes data collected on a large group of subjects. Predominant themes were determined by content analysis.

Quantitative data can be obtained by using the 20 item Likert scale. This is described in "Psychometric Evaluation of the Clinical Stress Questionnaire" (*Journal of Nursing Education*, 28(4), 169-174, 1989). The reliability and validity of this scale is described in this article. The alpha coefficients for threat and challenge are .84 and .85, respectively. The mean score of the Threat Scale can be determined by adding the scores for the 6 threat items shown in Table 4 (p 173) of this article and dividing by 6. The mean score for the Challenge Scale can be determined by adding the scores for the 7 challenge items shown in Table 4 and dividing by 7.

Please feel free to contact me if I can be of assistance. I'd love to see an abstract of your research.

Good luck.

Please feel free to modify as needed.

Sincerely,

Kathleen Deska Pagana, PhD, RN
Associate Professor of Nursing

KDP/amy
Enclosure

D E P A R T M E N T O F N U R S I N G
P H O N E • 7 1 7 - 3 2 1 - 4 2 5 0 F A X • 7 1 7 - 3 2 1 - 4 0 9 0

APPENDIX E

APPENDIX E

GVSU Approval



1 CAMPUS DRIVE • ALLENDALE MICHIGAN 49401-9403 • 616/895-6611

December 3, 1997

Sheryl Veurink-Balicki
861 Parkhurst N.W.
Grand Rapids, MI 49504

Dear Sheryl:

Your proposed project entitled "*A Correlation Between Emergency Nursing Stress and Successful Completion of the Emergency Nursing Pediatric Course*" has been reviewed. It has been approved as a study which is exempt from the regulations by section 46.101 of the Federal Register 46(16):8336, January 26, 1981.

Sincerely,

[Redacted Signature]

Paul Huizenga, Chair
Human Research Review Committee

APPENDIX F

APPENDIX F

Informational Letter for Participants

February 5, 1998

Dear Nursing Colleague,

We are conducting a study to investigate the benefits of the Emergency Nurses Pediatric Course (ENPC) for the Emergency Department Nurse. This study is being done as our master's theses at Grand Valley State University. Since you have taken this course, we are requesting your participation in this study.

Enclosed you will find an information sheet and two sets of questionnaires. The questionnaires should be answered to indicate how you felt before taking ENPC and after taking ENPC. The sheets are color coded to make it easier to differentiate between the "before" and "after" questionnaires.

Your completion and return of the questionnaires implies your consent to participate in the study. It also implies understanding of the following:

1. Participation will involve completion of an information sheet and four short questionnaires. This should take a total of no more than 20 minutes.
2. I have been selected for participation since I have completed the ENPC course.
3. The information that I provide will be kept confidential and the questionnaires and data will be coded such that individual respondents can not be identified.
4. A summary of the results will be provided to me at my request.
5. My participation is voluntary and I may choose not to participate simply by not returning the forms.
6. The investigators, Diana Ropele and Sherri Veurink-Balicki, have my permission to release information obtained in this study to scientific literature. I understand that I will not be identified by name.
7. The following may be contacted at any time if I have questions about the study or my participation in it:
Diana Ropele, BSN, RN (616) 796-7215
Sherri Veurink-Balicki, BSN, RN (616) 791-1641
8. If I have any questions about my rights if I choose to participate in this study, I may contact:
Professor Paul Huizenga (616) 895-2472
Chairperson, GVSU Human Research Review Committee

Please return the forms in the enclosed addressed, stamped envelope within two weeks. If you would like a copy of the results, please complete the enclosed postcard and return it separately so the confidentiality of your responses can be maintained.

Thank you in advance for your participation.

Sincerely,

APPENDIX G

APPENDIX G

Reminder Postcard

Dear Nursing Colleague,

About two weeks ago we mailed you a packet of questionnaires about your perceptions before and after taking the Emergency Nursing Pediatric Course. If you have already completed and returned the questionnaires, thank you for your assistance. If you have not completed them yet, please complete them as soon as you can and return them in the addressed, stamped envelope that came with the packet of questionnaires. Thank you for your participation in this study.

Sincerely,

Diana Ropele, BSN, RN, CEN Sherri Veurink-Balicki, BSN, RN, CEN

LIST OF REFERENCES

LIST OF REFERENCES

American Nurses' Association. (1991). Role of the registered nurse in the management of patients receiving IV conscious sedation for short-term therapeutic, diagnostic, or surgical procedures. (Policy statement). Washington D.C.: Author.

American College of Surgeons, Committee on Trauma. (1993). Resources for optimal care of the injured patient. Chicago: Author.

Benner, P. (1984). From novice to expert: Excellence and power in clinical nursing practice. Menlo Park, CA: Addison-Wesley Publishing Company.

Bidigare S. & Oermann, M. (1991). Attitudes and knowledge of nurses regarding organ procurement. Heart & Lung, 20, 20-24.

Brockopp, D. & Hastings-Tolsma, M. (1989). Fundamentals of nursing research. Glenview, IL: Scott, Foresman and Company.

Burns, C., & Harm, N. (1993). Emergency nurses' perceptions of critical incidents and stress debriefing. Journal of Emergency Nursing, 19, 431-435.

Burns, H., Kirilloff, L., & Close, J. (1983). Sources of stress and satisfaction in emergency nursing. Journal of Emergency Nursing, 9, 329-336.

Caldwell, M. (1976). Staff stress: what you can do about it. Journal of Emergency Nursing, 2(2), 21-23.

delBueno, D. (1989). Certification should not be required for hiring/promotion. Journal of Nursing Administration, 19(7), 9.

Durch, J. & Lohr, K. (1993). Emergency medical services for children: Summary. Washington D.C.: National Academy Press.

Emergency Nurses' Association. (1991). Standards of emergency nursing practice (2nd ed.). St. Louis: Mosby.

Emergency Nurses' Association. (1995). Emergency nursing pediatric course informational brochure. (Brochure). Park Ridge, IL: Author.

Emergency Nurses' Association. (1995). Emergency nursing: Pediatric emergency care. (Policy statement). Park Ridge, IL: Author.

Emery, J. E. (1993). Perceived sources of stress among pediatric oncology nurses. Journal of Pediatric Oncology, 10, 87-92.

Fredrickson, J., Bauer, W., Arellano, D., & Davidson, M., (1994). Emergency nurses' perceived knowledge and comfort levels regarding pediatric patients. Journal of Emergency Nursing, 20, 13-17.

Griffith-Kenney, J. & Christensen, P. (1986). Nursing process: Application of theories, frameworks, and models. St. Louis: C. V. Mosby Company.

Haley, K. & Baker, P. (Eds.). (1993). Emergency nursing pediatric course: Provider manual. Park Ridge, IL: Author.

Hawley, M. (1992). Sources of stress for emergency nurses in four urban Canadian emergency departments. Journal of Emergency Nursing, 18, 211-216.

Hinds, P., Quargnenti, A., Hickey, S., & Mangum, H. (1994). A comparison of the stress-response sequence in new and experienced pediatric oncology nurses. Cancer Nursing 17(1), 61-71.

Inouye, D. (1992). Pediatric emergency medical services legislation. In R. Dieckmann (Ed.), Pediatric emergency care systems: Planning and management (pp. 24-26). Baltimore: Williams & Wilkins.

Joint Commission for Accreditation of Health Care Organizations. (1997). Comprehensive accreditation manual for hospitals. Chicago: Author.

Kadish, H., Bolte, R., Santora, S., Espinoza, R. & Woodward, G. (1996). Evaluating the effectiveness of a pediatric trauma educational program in Central America. Pediatric Emergency Care, 12, 407-410.

Keller, K. (1990). The management of stress and prevention of burnout in emergency nurses. Journal of Emergency Nursing, 16, 90-95

King, I. (1981). A theory for nursing: systems, concepts, process. New York: John Wiley and Sons.

Lazarus, R. (1966). Psychological stress and the coping process. New York: McGraw-Hill Book Company.

Lazarus, R. & Folkman, S. (1984). Stress, appraisal, and coping. New York: Springer Publishing Company.

Nielsen, B. (1989). In my opinion...certification should be required for hiring/promotion. Journal of Nursing Administration, 19(7), 8.

Oermann, M. & Standfest, K. (1997). Differences in stress and challenge in clinical practice among ADN and BSN students in varying clinical courses. Journal of Nursing Education, 36, 228-233.

Pagana, K. (1989). Psychometric evaluation of the Clinical Stress Questionnaire (CSQ). Journal of Nursing Education, 28, 169-174.

Phipps, L.. (1988). Sources of stress among doctors and nurses in the emergency department of a general hospital. Canadian Medical Association Journal, 139, 375-376.

Polit, D. & Hungler, B. (1995). Nursing research: principles and methods (5th ed.). Philadelphia: J.B. Lippincott.

Redd, M., & Alexander, W. (1997). Does certification mean better performance? Nursing Management, 28(2), 45-50.

Simon, H. & Sullivan, F. (1996). Confidence in performance of pediatric emergency medicine procedures by community emergency practitioners. Pediatric Emergency Care, 12, 336-339.

Talbot, L. (1995). Principles and practice of nursing research. St. Louis: Mosby Year Book, Inc.

Taylor, M. & Soud, T. (1991). Florida pediatric emergency nursing education project. Journal of Emergency Nursing, 17, 152-155.

Tenney, J., Golden-Baker, S., DeMoucell, P., & Wians, K. (1993). Empowerment through Rehabilitation Certification. Rehabilitation Nursing, 18, 231-236.