Occupational and life stress in nursing: Is there a relationship?

Christopher Billam
Edith Cowan University

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Occupational and Life Stress in Nursing:
Is There a Relationship?

Christopher Billam Diploma Health Science (Nursing)

School Of Nursing

Western Australian College Of Advanced Education

Submission Date: 15th November 1989.
A population of two hundred and twenty nurses involved in direct patient care in a regional hospital were surveyed to assess if a relationship exists between occupational and life stress. A cross-sectional survey design was used. The questionnaire contained four distinct categories: demographic information, Nurses' Stress Scale, a Life Events Inventory and a social support scale. A return rate of 49.5% was obtained, and several completed questionnaires were rejected, leaving the data from 104 questionnaires to be analysed. The nurses in this population reported low scores for both occupational and life stress. However, the instrument used to calculate the occupational stress levels did not prove to be reliable for this population, as indicated by a low Cronbach's alpha score. A Pearson's correlation analysis was computed for all of the variables studied. The only significant correlation found was life stress with occupational stress ($r = .23$ with $p = .01$). Multiple regression using the maximum $R^2$ method revealed that a combination of three variables: life stress, working status and social support accounted for 7.6% of the variance for the dependent variable occupational stress ($p = .05$).
I certify that this thesis does not incorporate, without acknowledgement, any material previously submitted for a degree or diploma in any institution of higher education and that, to the best of my knowledge and belief, it does not contain any material previously published or written by another person except where due reference is made in the text.

Christopher Billam.
I would like to acknowledge the nursing staff of the Kalgoorlie Regional Hospital for kindly participating in this research, especially to Judy Urbaneck for her valuable assistance with the data collection. A special mention must be made to Ruth MacKay, for acting as my supervisor, and for patiently listening to my ideas. This thesis would not have been possible without your valuable assistance.
Table of Contents

Introduction. --------------------------------------------1.
Literature Review.---------------------------------------4.
Figure 1. --------------------------------------------12.
Method. -------------------------------------------------15.
Variables.------------------------------------------15.
Design.---------------------------------------------16.
Instruments.----------------------------------------17.
Population and Location.-----------------------------18.
Data Collection.------------------------------------19.
Delimitations.--------------------------------------20.
Results.------------------------------------------------22.
Table 1.--------------------------------------------24.
Table 2.--------------------------------------------26.
Discussion.-----------------------------------------27.
Future Research.-------------------------------------29.
Limitations.----------------------------------------29.
Nursing Implications.-------------------------------30.
Conclusion.-----------------------------------------31.
Reference List.----------------------------------------33.
Appendix A.---------------------------------------------38.
Appendix B.---------------------------------------------39.
Introduction

Quality patient care is the aim of all nurses and nursing institutions. "Quality care can be delivered by nurses who are physically and psychologically equipped to give that kind of care, but not those who are exhausted, unmotivated and apathetic." (Cronin-Stubbs and Rooks 1985, p. 31). Exhaustion, apathy and lack of motivation are examples of the psychological effects that stress is able to produce in all walks of life. At some stages of our lives everyone will experience some form of stress overload which is capable of having deleterious effects on all aspects of our lives, from social interactions right through to our performance at work.

Poulton, (in Warr 1971, pp. 64-66) identifies six main areas of stress; personal threat, too much to do at once, noise, insufficient heat loss, loss of sleep, and drugs which increase or reduce arousal. Selye constructed a theory that explained the phenomenon of stress. Selye's General Adaptation Theory proposes that nonspecific adaptational changes occur in the body in response to stress. Bates and Moore (1975, p. 765), describe stress as being the: "... physical, social and cultural conditions likely to be uncomfortable for most people in a culture or social group." This idea provides an alternative perspective to the stress phenomenon. It is important to remember that not all stress is of a negative nature, for example, getting married is a stressful situation. However, most people would view this as a positive event.
Holahan and Moos (1984, p. 746) state: "Stress is endemic to modern life ...". The importance of stress in our lives is noted by Packard and Motowidlo (1987 p. 253): They believe that stress plays a necessary role in our lives. In fact, it may be possible to say that a certain amount of stress is essential to maintain a healthy lifestyle. Kelly (1988 p. 152), believes that: "Stress is a necessary component to growth and well being".

MacNeil and Weisz, (1987 p. 274) illustrate the effects that stress can have upon a hospitals' ability to provide quality patient care, by identifying problems which may occur in a hospital due to staff members suffering from stress. "... Stress can ultimately lead to a variety of work-related problems such as absenteeism, staff conflict, staff turnover, decreased morale and decreased effectiveness." From a managerial perspective, stress in nursing should ideally be reduced as much as possible. Randolph, Price and Collins (1986, p. 43 ) note: "High levels of occupational stress are inherent in large health care systems".

"Nursing sick or injured people is in itself, inevitably a stressful vocation". (Holle & Myer 1986, p. 38B). Parker (1986, p. 47) provides another perspective of stress in nursing: "Stress comes to us all. Some handle it well, others crumble." Bates and Moore (1975, p. 765) note that: "Stress levels vary both with the stressful situation and the person's ability to cope." With so many factors involved in stress it is not feasible to expect a
person to 'throw a switch' and repress personal stress from affecting their work.

This research project has concentrated on two aspects of stress, occupational and life stress. Occupational stress can be broadly defined as the stress experienced by an individual during their working time. Whereas, life stress is composed of all the problems that are encountered during one's life. This study aimed to answer the question: Is there a relationship between life stress and occupational stress in nurses? The hypothesis used to test this question is: There is a positive correlation between nurses' life stress and their occupational stress.
Literature Review

The full ramifications that stress has upon society are not fully understood, although the cost of illness thought to be related to stress has been well documented. Wadsworth, Clark, and Hollefreund (1986, p.21) illustrate the cost of stress in the United States. "In 1973, researchers determined the cost of stress in terms of loss of production, treatment and prevention was 1-3% of the gross national product." Levenstein, (1986, p. 27) emphasises that the cost of stress can be related to illness. "Stress induced cardiovascular disease is the reason for 12 percent of time lost by workers and comes to $4 billion a year." From a financial viewpoint alone, stress can be seen to be a suitable subject for research.

Stress induced illness places a huge burden on our already overworked health care system. Nurses are not immune to stress, although, many imagine themselves as being 'a supernurse'. Gillespie and Gillespie believe: "Stress has become a common problem for nurses since they bear the major burden of health care provision". (1986, p. 24). Hingley and Harris (1986, p. 28) found that nurses (in the United Kingdom) live two years less than other professional people and have a higher suicide rate. This idea is supported by the experience of Tomlin (1977). "As a result of the stresses of working in an intensive care unit at least three nurses working in different intensive care units have taken or attempted to take their own lives." (p. 442). Hingley and Harris (1986, p. 28) go on to say: "... we do not wish to suggest that
stress is the sole cause of high suicide rates and low life expectancy in nursing, we think it may be an important contributory factor."

The information reported by Hingley and Harris, and Tomlin, while being specific to the United Kingdom, could probably be found in other developed countries, for example: the United States, Canada, Australia, and New Zealand. It may be possible that cultural influences can have some impact on stress-related deaths or illness. Nursing is not alone in the type of work that has been stereotyped as being stressful; other examples could include business executives, air traffic controllers, and members of the police force. There are two main areas that can be identified as being common denominators between all these professions: a) large numbers of people have contact with these professions, and b) decisions often have to be made quite rapidly.

When business executives are excluded from the list of professions, another two variables can be included. They are: the people involved are classified as essential workers and they have to provide twenty-four hour coverage to the public, which means that some of the members have to work shifts. Coffey, Skipper, and Jung (1988 p. 251) suggest that occupational stress may be increased by working rotating shifts. Also, the decisions made by these people can be of a life or death nature, for members of the public.

Dohrenwend and Martin (1979 p. 453), note: "... stressful events are most harmful when they are perceived as being uncontrollable." Expanding upon this idea, a logical conclusion
may be drawn, that increasing perception of control over stressful
events may reduce some of the damage caused by the stress. As
noted earlier a certain amount of stress is required during one's
life. Therefore, if the emphasis is taken away from trying to
reduce stress levels and placed upon increasing the amount of the
control over stressful events, then a reduction in the harm caused
by the stress-related events should fall accordingly. An
important aspect to remember is that it would be almost impossible
to control stressful life events. Hence, emphasis on managing
stress related events and improving coping strategies should be
increased.

There is a vast quantity of literature written about stress.
Much of the extensive research into stress in nursing has been
fragmented. Some of the stressors in nursing have been identified
and thoroughly researched by many authors (Adey, 1987; Bailey,
Steffen, & Grout, 1980; Coughlan, 1984; Dewe, 1986; and Ness
1980). This type of research may have led to further
investigations into which areas of nursing were the most
stressful. Gentry and Parkes, (1982); Maloney, (1982); and many
others have identified high stress areas in nursing. However,
their findings tend to be contradictory.

From the literature it appears that the case for equal stress
levels in all areas of nursing is well supported, as demonstrated
by the findings of Chiriboga and Bailey, (1986), Cronin-Stubbs and
Rooks, (1985), Keane, Ducette and Adler, (1985), Leatt and Schneck,
(1980), and, McCranie, Lambert, and Lambert, (1987). The main
focus of attention has been the comparison of stress levels
between intensive care nursing and non-intensive care nursing.

Cross and Kelly (1983, p. 45), found: "... stress factors are related to the overall hospital environment, rather than to the specific work areas within these institutions." Extrapolating on Kelly's findings, it may be possible to assume that stress levels vary from hospital to hospital. An important question can be raised at this point; why do stress levels vary within institutions? One possible solution to this question is the style of management, which is utilised within the different working environments. Another possible answer could be related to the diversity of the roles which nurses perceive themselves as fulfilling, which may vary from institution to institution. It was not an objective of this research project to examine the possible diversification of nurses' stress levels from hospital to hospital, but rather to examine the relationship between life stress and occupational stress.

In order to clarify the issues involved in stress in nursing, it appears necessary to examine nurses in general as a whole and not as specialised groups. From the literature, three factors out of the myriad of factors that are involved in stress, can be closely examined. They are social support, occupational stress, and life stress.

Social support has been identified as being an important factor in the reduction of stress levels, (Bates & Moore, 1975; Benson Cook & Mandrillo, 1982; Cassel, 1974; Graham, 1988; Lin, Simeone, Ensel, and Kuo, 1979; and Scully, 1981). The importance of adequate social support systems cannot be over-emphasised. But,
effective social support is dependent upon the quality of the support given rather than the size of the social support system, as noted by McFarlane, Norman, Streiner, and Roy, (1984 p. 502). Therefore it is reasonable to assume that social support from a small cohesive group can be more effective than that given by a large group.

Norbeck (1981 p. 49) proposes that social competence may influence a person's ability to maintain and attract social support systems. This idea in itself appears quite logical, for a person who has limited social skills will experience some difficulty in utilising their social skills to communicate effectively within a social support network. Taylor, believes that:

"Social relationships may not only be important in combating stress in their own right; they may also buffer other stressors." (1986, p. 173). How important the buffering effect that social support is theorised to have upon stress is not known. However, it is believed that social support can directly affect a person's health. Lin et al, state the general assumption about social support: "The greater the social support that an individual receives, ... the less likely that an individual will experience illness." (1979, p. 109).

Occupational stress can prevent the formation of social networks, especially in single people, as illustrated by Scully:

Indeed, working nights, evenings, and weekends can deprive nurses of those external support systems that they so desperately need, such as socializing with young adults who are not nurses, joining in sports activities, developing hobbies or cultivating outside activities. (1981, p. 49).
An important area that has not been extensively examined is the relationship between life stress and occupational stress. Linder-Pelz, Pierce, and Minslow, (1986, p. 313) suggest that this area of research is open to nursing researchers.

It would seem more useful, in future studies of stress among nurses, to study personal vs job causes of stress in various types of nursing work than to worry about which work setting is the most stressful.

One of the problems associated with researching stress is the number of factors which can influence stress levels. Beall Harris, (1989 p. 25) illustrated in a model some of the factors that can complicate the stress phenomenon. Some of the factors that appeared to be inversely proportional to occupational stress were; age, work experience, education, hardiness, control, and power. The factors that were proportionally related to increased stress levels are; environmental stress, anxiety, job dissatisfaction and day to day hassles. It is possible to say that many of these factors may affect nurses. Yu, Mansfield, Packard, Vicary, and McCool (1989 p.121), illustrate some of the variables that may increase stress levels, that nurses as professionals may encounter.

Nurses are consistently faced with clinical dilemmas including crisis events, "life and death" situations, rapid technological advances, and daily exposure to various illnesses and disease."
Another factor that compounds some of these variables, is that nursing is a female dominated profession. Freedman and Biessesi (1988, p. 272), state: "It may be that the dual demands of work and family will contribute to the unique stress experienced by women". This idea suggests that occupational stress may be influenced by external factors, even though its main point of reference is most relevant to women.

Sarason and Johnson (1979, p. 76) note: "It is possible that life changes are also related to variables in the work situation, ..." Conversely occupational stress may be related to personal stress. This idea has support from Cronin-Stubbs and Velsor-Friedrich. "Excessive demands at home lessens [sic] energy available for adapting to professional stressors. ... Stress in nursing then involves both personal and professional variables." (1981, p. 19).

In order to understand the complexity of stress, some basic concepts need to be defined.

**STRESS:** "... is an individual's response to demands perceived as being unpleasant in his or her personal or work environment." (Linder-Pelz 1986, p. 307). Bates and Moore, place a different perspective on stress: "... the result of the interaction of an individual's personal qualities with the situation in which the individual finds himself." (1975, p. 765). Whereas, Hawkins (1987) describes stress as "... the mismatch between the demands made on an individual and his ability to cope." (p. 307).

**OCCUPATIONAL STRESS:** "Job stress involves the demands encountered within the roles and functions of employment."
STRESSORS: "Sociological, psychological and physiological problems with which an individual has been burdened, with demands exceeding his, her potential for adaptation ... ." Matlar and Solokongas, (in Graham, 1988 p. 151).

COPING: As defined by Pearlin and Schooler: "... any response to external life strains that serves to prevent, avoid, or control emotional distress." (1978 p. 3).

SOCIAL SUPPORT: "... may be defined as support accessible to an individual through social ties to other individuals, groups, and the larger community." Lin et al, (1979, p. 109).

While only three variables were examined, in this study, a fourth variable, coping, is included in the model for the clarification of the process involved.

This simple model presented illustrates some of the relationships that exist in the stress network. If this model is accurate, then there appears to be two methods of reducing occupational stress. They are; improving a person's coping ability, and their social support systems.
Using this model it is possible to say that an increase in social support and coping ability may reduce the harmful effects that occupational and life stress can have upon a person. It is suggested that a reciprocal relationship exists between occupational and life stress. Similarly, an increase in social support may improve the effectiveness of a person's coping ability.

The area of improving a person's coping ability is very extensive. A major facet that must be examined in the area of coping ability is personality. People with different types of personalities tend to respond differently to the same situation. There are two types of coping strategies, effective and ineffective. Ineffective coping strategies, such as increased drug use (both legal and illegal), taking days off sick, resigning from the work place, and withdrawing from the situation, will not
resolve the situation but only delay the inevitable.

Effective coping strategies such as the use of assertion and relaxation, may go a long way to resolving the problems. The use of these strategies could possibly reduce the amount of harm experienced by a person due to stressful events. Probably the most effective method of improving coping abilities, is through education to change attitudes towards stress management, and improving peoples' coping strategies.

It may be much easier to provide social support than supply education for employees. For example, a staff social club may be developed, or alternatively, a senior staff member may be allocated some working time to act as a counsellor. These counselling sessions would need to be strictly confidential in order to attract the staff to utilise this service. The designated counsellor then could provide feedback to nursing administration on the problems that the nursing staff are encountering.

Provision of social support systems for the staff and stress management education could be used to complement each other, thus enhancing their single efforts to reduce occupational stress.

The three variables identified that have been studied are; social support systems, occupational stress, and life stress. There are many extraneous variables associated with this research: coping ability, work experience, the personality of the respondents (e.g. hardiness), and gender, although gender will play only a minor role, as most of the respondents are females, as one would expect in any research in nursing. Results from the Australian census of 1981 reveals that the vast majority of nurses are
females, with only 6.6% of nurses being males (Australian Bureau of Statistics 1984, p. 4). As noted previously, there are many factors that have the ability to affect stress levels. A study into the way with which all of these variables interact, would present many methodological problems which could only be overcome by a researcher who does not suffer from the same time restrictions that have been placed upon this research project.
Method

Variables

One of the major difficulties involved with research into stress is the lack of concise and widely acceptable definitions for the major variables. At present it is possible to find many slightly different definitions for many of the variables. It is therefore necessary to provide definitions for the numerous variables.

STRESS: will be taken to mean both the physiological and psychological responses of an individual to a situation that is perceived as being unpleasant.

OCCUPATIONAL STRESS: can be broadly defined as the stress that individuals encounter during the time in which they are engaged in their employment.

LIFE STRESS: is composed of all the stress that is encountered during one calendar year.

SOCIAL SUPPORT: will be taken to mean both the psychological and financial support received by an individual from their family, friends, and colleagues. The support provided may at times, as an example, only amount to listening to the individual's problems.

AGE: refers to the person's chronological age in years at the time of the data collection.

EXPERIENCE: indicates the number of years that each person has had, in their current position.

WORKING STATUS: is designated as being whether the individual works in a full or part-time capacity.

DESIGNATION: will be defined as the current position that each of
the respondents holds. For example, both registered and enrolled nurses are taken to mean those nursing categories recognised by the Nurses Board of Western Australia. The term student, within this classification, is supplied to cover all of the nurses who are undergoing some form of education, irrespective of what their final qualification will be.

The dependent variable for this study is occupational stress, with life stress and social support being designated as the independent variables. These three variables will be described as the primary variables in the results and discussion sections. The remaining variables; age, designation, working time, and experience have been classified as extraneous variables to the basic relationship examined.

**Design**

A cross-sectional survey has been utilized to collect the data. A four part questionnaire was used to elicit information from the nurses regarding the stress they experience in their lives. Prior to instituting this research, the research proposal was submitted and approved by the ethics committee at the School of Nursing at the Western Australian College of Advanced Education. Final approval was obtained from the hospital's executive committee. Formal consent of the subjects was not required, as consent was assumed to be given by the completion and return of the anonymous questionnaire. Respondents were informed of their rights regarding their participation in this research project. The respondents rights are explained in the cover letter (See Appendix A). Specific instructions were given to
prevent the identification of respondents and thus, to ensure anonymity.

**Instruments**

The questionnaire consisted of four sections; life stress, occupational stress, social support and demographic data. The demographic data are illustrated in appendix B. Occupational stress was measured by using the Nursing Stress Scale devised by Gray-Toft and Anderson (1981) (See Appendix B). The thirty four item scale describes situations that nurses in a hospital situation have found to be stressful. Gray-Toft and Anderson (1981, p. 640) when discussing the validity of their scale report that with the exception of two subscales, internal consistency exceeded 0.70. The authors, however, did not identify which of the subscales failed to meet the internal consistency of 0.70. It would appear that this scale is relatively reliable as both Topf (1989, p. 181) and, McCranie, Lambert, and Lambert (1987, p. 76) reported a Cronbach's alpha of .92. The respondents were instructed to use a four point scale, ranging from never, occasionally, frequently to very frequently, to indicate how often they have experienced each item to be stressful in the two weeks proceeding the survey. The reported frequencies are then summed to produce a total occupational stress score. The grammar in the original survey has been changed slightly to suit common Australian language useage; for example, the word physician has been substituted with doctor, unit with ward, and scheduling with rostering.

The degree of life stress was assessed by the Life Events
Inventory produced by Cochrane and Robertson (1973) (See appendix B). Cochrane and Robertson (1973, p. 136) report the validity of their scale at .89, using a coefficient of concordance which is significant at the .001 level. Feldman et al. (1988) reviewed the literature and were unable to find data to support the reliability of the Life Events Inventory (p. 15). The sample was asked to identify which life events they had experienced in the last twelve months. The fifty five item scale was divided into three parts. Part A covered items one to thirty five, which all the respondents answered. Part B covered items thirty six to fifty one. Only the sample who were currently in a stable relationship answered this part. Part C, items fifty two to fifty five covered areas only applicable to the respondents not currently in a marital type relationship. Each individual's score for life stress was calculated by summing the values of the items rated.

Social support has been measured using a seven item scale based upon a scale presented by Bullough (in Reeder, Ramacher and Gorelink 1976, p. 22) (See Appendix B). There is no available information concerning the reliability and validity of this scale. The sample subjects were asked to rate the items on a five-point Likert scale, ranging from "strongly agree", through "agree", "disagree", to "strongly disagree" and or "not applicable". Only one question was designed to fit into the not applicable category. This question was designed to identify those people in the sample who do not describe themselves as being in a stable relationship.

Population and Location.

This research was conducted in a regional hospital which has
approximately two hundred beds in Western Australia. This hospital provides extensive care for the community it services, for example; a children's ward, extended care for the elderly, and an accident and emergency department. This hospital provides general, and some specialist services, for the community. The nurses who were studied in this project were employees of the hospital and directly involved with patient care. As one of the instruments focuses on clinically orientated stress, only nurses whose prime function is in the clinical field have been assessed. Therefore, the population of eligible nurses was estimated at two hundred and twenty.

The nurses from the clinical stream who were ineligible for the study were those who were on extended sick leave, annual leave, workers compensation, or extended leave during the data collection period.

Data Collection

The data collection period covered two weeks from September 7th to September 21st, 1989. This time period was estimated to be sufficient for all respondents to complete and return the questionnaire. In order to include all eligible staff in this hospital, a resource person was allocated to assist with the data collection. The resource person circulated posters throughout the hospital on prominent notice boards, circulated the surveys, collected the completed surveys and answered any queries regarding the research.
Delimitations

After completing any research it is always possible with hindsight to identify factors that may have been handled differently. However, there are some factors that can be identified prior to the initiation of a research project. The main factor to be considered is the cross-sectional approach to the subject. Obviously, a longitudinal study would have given a more accurate picture of the stress levels of the population; however, a relatively short period of time could be allocated to the data collection. It is more than probable that stress levels vary with time. For example, there are periods during the year when the workload experienced by nurses will fluctuate, e.g. during Christmas and Easter holidays. It may be possible that certain hospitals may suffer severe staff shortages during these holiday periods. The staff shortages may in turn affect the perceptions of stress that the working nurses will report.

Self reporting scales are open to questions regarding their reliability. This is especially relevant when a life events inventory is used. Klien and Rubovits (1986, p. 510) believe that the information supplied by this type of questionnaire is limited and should be used only as a rough estimate of stress levels experienced by individuals. Lowery (1987 p. 43), also suggests that these types of questionnaires are inadequate to examine the relationship that exists between stress and life events. The alternative is to use structured interviews, which would dramatically increase the cost of the research if a large sample
is to be used and makes anonymity impossible.

Examining occupational stress is also fraught with dangers. Moore (1984, p. 29) raises a pertinent issue, in querying how many people would like to admit they are suffering from stress. The only way in which self-reporting scales can be utilized to gain reliable information is to ensure that anonymity is guaranteed to all the respondents.
Results

Of the two hundred and twenty questionnaires distributed, a total of one hundred and nine were returned. This represents a return rate of 49.5%. During a telephone conversation with the resource person, she provided feedback regarding the questionnaire. The most interesting point concerned the return rate; quite a few members of the nursing staff commented on the personal nature of the Life events inventory. From this discussion, it may be inferred that a higher return rate may have been obtained if a different life event scale had been used. Of the 109 responses received, five of the questionnaires had to be rejected: nurses who did not meet the criteria of being employed in a clinical capacity invalidated three questionnaires, and the remaining were rejected on the grounds of incomplete data.

The data from the remaining one hundred and four questionnaires were analysed using the SAS version six statistical package on the Western Australian College of Advanced Education personal computer system.

A simple breakdown of the data supplied provided some interesting information. Less than five percent of the respondents were male; therefore, no comparisons will be made on the basis of gender. Registered nurses provided the greatest response rate with 50%, and 36.5% and 13.4% are the response rates from enrolled nurses and students respectively.

The respondents were relatively young; with 31.58% of enrolled nurses, 36.27% of registered nurses, and 92.86% of students were under twenty-six years of age. In the area of length
of nursing experience; the enrolled nurses are those with the most experience, with 55.26% having had five years experience or more, while only 32.69% of the registered nurses had more than five years experience. It is possible to say that as a group the respondents were fairly young and inexperienced, as a large percentage have had less than three years experience in their current positions. All of the students, 44.23% of registered nurses and 18.42% of enrolled nurses fitted into this category.

Analysis of the validity of the Nursing Stress Scale proved to be very interesting. McCranie, Lambert, and Lambert, (1987 p. 376) used this scale. They reported a mean of 80.89 and a standard deviation of 13.78; whereas, Topf (1989, p. 182), reported much lower values of 43.03 for the mean and a standard deviation of 12.96.

The mean of the Nursing Stress Scale for this research is 24.80 which is considerably lower than those reported by Topf, and McCranie, Lambert, and Lambert. The maximum total stress score for this scale is 96. The highest score recorded by this population was 67. Approximately 66% of the respondents would have recorded a score of between 11.49 to 38.11. It can be seen that when these results are compared to Topf's findings of 30.07 to 55.95 and McCranie, Lambert, and Lambert's results of 67.11 to 94.67 for a similar 66% of their respective samples; the nurses in this population have reported significantly lower occupational stress levels. The standard deviation for this study is 13.31, which lies between the two previously reported standard deviations (see Table 1). The standard deviation indicates that the
distribution of the occupational stress scores for this population is similar to that noted by both Topf, and McCranie, Lambert, and Lambert. Reliability of this scale was assessed using Cronbach's alpha coefficient, and found to be unexpectedly low at .34. In the area of life stress the respondents also have recorded low scores. The maximum possible score for the instrument is 2654. Simple calculations indicate that approximately 66% of the population studied scored from 112.79 to 433.71. From this data it is possible to suggest that this population experienced low levels of life stress for the year proceeding the initiation of this research. Table 1 on page 25 presents the means, standard deviations and ranges for: occupational stress, life stress, social support, and age.

Table 1
Simple Statistics for the Variables: Age, Social Support, Occupational Stress and Life Stress

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean</th>
<th>Standard Deviation</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>AGE</td>
<td>1.13</td>
<td>1</td>
<td>1 - 4</td>
</tr>
<tr>
<td>SOCIAL</td>
<td>78.09</td>
<td>17.96</td>
<td>28.5 - 100</td>
</tr>
<tr>
<td>OCCUPATIONAL</td>
<td>24.80</td>
<td>13.31</td>
<td>2 - 67</td>
</tr>
<tr>
<td>LIFE</td>
<td>273.25</td>
<td>160.46</td>
<td>20 - 755</td>
</tr>
<tr>
<td>STRESS</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
It would be inappropriate to provide a mean for the variable age, because the variable has been categorised into the following age groups: less than 21, 21 - 25, 26 - 30, and more than 30 years. This categorisation was necessary to provide anonymity to the respondents due to the relatively small population of the nurses employed in this hospital.

The variables designation and working status have been assigned a specific numeric value for each category within that class. This has enabled a more detailed analysis to be performed, in order to assess which of the extraneous variables has had the most significant effect upon the primary variables, social support, life stress, and occupational stress. Multiple bivariate Pearson correlational analyses were performed between the primary variables and the extraneous variables. Table 2 reports the correlations between the extraneous variables with social support, occupational and life stress. For inclusion in Table 2, the correlation of the extraneous variables had to meet two statistical criteria: a) have a correlation coefficient of .2, and b) be significant at the .05 level.

The correlation between age and experience provides a simple test of the reliability of the statistical information. A positive correlation between age and experience; (as one would expect), of .63 (p = .0001), suggests that the remaining correlations are reliable.
Table 2
Bivariate Correlation Analysis of the Primary and Extraneous Variables

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<th>OCCUPATIONAL STRESS</th>
<th>LIFE STRESS</th>
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* N = 104

It can be noted from Table 2 that none of the extraneous variables appear to have any impact upon occupational stress. While on first impressions it appears that life stress is the only variable to have any significant correlation with occupational stress, first impressions do not necessarily reflect the true picture. Multiple regressions have been used to examine the amount of influence that each variable has upon occupational stress. Forwards, stepwise, and maximum $R^2$ methods were utilised. It is important to note that the results from the maximum $R^2$ and forward methods produced identical results. The stepwise procedure showed that only life stress produced any significant variance. However, the decision to use the results from the maximum $R^2$ improvement method was made as Munro, Visintainer, and Page, (1986, p. 109)
suggested that the maximum $R^2$ method of multiple regression is the superior procedure.

Only three of the variables significantly explained any of the variance ($p = .05$) for the dependent variable occupational stress. Life stress accounted for 5.3% of the variance, while life stress and social support combined accounted for 6.6%, and life stress in conjunction with both social support and time spent at work explained 7.6% of the variance.

**Discussion**

The small correlation coefficients found to exist between occupational stress and the other variables were not entirely unexpected as there are many factors which may contribute to the occupational stress phenomenon, which has been demonstrated by the literature review. Examples of those factors include: gender, personality, coping strategies, social support, and a sense of control over events. All may contribute to the complex nature of occupational stress.

The inverse relationship of $-0.22$ ($p = .05$) that was found in this population of nurses, between age and social support, was quite interesting. One would expect, that on the whole, as a person's age increases they would have had more time to form more extensive social support networks. Perhaps, because the greater proportion of this population is relatively young, they still may have close contact with their families. However, the results of this survey must be treated with some suspicion as the reliability of the social support section of the questionnaire was $0.42$ as calculated by Cronbach's coefficient alpha.
The findings of this research revealed that more of the experienced nurses were working in a part-time capacity when compared to the less experienced nurses. There may be several factors that could explain this phenomena. The more experienced nurses tend to be older, and they may have social commitments which prevent them from working full-time. For example, they may have school aged children to care for. Another possible explanation is that the more experienced nurses are working part-time to supplement their families' income.

Spoth and Konewko (1987) found in their study that "Statistical analysis did not support a relationship between life change stress and critical care stressors" (p. 281), whereas, this study showed that a relationship did exist between occupational and life stress. A Pearsons correlation of .23 (p < .02), and multiple regression (illustrating that life stress accounted for 5.3% of the variance p < .02) both indicate that a relationship does exist, albeit a weak relationship. There are two possible explanations for the differences of the results: a) two different instruments were used, and b) different samples were obtained. Spoth and Konewko only included nurses from intensive care units in their sample. Therefore, it is reasonable to argue that the different instrumentation and samples may be responsible for the contrasting results.

An important issue that needs to be discussed is the relevance of the results. The relationships that have been found to exist between the variables in this study are very minimal. In fact, the variables measured do not explain to any great degree
the variance of the nurses' stress at work. While the complexity of the stress phenomenon is extensive, one may have expected more significant relationships to be revealed.

Future Research

Research on any subject provides a realisation that research provides many more questions to be answered than it provides answers. This research needs replicating to assess the reliability of the results. A longitudinal study would be helpful in providing some information on how the stress levels of nurses change over time.

Limitations

The limitations for this research can be divided into two main categories; methodological and theoretical. The methodological limitations concern the reliability of the Nurses Stress Scale and the Social support instrument. As noted earlier both Topf (1989), and McCranie, Lambert, and Lambert, (1987) report .92 as being their Cronbach's coefficient for the nurses' stress scale, which differs significantly from the result of .32 for this study. In order to assess which factors were responsible for lowering the alpha coefficient result for this population, a factor analysis would be required. A factor analysis is beyond the scope of this study. Therefore, the reliability of this scale was a limitation. Similarly, Cronbach's coefficient of internal consistency for the social support instrument of .42 is relatively low. Hence, the results of the social support scores should be treated with due caution.

The theoretical limitations to be examined are the
applicability of the results from this study to other nursing populations. While the return rate of 49.5% exceeded the expected return rate, no definitive statements can be made about the population studied. A factor that compounds the issue of potential generalisation of the results of this survey to other hospitals, is the relative inability to explain the nurses' occupational stress levels by the variables studied in this research project. Only cautious inferences can be made about this population.

**Nursing Implications**

The vast amount of literature written about stress in nursing demonstrates that nurses are concerned about the possible effects that stress may have upon themselves, and their colleagues.

An area to be considered is how nurses cope with stress. There are times in the hospital situation when nurses can be heard laughing, which may be seen as being inappropriate behaviour for a caring profession. Hutchinson (1987) notes:

> Humour invariably cultivates good feelings. With its by-product of laughter, humour draws people together. ... Individuals who can laugh at themselves or at a difficult situation demonstrate an ability to accept a less than perfect word. (p. 196).

Expanding upon this idea, humour may be a therapeutic coping method that can defuse a stressful situation. In fact it may be possible that nurses who are laughing and happy are effectively dealing with occupational stress.

The idea of producing social support has been mentioned
previously. It is important to examine strategies that allow for the implementation of effective social support systems within a nursing situation. Shin Rosario, Morch, and Chestnut (1984, p. 875) suggest that attempting to foster social support is an important step by both employees and administration in reducing the effects that occupational stress may be having upon employees.

It should be emphasised that nurses also need to accept some of the responsibility for providing their own social support. Tschudin (1985, p. 46) notes: "Nurses need support from groups because there is so much 'giving' work that it must be balanced by a 'receiving' or personal 'refuelling'". Nurses can provide their own social support, by using the nurturing and caring skills that are used for patients on each other, as suggested by Kornick Wilson, (1986, p. 47). One type of this social support could just be thanking other colleagues who have helped on a busy shift. The two words, thank you, are often the types of support that are needed, and probably the most neglected.

Conclusion

The findings of this research revealed that the population studied reported low scores for both occupational and life stress. These results, especially concerning occupational stress, conflict markedly with the findings of many other researchers. However, it must be emphasised that the low internal consistency of the occupational stress scores of .32 suggests that due caution should be used when interpreting the results of this study. The hypothesis of this study has been supported by the data presented, but the small size of the correlations suggest that a major
portion of the nurses' occupational stress cannot be explained by
the variables studied in this project.

It is important to remember that the nurses stress levels
have only been assessed for a two week period. It is not possible
to infer that the nurses from this population do not suffer from
elevated stress levels at other times of the year. A longitudinal
study would be required to provide more detailed information on
how the stress levels fluctuate in this population.

There is a great deal of scope for the reduction of the
harm that may result from occupational stress, by both nursing
administration and nurses themselves. The ideas presented in the
nursing implication section are not aimed at the hospital that
participated in this research (as the nursing staff there at the
moment appear to be under little stress), but rather, are thoughts
that may be implemented by any hospital that wishes to reduce
occupational stress, and an improvement of patient care may
result.
Reference List


Hingley, P Harris, P. (1986), Burn-out at senior level, *Nursing Times*, 82(31), pp. 28-29.


Reeder, L. Ramacher, L. Gorelink, S. (1976), Handbook of Scales And indicies of Health Behaviour, Goodyear publishing company, California.


Appendix A

Dear colleague,

you are requested to participate in a research project looking at the stress of nurses. There are times in our lives when our life runs smoothly, at other times our plans are disrupted. These disruptions may lead to unpleasant feelings which may result from the phenomenon termed stress. In order to reduce stress, it is important to study the various factors that may contribute to elevated stress levels. The information you supply may allow the identification of some of the major causes of stress.

When supplying information for research you have certain rights that are guaranteed. They are:

1. Your participation is voluntary.
2. You have the right to refuse to participate.
3. Anonymity is guaranteed.
4. All information supplied will be grouped to prevent the identification of any one individual.

INSTRUCTIONS

PLEASE DO NOT IDENTIFY YOURSELF IN ANY WAY ON THE ANSWER FORM.

PLEASE SEAL THE COMPLETED SURVEY IN THE ENVELOPE SUPPLIED.

If you have any questions about this project, please do not hesitate to contact JUDY URBANECK who will try to answer your questions.

YOURS SINCERELY

CHRISTOPHER BILLAM.
Appendix B

Nurse's stress inventory

This inventory assesses two aspects of stress, and the social support that you receive. This inventory will take approximately 15 - 30 minutes of your time to complete. The following scales are presented by: Cochrane and Robertson 1973, Gray-Toft and Anderson 1981, and Bullough (in Reeder, Rachmer and Gorelink 1976), respectively.

The information that you supply in this section will allow for a more detailed analysis of stress in various categories.

PLEASE PLACE A CROSS IN THE APPROPRIATE PLACES.

Please indicate your sex.  
F ( )  M ( )

Please indicate your designation.  
RN ( )  EN ( )  STUDENT ( )

Please identify your current Nursing stream.  
STAFF DEVELOPMENT ( )  CLINICAL ( )  MANAGEMENT ( )  RESEARCH ( )

Are you currently working:  FULL TIME ( )  OR  PART TIME ( )

How many years experience have you had at your current level? e.g.  
RN EN.  
Less than 1 year.  ( )  
1 year or more, less than 3 years.  ( )  
3 or more years, less than 5 years.  ( )  
5 or more years, less than 7 years.  ( )  
7 or more years, less than 9 years.  ( )

Please indicate your age from the following categories.  
Less than 21 years  ( )  
21 - 25 years.  ( )  
26 - 30 years.  ( )  
more than 30 years.  ( )
This section examines the factors that occur in our general lives that may affect stress levels. Please indicate with a cross in the appropriate place, those events which you have experienced in the last twelve months. This section was designed by Cochrane and Robertson 1973.

PART A.

UNEMPLOYMENT.

TROUBLE WITH SUPERIORS AT WORK.

NEW JOB IN SAME LINE OF WORK.

NEW JOB IN NEW LINE OF WORK.

CHANGE OF HOURS OR CONDITIONS IN PRESENT JOB.

PROMOTION OR CHANGES IN RESPONSIBILITY AT WORK.

RETIREMENT.

MOVING HOUSE.

PURCHASING OWN HOUSE (TAKING OUT MORTGAGE).

NEW NEIGHBOURS.

QUARREL WITH NEIGHBOURS.

INCOME INCREASED SUBSTANTIALLY (25%).

INCOME DECREASED SUBSTANTIALLY (25%).

GETTING INTO DEBT BEYOND MEANS OF REPAYMENT.

GOING ON HOLIDAY.

CONVICTION FOR MINOR VIOLATION (e.g. SPEEDING OR DRUNKENESS).

JAIL SENTENCE.

INvolvEMENT IN FIGHT.

IMMEDIATE FAMILY MEMBER STARTS DRINKING HEAVILY.

IMMEDIATE FAMILY MEMBER ATTEMPTS SUICIDE.

IMMEDIATE FAMILY MEMBER SENT TO PRISON.

DEATH OF IMMEDIATE FAMILY MEMBER.
DEATH OF A CLOSE FRIEND.
IMMEDIATE FAMILY MEMBER SERIOUSLY ILL.
GAIN OF A NEW FAMILY MEMBER (IMMEDIATE).
PROBLEMS RELATED TO ALCOHOL OR DRUGS.
SERIOUS RESTRICTIONS OF SOCIAL LIFE.
PERIODS OF HOMELESSNESS (HOSTEL OR SLEEPING ROUGH).
SERIOUS ILLNESS OR INJURY REQUIRING HOSPITAL TREATMENT.
PROLONGED ILL HEALTH REQUIRING TREATMENT BY OWN DOCTOR.
SUDDEN AND SERIOUS IMPAIRMENT OF VISION OR HEARING.
UNWANTED PREGNANCY.
MISCARRIAGE.
ABORTION.
SEX DIFFICULTIES.
Please answer PART B OR C, depending upon which part (B OR C) best suits your current situation.

PART B.

MARRIAGE.
PREGNANCY (OR OF WIFE).
INCREASED NUMBER OF ARGUMENTS WITH SPOUSE.
INCREASE IN NUMBER OF ARGUMENTS WITH IMMEDIATE FAMILY MEMBERS (e.g. CHILDREN).
TROUBLE WITH OTHER RELATIVES (e.g. IN-LAWS).
SON OR DAUGHTER LEFT HOME.
CHILDREN IN CARE OF OTHERS.
TROUBLE OR BEHAVIOUR PROBLEMS IN OWN CHILDREN.
DEATH OF SPOUSE.
DIVORCE.
MARITAL SEPARATION.
EXTRA-MARITAL AFFAIR.
BREAK UP OF AFFAIR.
INFIDELITY OF SPOUSE.
MARITAL RECONCILIATION.
SPOUSE BEGINS OR STOPS WORK.

PART C.
BREAK UP WITH STEADY BOY OR GIRL FRIEND.
PROBLEMS RELATED TO SEXUAL RELATIONSHIPS.
INCREASE IN NUMBER OF FAMILY ARGUMENTS (e.g. WITH PARENTS).
BREAK UP OF FAMILY.
Stress is commonly found in the working environment, this section aims to identify some of the causes of stress in the nursing profession. Developed by Gray-Toft and Anderson 1981.

Please rate the following factors that you may have experienced in the last week by circling the appropriate number: 0 = never, 1 = occasionally, 2 = frequently, 3 = very frequently.

- Breakdown of a computer.
- Criticism by a doctor.
- Performing procedures that patients experience as painful.
- Feeling helpless in the case of a patient who fails to improve.
- Conflict with a supervisor.
- Listening or talking to a patient about his/her approaching death.
- Lack of an opportunity to talk openly with other ward personnel about problems on the ward.
- The death of a patient.
- Conflict with a doctor.
- Fear of making a mistake in treating a patient.
- Lack of an opportunity to share experiences and feelings with other personnel on the ward.
- The death of a patient with whom you developed a close relationship.
- Doctor not being present when a patient dies.
- Disagreement concerning the treatment of a patient.
- Feeling inadequately prepared to help with the emotional needs of a patient's family.
- Lack of an opportunity to express to other personnel on the ward my negative feelings towards patients.
INADEQUATE INFORMATION FROM A DOCTOR REGARDING THE MEDICAL CONDITION OF A PATIENT.

BEING ASKED A QUESTION BY A PATIENT FOR WHICH I DO NOT HAVE A SATISFACTORY ANSWER.

MAKING A DECISION CONCERNING A PATIENT WHEN THE DOCTOR IS UNAVAILABLE.

FLOATING TO OTHER WARDS THAT ARE SHORT-STAFFED.

WATCHING A PATIENT SUFFER.

DIFFICULTY IN WORKING WITH A PARTICULAR NURSE (OR NURSES) OUTSIDE THE WARD.

FEELING INADEQUATELY PREPARED TO HELP WITH THE EMOTIONAL NEEDS OF A PATIENT.

CRITICISM BY A SUPERVISOR.

UNPREDICTABLE STAFFING AND ROSTERING.

A DOCTOR ORDERING WHAT APPEARS TO BE INAPPROPRIATE TREATMENT FOR A PATIENT.

TOO MANY NON-NURSING TASKS REQUIRED SUCH AS CLERICAL WORK.

NOT ENOUGH TIME TO PROVIDE EMOTIONAL SUPPORT TO A PATIENT.

DIFFICULTY IN WORKING WITH A PARTICULAR NURSE (OR NURSES) ON THE WARD.

NOT ENOUGH TIME TO COMPLETE ALL MY NURSING TASKS.

A DOCTOR NOT BEING PRESENT IN A MEDICAL EMERGENCY.

NOT KNOWING WHAT A PATIENT OR PATIENT'S FAMILY OUGHT TO BE TOLD ABOUT THE PATIENT'S MEDICAL CONDITION OR TREATMENT.

UNCERTAINTY REGARDING THE OPERATION AND FUNCTIONING OF SPECIALIZED EQUIPMENT.

NOT ENOUGH STAFF TO ADEQUATELY COVER THE WARD.
The amount of social support that a person receives has been shown to affect how people respond to stress.

Do not use specific previous experiences to answer these questions. Please answer the following questions by circling the appropriate response.

1 = strongly agree, 2 = agree, 3 = disagree, 4 = strongly disagree, and, 5 = not applicable.

Adapted from Bullough (in Reeder, Rachmer and Gorelink 1976).

I HAVE SEVERAL FRIENDS WHO WILL ALWAYS HELP ME.

I CANNOT ALWAYS COUNT ON MY FAMILY FOR HELP.

I CAN TELL MY TROUBLES TO MY PARTNER AND MY PARTNER WILL HELP ME.

I HAVE NO-ONE TO LOOK AFTER ME IF I AM SICK AT HOME.

I HAVE AT LEAST TWO VERY CLOSE FRIENDS TO TALK TO. (NOT COUNTING PARTNER).

I CAN COUNT ON MY FAMILY TO LEND ME MONEY IF I NEED MONEY.