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Full Name of Author — Nom complet de l'auteur

Roxanne Mary Whetmore

Date of Birth — Date de naissance  
19/02/56

Country of Birth — Lieu de naissance  
Canada

Permanent Address — Résidence fixe

138 Banning Road  
Kanata, Ontario  
K2L 1C2

Title of Thesis — Titre de la thèse

Absence From Work In Two Halifax Hospitals

University — Université

Saint Mary's University

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1983

Name of Supervisor — Nom du directeur de thèse

Dr. J.K. Chadwick-Jones

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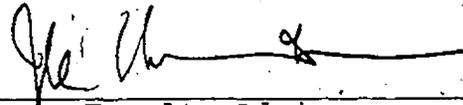
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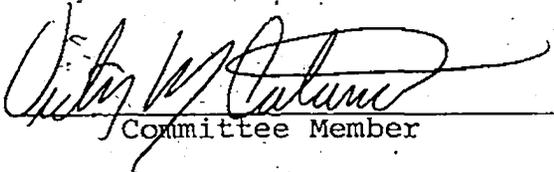
Roxanne Mary Whetmore

Submitted in partial fulfillment of the  
requirements for the degree of  
Master of Science  
at Saint Mary's University  
Halifax, Nova Scotia

Approved:

  
\_\_\_\_\_  
Faculty Advisor

Approved:

  
\_\_\_\_\_  
Committee Member

Approved:

  
\_\_\_\_\_  
External Committee Member

Date:

April 14, 1983

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## Abstract

Roxanne Mary Whetmore

## Absence Among Nurses in Two Halifax Hospitals

April 8, 1983

The present study investigated grade, marital status, age, length of service, shift and type of ward, in relation to short (1-2 days) and long (3 or more days) term absence levels in the nursing profession. Employee personnel records, for 678 nursing personnel, were obtained from two hospitals. Each individual absence was recorded noting the day of the week, month of occurrence, length of the absence and the type of shift. In addition, 40 subjects participated in answering an interview checklist regarding reasons why absences occurred. As predicted the total and short term absences decreased with increased levels of skill although the number of long term absences generally did not increase with increased grade levels. For marital status, the divorced group obtained the highest overall absence levels, comprised mainly of long term absences. As age increased the number of short term absences decreased and the number of long term absences

increased. The number of short term absences decreased as the length of service increased, although a covariate analyses did not support these results. Long term absences were more prevalent for workers with a longer tenure than for workers with a shorter length of service, within one hospital only. The 8 hour shift cycle produced more overall absences with the duration of each absence being longer than the 12 hour shift cycle. The day shifts for both cycles had the most absences with Mondays producing the most absences for the 8 hour cycle and Fridays for the 12 hour cycle. Wards considered stressful had shorter absence levels and fewer long term absences when compared to all other wards. "Serious domestic problems" was the most frequently given response to why absences occurred. It was concluded that it is useful to make a distinction between short and long term absences within the general definition of absence.

Definitions

- C.H. - Combined Hospital Data
- V.G. - Victoria General Hospital
- I.W.K. - Izaak Walton Killam Hospital
- Unit Coörd. - Unit Coordinator
- R.N. - Registered Nurse
- C.N.A. - Certified Nurses' Assistant
- N.A. - Nursing Aide

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## Absence Among Nurses in Two Halifax Hospitals

Absenteeism is often said, by management and by the press, to be an increasingly prominent problem in all sectors of the work force. It is acknowledged as a problem in many countries where there are fixed work schedules. Regardless of ideological differences, it emerges as a problem in European, Asian, American and African societies (Chadwick-Jones, 1980). Absence from work has been recognized as a management problem (Chadwick-Jones, 1980). It is of more concern than wastage or turnover, since the results of absenteeism constitute a very large cost item in every organizations budget. Taylor (1974) has stated that absence costs are roughly equal to the total expenditure of the National Health Service of Britain. Furthermore, a higher proportion of the working population is now taking time off work due to incapacity; those who do so are absent more frequently than used to be the case. Taylor estimates that only 80 percent of all sickness absences might be genuinely the result of incapacitating medical problems. Estimates based on Britain's national insurance claims

show that 300 million working days are lost due to certified illness alone. This figure does not include certified absence of less than 3 days or of time lost by women not eligible for benefits (Franks, 1972). In Canada, based upon Ontario government statistics and on a survey by the I.R. Research Services of Kingston, the Financial Times estimated that 97.5 million days were lost in 1977 through accidents and illness, compared with 93.1 million days lost in 1975 (cited from Chadwick-Jones, 1980). The literature suggests that it is not so much the duration of the absences which is rising but the frequency of occurrence of absences under 2 days duration (Clark, 1975; Cooper & Payne, 1965; Redfern, 1978; Taylor, 1974).

#### Absence in Hospitals

Hospitals, one of the largest employers in the country, have done little in the way of experimentation with new absence control systems, and of what has been applied, little or no follow-up research has been done. In fact, Redfern (1978) states that absence in the nursing profession is an increasing problem with most

of the research literature on absence applying to industrial workers. She also argues that there are characteristics peculiar to the work done by nurses that make them an unique group, with different patterns of attendance (and absence), from those of other workers. It would seem that at the hospital level the basic information is not available for the administrators to identify particular problem areas within the organization. Brookes and Gardiner (1972) have emphasized the need for information on absences to be communicated to all levels of management including the unit officers and the charge nurses. There is no doubt that first line management is able to play a role in the reduction of absence levels (Brookes & Gardiner, 1972), but there must be enough information to enable judgements to be made on absence levels of the unit in question in relation to other units in the group. However, to date such information has not been provided mainly due to the time and cost factors involved in gathering such information.

### Defining Absence

"Absence" has been used to describe a variety of behaviors. Additionally related terms, such as "absenteeism", "nonattendance", "sickness absence" and "short term absence", have been used to describe these same behaviors. The first step in any study on absenteeism is to operationally define this concept.

Roberts' Dictionary of Industrial Relations (1971) defines absence as a "temporary unavailability from work lasting one or more days or shifts. It is to be distinguished from lateness which is of lesser duration than one day or shift, even though the employee may be unavailable when needed for work assignment" (pp.3-4). Marsh and Evans (1973) define absence as "the failure of workers to report to work" (p.11). The British Institute of Management defines absence as "lost time, whatever the cause or reason given, of over one hours' duration" and defines absenteeism as "the kind of absence which a reasonable person, having regard to all existing circumstances, may regard as avoidable" (cited from Marsh & Evans, 1973, p.11). Marsh and

Evans also state that difficulties in defining absence as well as measuring it, reside in distinguishing reasons for the absence and assessing the degree of responsibility to be attributed to the absentee. Thus the definition of absence can range from those that involve any failure to attend work, including those due to sickness and holidays, to definitions that are based on unscheduled time off that is, not deemed to be justified. Marsh and Evans suggest that these two types of absences can be separated by designating them as voluntary vs. involuntary or avoidable vs. unavoidable.

In a Canadian context the dictionary of Canadian Labour Terms (1978) defines absenteeism as " absence from work, the personnel problem created by absence. An excused absence is one an employer permits as being legitimate, personal or business reasons. Chronic absenteeism involves habitual or frequently recurrent absences from work " (p.1). The Canadian Labour Arbitration (1977) refers to absence in terms of authorized vs. unauthorized and innocent, blameless absence. An innocent absence is felt to have a

justifiable reason and permission for the absence such as illness of self, spouse or children. An unauthorized, voluntary absence refers to those absences which are taken without permission of the employer or without just cause. The Canadian Labour Arbitration further states that "...it is beyond dispute that an employee that is absent from work on one or more occasions without permission, without justifiable reason, or without having provided his employer with an adequate notice, may be properly disciplined and in certain instances even discharged" (p.293).

#### An Operational Definition of Absence

In operationally defining absence, a quantitative, as well as a qualitative, distinction must be made (Chadwick-Jones, 1980). Firstly, there is the long term absences which is characterized by 3 or more days away from work. Absences of long durations are likely to be the result of serious illness or injury and are generally felt to be unavoidable. Chadwick-Jones, Brown and Nicholson (1973) call this an A-type absence

which includes serious illness, holidays, jury duty and other causes which are obviously unavoidable.

Secondly, there is the short term absence of 1 or 2 days duration. This brief absence, termed B-type (Chadwick-Jones et al, 1973), is often the expression of an employees' decision not to attend work. As it may be impossible to check excuses for the true cause of a brief absence, this type is felt to be under the employees' own control resulting from a personal decision to take a day off. The present research will utilize the definition of absence that has been presented by Chadwick-Jones et.al (1973).

Specifically, absence will be divided into two categories, short term and long term absences.

#### Short Term Absence

Using the above operational definition, short term absences are looked upon as psychological phenomena which, to some degree, constitute a voluntary withdrawal from work. The literature abounds with possible explanations of the causes of short term absences. Hill and Trist (1953) call it a an

expression of tensions through minor illnesses and accidents. This type of absence is without formal permission of the organization. As Gibson (1966) points out, it is short enough not to activate legitimizing procedures. Thus, to an extent, it is concerned with what the organization considers legitimate as well as what the individual considers tolerable. Other possibilities for the occurrence of short term absence include a variety of explanations ranging from a way of resolving perceived inequity (Adams, 1965); to a reward/cost consideration of job satisfaction (Vroom, 1965); to push/pull explanations of high satisfaction associated with high absence (As, 1962); to the consideration of distance travelled from place of residence to place of employment (Nicholson & Goodge, 1976). Although theories have postulated the causes of short term absences, there has been little empirical research in this area.

#### Factors Related to Absence

Many variables have been suggested as contributing to increased general absence rates. Age, sex, marital

status, tenure, job status, size of the work unit, job satisfaction, day of the week, shift and the labour and employment climate have all been investigated. The main findings for each of these variables are briefly reviewed with special emphasis placed on absence research relevant to nursing.

### Shift

In industrial settings, shift workers have lower absence levels than day workers (Taylor, 1974). In nursing, special problems arise with the shift system. Vahey (1974) has found that long days of duty (12 hour shifts) amount to a significant discouragement for nurses to go to work. Long days were found to account for up to 20 percent more absences than short days of duty (8 hour shifts). However, Brookes and Gardiner (1972) did not find any correlation with length of shift and absence levels. Day and night shifts have also been investigated and no significant relationship has been found for the time of day the shift occurs (Brookes & Gardiner, 1974; Clark, 1975; Taylor, 1974).

Day of Week

Investigations of absence rates according to the day of the week and rest days have also provided contradictory results. Brookes and Gardiner (1972) and Vahey (1971) found that weekends offer the highest absence rates. Clark (1975) suggests that the day(s) immediately following official rest days produce the highest absence rates (this finding was not consistent throughout Clark's study).

Job Status

Taylor (1974) showed that absence levels tend to fall with increasing levels of skill. Rushworth (1975) also found a high negative correlation between levels of responsibility and levels of absence among nurses. This suggests that the more responsibility the nurse is given or the more qualified the nurse is (staff nurse, charge nurse or administrator) the lower the absence rate.

Age and Tenure

Age and absence frequency, but not age and duration, are negatively related (Chadwick-Jones et al, 1973; Nicholson, Brown & Chadwick-Jones, 1977). On the other hand, Cooper and Payne (1965) did not find this relationship between age and absence frequency; in fact older workers had increased absence levels. However, Cooper and Payne did not distinguish between short and long term absences. Generally it has been found that older workers have fewer short term absences than younger workers; their absences are of a longer duration (Froggatt, 1970; Nicholson et al, 1977). This trend has also been found in the nursing profession. The Kings Fund Centre has found that younger nurses tend to have more frequent absences but the duration of each is longer in older nurses (cited from Redfern, 1978). Franks (1972) has also supported the relationship of increased age and tenure resulting in a decrease in absence levels. However, Rushworth (1975) has suggested that a change is occurring in the work force through the attitudes of younger persons towards regular attendance. This idea, though, has not

been borne out through empirical research.

### Marital Status

In industrial settings, marital status and family responsibility affect absence levels. Chadwick-Jones et al (1973) found that married women incurred more absences than single women and that their absence level increased with the number of dependent children. In nurses, this variable has not been extensively investigated. Clark (1975) found no significant relationship of marital status and absence whereas Franks (1972) concluded absence in women increases with the number of dependent children.

### Size of Work Unit

The size of the organization, the hospital, as well as the work unit, the ward, seems to bear a positive relationship to absence and turnover (Taylor, 1974; Weiland, 1969). However, Clark (1975) did not find a significant difference in the frequency of short term absences as related to hospital size. Redfern

(1978) suggests that the "...organizational size by itself is not sufficient to exert a systematic influence on absence" (p.235). The size of the work unit (ward, department, etc.) may be more important since it may reveal differences in the social network and "absence cultures prevailing" (p.235). This idea has been supported by a number of studies with nurses which have found interesting differences in absences according to the type of ward. Meates (1971) found that the most heavily populated wards, in comparison to the underused wards, produced less absences. There was a solid nucleus created by permanent staff which in turn produced a stable working environment with no time for boredom. In the underused wards Meates found a weak nucleus, or team effort, with high boredom levels.

Rushworth (1975) hypothesised that there was an optimum level of staffing for each ward which was determined by the work load, rather than bed numbers. If staffing falls far below or rises well above the work load, then absences should increase. Rushworth felt that in the first case the stresses imposed by attempting to meet impossible demands become

intolerable and that some members respond by taking a day off. At the other extreme, when a ward is overstaffed a nurse may feel that she is not an important member of the team and will yield to the temptation of a day off. Peacock (1977) investigated absence amongst nurses as a response to extra work load. A significant difference was not found in absence levels. However, increased absence rates were noted after the peak of extra duty. Peacock suggested that the nurses felt too obligated during very busy periods to take sick time.

#### Type of Work Unit

Parkes (1980) compared medical and surgical wards. She showed that while there were higher levels of anxiety and depression and lower levels of work satisfaction on medical wards, there was no difference in the amount of absence taken between both. On the other hand Rushworth (1975) found that lower absence rates occurred on medical wards with only female patients.

### Supervisory Style

Research on supervisory style, in industrial settings, suggests that the more democratic the style, the lower the level of absence (Chadwick-Jones et al., 1973). In nursing, this factor has not been given much consideration. Vahey (1971) has suggested, though, that absence rates may be high under conditions of 'bad' management. Meates (1971) recognizes the need for a supportive team on the ward to help alleviate the temptation of unnecessary absences.

### Job Satisfaction

While the relationship between absence and job satisfaction has been widely researched, in general too few studies involved nurses. Decreased job satisfaction is believed to lead to increased absence levels and ultimately a high turnover rate (Hulin, 1966, 1968; Singh & Smith, 1975). In relation to student nurses, Clark (1975) did not find job satisfaction to be a predictor of short term absences. In fact, the whole relationship of job satisfaction and

absence levels has been questioned (Nicholson et al, 1976; Taylor, 1974). Other factors outside the work place must be taken into consideration. Family responsibility, weather, travelling difficulties, etc., all may affect one's decision to go to work. However, Meates (1971) and Rushworth (1975) suggest that a nurse must feel part of the team in order to be satisfied. They believe this means sharing in an adequate workload.

#### Labour Climate

In the past there has been a commonly held belief that the frequency of absence increases as the shortage of labour increases (Peacock, 1977). However, Taylor (1974) suggests that absence levels are higher when there is high unemployment. Chadwick-Jones et al (1973) suggest that the fear of unemployment may reduce turnover, but it could increase job dissatisfaction and absence because of the workers' restricted mobility. Little research has been done on this factor.

Summary of Absence Research

Research in the area of absence has produced many contradictory findings. This is not surprising given the failure to define what is meant by absence. In addition many of the statistical procedures that have been employed in these studies may have not been sensitive enough to establish significance. There are other methodological problems with the work that has been done. Factors such as sample size and the length of time under investigation have been left uncontrolled. While Proggatt (1970) examined a 7 year period, Rushworth (1975) examined a period of only 13 days. Also omitted in the past, have been any considerations of the larger social, cultural and historical settings of these studies. To find any real trends in absence rates more stringent methods of data gathering and analyses must be employed. This is especially so in detecting absence trends in the nursing profession.

Again very few researchers in this area have distinguished absence rates by length, even though

Brookes and Gardiner (1972) have found that 73 per cent of the total absences which occurred during a 4 week period at four different hospitals were of 3 days or less. This figure clearly indicates that short term absence is the usual type of absence. Other investigations have failed to make the distinction between long and short term absences and have reported only total absence figures. This failure prevents any conclusions from being made about the full scope of the problem.

In seeking causal relationships for absences, researchers adopt one of two approaches: (1) they may look upon absence as one more criterion variable, usually signifying individual withdrawal from aversive work conditions; or (2) they may adopt a managerial view of absence as a threat to organizational effectiveness, motivated by something that is clearly labeled 'proneness'. As Johns and Nicholson (1982) point out, these restricted meanings have limited the overall understanding of the phenomenon of absence.

Although briefly mentioned by previous studies,



individual differences in relation to absenteeism has not been given much consideration. As Johns and Nicholson (1982) state, absence events are 'phenomenologically unique'. That is, absence means different things to different people at different times in different situations - not all absences are just to avoid work, as generalizations of previous research would lead one to believe. It has been suggested, and rightly so, that a more closely contingent approach is needed in an attempt to uncover the specific contextual conditions that apply to individual episodes.

#### Purpose of the Present Study

The purpose of the present study is to investigate the absence levels on both a long term (3 days or more) and a short term (2 days or less) basis in the nursing profession in two Halifax, Nova Scotia hospitals. Primary interest is in those absences that are of 1 or 2 days duration. These types of absences are the most costly to the smooth running of any ward or hospital. In addition it is hoped that trends will be established for six factors which are felt to play a major role in

contributing to absence: grade, marital status, age, length of service, shift and ward.

### Grade

Previous research on grade has shown that absence levels tend to fall with increasing levels of skill (Rushworth, 1975; Taylor, 1974). It would seem plausible to apply this finding to the frequency of short term absences as well. Although there has been little work on long term absences in the nursing profession, it is likely that nurses in the higher positions are older with a higher sense of responsibility. Absences for these nurses should be for serious illness only. Thus, needing a longer time to recover this group should have more long term absences. In the present study five grades of nurses are investigated. The lowest grade is that of nursing attendants. No formal training is required of people in this position. However, these employees generally have a high school education. Their duties include menial ward tasks such as making beds, cleaning bed pans and running errands for the other nurses. The

next class is the Certified Nursing Assistants (C.N.A.). The C.N.A. undergoes a 1 to 2 year training program. The duties of the C.N.A. involve a higher level of nursing skill including caring for the personal hygiene of the patients, taking vital signs as well as making beds. The Registered Nurses (R.N.), have a 2 to 3 year training program provided by nursing schools at various hospitals. The duties of the R.N.'s involve more responsibility than the previous two grades. For example, the R.N.'s carry out the orders of the doctors by dispensing medicines, giving injections and taking blood samples. The administration of the ward is carried out by Head Nurses (R.N.) who have acquired these positions through experience, and by the unit coordinators, the highest position. Unit Coordinators usually have a university degree as well as several years of nursing experience.

With respect to grade, two hypotheses are postulated.

Hypothesis 1      The higher the rank or position, the lower the total number of absences.

» Hypothesis 2 The higher the grade of the employee, the greater the proportion of long term absences.

### Marital Status

For marital status, past studies have concluded that married women incur more absences than do single women (Chadwick-Jones et al, 1973; Franks, 1972), however, Clark (1975) found no significant relationship of marital status to absence. In the present study four categories of marital status are investigated: single, married, divorced and widowed. While previous research is inconclusive with regard to the relationship of marital status and long term absences, it is possible that divorced or widowed status may lead to more long term absences. This seems reasonable as other variables such as age as well as added domestic responsibility may be related factors.

Hypothesis 3 The highest number of total absences as well as the most number of short term absences will occur for the married nursing personnel.

Age

It has been the consensus of much of the past research that the frequency of absences are much higher in younger workers (Chadwick-Jones et al, 1973; Franks, 1972; Nicholson et al, 1977). When a breakdown of the number of short term absences is made, older workers still have fewer absences but the duration of each tends to be longer (Froggatt, 1970; Nicholson et al, 1977).

Hypothesis 4 As age increases, the frequency of the total absences and the number of short term absences will decrease.

Hypothesis 5 As age increases, the duration of each absence will also increase.

Length of Service

As with age, as tenure or length of service increases, there is a decrease of absence levels (Franks, 1972). However for length of service, age may

be directly related. As length of service increases so does age, although it is not solely dependent upon age. Thus, the specific hypotheses for length of service are quite similar to those made for age.

Hypothesis 6 As length of service increases, the frequency of the total absences and the number of short term absences will decrease.

Hypothesis 7 As job tenure increases, so does the number of long term absences.

### Shift

Research on shift has produced inconclusive results. Vahey (1974) found that 12 hour shifts produced higher absence levels in comparison to 8 hour shifts. However, Brookes and Gardiner (1972) did not find any differences in these two types of shift systems. Comparison of time of day the shift begins, also revealed no significant relationships (Brookes & Gardiner, 1972; Clark, 1975; Taylor, 1974). Some investigations of absence rates, according to day of

the week, have shown that weekends produce the highest rates (Brookes & Gardiner, 1972; Vahey, 1974) while others suggest absences increase immediately following rest days (Clark, 1975). Thus, hypotheses regarding shift are difficult to make. First, the shifts must be categorized according to length, as both hospitals employ long (12 hour) and short (8 hour) duty shifts. Next, the time of day the shift occurs must be considered. For the 8 hour shifts there are three times during the day that the shift may begin; 7 a.m. (day shift); 3 p.m. (evening shift); and 11 p.m. (night shift). For the 12 hour shifts there are four times during a work day that a shift may begin; 7 a.m. (for both the 12 hour and 8 hour day shifts); 3 p.m. (8 hour evening shift); 7 p.m. (12 hour night shift); and 11 p.m. (for both the 12 hour evening and the 8 hour night shifts). For an examination of absences according to the day of the week, there are three different groups. Group A includes the 12 hour shifts where weekends are worked however, the official rest days are not known. Group B contains those working 8 hour shifts including weekends and again the official rest days are not known. Group C is for those

nurses working 8 hour shifts on week days only with the official rest days being Saturday and Sunday. Because of the complexity of the shift variable any general hypotheses concerning the length of the absences (short vs. long) will not be made. The length of the shifts, the day of occurrence as well as the rates of absences will, however, be examined in detail.

Hypothesis 8 A higher proportion of absences will occur during 12 hour shifts as compared to 8 hour shifts.

Hypothesis 9 For the 8 hour shifts, higher absences will occur during night shifts (11 p.m. to 7 a.m.) than during the day shifts (7 a.m. to 3 p.m.).

Hypothesis 10 For the 12 hour shifts higher absences will occur during the night shifts (7 p.m. to 7 a.m.) than during the day shifts (7 a.m. to 7 p.m.).

#### Ward

With regard to ward, work load and stress factors must be considered in discussing absence. As

previously stated, the most heavily populated wards produce less absence levels as compared to underused wards (Meates, 1971). Rushworth (1975), however, postulated absence levels to be related to workload rather than bed numbers. A review of the literature on stress factors related to type of ward does not suggest any differences in absence levels, although, Parkes (1980) found higher anxiety and depression levels on medical wards. Based on interviews with nursing personnel, intensive care units are considered to produce higher stress levels than found on any other hospital ward.

Hypothesis 11      The absences will be less on wards where there is an average work load than on those where the load is above or below average.

Hypothesis 12      Wards producing high stress levels, such as intensive care units, will have higher absence levels than those that are less stressful.

### Individual Differences

There are many different theories about why an individual takes time off from work. Much of this research has dealt with job satisfaction (Aas, 1962; Adams, 1965; Hill & Trist, 1953; Vroom, 1965). Others have considered the level of absences the organization would consider tolerable (Gibson, 1966) as well as distance travelled from place of residence to work (Nicholson & Goodge, 1976). More recent trends in looking at individual differences suggest that each absence is unique and that broad generalizations regarding the causes cannot be made (Johns & Nicholson, 1982). It is not the intention of this research to try to determine the personal reasons behind individual absences. However, a small sample of nurses will be randomly selected to answer a specifically designed questionnaire regarding reasons why they take time off from work. It is hoped that this might reveal, in very general terms, why some absences occur.

In addition to the foregoing analyses involving both hospitals, inter hospital comparisons will be

made to examine the effects of different organizational structures on absence behavior as one hospital is a pediatric hospital and the other is a general hospital.

#### METHOD

##### Sample

The sample consisted of 678 selected nursing personnel from two hospitals, the Victoria General (V.G.) and the Izaak Walton Killam Hospital for Children (I.W.K.), both of which were located in Halifax, Nova Scotia. Of this total, 483 were from V.G. and 195 from I.W.K.. Ages of the nursing personnel ranged between 20 and 67 years ( $\bar{x}=29.9$ ), their length of service spanned from one to 32 years ( $\bar{x}=4.01$ ).

In addition a small sample of 40 (39 female and 1 male) were randomly selected from the total sample of nursing personnel from V.G.. The subjects in this sample were asked to answer an interview questionnaire specifically designed for this study (Appendix A). The mean age of this group was 36.5 years and the mean

length of service was 8 years.

### Procedure

The time period under investigation was from January 1 to December 31, 1979. During this time period the employment climate was optimistic with layoffs or ward closures not presenting a problem. In fact 1979 saw expansion as a new hospital had just recently opened in the area. The labour climate was also favourable with no disputes or unrest reported. However, the early to mid seventies saw high unemployment among nurses in this area as well as across Canada. Contributing to the high unemployment level was a slow economic climate resulting in freezes on expansions and the closure of wards.

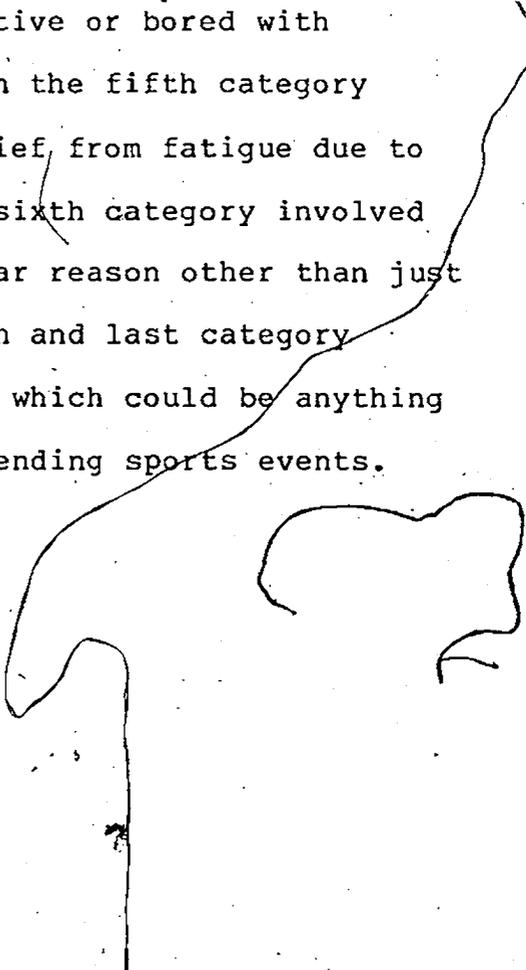
Data collection involved gaining access to employee records from the personnel departments of each hospital and recording the absences incurred by each member of the nursing staff. To be included in the sample, an employee must have remained on the same ward for the entire period of the year under investigation, or had documented ward changes which enabled the

employee to be followed on the new ward. If a record of the move was not found or if the nurse left the hospital, that employee was excluded from the study. To protect the privacy and to ensure confidentiality of each employee, all data were coded.

From each employee's record the following specific information was obtained: sex, age, marital status, length of service, grade and the ward on which the employee worked. Each individual absence was recorded noting the day of the week, month of occurrence, length of the absence and the type of shift. Shifts were categorized as follows: Short Day - 7 a.m. to 3 p.m.; Long day - 7 a.m. to 7 p.m.; Short Evening - 3 p.m. to 11 p.m.; Long Evening - 11 p.m. to 11 a.m.; Short Night - 11 p.m. to 7 a.m.; Long Night - 7 p.m. to 7 a.m..

During the year of 1980, 40 subjects were interviewed and asked to fill out a questionnaire regarding the question "For what reasons would you take a day off work?". The questionnaire itself involved two classes of explanations for absences. The first class

included purposive reasons, that is, domestic responsibilities and personal business. The second class was comprised of personal reasons; e.g., minor illness, boredom or stresses from the home or job. A further division of these two classes resulted in seven categories of causes for absences, with 2 items per category. The first category viewed the major cause of absence to be personal illness which resulted in an incapacity of the employee to work. The second category was related to domestic responsibilities such as illness of spouse or children. Personal business that could not be easily accomplished outside of scheduled work time constituted the third category. The fourth category involved reasons relating to boredom, that is, feeling negative or bored with certain aspects of the job. In the fifth category absences were felt to be a relief from fatigue due to regular work attendance. The sixth category involved absences taken for no particular reason other than just wanting a day off. The seventh and last category included miscellaneous reasons which could be anything from social engagements to attending sports events.



In all of the analyses, the individual was treated as the unit of measure; i.e. for the six independent variables of grade, marital status, age, length of service, shift and ward, the unit of measure was the individual employee. The dependent measures included:

- (1) the mean number of absences for the year under investigation;
- (2) the mean length of the absences involving all employees for the year;
- (3) mean length for each absence for the year (the total number of days absent/number of absences);
- (4) the number of short term absences (1-2 days) for the year;
- (5) the number of long term absences (3 or more days) for the year.

The various shifts over which the nursing personnel worked in the course of a year, presented certain difficulties. The nurses worked either 8 hour shift cycles or 12 hour shift cycles. On the 8 hour shift cycle, the nurses worked strictly 8 hour shifts with 10 shifts in a 2 week period. On the 12 hour shift cycle, nurses worked six 12 hour shifts and one 8 hour shift, for a total of 80 hours within a 2 week period.

However, particular problems were inherent in analyzing the data for the 12 hour shift cycle. Within this cycle the probability of working 12 hour shifts was

much greater than the probability of working an 8 hour shift; there was a 6:1 ratio of 12 hour shifts within a two week period. Thus, analyses within each shift cycle involved descriptive measures only.

The time of day the shift occurred (day, evening or night) also presented a problem. Once again the probability of working each shift was not equally distributed. It was felt by the nursing administration that in general the night shifts saw one third the staff as compared to the day shifts. However, this was not always the case for each ward. The exact proportion of nurses at work on the weekends compared to the weekdays was also unknown. The nursing administration of the hospitals felt that the distribution was approximately equal, but exact figures were not obtained. Again for these variables, analyses involved descriptive measures only.

A series of one-way ANOVA's were conducted for each of the five independent variables. Grade had five levels: unit coordinator, head nurse, R.N., C.N.A. and nursing aide. Marital Status contained four

levels: single, married, divorced and widowed.

Employees who indicated that they were cohabiting with another person were listed as married. Age, was divided into nine levels: 20-24 years, 25-29 years, 30-34 years, 35-39 years, 40-44 years, 45-49 years, 50-54 years, 55 years-59 and 60 years plus. Length of Service, the fourth independent variable, contained seven levels; 0-4 years, 5-9 years, 10-14 years, 15-19 years, 20-24 years, 25-29 years and 30 years plus. For Ward, there were two levels: wards considered stressful and those wards considered less stressful .

In addition to the one-way ANOVA's, chi-square analyses for the frequencies of the short and long term absences were also performed at each level of the independent variables to detect any relationship within each level. This would further support any differences that might be found with analysis of variance for the short and long term absences. In addition to these analyses, an analysis of covariance was also conducted for Length of Service. This was done since Age was felt to play a major role in contributing to this variable (i.e. as length of service increases so does

the age of the employee). Finally, for the variables of Age and Length of Service, correlational analyses (Pearson Product Moment) were administered to detect any patterns that might have developed for these two independent variables across the five dependent measures.

### RESULTS

One way ANOVA's, chi-squared analyses and, in some cases, covariate and correlational analyses were performed on the data for each independent variable. However, for shift, only descriptive measures were employed. Analyses were made within each shift cycle. For each variable the analyses examined each hospital separately as well as both combined. In the following presentation the results are reported according to each of the five variables studied. Within each variable, the results are subgrouped under each of the hypotheses discussed above.

#### Grade

Table 1 presents information for the different

grades of nurses at each hospital in the sample. The V.G. clearly supports a much larger nursing staff than does the I.W.K. As noted, the majority of the nursing personnel for both hospitals was found within the grade of R.N.. However, the I.W.K. contained a much larger administrative component, i.e. unit coordinators and head nurses (20.5%), compared to the V.G.'s administration of only 6% of the total nursing staff,  $\chi^2(14)=58.076$ ,  $p < .001$ .

Combining both hospitals, an examination of nursing personnel with no absences showed that a larger proportion of nurses in the higher grades appeared to be free of absences for the entire year compared to the lower grades; Unit Coordinator, 26%; Head Nurse, 20%; R.N., 8%; C.N.A., 7%; Nursing Aide, 5%.

#### Hypothesis 1

Combined Hospital Data Further analyses of the

Table 1

## Distribution of Grade by Hospital

Grade	Number in Sample	
	V.G.	I.W.K.
Unit Coord.	8	11
Head Nurse	20	<del>20</del>
R.N.	364	115
C.N.A.	55	40
N.A.	36	0
$\chi^2$	58.076*	

\*  $p < .001$

combined hospital data for Grade is shown in Table 2. The total number of absences produced a significant difference across grade,  $F(4,673)=10.723, p<.001$ . The lowest grade, nursing aides, had the highest number of absences ( $\bar{x}=5.44$ ); the highest grades, unit coordinators ( $\bar{x}=2.10$ ) and head nurses ( $\bar{x}=2.04$ ), had the fewest. The frequency of short term absences also proved significant,  $F(4,673)=14.051, p<.001$ . Again nursing aides produced the highest number of short term absences ( $\bar{x}=5.25$ ) while head nurses had the fewest ( $\bar{x}=1.63$ ). These results support hypothesis 1.

An examination of the relationship between the frequencies of short and long term absences within each grade revealed significant differences for only two levels, R.N. ( $\chi^2(65)=92.484, p<.01$ ) and nursing aide ( $\chi^2(22)=43.650, p<.01$ ). For both grades the mean number of short term absences was greater than the frequency of long term absences, thus, adding marginal support to hypothesis 1.

V.G. As noted in Table 2, the V.G. contained trends similar to the combined data of both hospitals.

Table 2

## Absence by Grade - Total and Short Term

	Mean Absence		X <sup>2</sup> of Short and Long Term
	Total	Short Term	
Unit Coord.			
C.H.	2.11	1.74	14.175
V.G.	2.88	2.00	12.444
I.W.K.	1.54	1.54	-----
Head Nurse			
C.H.	2.04	1.63	14.175
V.G.	2.75	2.50	12.034
I.W.K.	1.55	1.03	8.795
R.N.			
C.H.	3.89	3.61	92.484*
V.G.	4.00	3.74	88.887**
I.W.K.	3.56	3.18	31.328
C.N.A.			
C.H.	4.40	4.22	13.712
V.G.	4.62	4.45	20.459
I.W.K.	4.10	1.54	8.497
N.A.			
C.H.	5.44	5.25	43.650*
V.G.	5.44	5.25	43.650*
F			
C.H.	10.723**	14.051**	
V.G.	3.744**	3.338**	
I.W.K.	9.244*	12.309	

\*p&lt;.001

\*\*p&lt;.01

Hypothesis 1 was supported. The nursing aides had the highest number of total absences ( $\bar{x}=5.44$ ) while the head nurses had the fewest absences ( $\bar{x}=4.01$ );  $F(4,478)=3.744, p<.01$ . The data for the number of short term absences also supported hypothesis 1. The highest number of short term absences occurred in the lowest grade, nursing aides, ( $\bar{x}=5.25$ ) while the fewest short term absences took place in the highest grade, unit coordinators, ( $\bar{x}=2.00$ );  $F(4,478)=5.78, p<.001$ .

As found with the combined hospital data, an examination of the frequency of short and long term absences within each grade proved significant for only the R.N.'s ( $\chi^2(52)=88.887, p<.001$ ) and the nursing aides ( $\chi^2(22)=43.650, p<.01$ ). Once again the lower grades produced more short term than long term absences, further supporting hypothesis 1.

I.W.K. Contrary to the combined hospital data and that for the V.G., the I.W.K. only partially supported hypothesis 1. As shown in Table 2, the total number of absences differed across grades,  $F(3,191)=9.244, p<.001$ . The C.N.A.'s, the lowest grade

in the I.W.K., had the largest number of absences ( $\bar{x}=4.10$ ) while the unit coordinators had the fewest ( $\bar{x}=1.55$ ). However, the frequency of the short term absences did not vary across grades at the I.W.K..

The relationship between the number of short and long term absences within each grade level did not produce any significant differences.

Subgrouping of Grade Next, grade was classified according to job status for the combined hospital data. In section A of Table 3, Group Low is comprised of the lower ranks including R.N.'s, C.N.A.'s and nursing aides, while Group High contains the higher ranks of unit coordinators and head nurses. Group Low acquired a higher total absence frequency ( $\bar{x}=4.07$ ) as compared to Group High ( $\bar{x}=2.07$ );

$F(1,676)=30.790, p<.001$ . Analysis of the number of short term absences revealed that Group Low obtained the larger number of short term absences ( $\bar{x}=3.80$ ) as compared to Group High ( $\bar{x}=1.66$ ),  $F(1,676)=39.601, p<.001$ . These findings are consistent with the predictions of hypothesis 1.

Table 3

## Absence by Subgrouping of Grade - Total and Short Term

	Mean Absence	
	Total	Short Term
Section A		
Group Low	4.07	3.80
Group High	2.06	1.66
F	30.790**	39.601**
Section B		
Group High	3.67	3.37
Group Low	4.69	4.50
F	13.326**	18.729*

\*  $p < .01$   
 \*\*  $p < .001$

Note: Section A - Group Low: N.A., C.N.A., R.N.  
 Group High: Unit Coord., Head Nurse

Section B - Group Low: N.A., C.N.A.  
 Group High: Unit Coord., Head Nurse,  
 R.N.

Since the classification of R.N. as a lower grade could be questioned, it was reclassified in the High group and the analyses repeated. In section B of Table 3, Group Low now contains the grades of C.N.A. and nursing aide. Group High includes unit coordinators, head nurses and R.N.'s. As found in section A, the number of absences are still larger for Group Low ( $\bar{x}=4.69$ ) compared to Group High ( $\bar{x}=3.67$ );  $F(1,676)=13.326, p<.001$ . Group Low again had a higher number of short term absences ( $\bar{x}=4.58$ ) while Group High had fewer short term absences ( $\bar{x}=3.37$ );  $F(1,676)=18.729, p<.001$ . Again these findings supported hypothesis 1.

### Hypothesis 2

Combined Hospital Data      The frequency of long term absences did not differ between grades as shown in Table 4. Neither did the length or the mean length of the absences. Thus hypothesis 2, that the higher grades would have a higher proportion of long term absences, was not supported.

V.G.      On the whole the data for Grade for the V.G. supported hypothesis 2, contrary to both

Table 4

## Absence by Grade - Long Term

	Mean Absence		
Unit Coord.	Length of Absences	Mean Length of Absences	Long Term
C.H.	5.05	1.85	.3684
V.G.	9.25	3.02	.8750
I.W.K.	2.00	.991	.0000
Head Nurse			
C.H.	3.73	1.38	.4082
V.G.	4.00	1.36	.2500
I.W.K.	3.55	1.40	.5170
R.N.			
C.H.	5.72	1.34	.2881
V.G.	5.67	1.31	.2582
I.W.K.	5.86	1.44	.3830
C.N.A.			
C.H.	5.86	1.24	.1789
V.G.	6.06	1.22	.1636
I.W.K.	5.57	1.26	.2000
N.A.			
C.H.	6.87	1.26	.1944
V.G.	6.87	1.26	.1944
F			
C.H.	1.635	.935	1.203
V.G.	1.441	3.338**	2.586*
I.W.K.	2.062	.716	1.498

\*  $p < .05$   
 \*\*  $p < .01$

Note: Length of Absences - length of the absences involving all employees

Mean Length of Absences - mean length for each absence (the total number of days absent/number of absences)

hospitals combined. As shown in Table 4 both the mean length and the frequency of long term absences differed significantly over grade. As predicted the unit coordinators had the highest frequency of long term absences ( $\bar{x}=.875$ ) with nursing aides having the fewest number ( $\bar{x}=.194$ );  $F(4,478)=2.586, p<.05$ . The unit coordinators also produced the longest mean absence lengths ( $\bar{x}=3.02$ ) while nursing aides had the shortest absences ( $\bar{x}=1.26$ );  $F(4,478)=3.338, p<.01$ .

I.W.K. As was the case with the combined hospital data, the frequency of long term absences, the length and the mean length of the absences were not different with respect to Grade, again not supporting hypothesis 2.

Subgrouping of Grade In Section A of Table 5 both the frequency of long term absences and the mean absence lengths did not differ between Group High and Group Low; although the length of the absences did

Table 5

## Absence by Subgrouping of Grade - Long Term

	Mean Absence		
	Length of Absences	Mean Length of Absences	Long Term
Section A			
Group Low	5.81	1.32	.266
Group High	4.10	1.51	.397
F	4.727*	1.335	2.297
Section B			
Group High	5.52	1.37	.301
Group Low	6.14	1.24	.183
F	1.070	.961	3.22*

\*  $p < .05$ 

Note: Section A - Group Low: N.A., C.N.A., R.N.  
 Group High: Unit Coord., Head Nurse

Section B - Group Low: N.A., C.N.A.  
 Group High: Unit Coord., Head Nurse,  
 R.N.

reach significance ( $F(1,676)=4.727, p<.05$ ) the direction of that difference was opposite to what had been predicted.

In Section B of the subgrouping of grade, Group High had more long term absences ( $\bar{x}=.302$ ) than did Group Low ( $\bar{x}=.183$ );  $F(1,676)=3.224, p<.01$ . However, the length and the mean length of the absences did not differ between both subgroupings. Again the evidence in support of hypothesis 2 was inconsistent.

Summary of Grade Hypothesis 1 stated that a higher number of total absences, as well as a higher number of short term absences would be found for the lower grades of nursing personnel. The analysis of data from both hospitals combined, the V.G. separately, the I.W.K. separately (for the frequency of the short term absences only) and Section A and B which included the subgrouping of grade, all strongly supported this hypothesis.

Hypothesis 2, stated that the higher grades of nurses would produce more long term absences than the

lower grades. With the exception for the V.G. alone, the frequency of long term absence, length of absence and the mean length of absence, did not differ across Grades, on the whole.

### Marital Status

Crosstabulation of Grade by Marital Status yielded a distribution as shown in Table 6. For the I.W.K. the marital status was unavailable for 160 observations; therefore only the combined data was analyzed. Overall, 62.9% of the nursing personnel were single, 32.4% were married, 3.47% divorced and 1.1% widowed. A higher percentage of nursing aides were married, while the majority of employees in the other grades were single.

### Hypothesis 3

Results of one way ANOVA's on the five dependent variables are presented in Table 7. While the total number of absences differed significantly,  $F(3,514)=2.104, p<.01$  the predicted direction was not

Table 6

## Marital Status between Grades across Hospitals

	V.G.	I.W.K.	Combined Hospitals
Unit Coord.			
Single	6	--	6
Married	1	--	1
Divorced	0	--	0
Widowed	1	--	1
Head Nurse			
Single	9	2	11
Married	9	--	9
Divorced	2	--	2
Widowed	0	--	0
R.N.			
Single	242	12	254
Married	105	11	116
Divorced	14	--	14
Widowed	3	--	3
C.N.A.			
Single	35	7	42
Married	18	3	21
Divorced	1	--	1
Widowed	1	--	1
N.A.			
Single	13	--	13
Married	21	--	21
Divorced	1	--	1
Widowed	1	--	1
Total			
Single	305	21	326
Married	154	14	168
Divorced	18	--	18
Widowed	6	--	6

Note: 160 missing observations for the I.W.K.

Table 7

## Absence by Marital Status - Total and Short Term

	Mean Absence		X <sup>2</sup> of Short & Long Term
	Total	Short Term	
Single	4.02	3.82	68.672**
Married	4.10	3.79	55.123*
Divorced	5.61	5.06	23.200
Widowed	2.67	2.17	8.25
F	2.104**	1.862	

\* p < .05  
 \*\* p < .01

found. Divorced nurses had the highest total absence rate ( $\bar{x}=5.61$ ) followed by married nurses ( $\bar{x}=4.10$ ). Widowed nurses had the fewest number of absences ( $\bar{x}=2.67$ ). The frequency of short term absences did not change over Marital Status.

The number of short and long term absences were compared within each marital category. Single nurses ( $\chi^2(52)=68.627, p<.01$ ) and married nurses ( $\chi^2(36)=55.123, p<.05$ ) both had significantly more short term absences. This finding is not conclusive as the one way ANOVA between Marital Status did not support this finding.

As shown in Table 8 the frequency of long term absences did, however, vary over Marital Status,  $F(3,514)=2.583, p<.05$ . As predicted the highest numbers of long term absences were found for divorced ( $\bar{x}=.5556$ ) and widowed ( $\bar{x}=.5000$ ) nurses. Single nurses had the fewest number of long term absences ( $\bar{x}=.2086$ ). The length of the absences also differed between categories of Marital Status,  $F(3,514)=2.264, p<.01$ . Divorced nurses had the longest absence lengths ( $\bar{x}=6.47$ ),

Table 8

## Absence by Marital Status - Long Term

## Mean Absence

	Length of Absences	Mean Length of Absences	Long Term
Single	5.29	1.26	.2086
Married	6.47	1.44	.3036
Divorced	7.83	1.48	.5556
Widowed	4.83	1.24	.5000
F	2.104**	.854	2.853*

\* $p < .05$   
\*\* $p < .01$

however widowed nurses produced the shortest absences ( $\bar{X}=4.83$ ). This finding suggests that although the widowed nurses may produce one of the highest frequencies of long term absences, those absences are short in length.

Summary of Marital Status Hypothesis 3, that married nurses would produce a higher number of total and short term absences overall, was not supported. There was no difference in the number of short term absences for the categories of Marital Status. While the total number of absences, did vary, it did not do so in the predicted direction. The divorced nurses produced the highest number of absences and the widowed nurses the fewest. Single nurses, as well as married nurses, had significantly more short term absences compared to long term.

The prediction that divorced and widowed nurses would have the highest number of long term absences was supported.

Table 9

## Distribution of Nurses According to Age

Age	Combined Hospitals	V.G.	I.W.K.
20-24	220	187	33
25-29	184	133	51
30-34	103	76	27
35-39	46	31	15
40-44	29	24	5
45-49	27	14	13
50-54	20	15	5
55-59	8	3	5
60 +	5	0	5

Note: 160 missing observations  
for the I.W.K.

Age

The ages of the nurses in the sample, ranging from 20 to 67 years, were grouped into nine 4 year intervals. As shown in Table 9, the largest percentage of the nursing personnel was found within the 20-24 age interval (34.27%) and the smallest percentage was 60+ interval (.78%).

Hypothesis 4

Combined Hospital Data      The total number of absences by Age were correlated using Pearson Product correlatives. No significant relationship was found. The frequency of short term absences, however, was negatively correlated with Age,  $r = -.006$ ,  $p < .05$ , supporting the predicted relationship, that as age increased, the frequency of the short term absences decreased.

Further analyses were conducted for Age using one-way ANOVA's (Table 10). As was found with the

Table 10

Absence by Age - Total and Short Term  
Mean Absence

Age		Total	Short Term	$\chi^2$ of Short and Long Term
20-24	C.H.	3.68	3.58	4.688
	V.G.	3.66	3.56	3.449
	I.W.K.	3.79	3.70	6.178
25-29	C.H.	3.90	3.63	53.460**
	V.G.	4.17	3.93	49.308
	I.W.K.	3.18	2.84	29.762**
30-34	C.H.	4.29	3.87	75.587***
	V.G.	4.63	4.20	66.603*
	I.W.K.	3.33	2.96	24.762**
35-39	C.H.	4.26	3.87	75.587***
	V.G.	4.78	4.16	36.081**
	I.W.K.	3.40	3.00	6.875
40-44	C.H.	4.52	4.28	12.808
	V.G.	4.96	4.75	11.740
	I.W.K.	2.40	2.00	1.875
45-49	C.H.	3.37	3.30	21.140
	V.G.	4.07	3.29	11.389
	I.W.K.	2.61	2.38	13.000
50-54	C.H.	1.62	1.37	2.667
	V.G.	4.20	3.80	18.068
	I.W.K.	2.40	1.80	1.875
55-59	C.H.	1.62	1.37	2.667
	V.G.	3.33	3.33	-----
	I.W.K.	.60	.20	-----
60 +	C.H.	2.80	.80	6.667
	I.W.K.	2.80	.80	6.667
F	C.H.	1.472	1.982*	
	V.G.	1.417	.954*	
	I.W.K.	1.190	2.348*	

\*  $p < .05$  \*\*  $p < .01$  \*\*\*  $p < .001$

correlational analysis, the total number of absences did not differ significantly across the age groups. Although a statistical difference was noted for the frequency of short term absences,  $F(8,633)=1.982, p<.05$ , the predicted trend was not found. There appeared to be a fairly steady increase in the number of short term absences, ranging from age 20 ( $\bar{x}=3.58$ ) to age 44 ( $\bar{x}=4.28$ ), with a decrease in frequencies to age 60+ ( $\bar{x}=.800$ ). The expected differences between the number of short and long term absences within each age group were not found. Only for Group 25-29 ( $\chi^2(39)=53.460, p<.01$ ), Group 30-34 ( $\chi^2(40)=75.587, p<.001$ ) and Group 35-39 ( $\chi^2(22)=44.081, p<.01$ ) were the differences between the two types of absences significant.

V.G. In contrast to the combined hospital data, the total number of absences did not differ significantly, nor did the number of short term absences as shown in Table 10. The number of short and long term absences within each age level differed only for Group 30-34 ( $\chi^2(40)=66.606, p<.01$ ) and for Group 35-39 ( $\chi^2(22)=36.081, <.05$ ). The V.G. data does not

support hypothesis 4.

I.W.K. For the I.W.K. a significant difference was noted for the number of short term absences,  $F(2,348)=2.348, p<.05$ . In general the younger nurses (Group 20-24,  $\bar{x}=3.70$ ), had more short term absences than the older nurses (Group 60+,  $\bar{x}=.800$ ).

Frequency data for short and long term absences within each age level for the I.W.K. replicated the combined hospital data, Group 25-29 ( $\chi^2(21)=29.762, p<.01$ ), Group 30-34 ( $\chi^2(16)=24.181, p<.01$ ) and Group 45-49 ( $\chi^2(5)=13.000, p<.05$ ) were all significant.

#### Hypothesis 5

Combined Hospital Data Age was positively and significantly correlated with the frequency of long term absences,  $r=.219, p<.001$ ; the length of the absences,  $r=.166, p<.001$ ; and the mean length of the absences,  $r=.154, p<.001$ . These findings suggest that as age increased the number of long term absences, as well as the length of each absence also increased.

Table 11  
Absence by Age - Long Term

Age		Mean Absence Length of Absences	Mean Length of Absences	Long Term
20-24	C.H.	4.50	1.16	.10000
	V.G.	4.48	1.16	.1016
	I.W.K.	4.64	1.16	.0909
25-29	C.H.	5.12	1.20	.2663
	V.G.	5.70	1.17	.2406
	I.W.K.	4.47	1.28	.3333
30-34	C.H.	6.30	1.37	.4175
	V.G.	6.70	1.41	.4343
	I.W.K.	5.18	1.26	.3104
35-39	C.H.	8.16	1.89	.4783
	V.G.	9.02	1.96	.5161
	I.W.K.	6.40	1.77	.4000
40-44	C.H.	6.86	1.41	.2414
	V.G.	7.58	1.52	.2083
	I.W.K.	3.40	.892	.4000
45-49	C.H.	8.78	2.27	.5185
	V.G.	13.07	3.28	.7857
	I.W.K.	4.15	1.18	.2308
50-54	C.H.	6.30	1.44	.4500
	V.G.	5.53	1.06	.4000
	I.W.K.	8.60	2.60	.6000
55-59	C.H.	2.37	1.29	.2500
	V.G.	4.00	1.11	.0000
	I.W.K.	1.40	1.40	.4000
60 +	C.H.	13.20	1.87	2.000
	I.W.K.	13.20	1.87	2.000
F	C.H.	4.638**	3.802**	8.084**
	V.G.	6.547	6.504	5.730*
	I.W.K.	1.613	1.386	2.801
* p<.01	** p<.001			

Analysis of variance also proved significant for this variable  $F(8,633)=8.084, p<.001$ . As shown in Table 11 there were fewer long term absences for the 20 year old nurses ( $\bar{x}=.100$ ) than produced by the 60+ group ( $\bar{x}=.200$ ). Both the length ( $F(8,633)=4.638, p<.001$ ) and the mean length ( $F(8,633)=3.892, p<.001$ ) of the absences differed significantly over these groups. A similar pattern of shorter absence lengths for the younger nursing personnel (Group 20-24,  $\bar{x}=4.50$ ) and longer absences for the older nurses (Group 60+,  $\bar{x}=13.20$ ) were noted for each variable.

V.G. Although a significant difference was obtained for the number of long term absences,  $F(7,475)=5.730, p<.001$ , the predicted trend of hypothesis 5 was not found. As shown in Table 11, much more variation in the frequencies of long term absences occurred in the V.G. than in the combined hospital data. These results are contrary to those predicted by hypothesis 5. The youngest age groups (20-24 year olds) produced a higher frequency of long term absences ( $\bar{x}=.1016$ ) than did the oldest group of 55-59 year olds ( $\bar{x}=0$ ). Analyses of the length and mean length of the

absences also did not offer support for hypothesis 5, as no statistical differences were found.

I.W.K. Hypothesis 5 was supported within the I.W.K. as frequency of long term absences also differed across the age levels,  $F(2,348)=2.801, p<.01$ . Similar to the combined hospital data, more long term absences were found for older workers (Group 60+,  $\bar{x}=2.00$ ) than for younger employees (Group 20-24,  $\bar{x}=.091$ ). The length and mean length of the absences were not significant.

Summary of Age Hypothesis 4 stated that as age increases, the total number of absences and the frequency of the short term absences would decrease. The data analyses provided mixed support for this hypothesis. The combined data for both hospitals and for the V.G. alone did not support this hypothesis. For the I.W.K. data partial support was found for hypothesis 4 in that the number of short term absences behaved as predicted. Furthermore, the significant positive correlations between age and long term absences found over all the data provides additional

support for hypothesis 4.

Hypothesis 5 states that the duration of the absences would increase with age. This hypothesis found support from the various analyses that were conducted. Both the ANOVA and the correlational analyses of the combined hospital data supported the predicted relationship for length and mean length of absence and age, as well as that for the number of long term absences. Marginal support was given to hypothesis 5 by one-way ANOVA's for the V.G. and the I.W.K. when analyzed separately.

Unlike the ANOVA and correlational analyses, a chi-square analyses of the number of short and long term absences for the analyses of the hospitals, either combined or separately, did not support either hypothesis 4 or 5.

#### Length of Service

Length of service for each employee ranged from one to thirty two years. This variable contained seven

Table 12

## Length of Service by Grade

Grade	Mean Length of Service		
	V.G.	I.W.K.	Total
Unit Coord.	18.75	9.09	13.16
Head Nurse	6.60	8.07	7.07
R.N.	2.72	3.67	2.95
C.N.A.	4.25	5.55	4.80
N.A.	6.53	----	6.53
F	62.291*	9.439*	49.738*

\*  $p < .001$

levels; 0-4 years, 5-9 years, 10-14 years, 15-19 years, 20-24 years, 25-29 years and 30 + years of service. Analyses according to Grade and Length of Service showed that length of service varied over grade ( $F(4,673)=49.738, p<.001$ ) with the R.N.'s having the shortest length of service ( $\bar{x}=2.95$ ) and the unit coordinators the longest ( $\bar{x}=13.16$ ). As shown in Table 12, the length of service between each grade differed significantly for each hospital; (V.G.,  $F(4,478)=62.291, p<.001$ ; I.W.K.,  $F(3,191)=9.439, p<.001$ ). Both hospitals followed a similar pattern: R.N.'s possessed the shortest length of service (V.G.,  $\bar{x}=18.75$ ; I.W.K.,  $\bar{x}=3.67$ ) while the unit coordinators had the longest tenure (V.G.,  $\bar{x}=18.75$ ; I.W.K.,  $\bar{x}=9.09$ ).

#### Hypothesis 6

Combined Hospital Data      Correlational analyses revealed a significant negative correlation between length of service and the number of short term absences,  $r=-.069, p,.001$ , suggesting that as length of service increases the number of short term absences decrease.

V.G. Age was a controlled factor in the covariate analyses conducted for length of service data within the V.G.. Age was significant across most of the dependent variables. As shown in Table 13, the main effects for the total number of absences were nonsignificant with the covariate of age reaching significance,  $F(1,475)=4.014, p<.05$ . An interesting trend seemed to emerge for the total number of absences. The number of absences increased during the first 10 years of service (Group A,  $\bar{x}=3.96$ ; Group B and C,  $\bar{x}=4.75$ ) but then declined (Group D,  $\bar{x}=2.5$  to Group F,  $\bar{x}=0.0$ ). A significant relationship was not found for the number of short term absences on either level of main effect or covariate. A similar pattern emerged for the frequencies of short term absences. Within each level of length of service, the number of short term absences differed for only three of the groups: Group A,  $\chi^2(52)=110.625, p<.001$ ; Group B,  $\chi^2(36)=5.652, p<.05$ ; Group D,  $\chi^2(14)=22.5875, p<.01$ .

Table 13  
Absence by Length of Service - Total and Short Term

	Mean Absence		x <sup>2</sup> Short and Long Term
	Total	Short Term	
Group A (1-4 yrs)			
V.G.	3.96	3.77	110.625***
I.W.K.	3.35	3.12	31.885
Group B (5-9 yrs)			
V.G.	4.75	4.31	50.652**
I.W.K.	2.84	2.43	28.077
Group C (10-14 yrs)			
V.G.	4.75	4.31	36.186
I.W.K.	2.76	1.94	16.108
Group D (15-19 yrs)			
V.G.	4.11	3.67	22.575*
I.W.K.	4.80	4.60	6.000
Group E (20-24 yrs)			
V.G.	2.50	1.00	10.792
I.W.K.	2.20	1.60	1.875
Group F (25-29 yrs)			
V.G.	2.00	1.50	4.000
I.W.K.	2.00	1.50	-----
Group G (30+ yrs)			
V.G.	0.00	0.00	-----
Main Effect			
V.G.	1.424	1.510	
I.W.K.	.981	1.719	
Covariate			
V.G.	4.014**	1.429	
I.W.K.	5.825**	15.384***	

\* p < .01    \*\* p < .05  
\*\*\* p < .001

I.W.K. As shown in Table 13 the covariate analyses of this hypothesis did not reach a level of significance.

### Hypothesis 7

Combined Hospital Data Positive correlations were found for the length of service and length of absence ( $r=.075, p<.05$ ), mean length of absence ( $r=.115, p<.001$ ) and the number of long term absences ( $r=.155, p<.001$ ). In all cases the relationship was in the direction predicted by hypothesis 7.

V.G. The covariate analysis of the number of long term absences, both length of of service and the age covariate were significant,  $F(6,475)=1.826, p<.01$  and  $F(1,475)=19.595, p<.001$ , repectively (Table 14). Fewer long term absences occurred for employees in their first years of service Group A,  $\bar{x}=.19$ ) compared to employees who had a longer tenure (Group E,  $\bar{x}=1.50$ ) and Group F,  $\bar{x}=.50$ ). However, both the length and mean length of the absences were nonsignificant with the covariates of age proving significant,  $F(1,475)=4.921, p<.05$  and  $F(1,473)=14.060, p<.001$ .

Table 14  
Absence by Length of Service - Long Term  
Mean Absence

	Length of Absence	Mean Length of Absence	Long Term
Group A (1-4 yrs)			
V.G.	5.38	1.24	.1900
I.W.K.	4.77	1.31	.2400
Group B (5-9 yrs)			
V.G.	7.15	1.56	.4300
I.W.K.	4.24	1.24	.4100
Group C (10-14 yrs)			
V.G.	6.77	1.29	.3500
I.W.K.	7.12	1.47	.8200
Group D (15-19 yrs)			
V.G.	8.67	2.52	.4400
I.W.K.	6.00	1.00	.2000
Group E (20-24 yrs)			
V.G.	6.50	3.13	1.5000
I.W.K.	9.00	2.23	.6000
Group F (25-29 yrs)			
V.G.	5.00	2.50	1.5000
I.W.K.	3.50	2.17	.5000
Group G (30+ yrs)			
V.G.	0.00	0.00	0.0000
Main Effect			
V.G.	1.424	14.060	1.826*
I.W.K.	.552	.653	.647
Covariate			
V.G.	4.021**	14.060***	19.595***
I.W.K.	2.014	2.915*	8.950***

\* p<.01

\*\* p<.05

\*\*\* p<.001

I.W.K. All the analyses of covariance conducted for hypothesis 7 emerged nonsignificant.

Summary of Length of Service The mean length of service for each grade differed significantly for both hospitals combined as well as separately. In general R.N.'s had the shortest length of service and the unit coordinators the longest.

Hypothesis 6 states that as length of service increases, the frequency of the total and the short term absences would decrease. Hypothesis 6 was not supported through the covariate analyses. The total number of absences were not significant for either hospital. However, the correlational analyses for the combined hospital data partially supported hypothesis 6. The number of short term absences was both significantly and negatively correlated to length of service. The total number of absences were also negatively correlated to length of service, although nonsignificantly.

The analysis gave marginal support to hypothesis 7. Long term absences were more prevalent for workers

with a longer tenure than for workers with a shorter length of service for the V.G. only. Within the covariate analyses, the length and mean length of service were non significant. However, the number of long term absences was significant on both main effect and covariate. Correlational analyses for both hospitals combined, again, supported for hypothesis 7: length, mean length and the number of long term absences showed positive and significant relationships when correlated with length of service.

#### Shift

The sample was divided into two groups. The 12 hour cycle contained those who worked a rotating two week cycle of 12 hour shifts with one 8 hour shift in that cycle ( $n=573$ ); the 8 hour cycle contained those who worked strictly 8 hour shifts ( $n=105$ ).

#### Hypothesis 8

##### Twelve Hour Cycle

As shown in Table 15,

Table 15

Absence by Eight and Twelve Hour Shifts - Short Term

Mean Absence

	Total	Short Term	$\chi^2$ of Short & Long Term
12 Hour Shift	3.84	3.59	26.664
8 Hour Shift	4.20	3.71	15.919
F	1.293	.153	

Table 16

## Absence by Eight and Twelve Hour Shifts - Long Term

Mean Absence

	Length of Absences	Mean Length of of Absences	Long Term
12 Hour Shifts	5.43	1.29	.2461
8 Hour Shifts	7.21	1.67	.4946
F	6.665*	6.982*	10.742

\*p&lt;.001

the total number of absences was not significantly different between these two groups. However, the length ( $F(1,676)=6.665, p<.01$ ) and mean length ( $F(1,676)=6.982, p<.01$ ) of the absences were statistically different over both types of shifts (Table 16). Nurses working only 8 hour shifts had longer absences ( $\bar{x}=7.21$ ) than do those employees working the 12 hour shift cycle ( $\bar{x}=5.43$ ). The number of short term absences did not reach significance, although, those in the 8 hour shift group did take significantly more long term absences ( $\bar{x}=.4946$ ) than the 12 hour shift category ( $\bar{x}=.2461$ );  $F(1,677)=10.742, p<.001$ . Within each group, the number of short and long term absences were not significant.

#### Hypothesis 9

Eight Hour Shift Cycle On a purely descriptive level, Figure 1 displays the distribution of absences across all three shifts (day, evening, night) for the 8 hour shift cycle. The night shifts' total absences were adjusted (i.e. multiplied by two thirds) to try to compensate for the uneven proportion of nurses

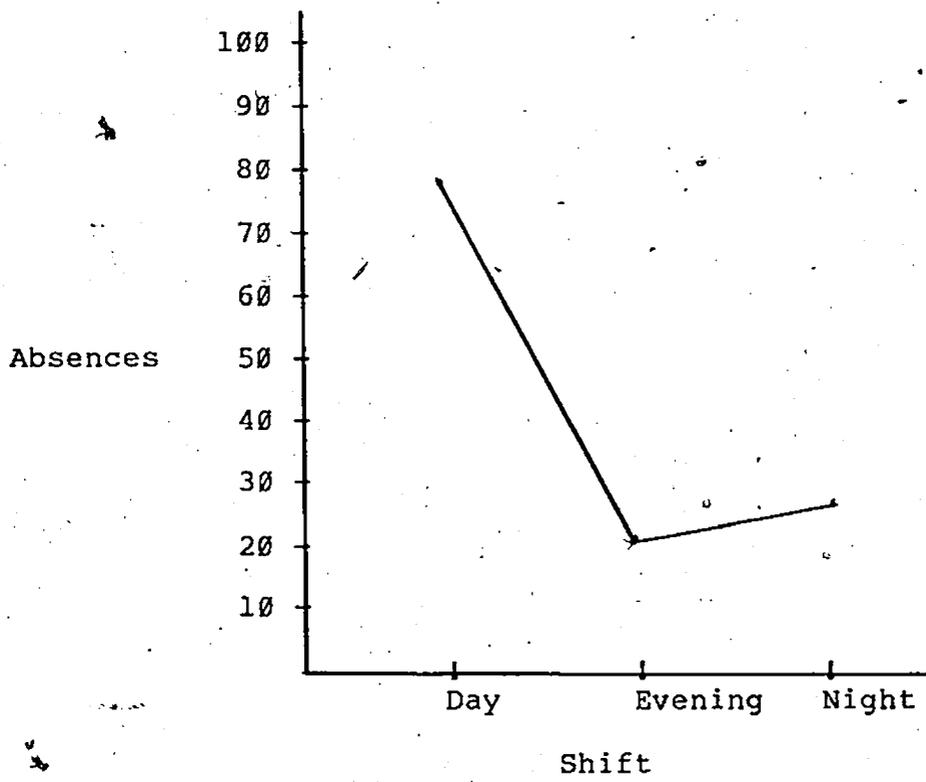


Figure 1 - Distribution of Absences for Eight Hour Shift

working these shifts as compared to the day shifts. As shown, more absences occurred ( $n=76$ ) on day shifts even when compared to the adjusted total of the night shifts ( $n=26$ ).

#### Hypothesis 10

Twelve Hour Shift Cycle Figure 2 shows the distribution of absences across the six shifts (long day, short day, long evening, short evening, long night, short night) for those nurses working the 12 hour shift cycle. Using the adjusted total, more absences occurred on the 12 hour night shift ( $n=344$ ) compared to any other shift. However, there is a 6:1 ratio for the 12 hour shifts as compared to the 8 hour shifts within this cycle. Thus, if the 8 hour day shift absences are multiplied by six, they would then have the largest number of absences of any shift.

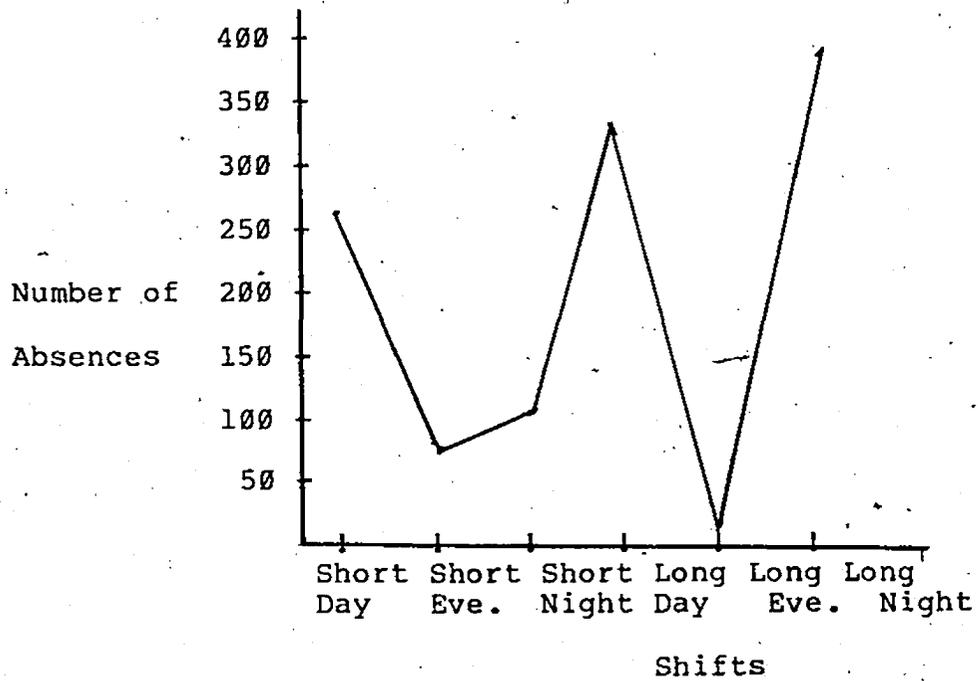
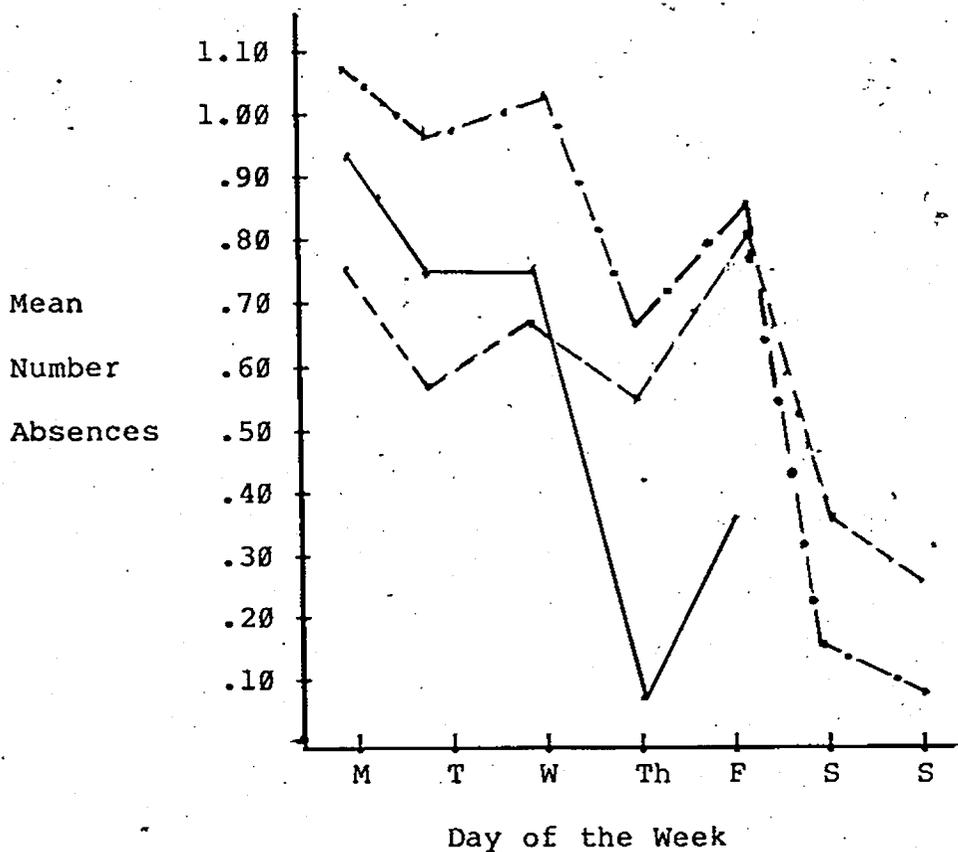


Figure 2 - Distribution of Absences for Twelve Hour Shift

Day of the Week      The distribution of absences for the day of the week is shown in Figure 3. For this analysis, the 8 hour shift cycle was subdivided into those working 8 hour shifts including weekends (Group B) and those working 8 hour shifts weekdays only (Group C). Group A contained data for the 12 hour shift cycle. Again on a purely descriptive level, examination of the mean absence rates showed Monday to be the favoured day for Group B ( $\bar{x}=1.02$ ) and for Group C ( $\bar{x}=.929$ ). Absence rates were still quite high for all three groups during the mid week - Tuesday, Wednesday and Thursday. In fact, absences tended to rise on Wednesday; however they were still lower than Mondays' rates. The absence levels on Thursday revealed interesting patterns for all shift categories. Both groups working the weekends, Group A ( $\bar{x}=.508$ ) and Group B ( $\bar{x}=.538$ ), had lower absence rates than for any other weekday. For Group C, the lowest absence levels for the week were found on Thursday ( $\bar{x}=.071$ ). On Friday, absence levels increased for all three with Group A having the highest absence rates. For Group A



Note: 8 hour weekends ————  
 8 hour weekdays -----  
 12 hour weekend - · - · -

Figure 3 - Distribution of Absence - Day of the Week

and Group B which worked the weekends, both Saturday and Sunday produced very low absence levels in comparison to Thursday of Group C. However, the weekends had much lower staff numbers as compared to the weekdays, and this must be considered in drawing any conclusions.

Summary of Shift Hypothesis 8 stated that a higher absence rate would be found for the 12 hour shift cycle as compared to the 8 hour shift cycle. However, nursing personnel working on the 8 hour cycle had longer absences; both the length and the mean length of the absences differed significantly. The number of absences was also greater on the 8 hour shifts compared to the 12 hour shifts. There was no difference in the number of short term absences. On the whole these findings do not support hypothesis 8.

Hypothesis 9 stated that night shifts would produce the highest absence rates for the 8 hour shifts. On a descriptive level, the day shifts had the highest mean absence levels for the 8 hour shift category, thus not supporting hypothesis 9.

Hypothesis 10 states that for the 12 hour shifts, night shifts would produce the highest absence rates. Again, the 8 hour day shift had the most absences. Descriptive analyses for the day of the week most susceptible to absences showed Monday to produce the highest absences for the two types of 8 hour shifts, with Friday having the highest levels for the 12 hour shift. Thursday possessed the lowest rates for the 8 hour weekday group and for those groups working the weekend, Saturday and Sunday appeared to have the lowest absence rates. These results, taken as a whole, do not support hypothesis 10.

#### Ward

##### Hypothesis 11

An analysis of the workload for nursing personnel showed the ratio of nurses to patients was the same across wards. Therefore, hypothesis 11 which stated that an adequate work load would produce fewer absences as compared to the over and under used wards could not be examined directly.

Hypothesis 12

The stress levels of the wards were measured through self reports of the personnel. The I.W.K. reported that the intensive care units were the most stressful; however, personnel at the V.G. was indecisive regarding which ward(s) they considered most stressful. Nevertheless it was decided that the intensive care units could produce high stress levels; thus, two groups were formed, Group A containing the intensive care units ( $n=108$ ) with the remaining wards classified into Group B ( $n=570$ ). As shown in Table 17, the total number of absences for these two groups produced similar mean absence rates (Group A,  $\bar{x}=3.51$ ; Group B,  $\bar{x}=3.93$ ).

Both the length and mean length produced significant differences when analyzed through one-way ANOVA,  $F(1,676)=4.782, p<.05$  and  $F(1,676)=3.972, p<.05$ , respectively (Table 18). The average length of the absences for Group A ( $\bar{x}=4.45$ ) were shorter than for Group B ( $\bar{x}=5.86$ ).

Table 17

## Absence by Ward - Total and Short Term

	Mean Absence		$\chi^2$ of Short and Long Term
	Total	Short Term	
Group A	3.51	3.34	12.25
Group B	3.93	3.36	6.487
F	1.954	1.026	

Note: Group A - Intensive Care Wards  
Group B - All other wards

The number of short term absences were not different between both of these groups. Group A had a significantly lower number of long term absences ( $\bar{X}=.167$ ) than did Group B ( $\bar{X}=.300$ ),  $F(1,676)=3.512, p<.01$ .

Summary of Ward Hypothesis 11 states that fewer absences would occur on wards where the work load was adequate in comparison to wards where the load was over or under normal loads. This hypothesis could not be tested directly as the ratio of nurse to patient was equally distributed across wards. Hypothesis 12 stated that more absences would be incurred by the stressful wards as compared to the less stressful wards. However the less stressful wards produced longer absence rates, both the length and the mean length of the absences on less stressful wards were significantly higher than those considered more stressful. The number of short term absences did not differ over wards. The frequency of long term absences did with the less stressful wards having more long term absences. These results do not support hypothesis 12.

Table 18  
Absence by Ward - Long Term

	Length of Absences	Mean Length of Absences	Long Term
Group A	4.45	1.12	.1667
Group B	5.86	1.34	.3000
F	4.782*	3.972*	3.512**
**	p<.05		
*	p<.01		

Note: Group A - Intensive Care Wards  
Group B - All other wards

Table 19

## Reasons Given for Absences

	N	Percentage
Serious Family Problems	34	85
Accidents	33	82.5
Minor Illness	30	75
Pressures on the Job	26	65
Personal Business	17	42.5
Feeling "Blue"	13	32.5
Late for Work	11	27.5
Minor Family Problems	10	25
Boring Job	6	15
Social Engagements	5	12.5
Sports	3	7.5
Disagreement with Supervisor	2	2.5

### Questionnaire

Table 19 displays the frequency of responses given by the sample of nurses when asked the question "For what reasons would you take a day off?". The most frequently stated reasons involved serious domestic problems (82.5%) and minor ailments (75%). Responses least checked by the subjects were those regarding social engagements (12.5%), attending sport events (7.5%) and disagreement with supervisors (2.5%).

### DISCUSSION

The results indicated that many variables are related to absence rates in the nursing profession. Furthermore, making a quantitative distinction between short term and long term absences as proposed by Chadwick-Jones et al (1973), proved useful. It helped to increase the understanding of how these variables related specifically to absence levels.

For most of the variables studied in relation to absence, both the V.G. and the I.W.K. followed

similar patterns. However, when differences were noted, it was felt that the smaller sample size of the I.W.K. may have contributed to cases where the findings were different between these two hospitals. The following is a brief discussion of the results obtained for each variable investigated in this study.

### Grade

#### Hypothesis 1

For Grade, some interesting and unpredicted results were found. Similar to Taylor (1974) and Rushworth (1975), the present study found that the overall absence levels tended to fall with increasing levels of skill, as predicted in hypothesis 1. For both hospitals combined and for each hospital separately; the higher grades (unit coordinators, head nurses and R.N.) had a lower absence frequency than the lower grades (C.N.A.'s and nursing attendents). This finding could reflect the fact that those nursing personnel who hold higher positions possibly have a greater sense of responsibility or duty toward their patients as well as a stronger identification with the

hospital or organization. Previous work has shown that if an employee does not derive satisfaction from their jobs, there may be higher absence levels and higher turnover rates (As, 1962; Hill & Trist, 1953; Hulin, 1966, 1968; Singh & Smith, 1975; Vroom, 1965). Within a hospital setting the higher grades of nurses usually involve longer training periods thus, they may consider themselves to be a crucial team member (Meates, 1971) more so than the lower grades. Hence, the higher grades may have a greater feeling of dedication and derive greater satisfaction from their jobs (Hulin & Smith, 1964).

When a quantitative distinction is made in defining absence (i.e. short vs. long term) the predicted hypotheses for the variable of grade did not always meet with support. In general the higher the grade of nurse, the lower the short term absence level, although this was not the case in the I.W.K.. It would seem that there is a difference between the higher and lower grades of nurses in relation to the overall absence levels within the I.W.K., it does not appear useful to make a distinction between short and long term

absences. However, the basic finding, again, suggests that those with a higher status job may possess a greater sense of responsibility. They may not let minor illnesses or personal business, which are often reasons for a short term absence (Chadwick-Jones et al, 1973), stop them from attending work.

### Hypothesis 2

Only at the V.G. did the higher ranks of nurses have more long term absences. In addition, the higher ranking nurses at the V.G. also had absences of longer durations. Additional weight was given to hypothesis 2 when Grade grouped R.N. in the high category along with unit coordinators and head nurses, significantly more long term absences were found than were found in comparison to the C.N.A.'s and nursing attendents. However, such results were not found when the grade of R.N. was included with lower ranks. This finding suggests that the R.N.'s absence behavior is more similar to head nurses and unit coordinators and should be classified as a higher position within the nursing profession. However within each grade, R.N.'s, at both

hospitals and at the V.G. alone, had significantly more short term absences. This finding does not support hypothesis 1 or 2. If the grade of R.N. is indeed considered a higher position within a hospital setting, either no difference in the frequency of short and long term absences could be expected, or that the number of long term absences would be greater than the number of short term absences. Thus, it cannot be concluded with any degree of certainty that the grade of R.N. should be considered a high position. Nursing attendants also showed a higher frequency of short term absences within the analyses of the combined hospital data and the V.G.. This finding gives support to both hypotheses 1 and 2.

Conclusions. The present study adds support to the notion that the overall absence levels tend to decrease with increasing levels of skill as has been postulated by Taylor (1974) and Rushworth (1975). It can also be said that the frequency of short term absences also decrease with increasing levels of skill. It can not be said, with any degree of certainty, that the frequency of long term absences are greater for the higher grades of nurses since this was found within

only at the V.G..

### Marital Status

#### Hypothesis 3

Hypothesis 3 predicted that married personnel would produce the highest number of overall and short term absences. This prediction was not supported. Clark (1975) also found no relationship between marital status and absence levels. Chadwick-Jones et al (1973) and Franks (1972) on the other hand found married women to incur a greater frequency of absences. In these previous studies, it appears that only the categories of married and single were used. The present study showed that nurses who were divorced produced the highest overall absence levels. This finding is not surprising if absence levels are affected by family responsibility, as suggested by Chadwick-Jones et al (1973). It seems quite feasible to assume that those nurses who are divorced and have children would have a greater family responsibilities raising their children as single parents. It is also likely that divorced people in general have other psychological difficulties

such as alcoholism (Casper, Neumann, & Okraku, 1982; Casper & Mozersky, 1968) which may affect their rate of absenteeism.

Classifying the overall absence levels into short and long term absences does not produce evidence supporting hypothesis 3. The number of short term absences did not differ across Marital Status. As expected, the divorced group, as well as, the widowed category had the highest frequency of long term absences. The divorced group also had absences of the longest duration.

Although it was predicted that more long term absences would be found for the divorced nurses, it was surprising that the number of short term absences did not reach significance since the highest overall absence levels were produced by this group. This finding suggests that the frequency of long term absences is the key factor contributing to the overall absence levels thus, family responsibility may not play such a large role as previously felt. However, the divorced category may be under represented compared to

the other groups, thus, for a more stable picture a larger sample within the divorced group should be obtained.

Conclusions. Although it is cautioned that the divorced marital status may be under represented, the present study found that the divorced group had the highest overall absence levels which were comprised of mainly long term absences. This finding has not been previously reported in absence research. Past literature has suggested that either there was no relationship between the frequency of absences and marital status (Clark, 1975) or that the married personnel produces the highest absence rates (Chadwick-Jones et al, 1973; Franks, 1972).

#### Age

#### Hypothesis 4

Hypotheses 4 predicted a negative correlation would be found between Age and the the frequency of short term absences. Previous research has found that older people had fewer absences (Chadwick-Jones et al,

1973; Franks, 1972; Nicholson et al, 1977). In the present study this finding occurred only for the number of short term absences. Research that has examined the length of the absences have found, as did the present study, that although older workers have fewer absences than younger workers, the older employees absences are of a longer duration (Froggatt, 1970; Nicholson et al, 1977; Redfern, 1978).

A closer examination of the relationship between age and short and long term absences revealed interesting and unpredicted results. With regard to hypothesis 4, the total number of absences did not vary over the age levels for either the combined or the V.G. data. Although differences were noted for frequency of short term absences for the combined hospital data, the predicted direction of these absences was not found. The same general pattern appeared for the total absences and for the number of short term absences. Specifically, an increase in the number of absences up to the age of 44 and then a decline in the frequencies to the age of 60 years took place. There are a number of theories that could be suggested for these findings.

As noted by Rushworth (1975), the lower absence frequencies of younger employees, and evident in the present study, could be a result of a change that has occurred in the younger nurses' attitudes toward regular work attendance. Another explanation might be that younger workers, in their first job, are trying to impress their supervisors; or that younger workers, who are more likely to be single, have less domestic and family responsibilities. However, these suggested explanations are purely speculative and further empirical research must be conducted to try to replicate the findings of the present study. As well, investigations of the individual reasons behind the absences given by younger employees must be conducted.

The absences behavior of the nursing personnel at the I.W.K. however, does support hypothesis 4, as well as the findings of past research (Chadwick-Jones et al, 1973; Franks, 1972; Nicholson et al, 1977). Although the total number of absences were not a significantly different, the number of short term absences were. A general pattern appeared: the younger employees (aged 20-24) having a higher frequency of short term absences

than did any other age group. Again the I.W.K. sample is smaller than the V.G. and when the data of the I.W.K. is combined with the data of the V.G., the number of short term absences produced by the I.W.K. was not large enough to change the overall pattern contained within the combined hospital data. However, if the absence trend found within the I.W.K. is a true representative sample of that hospital; other probable explanations must be explored. It is possible that since the I.W.K. is a smaller hospital, supporting a much smaller staff than the V.G., different supervisory styles may be present. The I.W.K. does have a much larger administrative component, i.e. more head nurses and unit coordinators than the V.G.. Chadwick-Jones et al (1973) has suggested that the more democratic the supervisory style, the lower the absence level. It has also been suggested that a supportive team is necessary on a ward (Meates, 1971) which may not be present if there isn't an optimum balance between the administration and other nursing personnel. This may result in more short term absences which as Adams (1965) suggests is a way of resolving perceived inequity. The findings of the I.W.K. may also be

reflected in the fact that it is a pediatric hospital. The younger nurses may find it quite stressful to work with sick children and may take a few years to adjust, and thus, the younger nurses may incur more short term absences as a way of relieving tension through minor illness (Hill & Trist, 1953).

#### Hypothesis 5

There were also some unpredicted results with regard to long term absences. Although positive correlations were found and the frequency of long term absences for age for the combined hospital data and each individually and a significant difference noted for the number of long term absences within the I.W.K. only, a closer examination revealed much variation between age categories. The combined hospital data and for each hospital separately, both showed that the oldest workers had more long term absences. However, there is not a steady increase in the frequencies of long term absences as a significant, positive correlation would indicate. From these findings no significant conclusions can be formed regarding long

term absence, especially when a significant difference was not obtained for the youngest and oldest workers for the number of short and long term absences.

Conclusions Correlational analyses of the present study supported the theories that as age increases the number of short term absences decrease and that as age increases the number of long term absences increase (Chadwick-Jones et al, 1973; Franks, 1972; Nicholson et al, 1977). However, when more sensitive statistical measures were employed (one-way ANOVA's) the true distribution of the absences were discovered and support was not given to the findings of past research. Although no strong generalizations can be drawn, a pattern within the combined hospital data and the V.G. of increased short term absences up to the age of 44 followed by a decrease in the frequencies to age 60 was noted. Hypothesis 5 was tentatively supported. The oldest age group had more long term absences than the youngest group. This pattern did not follow a steady progression, so generalizations can not be made.

Length of Service

Past research has found that as length of service increases, the frequency of absences decrease (Franks, 1972). The present study did not support these findings. Using correlational analyses, the combined hospital data showed that the number of short term absences decreased as length of service increased. However, closer examination of length of service and absence levels, using analysis of variance, did not support hypothesis 6. As postulated, age was directly related to tenure. Age was a much better predictor of the total absence levels and the frequency of short term absences than length of service. However, differences were found in the number of short and long term absences for the first 9 years of service and again during 15<sup>th</sup> - 19<sup>th</sup> year of tenure. This finding suggests that those employees of a short(er) length of service incur more short term rather than long term absences, although age was not a controlled variable for these analyses. Once again, generalizations can not be made as these results applied to the V.G. only.

Hypothesis 7

The number of long term absences was also positively correlated with length of service, supporting hypothesis 7. However, only within the data for the V.G. did an analysis of variance support hypothesis 7. Although age was a related factor, it appeared that length of service was also a predictor of the number of long term absences. In general, as length of service increased, the number of long term absences also increased. However as with Age, much variation was noted between the extremes. It would seem feasible to conclude that those nurses with a longer tenure would be more highly dedicated to their jobs, as well as deriving more satisfaction from the workplace, and as a consequence, they do not take time from work unless absolutely necessary. These absences might include serious illness or injury which are generally felt to be unavoidable (Chadwick-Jones et al, 1973). This suggestion applies to the V.G. only, as differences in the number of long term absences were not found for the I.W.K..

Conclusions      The present study did not support the findings of Franks (1972) who found absences to increase as length of service increased. However when qualifying the term absence, it was found that the number of short term absences were negatively correlated to length of service and that long term absences were positively correlated. This finding suggests that as length of service increases the number of short term absences decrease while the number of long term absences increase. However, again, more sensitive analytical measures revealed that age played a large role in contributing to these results. Covariate analyses showed that only for the frequency of long term absences did length of service predict the number of absences. As length of service increased more long term absences were obtained. However, this difference was noted between the extremes only, suggesting that a difference in even 10 years in length of service is not great enough to produce a difference in the frequencies of long term absences. A comparison between the extremes (1-4 years of service to 20-25 years of service) must be made if length of service is to predict the number of long term absences.

ShiftHypothesis 8

There did not appear to be a significant difference in the number of absences produced by either of the two shift cycles investigated. This supported the findings of Brookes and Gardiner (1974). However, this finding does not support hypothesis 8 or the findings of Vahey (1974) which suggested that the 12 hour shifts would produce the higher absence rates.

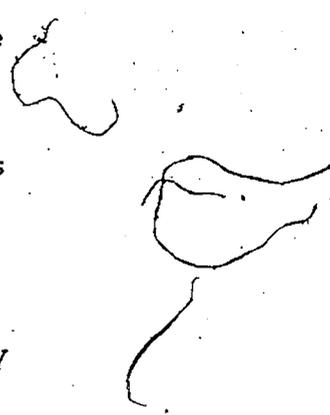
Although the number of short term absences did not change between the two shift systems, the number of long term absences did differ. The length of the absences exhibited some interesting patterns. Personnel working the 8 hour shift cycle had much longer absences than those working the 12 hour shift cycle. This finding is not surprising if consideration is given to the amount of time and pay lost for an absence on the 12 hour shift. While an 8 hour shift is only one day lost, a 12 hour shift is one day and a half which could lead to a 50 percent increased loss in

salary and benefits, Another factor to be considered includes the amount of time given for rest days between the two cycles. The 8 hour shifts have 4 rest days within a 2 week period, where as, the 12 hour shift cycle has 7 rest days within the same time frame. For the 12 hour shift cycle, it may be quite probable that if an absence occurred on any given day of duty, it could possibly be carried over to the day(s) of rest. This would result in a deflated number and length of all absences. It is felt that future research in the area of shift cycles and absence must consider and compensate for these factors as the two shift cycles (12 and 8 hour) cannot be treated alike if a true picture of absence is to be obtained.

#### Hypothesis 9 and 10

Past research focusing on absence and the time of day the missed shift occurs has found that no significant relationship exists (Brookes & Gardiner, 1972; Clark, 1975; Taylor, 1974). Within the present examination, day shifts produced the highest absence levels for the 8 hour shift cycle. This result does

not support hypothesis 9 which predicted the night shifts to produce the highest absence levels. For the 12 hour shift cycle, the long night shifts did produce the highest absence rate as predicted in hypothesis 10. However, if the 8 hour shifts were given an equal opportunity to be worked as the 12 hour shifts within the 12 hour shift cycle, the 8 hour day shift would then become the most likely shift for an absence to occur. This finding is not too surprising if consideration is again given to the discrepancy in the amount of time and pay lost between the 8 and 12 hour shifts. However, it is surprising that the day shifts produced the highest absence rates and not the predicted night shifts. It is suggested that normal waking hours do not play as large a role as previously thought and that absences occurring during the day may be related to taking care of personal business. The present investigation of this variable used purely descriptive measures. The present analyses also did not make a distinction between short and long term absences. Again this would be an interesting area to pursue in future research, using more stringent statistical analyses.



Day of the Week

The rate of absences throughout the work week had a very interesting distribution. Official rest days were not known as each nurse would have different rest days each week for two of the three different work weeks. For one of the 8 hour shift cycles, the official rest days were Saturday and Sunday. According to previous work the days immediately following the official rest days should find the highest absence levels for the week (Clark, 1975). Using descriptive analysis, this finding was supported. In this shift category Monday holds the highest absence levels. However, examination of the other 8 hour shift work week (where the official rest days are not necessarily Saturday and Sunday) show Monday as having the highest absence rates also, although there is not such a large difference in the absence rates throughout the week as shown in the week day only category. Thursdays showed the lowest absence rate within the 8 hour weekday category as well as being lower than any other weekday for the other two categories. Traditionally, Thursday

has been a pay day, and this could explain the low absence rate.

Although, the exact figures were not known for the percentage of nurses working the weekend, it was felt by the administration of both hospitals that the staff numbers were about equal to that found during the week. If this were in fact true, a drastic drop was noted in the absence rates for Saturday and Sunday. The lowest absence levels for the entire week were found during the weekend. This finding was unexpected as it directly contradicted the previous work done in this area. Both Brookes and Gardiner (1972) and Vahey (1974) found that the weekends offer the highest absence rates. Explanations for the low absence levels found on the weekends are not readily apparent. It could be possible that nurses have a sense of comraderie toward their fellow colleegs i.e. the nurses may feel that nobody wants to work weekends, however, each must take a turn. If a nurse does not give equal time to working the weekends, he/she may risk becoming ostrasized by fellow nurses. As well, possible termination of employment may occur if

absences become too frequent on the weekends. Stricter statistical measures as well as exact staffing figures are needed for each work day to be able to state with any degree of confidence that weekends do produce the lowest absence rates.

Conclusions Supporting the findings of Brookes and Gardiner (1974), the present study did not find a difference in the number of absences between the 8 hour shift cycle and the 12 hour shift cycle. Neither was a difference found for the number of short term absences between these two shift cycles, thus not supporting hypothesis 8 or the findings of Vahey (1974). The frequency of long term absences did show a difference with the 8 hour shift cycle producing more long term absences. However, the 12 hour shift cycle had significantly more official days of rest. Absences starting in the work week may very well carry over to the rest days, deflating the number of long term absences in this shift cycle.

Support was not given to the findings of Clark (1975) who found absence levels to be the highest following official days of rest. Mondays had the

highest absence rates for the shift cycle that had Saturday and Sunday as the rest days. However, the other 8 hour shift cycle which did not necessarily have the weekend as the official rest days also had more absences on Monday. Thursday had the lowest level of absences for the 8 hour shift cycle and the weekends had the lowest absence rates for the other two shift categories.

#### Ward

#### Hypothesis 12

Although Intensive Care units were considered to be more stressful than the other wards in the hospitals, a higher absence level was not found for these wards. Similar to Parkes (1980), a difference was not found in the overall absence levels. In the present study the number of short term absences did not vary between these two types of units. Examination of the length of the absences and the frequency of the long term absences added support to the findings of Rushworth (1975). In the present study, the length of

each absence was significantly longer and the frequency of the long term absences higher for those wards that were considered less stressful than the intensive care units suggesting that those wards thought to be stressful have much shorter absences, as well as a lower frequency of long term absences. Although no hypotheses were made regarding these variables it is felt that there is a special "type" of nursing personnel working in the intensive care units. These nurses may possess more experience and have higher levels of dedication to their duty as nurses. Thus they may derive greater satisfaction from their jobs leading to decreased absence rates (Hulin, 1966, 1968; Singh & Smith, 1975) with each absence being of a shorter duration than found in other wards. There may also be a greater sense of team effort on the intensive care wards. Each nurse may feel she is a crucial member of that team, which as Meates (1971) states will reduce absence levels.

Conclusions As Parkes (1980) found, the present study did not reveal a difference in the overall ~~absence rate~~ or in the number of short term absences between those wards considered more stressful than the

other wards, thus not supporting hypothesis 12. A difference was noted in the frequency of long term absences. The stressful wards produced significantly fewer long term absences than the other wards suggesting a special type of nurse may work on the wards considered stressful.

### Questionnaire

Although Johns and Nicholson (1982) state that absence events are phenomenologically unique, analysis of the questionnaire presented by the present study reveal interesting patterns for the reasons given by nurses for absences. If absences represent nonwork behavior, these events are subject to major causal influences that transcend the workplace. Many personal factors play a role, such as age, sex, general health or disabilities, domestic circumstances, marital status, etc., as witnessed by the present investigation. By far the majority of the reasons given were purposive in nature i.e. domestic responsibilities or business which are likely a result of non-volitional forces rather than a result of a

conscious choice to be absent from work. However, a large percentage of reasons also fall within the "personal reason" category. Taking time off for minor illnesses or because one feels slightly depressed can be a result of a conscious decision not to attend work (Chadwick-Jone et al, 1973). It may also be considered environmentally adaptive (Johns & Nicholson, 1982) with the idea being that a great deal of common illnesses have a strong psychogenic element, a way the mind/body deals with stress (Hill & Trist, 1953) which may or may not be related to the work place.

However it is important to examine absence from a sociocultural perspective to be able to make valid generalizations about absence. This would include not only investigating the norms, routines, customs and habits of the individual but also the psychological environment that is created by the structural conditions of the framework of rules, norms, customs and values of the influential organizational members which may have a strong impact on the individual (Johns & Nicholson, 1982). However, as pointed out previously, the purpose of the present study was not to

make any strong conclusions regarding each absence episode, thus, these factors were not considered. It is strongly suggested that these variables be given due consideration in future investigations.

### General Conclusions

It is useful and viable to make a qualitative as well as quantitative distinction in defining the term absence if a clear picture of absence trends are to be discovered. Making a distinction between short and long term absences may help to alleviate contradictions that are evident in past research on absenteeism. As Redfern (1978) states, nurses are a unique group of workers. This has been shown throughout the present study especially within the investigations of Shift and Ward. These variables themselves are unique to the nursing profession and do play a role in contributing to absence levels of nurses.

It is important to apply the appropriate statistical method of analyses. It is crucial that a sensitive measure be used. As shown in the present

study, correlational analyses may not be sensitive enough to reflect the true difference or lack thereof, in various absence levels.

The present investigation, which employed a cross sectional method, a large sample size followed over a full year period, as well as sensitive statistical measures, produced a fairly stable picture of the absence trends produced by the hospitals investigated. Although in many cases it is impossible to make valid generalizations to all hospital populations, it is felt that the information derived from this study will be useful to the samples involved as they are felt to reflect the absence trends of these hospitals. Future research should focus on the variables investigated in the present study (Grade, Marital Status, Age, Length of Service, Shift, Ward as well as individual reasons behind the absences) as they have proven to play a role in contributing to absence trends, both short and long term. Clark and Redfern (1978) state, and realistically so, that the nursing administration cannot plan a work schedule unless the incidence, trends and effects of absence are known. If these

factors are discovered, it will enable the management to be able to make allowances for absences and keep staffing and ultimately the level of patient care at an optimum level.

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Appendix AStudent Questionnaire Project

I'm doing a student project on time-off from work.  
 Would you answer a few questions for me, in confidence  
 -- can you help me?

1. How many days paid sick-leave (how much sick-leave allowance) does your organization allow (per year)?
2. What would be a reasonable rate of days off per year (though sickness or other reasons)?
3. (When and if they do) Why do people usually have to take time off? Check only those you think are important.

SERIOUS DOMESTIC PROBLEMS

COMMUNITY ACTIVITIES

BORING JOB

SPORT

DATE WITH FRIENDS

ACCIDENTS

FEELING DEPRESSED

BUSINESS

MINOR DOMESTIC PROBLEMS

DISAGREEMENT WITH BOSS

ROW WITH WORK MATES

JOB PRESSURES

MINOR ALLMENTS

WAKING UP LATE

4. Now can you say which of these are the 3 most usual reasons for taking time off?

5. In your opinion the reasons for taking occasional days off are justifiable in

100% OF CASES.

75% OF CASES

50 % OF CASES

25% OF CASES

10% OF CASES

6. Which are the justified ones and which are unjustified?

7. Do you think there are any favourite days for taking time off?