

Does shift work affect sleep patterns among nurses?

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Submitted in partial fulfillment of the requirements for

The Master in Science Degree in Nursing in the

College of Sciences and Health Professions

Albany State University

Spring 2017

DOES SHIFT WORK AFFECT SLEEP PATTERNS AFFECT SLEEP AMONG NURSES?

Abstract

Sleep and sleep quality are important to maintaining a healthy quality of life. Nurses that work long hour shifts, more importantly, consecutive shifts, often feel the effects of not acquiring enough sleep or enough quality sleep. The question answered here is whether shift work affects sleeping patterns among nurses. In addition to that question, another question answered is whether or not the lack of sleep related to shift hours effects overall quality of life. The results of this study detail the answers to these questions and additionally may encourage nurses to employ health promotion tactics in their own personal lives and not just in their patient's lives.

Acknowledgments

Thank you to all of the nurses that took the time out of their busy schedules to assist in providing answers to this research question. Additionally, thank you to Dr. Amankwaa for the guidance in preparing this piece of clay into art. Thank you to Dr. Allen for the honest and most useful feedback to make this picture perfect and successful. Dr. Allen, you truly made me feel comfortable and at ease with this process and I can't thank you enough. Lastly, thank you to my amazing husband and ever so patient children. I could not have done any of this without you three wonderful and precious people standing by my side for all of this.

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Thesis Approval Form

Accepted by the faculty of the School of Nursing and Allied Health Sciences, Albany State University, in partial fulfillment of the requirements for the Master of Science in Nursing Degree.

Dean of College of Sciences and Health Professions

Date

Thesis Committee

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Chapter 1: Introduction

Sleep health is a new topic of Healthy People 2020. This has become an important issue because of decreased work productivity all the way to fatalities caused by wrecks resulting from someone being tired or falling asleep at the wheel. Nurses working 12 hour shifts plus all the other duties of life, generally have inadequate sleep and a poor quality of sleep (Eanes, 2015). Cognitive impairment increases as fatigue increases as sleep decreases. Nurses play a vital role in promoting the health of others while compromising their own health by working long 12 hour shifts that are typically extended because nursing duties do not have a clock in or out time (Eanes, 2015).

Sleep is important for health and wellbeing and sleep loss reduces productivity in the work place and also influences basic patterns of behavior that negatively affect family health and interpersonal relationships (Lin, Liao, CHen, & Fan, 2014). The purpose of this thesis is to determine if shift work affects sleep patterns among nurses. This thesis looks at the correlation between shift work, lack of sleep, and the effects of both on quality of life.

Background

In just about every hospital across the nation nurses are working 12 hour shifts. Most nurses typically work consecutive days in a row to get the work week over and done with. But one should question if working consecutive long hour shifts affects sleep needs. Additionally, the amount of sleep received in between consecutively worked shifts need to be factored in to consideration when discerning how the amount of sleep affects nurses physically, mentally and in their work performance Frequent work shifts of 12 hour length on multiple consecutive days, more than likely leave an inadequate time to sleep (Allen, et al., 2014). Furthermore, when the nurse hat comes off the home hat usually goes on and the nurse must be a mom/dad and

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spouse/partner. In addition to long shift hours decreasing sleep hours, thereby increasing fatigue, nursing responsibilities during the shift also increase fatigue. In one study found in *Nursing Health and Sciences*, it was found that nursing activities such as walking in hallways, charting, assisting patients with mobility, changing patients, assessments, and medication administration all increased the nurses cardiac stress level to moderate which resulted in significant acute fatigue (Chen, Daraiseh, Davis, & Pan, 2014). This fatigue could potentially have an immediate impact on patient safety.

Nurses know that fatigue and lack of sleep have a negative impact on their ability to nurse. A qualitative study completed by Barker and Nussbaum (2011) surveyed nurses to obtain their perception on their fatigue and their work performance. These nurses negatively correlated fatigue with their work performance and their performance is closely linked to patient safety (Barker & Nussbaum, 2011).

Sleep deprivation and fatigue are associated with poor psychomotor performance, slowed reaction time, irritability, forgetfulness, and ineffective communication (Johnson, Brown, & Weaver, 2010). All of the aforementioned characteristics are the exact opposite of what is needed for effective nursing to take place. A good portion of nurses consider leaving the calling of nursing all together due to fatigue. The turnover for nurses, especially new nurses, is reportedly related to being so fatigued (Liu, et al., 2016)

Problem Statement

Hospital bedside nurses work long 12 hour shifts. After three days, the work week is done leaving open days to enjoy, but at what cost? Longer shifts are associated with increased physical and mental fatigue (Barker & Nussbaum, 2011). With 12 hours shifts literally lasting half of a whole 24 hour day, the window for good restful sleep becomes very limited. The risks

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for patient care errors and near errors increase when nurses work 12 hour shifts whether it is consecutive or not (Geiger-Brown, et al., 2012).

Purpose

The purpose of this paper explains the following: the relationship between lack of sleep and the effects on quality of life, how shift work affects sleep patterns for nurses, and lastly, the correlation between the lack of sleep and nurse fatigue are related to long shift hours worked. Twelve hour shifts restrict the opportunity for sleep which in turn could affect work performance (Geiger-Brown, et al., 2012). There are serious implications related to lack of sleep in shift nurses.

Theoretical Framework

Health promotion is absolutely important to nurses in both the professional arena and the personal arena. Nurses are daily performing tasks that promote health such as administering medications and teaching patient's health promotion behaviors like quitting smoking, the importance of a good diet, the importance of compliance and the importance of resting. Health promotion is typically considered something nurses do for patients and not themselves. Pender's Health Promotion Model is applicable to this study. If nurses do not promote their own health needs, such as sleep quality, then they cannot effectively take care of patients. Because of long shift hours and the daily demand of nursing activities, nurses are often fatigued and sleepy. Sleepiness alters alertness and delays reaction times (Perry, Patil, & Presley-Cantrell, 2013). This leads to patient safety issues such as medication errors and missing key assessment data. In addition to work performance being affected by sleep, other health issues and disparities are associated with lack of sleep. These include hypertension, diabetes, obesity, and heart disease (Perry et al, 2013). Pender's Health Promotion Model is based completely on behaviors that will

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inevitably impact and enhance health over a life span and prevent disease. Behaviors applicable to this study include sleep quality and habits and work habits.

Questions

1. Does shift work affect sleep patterns among nurses?
2. Does working consecutive nursing shifts cause a lack of sleep?
3. Does lack of sleep affect quality of life?

Scope

The scope of this study is specific. This study hypothesis aims to prove that working consecutive nursing shifts affects sleep patterns and overall quality of life. There are numerous studies with larger sample sizes with the aim to prove the same hypothesis in this investigation; therefore, the generalizations and results from this research study have meaning and support.

Nature

The nature of this study is clear. This particular study utilizes an online survey. There is no set amount of respondents already selected to participate. The survey is left open for a set amount of time, two weeks, which will allow for as many or as little respondents to participate.

Definition of Terms

- 1) Fatigue: Unrelenting exhaustion that develops overtime and is characterized by reduction in energy, motivation, and concentration.
- 2) Shift work: schedules of work time outside of a normal 9am -5pm work day.
- 3) Productivity: Measure of efficiency
- 4) Proficiency: Degree of effectiveness

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Summary

Sleep is of utmost importance in any human body for mental clarity and overall health and welfare. Sometimes nurses may not get a good night's sleep, especially if they are working consecutive 12 hour shifts. Research has shown that lack of sleep impacts health negatively. Therefore, it is important for nurses to find a good balance between sleep and work in order for nurses to maintain personal health promotion.

Chapter 2: Literature Review

The purpose of this chapter is to do a full review of the literature and to provide strong evidence of the correlation of shift work, fatigue, and work performance in nurses. This literature is complete and full as it includes nursing specific studies and studies specific to lack of sleep in the general population. Concepts for this literature review are length of shift worked, fatigue related to consecutive shifts, perceived level of fatigue by nurse, and work performance affected by fatigue. This review delineates sleep is commonly affected for shift work nurses.

Literature Review

Lack of sleep has effects on a person and their quality of life, health, and work performance. In a research study entitled *Sleep Characteristics and Health-Related Quality of Life Among a National Sample of American Young Adults: Assessment of possible Health Disparities*, the researchers set out to determine sleep habits and their association with quality of life and health disparities. The results of this study yielded sleep hindrance is associated with significantly low health quality of life including low mental health quality and insomnia, requiring sleeping medication to be used (Chen, Gelaye, & Williams, 2014). This study was based off of receiving <6 hours of sleep. This study showed a significant negative result. In one non experimental observational study, researchers used a convenience sample of 8 female registered nurses (RNs) with at least one year experience who worked consecutive day shifts to determine nursing activity distribution in a day and how nursing activities affect heart rate. Data of this study were analyzed using analysis of variance and Bonferroni Posthoc. This study results concluded that nurses spent more time walking in hallways, standing, and assisting patients with mobility (Chen et al., 2014). This type of nursing bedside work resulted in moderate cardiac stress level and, additionally, nurses reported extreme acute fatigue (Chen et

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al., 2014). Furthermore, a cross-sectional survey study found in the peer reviewed *Journal of Nursing Scholarship*, a convenience sample of 162 new nurses were surveyed and, through statistical analysis of bivariate correlation and chi-square, most were found that work related fatigue due to long shifts was a determinate of intent to leave current position of work (Liu, et al., 2016). A cross-sectional online survey performed by Barker and Nussbaum (2011) aimed to show nurse interpretation of levels of mental, physical, and total fatigue. This was a convenience sample of 745 RNs that completed the online survey and data was analyzed using histograms and the Shapiro-Wilks statistic (Barker & Nussbaum, 2011). These nurses reported extremely high mental fatigue levels with 12 hour consecutive shifts and these fatigue measurements were negatively associated with broad work performance including muscle strength, endurance, alertness, concentration, mood, and effective communication (Barker & Nussbaum, 2011). Allen et al (2014) performed a survey on 20 intensive care unit nurses, which followed the framework of a multivariate model and analyzed data with univariate regression analysis. The results were as follows, these critical care nurses obtain less sleep between consecutive work shifts (Allen, et al., 2014). Patient safety was not studied here. Moreover, because shifts are 12 hours, sleep time is significantly reduced especially in consecutive shifts. Geiger-Brown et al (2014) hypothesized sleep time would be reduced between shifts than before or after a block of consecutive 12 hour shifts, which in turn, would increase sleepiness and fatigue and reduced reaction times on shift. Geiger-Brown et al (2014) used a stratified sampling of 172 participants to accurately represent am-pm and pm-am shift workers. A generalized estimating equation and standard deviation was used to interpret data and give it meaning. The results of this study further indicate that long shift work and lack of sleep affect work performance. The results in this study show increased

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fatigue and inadequate sleep with consecutive 12 hour shifts along with increased episodes of inattentiveness as well as increase caffeine consumption (Geiger-Brown, et al., 2012).

Sleep deprivation has been shown to be associated negatively with poor decision making, forgetfulness, poor psychomotor performance, slowed reaction time, irritability, and ineffective communication (Johnson, Brown, & Weaver, 2010). These issues can greatly affect patient safety. A non- experimental correlation study was done with the purpose of determining how sleep deprivation influenced psychomotor performance of nurses who work night shift. A total of 289 full time RNs with no existing sleep disorders were recruited by posters, flyers, and announcements to participate in the study. The results of this study were analyzed using Pearson Chi-square and a general linear model. The results of this study yielded that about 56% of nurses are sleep deprived and psychomotor performance were poor for sleep deprived and no sleep deprived which could indicate night shift predisposes conditions that result in poor psychomotor performance (Johnson et al., 2010). With poor psychomotor performance being affected by fatigue and shift work, this can affect not only patient safety, but nurse safety as well. In one correlation survey study, a Chief Nursing Officer of a hospital sought to determine if shift length affected fatigue levels. The Rosswurm and Larabee model was used as framework and the Wilcoxon matched pairs test was used for statistical analysis of the data. This study revealed nurses did experience less fatigue during 8 hour shifts, but because of the sample size a decision cannot be made to go either way (Martin, 2015). To further support this study, a study conducted with 266 nurses sought to describe the current states of nurses' shift work and how it affects nurses' stress, sleep quality, and self-perceived health status. Hierarchical regression and independent T test was used to analyze data. The results of this study concluded that the nurses

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showed moderate job stress, poor sleep quality, and moderate levels of self-perceived health (Lin et al., 2014).

Summary

After this thorough literature review, the gaps are noticeable. Minimum studies exist related to shift work sleep patterns among registered nurses and patient safety. No studies have been done to determine if fatigue has actually caused patient injuries. Future researchers may want to consider a retrospective variance report review of medication errors and patient injuries to determine if nurse fatigue and slowed psychomotor skills have anything to do with patient injuries and medication errors. Does shift work affect sleep patterns among nurses? This is a question in which other researchers have studies using various methodologies according to existing research. In conclusion, this literature review supports the hypothesis of long hour shift work reduces sleep and causes increased fatigue which affect nurses health and work performance.

Chapter 3: Methodology

This chapter showcases the methods utilized for this study in order to achieve whole, full, and meaningful data. The methodology utilized for this study directs and guides the data collection and analysis of information in a cohesive and understandable fashion. This chapter describes the research design, setting, population and sample, instrumentation, data collection, data analysis, limitations, and protection of human subjects. The methods used in this study will help answer the question of “does shift work affect sleep patterns among nurses”?

Research Design

A descriptive correlation design without manipulation of variables is utilized. Furthermore, this study examines the relationship among the amount of hours of sleep nurses get while working consecutive shifts, perception of nurse fatigue, and quality of life all in relation to sleep and consecutive shifts worked. Because this is a descriptive correlation study, it is non-experimental. Therefore, there is no treatment given to any participants. This study includes nurses who work two or more consecutive shifts in a row on either day or night shifts. Measured variables include hours of sleep obtained while working the shifts, shift and amount of hours worked, and nurse perception of fatigue level. Variables that cannot be controlled include age, race, gender, and any existing comorbidities. In addition, this study identifies correlations between shift work, sleep patterns, and fatigue.

Setting

This study uses an online survey, therefore there is no specific setting. The general setting is the United States. The respondents completed a survey in a place of their choice with access to a computer.

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Population and Sample

The population for this study includes any nurse that works 2 or more consecutive 8, 10, or 12 hour shifts, either day or night. The sample is one of convenience, but in order to decrease any potential for bias, the survey will be administered by Survey Monkey to any random volunteer nurse. The exclusion criteria consist of the following: a participant has not worked at least two consecutive shifts in a row and located outside of the United States. The inclusion and exclusion criteria for this study allows for generalizations to be made to the population as a whole.

Instrumentation

The respondents completed a survey using the facilitated online service, Survey Monkey. The survey consists of questions regarding hours of sleep, hours worked, shift worked, and perception of work life balance. See Appendix A for demographic questions and Appendix B for survey questions. The recruitment tool link and inclusion criteria were placed on social media.

Data Analysis

Data analysis will be done for the entire sample using basic descriptive statistics. Percentages will be done so that all data may be seen as a whole. In addition, histograms are used to show data analyses in picture form.

Data Collection

Prior to any data being collected, authorization was obtained from Albany State University's Institutional review board (IRB). As the data was collected, the same survey form was used on each and every participant to ensure accuracy and consistency. Subjects for this study were based on volunteering to complete a survey.

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Data was managed in a private and confidential manner to respect the participant by having no identifiable information or data on the collection forms being used during the collection process. Data collected included age, gender, weight, years of experience, hours of sleep at night, shift worked, hours consecutive worked and questions regarding levels of fatigue, lack of sleep, and shift work. Coding and abbreviations were used by the researcher in which only the researcher had access to the meaning of the abbreviations and codes being used. All of the data collected was kept in a secure place, protected by a lock or password, in which only the researcher had a key or password. As the data was entered into the computer, the data was stored within Survey Monkey which was password protected and only the researcher had access to the information. The researcher was the only one with access to any information or data obtained, entered, and stored. The researcher enabled secure sockets layer encryption so that the data was protected as it moved between the respondent's computer and Survey Monkey servers. Additionally, the researcher disabled the internet protocol tracking address so that the survey and the responses remained anonymous. The survey given was printed at a sixth grade reading level to make the survey age appropriate and understandable for all subjects.

Limitations

Some limitations in this study included a small sample size dependent upon how many subjects are rejected based on inclusion and exclusion criteria. Additionally, the setting was only partially controlled and not highly controlled. Moreover, the study had limited time constraints for participation.

Protection of Human Subjects

The protection on human subjects was addressed in this study. The collaborative institutional training initiative (CITI) program was completed in order to ensure the researcher

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was successful in completing research involving human subjects. Appendix C shows completion certificate for the CITI program. Additionally, this study went before the Albany State University's IRB committee and was granted permission to proceed with this study. There is always a risk with online surveys. The confidentiality of the subjects were maintained with the use of extreme anonymity. The collection of data was gathered via Survey Monkey. Survey Monkey also managed the data collected in a private manner.

Data considered identifiable was not used. There was a consent form used for this study. The consent form was positioned at the beginning of the survey as question number one. There was no treatment given or withheld as it relates to the study. There was no direct contact with study subjects for this project.

Summary

The methodology utilized in this study helps to answer the question of "does shift work affect sleep patterns among nurses"? This study utilized a descriptive correlation design with the use of surveys. In addition, authorization was obtain from Albany State University IRB. Furthermore, protection of human subjects' rights was maintained as well as anonymity of subjects.

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Chapter 4: Research Findings

This chapter consists of the data findings from the survey administered. This chapter includes all questions answered by the 138 respondents on the survey and will be displayed in chart form with question responses displayed by histograms in Appendix D. This chapter describes all data and includes some comments left by the 138 respondents.

Description of Demographics

The sample was selected using convenience sampling method. The recruitment tool used was social media. The researcher had no direct contact with the respondents of the survey. The demographic questions on this survey asked questions regarding gender, age, years as a nurse, area of nursing, shift length, and overweight for height. The demographic questions compile Appendix A.

Gender	
Female	Male
95.21%	4.79

Age group	
20-30	33.56 %
31-40	35.62 %
41-50	16.44 %
51+	14.38 %

Years as a nurse	
<1y	3.42 %
1-5y	32.19 %
6-10y	26.03 %
11+y	38.36 %

Nursing shift hours worked	
12 hour shift	77.08 %
10 hour shift	9.03%
8 hour shift	13.89 %

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Time working particular nursing shift	
6m-11m	8.9%
1-5y	49.32 %
6-10y	24.66 %
11+y	17.12 %

Overweight for Height	
Yes	55.86 %
No	44.14 %

Nursing Specialty Area	
Medical-Surgical	52.9 %
ICU	18.12 %
ER	18.84%
Office	10.4%

How many hours sleep for two consecutive nursing shifts worked			
2-4 hours	5-8 hours	9-12 hours	13+ hours
6.9 %	60.0 %	24.14%	8.97%

Data Analysis/ Description of statistical findings

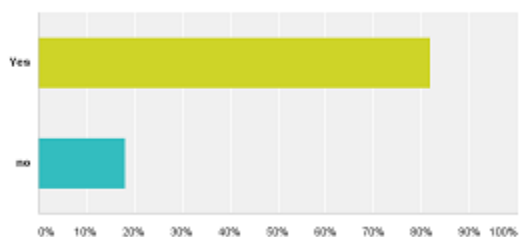
Descriptive statistical technique was used when determining how respondents answered questions. Percentages were the particular technique used to describe what the data shows. Histograms and tables were used to display the percentages for visual aid and further comprehension. Additionally there were comment sections on the survey questions in an attempt to qualify some of the data. Analysis of comments were not performed as the overall structure of

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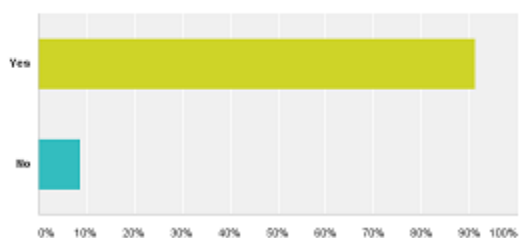
the study is quantitative. The comments were used to illustrate points of the quantitative data. Questions 11-23 are compiled in Appendix B.

The data provided in percentages show a strong correlation between lack of sleep and working nursing shifts, especially the longer 12 hour shifts. According to survey data, respondents feel nursing shift work does affect sleep patterns which thereby, affect quality of life. Particularly question number 21 from Appendix B asks “Do nursing work responsibilities affect your sleep pattern?” the percentage was overwhelming, with an astounding 81.75 % of respondents answering yes. This answer correlates with the question number 11 of Appendix B, “Does your sleep pattern affect your quality of life?” 91.3 % of the respondents answered yes to that question.

Q21 Do nursing work responsibilities affect your sleep pattern?



Q11 Does your sleep pattern affect your quality of life?



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An astounding 35 comments were left to qualify question number 11 regarding sleep pattern and quality of life. All of the comments directly state reasons related to being tired from shift work. These comments include “Poor quality/long enough duration of sleep = lack of energy = eating carbs for energy = gain significant weight. Nausea and foggy brain, I usually have to play "catch up" on my days off and spend them sleeping instead of doing chores or socializing, If I have less than 5.5 hours of sleep I usually pay for it 2 days later by being irritable & unable to concentrate, working full time 12 hr. night shifts greatly affects my quality of life, always exhausted, sleep in on my days off, migraines after my shifts are over from sleep deprivation, I often sleep more during my days off because I am so tired from my shifts”. And one of the numerous comments left for question 21 ties nursing shift work directly back to sleep. The comment stated “The stress and long hours affect the amount and quality of sleep.” The researcher is left to ponder the hard core truth of how sleep patterns are affected by shift work because it is of note that the majority of the comments left were done so between the hours of 1am and 6am. Though these answers show overwhelming evidence that shift work does affect sleep patterns, which indirectly affects family responsibilities and quality of life, 90.51 % of nurses answered “No” to the question “Have you attended any seminars on sleep, nursing work, and quality of life?” Only three comments were left to further explain answers. These comments were, briefly, “my hospital offers a few, currently reading a book on sleep disorders, and attended one during my nurse residency program”. By the same token, exactly 50% of the respondents rely on bedtime rituals such as essential oils, meditation, quiet time, and prescription medication, while the other 50% do not rely on a bed time ritual at all.

Consequently, nursing shift work and fatigue can affect attitude and temperament.

Question number 17 asks directly that, “Does your attitude and temperament change when you

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work consecutive nursing shifts?" 88.41 % answered yes. Some comments left to further explain this question include, "3-12 hour shifts in a row and I am a bear, I'm more on edge and have to stop and think more by the second or third day, I am mean, I am better with an 8 hour shift".

From this survey consecutive nursing shifts and long nursing shifts affect sleep patterns and affected sleep patterns affect quality of life, it should be noted that the majority of nurse respondents like their shift hours (67.15%); however, most would prefer shorter shifts. 52.17 % would prefer shorter shifts, while 47.83% would not prefer shorter shifts. No comments were left on these questions to facilitate any further conclusions. Additionally, 73.91% of respondents say they feel like they do have good work life/home life balance and 78.1% verify they do not get sick often, but a few respondents that answered yes left comments validating their response to that particular question. These comments include, briefly, "I am very prone to strep throat, which I tend to get when I'm working several consecutive shifts or overtime". Along with health and wellness 70.29% do exercise and 65.22% take care not to eat the majority of daily calories at the bedtime meal.

Lastly, it is overwhelmingly noted that question number 23, which states "Do you feel fatigued after working consecutive nursing shifts?" generates a very staunch yes as the answer. 95.65% of the respondents answered yes. Curiously only twelve comments were listed. Some of the comments include, "It is physically and mentally draining, nursing "hangover" needs a day to recuperate, it takes me a good two days to recover when I work 3 consecutive shifts". A notable comment refers to a nurse working 12 hour shifts and dropping down to 8 hour shifts and states she has noticed less anxiety, less stress, better sleep and a better relationship with her husband. That speaks volume to shift work affecting sleep pattern and that sleep pattern directly affecting

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work and home life balance, mood and temperament, interpersonal relationships, and overall quality of life.

Summary

This chapter compiled all of the data and summarized it. It is noted that the majority of the respondents do feel fatigued when they work consecutive shifts, additionally, they feel that the longer shifts affect their sleep pattern. Moreover, because the sleep pattern has been affected by the nursing shift the overall quality of life is ultimately affected as evidenced in this survey by question 11 and the 93.1% that answered it does. Even though most feel that shift work does affect sleep patterns, not many of these nurses surveyed have actually taken any lessons or seminars on ways to improve sleep habits and hygiene. Fifty percent rely on bedtime rituals and the other 50% do not. Most of the participants exercise and do not consume the majority of daily calories at the bedtime meal. Though it should be noted quality of food was not clarified or asked about. Overall, nursing shift work, sleep patterns, and effect of quality of life are all correlated as this study has revealed.

Chapter 5: Discussions with findings, recommendations and conclusions

This chapter is an overview of the entire study with findings. The section for recommendations for future research leads to the implications for practice as well as ideas for future related research. This section is comprised of a discussion with significance of findings and recommendations for future research.

Discussion

This particular research study set out to determine if shift work affected sleep patterns for nurses. Nurses were surveyed utilizing an inclusion and exclusion criteria as previously explained. The demographics of the survey participants varied. It was found in this study, additionally, that because sleep patterns are affected by shift work most of these participants felt that their quality of life was affected as well. In a study completed by Eanes (2015), the results concluded that nurses obtain reduced amounts of sleep between consecutive work shifts. Eanes (2015) results are consistent with this study in that 60% of the participants only obtained between 5 and 8 hours of sleep total for consecutive shifts worked. Sleep deprivation leads to reduced vigilance and potentially impairs work performance (Allen, et al., 2014). None of the questions in this survey asked about patient safety or work performance, some participants left comments validating they felt “foggy” after working consecutive shifts and not receiving adequate sleep.

Based on this study it can be concluded that many nurses, of a wide range in experience, feel long hours of shift work affect their sleep patterns which, affect their quality of life. Many of the nurses who participated in this study reported feeling fatigued after working consecutive nursing shifts and reported many aspects of their lives are affected by the fatigue and lack of sleep related to long shift hours and duties required while working the long shift hours.

Conclusion

According to this study it is concluded that shift work does affect sleep patterns among nurses which also affect nurses' quality of life. Basic descriptive statistics, percentages, were used to analyze the data. Nurses feel fatigued when they have worked long shifts as well as consecutive shifts. Many of the participants in this survey feel that their quality of life is affected in that they are too tired for family obligations and social obligations. Although the long shifts affect their sleep patterns, the majority do not feel it affects their overall health and actually enjoy working the shifts they are currently working. No patient safety measures were researched in this study. Though nurses are very knowledgeable about health promotion behaviors, as this is a large makeup of the education they provide to patients, it is often common to see a nurse not apply these behaviors to their own self and life. This study shows that majority of the participants never attended a seminar or workshop to help balance sleep and nursing shift hours as evidence by question 12. Additionally, as evidenced by question number 15 the respondents do exercise in various ways but no clarification was sought on how much so there is no way to know if the exercise they are doing is even sufficient enough. If nurses would attend to their own health promoting behaviors, nurses might be able to develop better sleeping patterns after nursing shift work that would improve overall health and quality of life.

Recommendations for Future Research

This particular study did not inquire about patient safety. Based on the outcome of this study and the revelation that nurses are fatigued after long shift hours and nurses sleep patterns are affected by shift work, it would be of worthy interest to discern if patient safety has been affected. Additionally, it would be suggested to use this information to determine just how much or little nurses actually pay attention to their own health promotion behaviors in the areas of

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sleep, exercise, social activities, and over all general health. Moreover, it would be incredibly useful to take this study information regarding shift work and sleep patterns and focus more on night shift workers and research car accidents when leaving work after consecutive night shifts. This study could be used to further investigate the benefits of all nurses working shorter shifts across the spectrum of nursing.

Summary

This chapter discusses the final data and the potential usefulness of it in the future or as a tool in future research studies. This study hypothesis is that shift work affects nurses sleep patterns. The data supports the study hypothesis proving the strain of shift work does affect sleep patterns, which in turn, affects overall quality of life. Facility boards and administrations need to carefully consider how long shift hours affect their employees' health and lives and how that can indirectly affect patient care as well as employee satisfaction.

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Appendix A

Appendix A comprises the demographic questions that are necessary to this research study.

- 1) Are you male, female, or other?
 - a. Male___
 - b. Female___
 - c. Other_____

- 2) Have you worked at least two days in a row the last week?
 - a. Yes__
 - b. No__

- 3) How many hours of total sleep for two consecutive nursing shifts worked have you received?
 - a. 2-4hours_____
 - b. 5-8hours_____
 - c. 9-12_____
 - d. 13+hours_____

- 4) What is your nursing specialty?
 - a. Med-surg_____
 - b. ICU_____
 - c. ED_____
 - d. Office_____

- 5) What nursing shift hours do you work?
 - a. 12hour shift_____
 - b. 10hour shift_____

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- c. 8hour shift_____
- 6) How many years/months have you worked this particular nursing shift?
- a. 6m-11m_____
 - b. 1-5years_____
 - c. 6-10years_____
 - d. 11 years+_____
- 7) What is your age group?
- a. 20-30
 - b. 31-40
 - c. 41-50
 - d. 51-older
- 8) How long have you been a nurse?
- a. Less than one year_____
 - b. 1-5years
 - c. 6-10 years
 - d. 11+years
- 9) Are you overweight for your height?
- a. Yes
 - b. No

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Appendix B

Appendix B shows the actual survey questions participants will be asked. Most are simple yes/no questions. An extra space will be given for the participant to provide elaboration if participants desire to do so.

- 1) Does your sleep pattern affect your quality of life?
- 2) Have you attended any seminars on sleep, nursing work, and quality of life?
- 3) Do you have any bedtime rituals that help you sleep after a nursing shift?
- 4) Does family responsibilities affect sleep, nursing work patterns?
- 5) Do you exercise at all?
- 6) Do you eat most of your calories at your bedtime meal after a nursing shift?
- 7) Does your attitude and temperament change when you work consecutive nursing shifts?
- 8) Do you enjoy the nursing shift hours you work?
- 9) Would you like a shorter nursing shift?
- 10) Do you have a good work life/ home life balance?
- 11) Do nursing work responsibilities affect your sleep pattern?
- 12) Do you often get sick?
- 13) Do you feel fatigued after working consecutive nursing shifts?

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Appendix C



Completion Date 21-Feb-2016
Expiration Date 20-Feb-2019
Record ID 18727356

This is to certify that:


Bethany Owens

Has completed the following CITI Program course:

Social & Behavioral Research - Basic/Refresher (Curriculum Group)
Social & Behavioral Research - Basic/Refresher (Course Learner Group)
1 - Basic Course (Stage)

Under requirements set by:

Albany State University

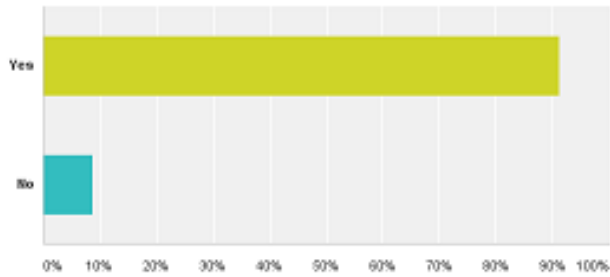


Verify at www.citiprogram.org/verify/?w43a5690d-80f8-4f20-89da-0f8d3918ca4b-18727356

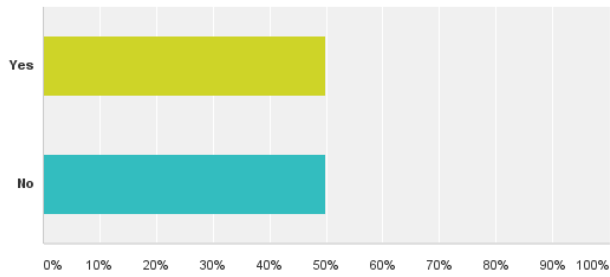
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Appendix D

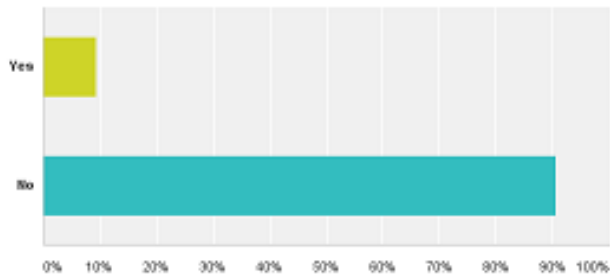
Q11 Does your sleep pattern affect your quality of life?



Q13 Do you have any bedtime rituals that help you sleep after a nursing shift?

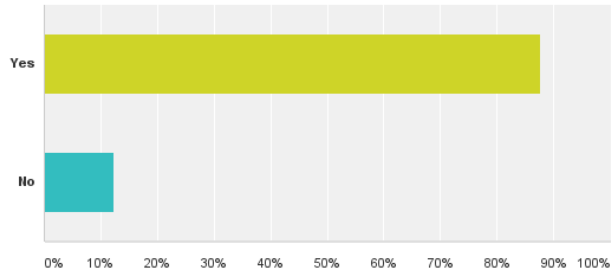


Q12 Have you attended any seminars on sleep, nursing work, and quality of life?

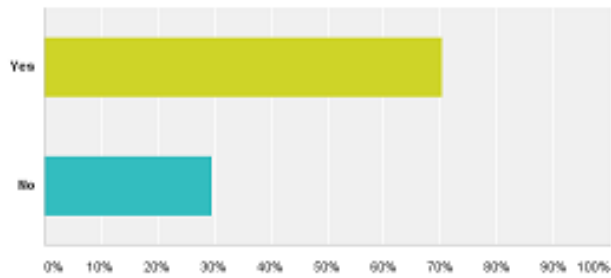


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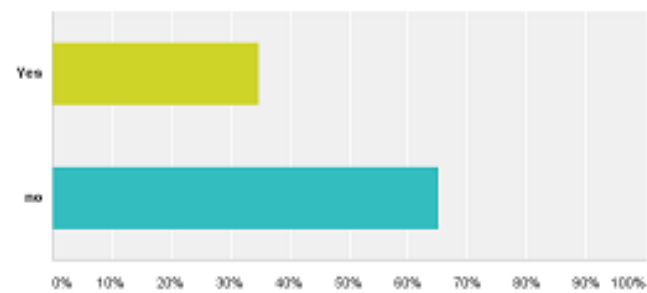
Q14 Does family responsibilities affect sleep, nursing work patterns?



Q15 Do you exercise at all?

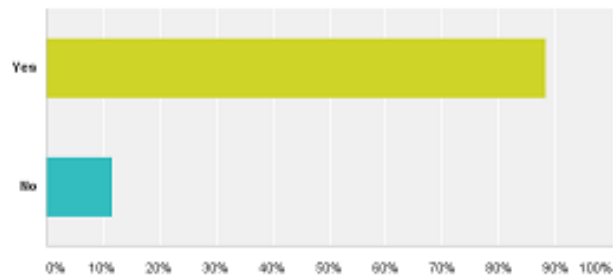


Q16 Do you eat most of your calories at your bedtime meal after a nursing shift?

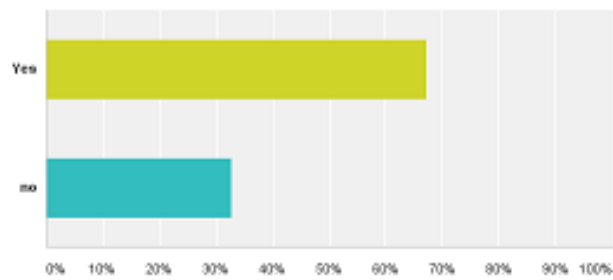


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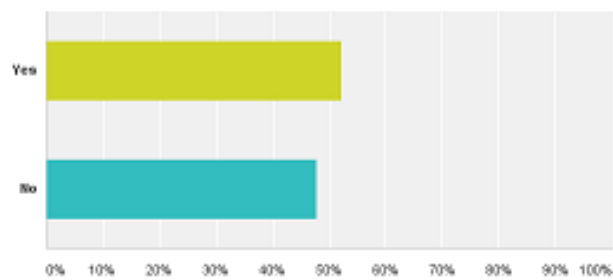
Q17 Does your attitude and temperament change when you work consecutive nursing shifts?



Q18 Do you enjoy the nursing shift hours you work?

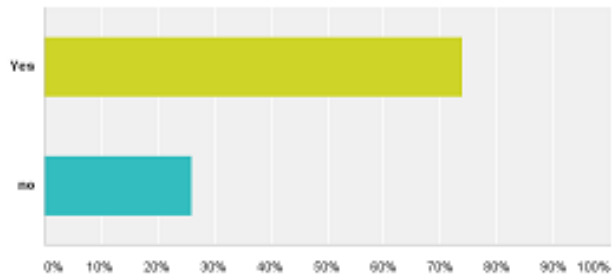


Q19 Would you like a shorter nursing shift?

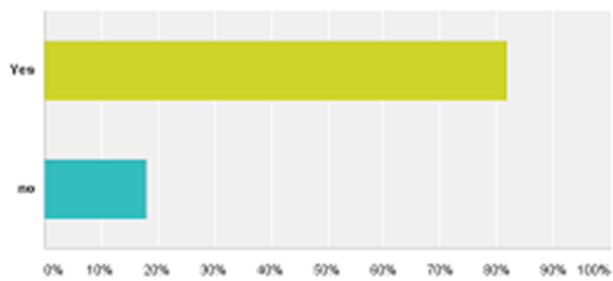


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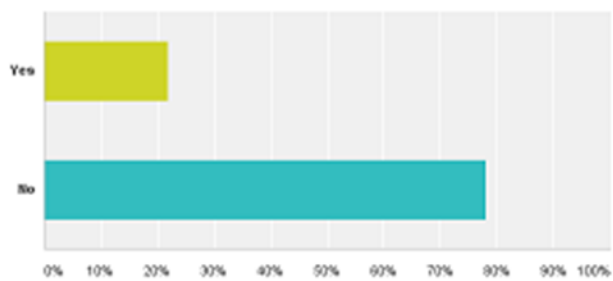
Q20 Do you have a good work life/ home life balance?



Q21 Do nursing work responsibilities affect your sleep pattern?

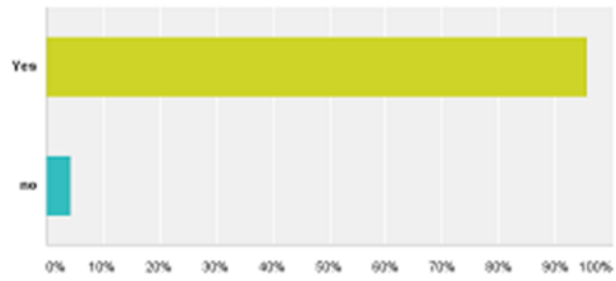


Q22 Do you often get sick?



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Q23 Do you feel fatigued after working consecutive nursing shifts?



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