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Comparison of Social Life and Sleeping Pattern among Eight and Twelve Hours Shifts Nurses

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Abstract
Objectives: The purpose of the current study is to: Investigate the relationship between shift length and Saudi nurses' social life and sleep pattern. **Methods:** A descriptive correlation, cross – sectional research design was utilized to conduct the current study. A convenience sample of 200 Saudi nurses was involved in the study. Data were collected from three hospitals: King Fahd Hospital, Al- Shumaisi hospital and Yammama Hospital**.** Data were collected over a seven months period from March, 2012 – October, 2012. An explanation about the purpose and the nature of the study was offered for each individual potential participant. Agreement to complete the questionnaire worked as an informed consent. Subjects were assured about the confidentiality of the collected data and that it will be only used by the researchers for the purpose of the current study. Data were collected using a questionnaire survey designed by the researchers and consisting of three parts: Sociodemographic data, questions related to nurses' sleep pattern, and nurses' social life. Data were analyzed using SPSS version 18. **Results:** Current study findings reveal no statistically significant difference in relation to the Saudi nurses' preference of either 8 or 12 – hour shifts. Saudi nurses who worked 12 – hour shift showed a statistically significant difference in relation to their satisfaction with their sleep quality than Saudi nurses who worked 8 – hour shift. Saudi nurses who worked 8 – hour shift had more time to spend with their families and were more satisfied than Saudi nurses who worked 12 – hour shift. **Conclusion** Shorter length shift work considered more positive in terms of sleep pattern satisfaction and quality social life as perceived by Saudi nurses.
Keywords: nurses, social life, sleeping pattern, shift length

Introduction

Nurses play a vital role in patient care and the health sector. Nursing shortage has been acknowledged as a problem worldwide, in Saudi Arabia there is a shortage of nurses of 100,000 nurses. In Arab countries, family ties and socialization are essential components of the Arab culture. In order to meet the needs of patients' care around the clock, in nursing profession, the 24 hours of the day are usually covered by three 8-hour shifts (day or morning – afternoon - late or night). Since the 1970s, several articles have described studies of the extended; mostly 12-hour, shifts and favorable consequences have been reported. For example, extended shifts give nurses more days and weekends off and can have more available "free" time with their family and friends (Underwood 1975, Ganong 1976, et al).

Work schedules are a key element in nurses' intent to remain employed. Extended shift (those past 8 hours) and overtime due to unplanned staff illnesses, absence or increased hospital admissions can result in increased fatigue and sleep deprivation among nurses (Geiger-Brown & Trinkoff, 2010). Furthermore, extended work shifts of twelve hours or longer are common and popular among hospital staff nurses, and it has been reported that nurses working longer shifts were more likely to experience burnout, job dissatisfaction, and patients were more dissatisfied with their care.

Sleep is a vital necessity in which the body renews itself and represents foundation of a healthy physical and mental life which directly impacts the person's quality of life (Karagozoglu & Bingol, 2008).There is reasonable evidence that shift workers in general suffer acutely and chronically impaired health (Costa, 2003; Harrington, 2001). There is also growing evidence that they have an increased risk of divorce and having children with anxiety and behavior problems (Pisarski et al., 2006).

Several studies have recognized impaired sleep as a common problem among nurses. Overworked, fatigued and stressed nurses are at a higher risk of making mistakes that threaten their own health as well as patient safety (Hasson & Gustavsson, 2010). For nurses working either 8 or 12-hour shifts, sleep deprivation amplifies the risk for patient errors, and personal injuries on shift (Fallis, McMillan & Edwards, 2011 & Rogers,

Wei-Ting Hwang, Scott, Aiken and Dinge 2004). Other concerns related to impaired sleep involve effects on the immune and cardiovascular systems. A decrease in the immune system is often associated with lack of quality sleep and cardiovascular regulation is essential; constant changes due to sleep loss could increase the risk of many cardiovascular diseases (Vaara, Kyrolainen, Koivu, Tulppo, & Finni, 2009).

Shift work, and particularly working night shift, is known as a source of stress for nurses (Fallis, McMillan, & Edwards, 2011). It is widely acknowledged that the negative effects of shift work arise from the mismatch between altered sleep-wake schedules, internal timing mechanisms, and community rhythms of business, social, and recreational activity (Costa, 2003). In essence, shift workers are required to work and sleep at times that conflict with normal societal and biological patterns.

According to (Knauth, 2001) Impaired sleep considered the most frequently reported complaint among shift workers on general and more evident among long shift workers. Those people are more likely to take naps during free hours or use days off to make up for the deficient sleep hours (Winwood, Winefield, and Lushington, 2006), this would impact the time they expected to spend with their families. Studies show that long shift workers suffer from additional stress caused by missing out on important parts of their social life. It is harder for nurses with long shifts to spend time with their children especially younger ones who go to bed early, and to attend school activities with them. On the other hand, spouses may work the opposite shift, thus spending less time together which reflects on the quality of marital and family relationships (Rathore, Shukla, Singh, & Tiwari 2012).

Due to long working hours and mismatch between work obligations and the family and social life requirements, many Saudi nurses would scarify their job to take care of their families and children. Recruiting non – Saudi nurses is a temporary solution to overcome the Saudi - nurses' shortage. In most cases the recruited nurses are non – Arabic speakers which put burden on the patients and caregivers due to communication issues.

Trying to improve the working conditions for the nurses might encourage Saudi nurses to sustain their jobs. One possible improvement is to introduce better scheduling processes, especially with regards to flexibility and adaptation to personal and social requests. This study investigates the relationship between the shift length and nurses sleep pattern and their opinions about their own social life.

The purpose of the current study was to Investigating the relationship between shift length and Saudi nurses' social life and sleep pattern.

Research hypotheses

1. The eight hours shift Saudi nurses will report better sleeping pattern than 12 hours Saudi shift nurses.
2. The eight hours shift Saudi nurses will report better social life than12 hours Saudi shift nurses.

Methodology

Research design

A descriptive correlation, cross – sectional research design was utilized to conduct the current study with the aim to investigate the relationship between shift length and Saudi nurses' social life and sleep pattern.

Subjects

A convenience sample of 200 Saudi nurses was involved in the study. Sample was selected from three different hospitals named: King Fahd Hospital affiliated to King Abdulaziz Medical City, Al- Shumaisi hospital affiliated to King Saud Medical City, and Yammama Hospital. Those hospitals were selected to present both 8hours and 12 hours shifts. Data were collected over seven months period from March 2012 to October 2012. The inclusion criteria included: female Saudi nurses, working for at least one year. Foreign nurses and Saudi nurses who worked for less than one year were excluded from the study.

An explanation about the purpose and the nature of the study was offered for each individual potential participant. Qualified subjects were asked to complete the survey questionnaire. Voluntary participation was assured. Agreement to complete the questionnaire worked as an informed consent. Subjects were assured about the confidentiality and anonymity of the collected data and that it will be only used by the researchers for the purpose of the current study.

Tools

After thorough literature review, data were collected using a questionnaire survey designed by the researchers and consisting of the following parts: Sociodemographic data including information about (age, gender, academic degree, marital status, and number of children, work area and the length of work experience). Second part of the questionnaire asked questions related to nurses' sleep pattern (number of sleeping hours in weekdays, weekends, and nurses opinions regarding sufficiency of sleeping hours). Third part concerning nurses' social life, it included 15 statements, Likert type scale to assess nurses about their opinion regarding their social life pattern. The scale included such as I have social life regardless the shift length, I just need to organize my time to have good social life, I have no enough time for spiritual need and I feel uncomfortable, I am satisfying

with my social life, I believe nurses social life has an effect on their job performance, and I get along with my family members. The Likert scale items were scored and a total score was calculated for every subject, I always get support from family and fronds (if they have enough time to spend with their families, visit their friends or practice their spiritual needs and their satisfaction with their social and spiritual life.

Content validity of the instrument was assessed by two experts who examined the tools and approved it. Test retest method was used to determine the reliability of the tool, by administering the tool twice with an interval period of two weeks to 5 subjects who were excluded from the study. The reliability was 0.79. Subjects needed 20 -25 minutes to complete the questionnaire. A pilot study was conducted to test the feasibility and applicability of the tools, and identified the most suitable time to collect data. The pilot study was carried out on different five students. The result of the pilot study was helpful in refining the interview questionnaire form

Data analysis

Data was coded for entry and analysis using SPSS statistical software package version 18. Data was presented using descriptive statistics in the form of frequencies and percentages. Interval and ratio variables was presented in the form of means and standard deviations, and tested by Student t-test. Nominal and ordinal variables were compared using chi-square test. Independent t test was used to compare between ratio and interval data of the two groups (8 and 12 hours shifts). The significance level was chosen as ($p < 0.05$).

Results

Data were collected from 3 different hospitals Those hospitals were selected to present both 8 hours and 12 hours shifts with the aim to assess the relationship between shift length and Saudi nurses' social life and sleep pattern. The sample consisted of 200 nurses, 114 nurses worked 12 hours shift and 86 nurses worked 8 hours shift.

Table 1: Comparison of the Sociodemographic Status between 12 Hours Shift and 8 Hours Shift Nurses

	12 Hours Shift n= 114 (%)	**8 Hours Shift n= 86 (%)**	**Test**	**P**
Age			t = 1.548	0.123
Less than 30	94 (82.5)	71 (82.6)		
39 – 39	15 (13.2)	14 (16.2)		
40	5 (4.4)	1(1.2)		
Mean	27.52	26.52		
SD	5.15	3.44		
Gender			$X^2 = 0.857$	0.355
Male	17 (14.9)	9 (10.5)		
Female	97 (85.1)	77 (89.5)		
Marital Status			$X^2 = 5.743$	0.125
Single	62 (54.4)	53 (61.6)		
Married	45 (39.5)	33 (38.4)		
Divorced	5 (4.4)	0		
Widow	2 (1.8(	0		
Number of Children			t = 1.248	0.201
No children	76 (66.7)	65 (75.6		
1-3	31 (27.2)	20 (		
More than 3	7 (6.1)	1 (1.2)		
Mean	0.7544	0.5233		
SD	1.38	1.08		

Comparison of the sociodemographic status between 12 hours shift and 8 hours shift nurses in table one showed that The two groups were comparable regarding age, Gender, marital status, and number of children as there were no statistical significant differences in those variables between the two groups ($p = 0.0123$, $p = 0.335$, $p = 0.125$, $p = 0.201$ respectevely). The mean age was 27.52 for the 12 hours shift nurses and it was 26.52 for 8 hours shift nurses. The majority of nurses in both groups were female (85.1 % and 89.5% respectively). More than half of the nurses in both groups were single, 54.4% of the 12 hours shift nurses and 61.6& of the 8 hours shift nurses.

Table 2: Comparison of the Education and Work between 12 Hours Shift and 8 Hours Shift Nurses

	12 hours shift n= 114 (%)	8 hour shift n= 86 (%)	Test	P
Degree			$X^2 = 18.856$	0.000
Bachelorette	56 (49.1)	62 (72.1)		
Diploma	56 (49.1)	18 (20.9)		
Master	2 (1.8)	6 (7)		
Years of Experience			t = 2.442	0.015
Less than 5	84 58.3)	72 (83.7)		
5 – 10	19 (16.7)	12 9 (14)		
10 and up	11 (9.6)	2 9 (2.3)		
Mean	4.17	2.72		
SD	4.88	2.88		
Unit			$X^2 = 36.104$	0.000
Medical	48 (42.1)	42 (48.8)		
Surgical	18 (15.7	34 (39.6)		
ER	11 (9.6)	6 (7)		
Outpatient Clinic	31 (27.2)	3 (3.5)		
ICU	5 (3.5)	1 (1.2)		
The preferable shift length			$X^2 = 2.132$	0.344
8 hours				
12 hours	77 (67.3)	53 (61.6)		
	37 (32.5Z)	33 (38.4)		

As shown in table 2 there was a statistically significant difference between the two groups regarding their degree, Years of experience and Unit of their work (p = 0.000, p = 0.015, p = 0.000 respectively). The 12 hours shift group had more nurses (49.1%) with diploma degree while the 8 hours shift group had more nurses (72.1%) with bachelorette degree. The mean years of experience of the 12 hours shift nurses (4.17 years) which was about double the mean years of experience (2.72) of the 8 hours shift nurses. More nurses in the 8 hours shift group (39.6%) worked in surgical unit while more nurses in the 12 hours shift (27.2%) group worked in outpatient clinic. There was no statistical significant difference between the two groups regarding their preference of the shift length. Almost two thirds of both groups (67.3% and 61.6%) prefer to work 8 hours shift.

Table 3: Comparison of the Sleeping Pattern between 12 Hours Shift and 8 Hours Shift nurses

	12 hours shift n= 114	8 hour shift n= 86	t	P
Do you have enough sleeping time?			$X^2 = 7.527$	0.023
Yes	41 (36)	19 (22.1)		
No	73 (64)	67 (77.9		
Sleeping hours in week days			t = 0.841	0.410
Less than 4	10 (8.8)	7 (8.1)		
4-6	73 (64)	64 (74.4)		
7-9	26 (22.8)	15 (17.4)		
10 and up	5 (4.4)	0		
Sleeping hours in weekend			t = 1.575	0.117
Less than 4	8 (7)	3 (3.5)		
4-6	46 (40.4)	32 (37.2)		
7-9	41 (36)	37(43)		
10 and up	19 (16.7)	14 (16.3)		

Comparison of the sleeping pattern between 12 hours shift and 8 hours shift nurses in table 3 showed that there were no statistically significant difference between the 12 hours and 8 horse shift nurses regarding their sleeping hours in the work days and in the off days (p = 0.410 and p = 0.117 respectively). The majority of nurses in both groups (64%, 74.6%) had sleeping hours ranged between 4 and 6 hours during the work days. More than one third of nurses in both groups (36% and 43%) had sleeping hours ranged between 7 and 9 hours during the off day. Surprisingly, results of the current study showed that 12 hours shift nurses were more satisfied with their sleep quality more than the 8 hour shift nurses as they reported that they had enough sleeping (p = 0.023)

Table 4: Comparison of the Social Activities between 12 Hours Shift and 8 Hours Shift Nurses

	12 hours shift n= 114 (%)	8 hour shift n= 86 (%)	Test	P
Do you think that you spend enough time with your family?			$X^2 = 11.767$	0.003
Yes	32 (28.1)	24 (27.9)		
No	81 (71.9)	78 (72.1)		
How many times do you visit your family per week?			$X^2 = 12.125$	0.016
Non	9 (7.9)	11 (17.4)		
Once	57 (50)	52 (60.5)		
Twice	26 (22.8)	12 (9.3)		
Three and up	22 (19.3)	11 (12.8)		
Do you think that you have enough time for visiting friends?			$X^2 = 0.411$	0.316
Yes	26 (22.8)	23 (26.7)		
No	88 (77.2)	63 (73.3)		

As presented in table 4, comparison of the social activities between 12 hours shift and 8 hours shift nurses showed that there were is a statistically significant difference between the 12 hours and 8 hours shift nurses regarding their opinion about having enough time to visit their families, the number of times they visit their family per week and their (P = 0.003, p = 0.016 respectively) while there was no difference between the two group in their opinion about having enough time to visit their friends(p = 0.316)

Table 5: Comparison of the Nurses Opinions Regarding their Social Life Pattern between 12 Hours Shift and 8 Hours Shift Nurses

	12 Hours Shift n= 114 Mean ± SD	8 Hours Shift n= 86 Mean ± SD	t	P
I have social life regardless the shift length	1.97 ± 1.105	1.95 ± 1.42	0.064	0.949
I just need to organize my time to have good social life	3.70 ± 0.62	4.14 ± 4.40	-1.050	0.295
I have no enough time for spiritual need and I feel uncomfortable	3.62 ± 0.71	3.57 ± 0.88	0.473	0.636
I am satisfied with my social life	2.12 ± 1.04	2.89 ± 1.08	2.670	0.008
Nurses social life has an effect on their job performance	2.78 ± 0 .93	2.64 ± 1.04	0.947	0.345
I get along with my family members	3.65 + 1.09	3.28 + 2.37	1.475	0.142
I can resolve conflict with family members and friends	3.85 ± 0.90	3.63 ± 0.99	1.663	0.098
I always get support from family and friends	3.76 + 1.00	3.63 ± 1.13	0.838	0.403
I have close friends who I can talk with	3.49 ± 1.15	3.37 ± 1.20	0.711	0.478

Comparison of the Nurses opinion about their social life pattern between 12 hours shift and 8 hours shift nurses is presented in table 5 and showed that there was no statistical significant difference between the mean scores of the two groups regarding the following statements. I have social life regardless the shift length, I just need to organize my time to have good social life, I have no enough time for spiritual need and I feel uncomfortable, Nurses social life has an effect on their job performance, I get along with my family members, I can resolve conflict with family members and friends, I always get support from family and friends, and I have a close friends who I can talk with (p =0.949, p = 0.295, p = 0.636, p = 0.008, p = 0.345, p = 0.142, p = 0.098, p = 0.403, p = 0.478 respectively). However there was statistically significant difference between the two groups opinion that I am satisfied with my social life (p = 0.008)

Discussion

Nurses are required to care for patients around-the-clock. Traditionally, nurses used to work five 8 hour shifts per week, however, now most hospital staff nurses work three 12 hour shifts per week to achieve better work-life balance. The present study was conducted with the objective of getting an insight into the relationship between shift length and Saudi nurses' social life and sleep pattern.

While there is a wide controversy opinion regarding the impact of the shift length, many studies

concluded that working extended shifts directly impacts both the nurse wellbeing and patients' safety. According to (Rathore, Shukla, Singh, & Tiwari 2012, Akerstedt, 1988; Costa, Lievore, Casaletti, Gaffuri, & Folkard, 1989), research into the impact of longer shift work on professionals has consistently identified a range of negative outcomes in physical, psychological, and social domains. Although findings are incongruent with the findings of the current study as we found no significant difference between 8 and 12 hour shift nurses with regard to the sleeping hours during the working and off days, results on the other hand raveled statistically significant difference between 8 and 12 hour shift nurses with regard to their overall satisfaction with their sleep. This finding could be explained according to (Lowden, et al. 1996) by the assumption that those nurses who work for 12 hour shift have more days off where they can make up for the sleep inadequacy during the work days, another interpretation to this finding in the current study is that majority of 12 hour shift nurses worked in the outpatient department which usually is rated as less stressful than other work areas.

Findings of a research study conducted by Stimpfel, 2011 revealed that nurses who reported working for 12 hours or more or overtime on their last shift were associated with increased odds of burnout, job dissatisfaction and intent to leave their employers. Results of the current study indicated no statistically significant differences between the two groups in relation to all statements that assessed the social life with the exception of the statement that measure the overall satisfaction with the social life as findings of the current study revealed that the 8 hour shift nurses were more satisfied with their social life than the 12 hour shift nurses.

In their study of Indian nurses with an objective of getting an insight into the problems faced by female nurses in shift work, Rathore, Shukla, Singh, & Tiwari (2012), found that the female nurses in different age groups faced many problems that affect their health and well being, fatigue, family and social and problems. They could not give much time to their children. Common problem was the insufficient sleep during night shifts. The nurses had to accommodate to the needs of the family, children in particular along with the adjustments to be made due to shift work. Children and husband in some cases did not cooperate which lead to more frustration. When asked if they would quit shift job if they get regular one more than 50 % said they are willing to quit their shift job. Our research study results support the findings of that study, as current study results revealed that 8 hour shift nurses had more time to spend and visit their families more than those nurses who worked for 12 hour shift.

Conclusion

Shorter length shift work considered more positive in terms of sleep quality and quality social life as perceived by Saudi nurses. Saudi nurses who worked 8 – hour shift showed a statistically significant difference in relation to their satisfaction with their sleep quality than Saudi nurses who worked 12 – hour shift. Current study findings reveal no statistically significant difference in relation to the Saudi nurses' preference of either 8 or 12 – hour shifts. Saudi nurses who worked 8 – hour shift had more time to spend with their families than Saudi nurses who worked 12 – hour shift. Saudi nurses who worked 8 – hour shift were more satisfied with their social life than Saudi nurses who worked 12 – hour shift.

Recommendations

Based on the findings of the current research study, the following recommendations are suggested. Further research, focusing on a wider range of workplace variables is needed to shed light on the current study findings. Replicate this study with larger and more heterogeneous randomly selected sample and well-defined valid instrument that fit and sensitive to Saudi culture. Hospital administrations should enhance the personal and professional well- being of long shift workers which in turn contributes to the quality of patient care.

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Conflict of Interest

Researchers declare no conflict of interest with any organization regarding the materials discussed in this manuscript.

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