



The Relationship between Work Shift, Satisfaction, and Intention to leave among Nurses

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Abstract

The acute shortage of nurses and other healthcare professionals is part of the reasons why the long duration of work shifts is common. Not much is known concerning the relationship of these work shift changes towards the satisfaction and intent to leave among nurses in Saudi Arabia. This study aims to explore the influence of work shift on the perceived satisfaction, intents, and discomforts experienced by nurses in Saudi Arabia. This study uses a cross-sectional correlation descriptive design, 491 staff nurses were conveniently selected from a medical city in Riyadh in Saudi Arabia to achieve study aims. The questionnaire survey was done with the nurse's satisfaction with their job and their intentions to leave. The questionnaire distributed from June to August 2017 and analyzed using the Statistical Package for Social Sciences Version 22. It is found that the nurses are mostly moderately satisfied with their job (36.3%) and has the intention to leave the health care facility the following year (55.4%). After duties, most complained of being tired (84.2%), with low back pain (62.1 %) and gets fatigued (60.6%). Most of the nurses did not agree that the duration of the shift should be reduced (54.9%), favours over time (52.7%), and gave opportunities to socialize (50.2%). Duration of shift is significantly associated with the nurses' job satisfaction ($p = 0.015$) and their intent to leave ($p = 0.0006$). The working shift was found to significantly influence nurses' health discomforts after duties ($p < 0.001$), especially the sleepiness ($p = 0.020$) among night shifters. Whereas duration of shift is more specifically associated with sleepiness ($p < 0.001$) and experiencing gastric discomforts ($p < 0.001$). Finally, nurses' staff working for over 12 hours is less satisfied with their job and more likely has the intention to leave the organization. The health discomforts experienced by the nurses' staff at the end of the shift vary more likely according to their work shift than the duration of shift.

Keywords: Work shift, length of work shift, nurses, job satisfaction, Saudi Arabia



1. Introduction

The work patterns of registered nurses (RN) remains a central point of focus for most clinical researches due to various factors inherent to the global health care sector. Over the past two decades, RN's patterns of work attracted significant interest from scholars as series of evidence show avail evident that long work hours among nurses is associated with poor quality of patient care (Stimpfel & Aiken, 2013; Stimpfel, Sloane, & Aiken, 2012). Among the known issues associated with long working hours include errors, needle injuries, hospital generated infections, and poor attention to details (Olds & Clarke, 2010). Hospitals incorporate recovery intervals between shifts, sleep options for recovery during the intervals, fatigue reduction, personal, and family engagement during the intervals as mechanisms of coping with stress resulting from long shifts. In as much as such efforts are not able to alleviate problems associated with long shift hours. Concerns of nurses' working duration cover length of shifts and the nature of rotation in the job. Ideally, nurses interact with patients, right from the admission to discharge, thus making them best suited to observe and report on quality. In other words, they are the most valid informants in hospitals concerning patient condition and progress during their stay. Consequently, a significant number of healthcare organizations and state boards of nursing continue to design suitable approaches to solving the challenges of nurse shift duration. Evidence from a series of research on the relationship between long working hours and poor quality of care have motivated recognized organization such as the Institute of Medicine (IOM) and American Nursing Association (ANA) to call for an end to mandatory overtime in healthcare organizations. For instance, the Accreditation Council for Graduate Medical Education (ACGME) started to minimize the duration of shift hours' residents and fellows in 2003 (Rosenbaum & Lamas, 2012). In support, the IOM published recommendations on how nurses play a critical role in enhancing patient safety and outcomes of patient care (Levy, 2004) .

Apart from shift length, nurse workload, and other work environmental factors determine the level of satisfaction with their duty as well as the quality of service delivery.



While shift duration extension beyond twelve hours is common and popular among nursing staff, little research exists to explore the effect of long shift hours on the well-being of nurses and patient care quality. Kieft, De Brouwer, Francke, and Delnoij (2014) concluded that nurses' degree of satisfaction with the work environment influences service delivery to patients. Griffiths et al. (2014) conducted a cross-sectional study of 488 hospitals across twelve European countries. The authors found that 15% of the respondents worked more than 12 hours and normal shift duration varied between countries as well within countries with various states. Nurses working more than 12 hours have high chances of poor patient safety. Nevertheless, extensive studies evaluating the connection between nurse shift duration and quality of care are limited. This research project seeks to collect fresh and unique data from a large nurse survey to supplement the existing gaps in the literature. This research will have wide implications to educators, policy makers, fellow researchers, and healthcare organization administrators. This research will help policy makers in designing policies restricting mandatory overtime for nurses. It provides vital information to health research organizations spearheading enquiries on how to keep nurses safe. Moreover, this research will act as a source of knowledge for the states board to know whether the restrictions on nurse shiftwork hours are beneficial or has side effects as well. Again, the findings of our study will provide insights into the role of collaborative engagement in designing regulations that control duration of shift hours and whether overtime should be mandatory or not. Finally, the research proposal investigates the motivating factors that enhance nurse satisfaction with their work with a specific attention to hours worked and nature of shift planning. Nurse leaders should adopt leadership styles that make nurses feel comfortable and delay their intention to leave.

1.1. Problem Statement

Economic, social, and technological forces change with time, a phenomenon that make workforce adapt to different forms of work schedules and planning. As the 21st century matures, work schedules have transformed significantly in different sectors where some industries use regular hours, others use irregular shifts, and others flexible hours to meet the demand of their operations (Johnson & Lipscomb, 2006; Cooper, 2009).



In this regards, organizations, especially in healthcare sector, no longer adhere to the normal work schedule of 8 AM to 5 PM. Nurses, typically viewed as physicians' aspirants, shift hours could fall at night or day depending on workload and scheduling policy of the specific where one organization works. Odd working hours could affect nurses' health and well-being in many ways. Disruption of sleep patterns, overall fatigue, declined vigilance and attention, and increased stress levels are some of the common negative effects of abnormal shiftwork scheduling (Hamid, Malik, Kamran, & Ramzan, 2014). According to Dall'Ora, Griffiths, Ball, Simon, and Aiken, (2015), nurse prefer 12-hour shift due to its inherent benefits such as work-family balance and nurses working 12 hours in a single shift experience higher degree of burnout than nurses working less shift hours do. Furthermore, the authors indicated that employers believe that changing number of shifts per day from 3 to 2 minimizes period of shift overlap as well as frequency of handovers, which reduces overall workforce requirement for cost saving measures. Handoffs overlaps between shifts reduce efficiency, increase discontinuity, and errors. Finally, States or federal regulations do not strictly provide that nurses should work only 12 hours. Additionally, due to the need for financial gain, some nurses could voluntarily sign up for longer shiftwork without knowing the overall effect such decision has on their job performance. Gómez-Garcia et al. (2016) argued that long shifts more than 12 hours reduce family time or the social life nurses need, increase tiredness and stress levels, increase occupational risks, and reduce attention of nurses while at work. The article does not link the aspect of longer working hours to delivery of quality care.

1.2. Research Aims

The study aims to examine the nurses' work shift and its impact to nurses' perceived job satisfaction and intent to leave the organization. Specifically, the study aims to:

1. To determine the nurses' work shift, duration of shift, and overtime in a specified healthcare facility.



2. To identify the significant relationship between the duration of shift with the perceived job satisfaction, intent to leave, interest to have overtime, and the lack of opportunity to socialize.
3. To determine if the nurses' work shift and duration of shift significantly impact the nurses' discomforts experienced at the end of the shift.

1.3. Research Questions and Hypothesis

1. What are the characteristics of the nurses according to work shift, duration of shift, and overtime?
2. Is there a correlation between the nurses' duration of shift with their perceived job satisfaction, intent to leave, interest to have overtime, and opportunity to socialize?
3. Is there a significant relationship between discomforts experienced by the nurses with the work shift and duration of shift?

The study hypothesis states that the long duration of shift significantly impacts the nurses' perception on job dissatisfaction, intent to have overtime, intent to leave, opportunity to socialize, and discomforts after work shift.

2. Literature Review

The nurse turnover rates have increased in the last decade due to a number of dynamic forces affecting healthcare workforce phenomenon supported by various publications and research studies. Burnout, job satisfaction levels, financial need, and organizational work environment and management commitment are some of the common predictors of nurses' intent to leave their current healthcare organizations (Tourangeau et al., 2012). Long hours shift work, fatigue due to shift work, recovery times, and sleep patterns are due changing nature of work in a healthcare setting, which makes it vital to evaluate the whether they influence nurses' decision to leave their employers. Caruso (2013) investigated the impact of shift work and long working hours on nurses.



The authors concluded that employers could minimize the risks associated with shift work and long working hours by making sleep a priority in their work scheduling system and integration with nurses' personal lives. The article provides quite relevant insights to this research proposal because it emphasizes the importance of employers considering sleep and personal lives of nurses are vital in shiftwork planning. It points out a probable relationship between work shift with job satisfaction and intention to leave. In a similar vein, Bae & Yoon (2014) examined the extent to which state laws concerning overtime regulations affect mandatory overtime practice among registered nurses. The authors concluded that states' regulations on mandatory overtime and adherence to consecutive working hours reduce nurse work hours during overtime shiftwork. The article provides useful information to the research proposal because it provides the role of government in regulating mandatory overtime prevalence among healthcare organizations. From the efficiency perspective, the employers may consider state regulations limiting the use of mandatory overtime disadvantageous.

Finally, employees in shiftwork can experience social to familial conflict. This is the consequence of having limited engagement with family members and activities due to spending too much time at work or irregularly with their children (Reddy et al. 2010). The negative impact of the time constraints to engage in family affairs can influence the feeling of lower life satisfaction and internal conflict within the family. The degree of work-family conflict depends on size, children's age, hours of shiftwork, and level of management support for social elements of family considerations. Such variables influencing the level of conflict affect stress levels among nurses as well as well-being. The problem can get more badly when a couple is working opposite shifts in nursing or different professions. It limits engagement time between female nurses and their spouses and children, a factor that is not the ingredient of a functional family. Therefore, hospital administrators should consider the balance between work life and social/family life because it affects the psychological thinking of nurses. A nurses' feeling of high psychological burden based on his or her negative relationship with partner or children is more likely to make errors or provide poor care services.



3. Methodology

To achieve the aims of this study, this study follows the purpose of correlation, which is to determine whether the increase in the traits of the variable can lead to either increase or decrease of other variables. The respondents in this study described their work profiles according to work shift and duration of shift. A correlation was used to establish a relationship between the respondents' health-related discomforts with work shift and the duration of the work shift. A similar analysis was done with perceived job satisfaction, intent to leave and intent to participate in overtime. Furthermore, the study was conducted in a King Fahad Medical City, which is supervised by the Ministry of Health in Riyadh, Saudi Arabia. A total number of 2, 676 nurses were working in the main hospital, women specialized hospital, children specialized hospital and rehabilitation hospital. The data were collected from the main hospital, women specialized hospital, children specialized hospital, and rehabilitation hospital. This study was used the convenience sampling to come up with the proper tool for the calculation of samples and the selection of respondents. The nurses' staff is eligible to participate when they pass the inclusion criteria which include working in the selected medical city and licensed to practice nursing in Saudi Arabia. For exclusion criteria, nurses' staffs who work in other hospitals or medical cities in Riyadh were excluded from the study. Also, respondents who did not complete the survey were omitted from the final sample to produce clear data. The study utilized power analysis through Raosoft incorporated for the calculation of the sampling size which resulted in 337 nurses' staff. In the calculation sample, the margin of error is 5%, the degree confidence is 95%, with the response distribution of 50%. In this study, 500 questionnaires were distributed to ensure an adequate number of samples in relation to the targeted sample size. In the final data collection, 419 questionnaires were returned with complete answers giving 83.8% response rate. Thus, the sample size for this study exceeds the estimated calculated sample size. The data showed that of the 419 nurses as respondents, 127 were from the Main Hospital, 113 were from the Children Specialized Hospital, 96 were from the Women Specialized Hospital and only 83 were from the Rehabilitation Hospital.



Finally, a self-report questionnaire taken from the study nurse's satisfaction with their job and their intentions to leave survey was used as a research tool. This tool was used by Bonface Muindi Tabitha in the study entitles the negative impacts of shiftwork and long work hours. The use of the tool was approved by the author Boniface Muindi. The tool covers the work characteristics of the respondents in relation to their shift. These include the duration of shift expressed in hours and the work shift whether as morning (AM) or evening (PM). The nurses' job satisfaction is rated according to a scale of 1 to 4. The highest number means the highest approval to job satisfaction which is 4. On the other hand, 1 means the nurse is least satisfied with the nursing job. The intent to leave was determined by their perception as to they either agree or disagree to more likely to stay in the organization for another year. Furthermore, the nurses' discomforts were also explored as to whether they experience or feel tired, fatigued, sleepy, moody, back pain, and digestive problems at the end of their work shift. The nurses were also asked of their perspective as to reduce the shift hours, participate in overtime, and whether this affects their opportunity to socialize.

4. Results and Discussion

The total number of nurses who answered the questionnaire is 419, 240 (57.3%) were working in the AM or morning shift, whereas the remaining 179 (42.7%) were at PM shift or at night. According to the duration of shift, the majority, 408 out of 419 (97.4%) of nurses, followed the 12 hours shift which is customary in the hospitals in Saudi Arabia. In Saudi Arabia, it is mandatory for nurses to end their duration for shift after 12 hours. However, several nurses answered 9 hours (1.4%) and 10 hours (1.2%) as their duration of shift. These nurses consider their working period as the number of hours they completed their assigned tasks for the day, thus several respondents answered less than 12 hours. Finally, according to the overtime experience of the nurses, about 381 (90.9 %) of the nurses have not encountered overtime. For those who experienced overtime, 11 nurses (2.6%) have 12 hours, whereas others have had either 1 (2.1 %), 2 (2.1%), or 3 (2.1%) hours only.



4.1. Perceptions of the nurses toward their work in terms of satisfaction, intent to leave, agreement to reduce shift hours, effects in social life, and health-related discomforts

Table 1 showed the perceived job satisfaction of nurses. Majority of the nurses (152, 36.3%) were moderately satisfied with their job. 107 nurses (25.5%) were satisfied while only 70 (16.7%) were highly satisfied. It was surprising to note that 90 (21.5%) out of the 491 nurses were not satisfied with their job in their current workplace.

Table 1. The perceived satisfaction scale of the nurses.		
In a scale of 1 -4 where 4 represents the most approval, do you feel satisfied with job	f	%
Not satisfied	90	21.5
Satisfied	107	25.5
Moderately satisfied	152	36.3
Highly satisfied	70	16.7
Total	419	100.0

Table 2 showed that more than half, which 232 nurses (55.4%) claimed their intention to leave the organization for the incoming year. In contrast, 183 (43.7%) decided to remain in organization. The remaining 4 nurses (0.9%) were still indecisive to be among those nurses who will be part of the turnovers.

Table 2. The distribution of nurses according to their intent to leave the organization.		
Do you see yourself leaving the organization in the next one year	F	%
Yes	232	55.4
No	183	43.7
Maybe	4	0.9
Total	419	100.0



The nurses complained of several discomforts which they typically experience after completing their entire work shift. Most of the respondents (84.2%) felt tired after working in their assigned areas. Other nurses mostly complained of back pain (62.1%), fatigue (60.0%), or sleepiness (44.9%). The least complaints were getting moody (31.4%) or having gastric upsets after work (29.6%) (See Table 3).

Table 3. The health complaints of the nurses after every shift.

I feel the following after completing my shift	f	%
Tired		
Yes	353	84.2
No	66	15.8
Fatigue		
Yes	254	60.6
No	165	39.4
Sleepy		
Yes	188	44.9
No	231	55.1
Moody		
Yes	132	31.5
No	287	68.5
Back pain		
Yes	260	62.1
No	159	37.9
Digestive problems		
Yes	124	29.6
No	295	70.4



Table 4 showed that the majority of the nurses (54.9%) thought that there is no need to reduce the number of hours per working shift. The nurses suggested that there should be positive changes in terms of bed availability, reducing the nurse-patient ratio, workload reduction and satisfying the needs of the ward and the patients instead of reducing the number of hour per shift. Nurses who agreed to reduce the number of shift hours comprised of 45.1 %. These nurses suggested that the working hours should be reduced from 12 to 8 hours (29.6 %), or to 6 hours (8.4%). Others also suggested having 2 days off after 2-3 days on duty (3.4%).

Table 4. Agreement and disagreement of nurses to reduce the shift hours.

Do you think there is need to reduce the shift hours	f	%
Yes	189	45.1
No	230	54.9
Neutral	0	0.0
Total	419	100.0

The results in Table 5 showed agreement or disagreement to have overtime at work. The findings revealed that majority of the nurses (52.7%) were not willing to participate in overtime. Most of these nurses thought that overtime was exhausting, demands more time. However, several nurses (43.0%) like overtime for added extra income, completion of extra tasks, and the lack of staff nurses. The remaining nurses (4.3%) were still undecided and were willing to help or be included in the overtime when needed.



Table 5. Agreement and disagreement of nurses to have overtime.

Do you willingly participate in overtime?	f	%
Yes	180	43.0
No	221	52.7
Neutral	18	4.3
Total	419	100.0

In relation to agreement or disagreement of overtime affecting their social life, majority of the nurses (50.2%) agreed that their job has affected their opportunities to have social life. Mostly reasoned that their working hours had affected their time for family engagements, drained their energy, and limited their socialization with friends, ventured to other sources of income, and lack of activities for self like going to the gym, relaxation, sleeping or meditation. However, 190 nurses (45.3%) disagreed and thought that they still need extra time based on their current working hours and schedule. About 4.5% of the nurses were still undecided as to whether their nursing work had affected their social life (See Table 6).

Table 6. Agreement and disagreement of nurses that overtime affected their social life.

Do you feel overtime affects your social life?	f	%
Yes	210	50.2
No	190	45.3
Neutral	19	4.5
Total	419	100.0



4.2. Correlation between the nurses' duration of shift with their perceived job satisfaction, intent to leave, interest to have overtime, and opportunity to socialize

The relationship between nurses' job satisfaction with the duration of shift was shown in Table 7. At 0.05 level of significance, results showed that there was a significant negative relationship between nurses' duration of shift and their satisfaction rating with correlation value of -0.119 ($p < 0.05$). Therefore, nurses who had longer work hours showed poor job satisfaction rating, while nurses with shorter work hours had high job satisfaction rating.

Table 7. Relationship between nurses' duration of work and satisfaction rating

Variables	Spearman Rank Correlation Value	P value	Remarks
Relationship between nurses' length of work and satisfaction rating	-0.119	0.015	Significant

Table 8 shows that at 0.05 level of significance, there was a significant association between nurses' duration of shift and their intention to leave the organization with contingency coefficient of 0.183 ($p < 0.05$). Moreover, results revealed that a higher proportion of respondents who work 12 hours responded "Yes" while lower proportion of respondents who work 9 to 10 hours responded "No". The results suggested that nurses who worked 12 hours were more likely to leave the organization than nurses who worked 9-10 hours.

Table 8. Relationship between nurses' duration of work and intent to leave

Duration of Work	Do you see yourself leaving the organization in the next one year			Total
	Yes	No	Maybe	
9.00	0	6	0	6
10.00	0	5	0	5
12.00	232	172	4	408
Total	232	183	4	419
Contingency Coefficient=0.183		P value = 0.006		Significant



As shown in Table 9, which shows the relationship between duration of work with intent to have overtime at 0.05 level of significance, there was no significant association between nurses' duration of shift and their intent to participate in overtime with contingency coefficient of 0.111 (p value=0.268).

Table 9. Relationship between nurses' duration of work and intent to go overtime

Duration of Work	Do you willingly participate in overtime?			Total
	Yes	No	Neutral	
9.00	2	4	0	6
10.00	0	5	0	5
12.00	178	212	18	408
Total	180	221	18	419
Contingency Coefficient=0.111		P value = 0.268		Not Significant

4.3. Correlation between discomforts experienced by the nurses with the work shift and duration of shift.

As shown in Table 10, there was a significant association between nurse's work shift and sleepiness with contingency coefficient of 0.113 ($p < 0.05$). As shown in the table, higher proportion of nurses in the PM shift felt sleepy, while higher proportion of nurses in the AM shift does not feel sleepy. This implied that nurses on PM shift were more likely to be sleepy than those nurses working on AM shift. Furthermore, there was a significant association between nurses' work shift and gastric upset with contingency coefficient of 0.207 ($p < 0.05$). As shown in the table, higher proportion of nurses whose shift were PM felt gastric upset compared to those whose shift were AM. This implied that nurses whose shift was PM was more likely to feel gastric upset than those nurses whose shift were AM. On the other hand, there was no significant association between nurses' work shift and feeling tired with contingency coefficient of 0.042 (p value=0.386). The same can be said with fatigue, moody and back pain.



Table 10. Relationship between nurses work shift with discomforts felt after shift

I feel the following after completing my shift		Work Shift			Contingency Coefficient	P value	Remarks
		AM	PM	Total			
Tired	No	41	25	66	0.042	0.386	Not Significant
	Yes	199	154	353			
Total		240	179	419			
Fatigue	No	90	75	165	0.044	0.362	Not Significant
	Yes	150	104	254			
Total		240	179	419			
Sleepy	No	144	87	231	0.113	0.020	Significant
	Yes	96	92	188			
Total		240	179	419			
Moody	No	173	114	287	0.089	0.067	Not Significant
	Yes	67	65	132			
Total		240	179	419			
Back Pain	No	86	73	159	0.050	0.302	Not Significant
	Yes	154	106	260			
Total		240	179	419			
Gastric Upset	No	189	106	295	0.207	<0.001	Significant
	Yes	51	73	124			
Total		240	179	419			

Regarding the duration or duration of work shift, Table 11 showed that there was a significant association between nurses' duration of work shift and fatigue with a contingency coefficient of 0.200 ($p < 0.05$). As shown in the table, higher proportion of nurses who worked 9 to 10 hours do not feel fatigue compared to those who work 12 hours. This implied that nurses who work 12 hours were more likely to feel fatigue than those nurses who worked 9 to 10 hours. Also, there was a significant association between nurses' duration of shift and sleepiness with a contingency coefficient of 0.160 ($p < 0.05$). As shown in the table, higher proportion of nurses who work 9 hours do not feel sleepy compared to those nurse who work 10 hours and 12 hours.



This implied that nurses who worked 10 hours to 12 hours were more likely to feel sleepy than those nurses who worked 9 hours. Meanwhile, there was a significant association between nurses' duration of shift and back pain with a contingency coefficient of 0.205 ($p < 0.05$). As shown in the table, higher proportion of nurses who worked 9 to 10 hours do not feel back pain compared to those who work 12 hours. This implied that nurses who worked 12 hours were more likely to feel back pain than those nurses who worked 9 to 10 hours. On the other hand, there was no significant association between nurses' duration of work and feeling tired with contingency coefficient of 0.071 ($p \text{ value} = 0.348$). The same can be said with moody and gastric upset.

Table 15. Relationship between nurses duration of work shift with discomforts felt after shift.

I feel the following after completing my shift		Duration of work shift (hours)			Total	Contingency Coefficient	P value	Remarks
		9.00	10.00	12.00				
Tired	No	0	0	66	66	0.071	0.348	Not Significant
	Yes	6	5	342	353			
Total		6	5	408	419			
Fatigue	No	6	5	154	165	0.200	<0.001	Significant
	Yes	0	0	254	254			
Total		6	5	408	419			
Sleepy	No	6	0	225	231	0.160	0.004	Significant
	Yes	0	5	183	188			
Total		6	5	408	419			
Moody	No	6	5	276	287	0.111	0.074	Not Significant
	Yes	0	0	132	132			
Total		6	5	408	419			
Back Pain	No	6	5	148	159	0.205	<0.001	Significant
	Yes	0	0	260	260			
Total		6	5	408	419			
Gastric Upset	No	6	5	284	295	0.106	0.093	Not Significant
	Yes	0	0	124	124			
Total		6	5	408	419			



The findings of this study showed that nurses who have longer work hours have a poor job satisfaction rating while nurses with shorter work hours have high job satisfaction rating. There were previous studies which are relevant to this research results. Similar findings were shown in the study of Han, Trinkoff and Gurses (2015); and, Alotaibi, Paliadelis, and Valenzuela (2016). The study conducted by Han, Trinkoff and Gurses (2015) among nurses from two states in America found that nurses were also found to be significantly dissatisfied with their job when they work in longer hours. The satisfaction even becomes poorer when nurses have inadequate breaks and leave on sick days (Hans, Trinkoff, & Gurses, 2015). Similar results were also observed in a study conducted among nurses in Saudi Arabia. Alotaibi, Paliadelis, and Valenzuela (2016) proved that the long working hours of nurses was perceived by them as dissatisfying. In Saudi Arabia, the nurses are working 48 hours a week and at times extend their working hours for endorsement and paper works. In this study, according to the staff nurses, work overload and time pressure may result from the low nurse-to-patient ratio in Saudi Arabia. The current ratio is four nurses per 1000 people. Extending hours of work reduces the time with families which aggravates job dissatisfaction among nurses in Saudi Arabia which was emphasized in the study of Alotaibi, Paliadelis, & Valenzuela, 2016). At present, no existing literature contradict the finding of this study which is disaffections towards nursing jobs most likely occur in long working hours. Another finding of this study in relation to intention to leave the organization, nurses working for 12 hours are more likely to leave the organization than nurses who work 9-10 hours. This finding is consistent with the previous studies as well. For instance, the study of Han, Trinkoff and Gurses (2015); and Al-Ahmadi (2014). Han, Trinkoff and Gurses (2015) discussed that the long hours of working is associated with nurses' job dissatisfaction which explained the increase turnovers of nurses. The nurses become more dissatisfied when they also experience inadequate breaks and sick days, which triggers them to more likely leave the organization. The turnover in Saudi Arabia has been regarded as chronically high. According to Al-Ahmadi (2014),



the turnover of nurses in the Saudi healthcare system specifically among public hospitals is confirmatory influenced by organizational and personal factors, work environment, personal factors and the availability of alternative employment opportunity which is also linked by several scientific researches.

Another finding of this study showed that nurses who are more likely sleepy are those working for 12 hours and assigned in the night shift. The results about sleepiness among the respondents can be explained by similar studies done by Ashutwi (2001); Eldevik et al. (2013); and, (Akerstedt, 1988). Ashuwiti (2001) also found that the Saudi nurses' sleepiness are more experienced by those in the night shift compared to the morning shift. This previous study discussed that Saudi nurses' sleep insufficiency occurs when family conflict arises with work. In this study, most of the respondents claimed that they spend less time gathering with friends and joining socialization activities. The work shift has been found associated with frequent subjective, behavioral, and physiological sleepiness which were due to circadian rhythm disturbance and sleep loss (Akerstedt, 1988). A study showed a different result conducted by Demir Zencirci and Arslan (2011) wherein no differences in experiencing sleepiness between nurses in either morning or evening shift. However, the study reported that when nurses are in rotating shifts, instead of long morning or evening shifts, feeling sleepy will most likely occur. In the current study, the findings revealed that work shift has been found correlated with fatigue and more likely among staff nurses in the night shift. Gumenyuk, Roth, and Drake (2012) explained that the incomplete adaptation to circadian rhythm is associated with work shift. The nurses working in the night shift has not adjusted to the sleep-wake rhythms which poses them to the risks of work shift disorders. Furthermore, the disturbance in sleeping patterns among night shift nurses is part of the shift syndrome which occurs due to affectation of the biological circadian rhythms of the body (Costa, 2010). At present, no researches contradict this finding, which showed that nurses in the morning shift suffer from fatigue than those in the night shift.

In terms of work shift and discomforts, this study found out that night shifters were more likely to develop digestive problems or gastric upsets than those nurses whose work shift is in the morning.



Reppert and Weaver (2002) explained that the inversion of sleep-wake cycles with modification in activity and rest is considered as stress to the circadian rhythm of biological functions especially among diurnals. The night shift workers which are in rotation, like the nurses, are to adjust quickly due to variations in schedule. Thus, the change-overs are variable and partially frustrating (Reppert & Weaver, 2002). According to the study conducted by Al-Makhaita, Sabra and Hafez among nurses working the secondary health care institutions in Eastern Saudi Arabia, work-shift has been revealed to be significantly associated with work-related stress especially with the night shifters. Work-related stress due to the misalignment of the circadian rhythms can lead to shift lag which include the feeling of digestive troubles (Costa, 2010). Hence, nurses in the night shift are more likely to report digestive problems compared to the morning nurses due to the regular stress that their biological circadian rhythm is exposed with. In fact, a study showed that there is a significant association between night shift workers with gastrointestinal disorders. Ulcer is more prevalent among night shift workers due to the compromise of the natural defense by the gastric function (Pietrojusti et al., 2006). Back pain was also commonly reported by nurses working in 12 hours shift compared to than those nurses who work in 9 to 10 hours. Low back pain is common among nurses which at time include the back of the neck and the shoulders. These findings are congruent to the study of Alexopoulos et al. (2003). Trinkoff et al. (2006) explained that the low back pain among nurses with longer shift duration is more likely due to physical demand and not psychology. The nursing work is physically demanding which require the nurses to heavy lifting, bending and twisting, and other awkward postures which increase their risk to musculoskeletal disorders (Yip, 2001). Furthermore, Trinkoff et al. (2006) proved that back pains involving the neck, should and lower back are associated with the morning and night work shift and duration of the work shift. Thus, adverse long duration of schedule is relevant to musculoskeletal disorders among nurses. No studies contradict such findings among night shift nurses over those in daytime.

According to Costa (2010), work shifts and those working hours scheduled at night is risky. Those in these shifts are at risk for gastrointestinal, psychoneurotic, cardiovascular, reproductive functions, and probably cancer. Other than that, they are also troubled with psycho-physical homeostasis.



This disparity can affect sleep/wake cycle and circadian rhythms. It can also be obstacles to their engagement with family and social life. Hence, this research emphasizes the need to protect nurses' health, especially those in night shifts. Health promotion is also recommended by the researchers for the preservation of nurse shift workers. Thus, the interferences of work shift and duration on health and well-being are complex and multifaceted. These variables can impact nurses' discomforts, relations with personal characteristics, and their working and living conditions. Based on the findings, it is important that the policy makers and implementers under the nursing administration and other departments must engage and come up with a good plan to safeguard the health of the staff nurses. It has been shown in this study that discomforts and other negative consequences of long shift work and night shifts can change the perception of nurses toward their nursing job. Thus, nursing administrators should reach out to their nurses and come up with nurse-centered strategies that will somehow keep their positive outlook about nursing despite of their unwanted experiences and being presently assigned in their current working environment.

5. Conclusion

Staff nurses working for over 12 hours are less satisfied with their job and more likely has the intention to leave the organization. The health discomforts experienced by the staff nurses at the end of the shift vary more likely according to their work shift than the duration of shift.

6. Recommendation

The current study findings serve as basis in highlighting the following recommendations that will benefit the nursing administrators, nursing practice, nursing education and nursing research:

6.1. Recommendations for Nursing Administration

It therefore recommended that adding short breaks and giving nurses time off are relatively modifiable factors that demonstrate respect for nurses to socialize and care for their self and own needs. Consequently, nurses' autonomy and satisfaction can help reduce the turnover rates of nurses in Saud Arabia.



The current study recommends the organization to revisit and strengthen their policy and compliance to the standards nursing practices through the development of interventions aimed at creating better work environments despite the long work shift by the nurses. A better environment can help nurses perform their jobs.

6.2. Recommendations for Nursing Education

Education plays a vital role in preparing student nurses adapt to their future career. This study recommends clinical teaching methods that aims to develop the nurses' adaptive skills to face clinical challenges in relation working for longer shifts in health care facilities .

Nurse educators for staff nurses are recommended to focus teaching on adaptive techniques against discomforts and other work-related stress brought by long duration of work shifts. The learning acquired will help nurse cope, perform job with satisfaction, and diminish their intent to leave .

6.3. Recommendations for Nursing Practice

It is recommended that the organization must explore the concerns of the nurses regarding stress-induced discomforts which can be attributed to longer working hours. Study showed that longer duration of work shift impact nurses comfort secondary to work-related stress. It therefore recommended that interventional programs should be implemented to identify and relieve sources of stress such us work shift and duration of working hours so that nurses will be comfortable and their job performance will be satisfying .

6.4. Recommendations for Nursing Research

The current study recommends a larger sample size from different health care sectors from different regions in Saudi Arabia to achieve accurate representation of the responses of nurses toward long work shift. Other research methods are recommended, such as qualitative approach, to gain deeper insight on the influence of duration of work to nurses' satisfaction, turnover, and discomforts. It is highly recommended that reliability and validity tests must be conducted before performing final data gathering in the future studies.



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