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## **Health related quality of life for nurses at day and night shift: A comparative study**

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**Abstract**--Nurses are one of the most important members of health care delivery systems, and they have an important role in providing safe health care, including patient care. Nurses must maintain their health in order to help others, to improve work in health care institutions such as increasing the number of employees, increasing basic resources , leads to an improvement in the health condition of the nurses and thus is reflected in the results of the patients. The nursing staff in the hallway or ward must provide nursing services to patients without interruption 24 hours a day, seven days a week, continuity, teamwork and service of the nursing function. Human satisfaction is characterized in This concept is a completely subjective variable that emphasizes the physical, psychological and social aspects of health and has an impact on individual experiences, emotions, age, gender, education level, socioeconomic status, risk factors, and the physical and social environment of places Living and working. The present study aims to: Compare between the HRQoL for the nurses at day and night shift. Study Design: A descriptive correlation quantitative design is done in the current work. The study has been carried out between the 1st of April 2021 and the 1st of Ramadan 2022 to compare the health related quality of life for nurses at day and night shift. Sample of the Study: A non-probability sampling technique is conducted on a (convenience sample) of (344) nurses from total (3341) nurses working in the Al Najaf Al Ashraf health department. Sitting of the Study: The current study has been conducted in eleven hospitals and five Specialized centers in Al Najaf Al-Ashraf Province in Iraq. within the Najaf Health Directorate. Results: In both the night and day shifts, the overall assessment of health-related quality of life is moderate. Conclusion: Comparing

between the HRQOL for night and day shift shows that there are statistically significant differences in the mean score, and also, the study confirms that the day shift has better HRQOL than the night shift. Recommendations: More study, especially among full-time nurses, is needed to determine the most effective fatigue identification and management measures that may be used in health-care workplace settings and also, as part of nurses' continuing education, training programs on optimism and proactive coping methods should be implemented.

**Keywords**---health related quality life, comparative study, nurses.

## **Introduction**

Health care employees need to be in a good condition to function well, It has been stated that a loss in nurses' health might result in a decrease in the quality and safety of the care they give, others have stated that nurses' poor health is a risk factor for negative outcomes including prescription mistakes, which have been connected to components of nursing practice. As a result, nurse health is necessary not just for nurses but also for patients (1). In the medical field, the term (HRQoL) was used to define the evaluation of physical and psychological health, as well as social well-being, Despite this, no one definition of HRQoL has been agreed upon by all researchers, It is described as a quality of life area that is primarily concerned with health evaluation in its broadest sense (2). Estimating the (HRQoL) in community and clinical settings has become more important for decision-making; it gives information on a population's performance and well-being. The HRQoL is quickly gaining traction as a measurable metric, self-reported psychological state, functional competency, social function, and individual health awareness are all part of this vast, multifaceted concept (3) .It includes a multifaceted idea that is rooted in physical, mental, cultural, and social contexts, The Nurses' HRQoL is linked to both their physical and emotional health, these are, above all, healthcare professionals, Their HRQoL may have an impact on the quality and safety of medical services, as well as the population's overall health, directly or indirectly (4).

On the other hand, Nurses are the most vital members of the healthcare workforce, and they play a key role in ensuring that patients receive high-quality, safe treatment. Job pressure, risk exposure, moral and ethical distresses, patient expectations, and significant others, on the other hand, all constitute a risk to nurses' well-being. Nurses also have multiple roles, such as continuing education and workplace management, which makes it difficult for some nurses to maintain a balance between their personal and professional life (5). Approximately 20% of the European workforce is involved in some form of shift work, with nurses leading the way, In Bosnia and Herzegovina, a unique work system exists in the health-care sector, in which all shift-work nurses are required to complete eight night shifts per month — unlike other European nations, which limit the amount of night shifts. As a result, we wanted to see if shift work had a substantial impact on hospital nursing staff's psychosocial functioning and quality of life (6).

Nearly a fifth of the global workforce now works shifts, with night shifts accounting for 20% of European and American employees. In the health-care industry, shift employment is considered essential for maintaining service continuity in hospitals and nursing homes. Nurses are largely committed to shift patterns that provide 24-hour care and include night shifts, which are defined by rotation and scheduling (7). Nowadays, a fifth of the worldwide workforce now works shifts, with Europe accounting for 40% of the total, working in shifts ensures that patient care is consistent around the clock in the healthcare industry (8).

The term "shift work" refers to a work schedule that employs two or more teams (shifts) of personnel in order to prolong the hours of operation of the workplace beyond those of traditional office hours (9). Shift work is common, particularly in the healthcare sector, where around 40% of employees work shifts (either daily split shifts, permanent morning, afternoon, or night shifts, alternating or rotating hours, or other sorts of shift work) (10).

The nursing staff on the ward must provide nursing services to patients without interruption 24 hours a day, seven days a week, because of the nursing profession's continuity, legacy, and service. Surgical nurses work in three shifts, each lasting eight hours (day shift from 8 to 4 p.m., swing shift from 4 to 12 p.m., and graveyard shift from 12 to 8 a.m.), four or five nurses normally work the day shift, with a one-hour lunch break, due to the enormous number of patients requiring nursing care. (11). Over 15 million people work night shifts on a regular basis or rotate nights, according to the Bureau of Labor Statistics, in the United States, there are 3 963 844 professionally engaged nurses (Centers for Disease Control and Prevention 2015, n.d.).

## **Methodology**

### **Study Design**

A descriptive correlation quantitative design is done in the current work. The study has been carried out between the 1st of April 2021 and the 1st of Ramadan 2022 to compare the health related quality of life for nurses at day and night shift.

### **Administrative Agreements and Ethical considerations**

The researcher obtained permission from the Ethics Committee of The University of Kufa's Faculty of Nursing has given an agreement; Furthermore, the Central Council for Statistics/Ministry of Planning has awarded official approval to use the study questionnaire with some modifications , AL-Najaf Health Directorate has given their permission to collect the samples from the hospitals , to fill out the form by each subject, and finally, after the researcher has clarified the purpose of the study to them, the subject agreement is obtained from the nurses; getting informed consent; maintaining participant confidentiality; and making participation in the questionnaire voluntary.

### **Sitting of the study**

The current work was carried out in Eleven hospitals and Five Specialized Centers in Al Najaf Al-Ashraf Province in Iraq. within the Najaf Health Directorate.

### **Sample of the study**

A non-probability sampling approach has been used (convenience sample) of (344) nurses from total (3341) nurse working in the Al Najaf Al Ashraf health department. In determining the size of sample, it is necessary to use a scientific method based on a statistically validated equation in which the population knowledge is mentioned. So we used the equation for calculated sample size  $Z^2 \cdot pq / d^2$  (13).

$$n = \frac{z^2 \times pq}{d^2}$$

n= Sample size

z= Standard critical of 95% confidence level = 1.96

d= Significance level (0.05)

p= probability of level of stress (0.5).

q= means (1-p).

$$n = \frac{(1.96)^2 \times 0.5(1-0.5)}{(0.05)^2} = 344$$

The result is (344) distributed on each hospital with the same proportion of that hospital in the total population to be more representative of the study community and more accurate. which depends on the nurses. That states multiple hospital : part / total x sample size. The research will be carried out with the permission of the Najaf Health Directorate.

### **The Study Instrument**

The researcher makes the study's instrument after surveying the relevant literature, and it is written in the Arabic language. In this study the (RAND 36-Item Health Survey 1.0 Questionnaire Items 2022, n.d.) is used.

This tool consists of two parts:

Part I: Socio-Demographic Data: The Demographic Information: There are eleven items in this section, that include: gender, age, marital status, residency , qualification, workplace, working shift, if you were a night shift and left work in it, what is the reason, years of experience, sleep hours during day, sleep hours during night.

Part II:: This part illustrates eight dimensions to examine the HRQoL for nurses in day and night shift in Al-Najaf governorate hospitals and specialized centers. These domains along with the items associated with each one are demonstrated.

### **Score Interpretation**

Physical functioning part of the study instrument consist one type of scale with three responses ( (1) Yes, limited a lot, (2) Yes, limited a little, (3) No, not limited at all). Role limitations due to physical health part of the study instrument consist one type of scale with three responses with two responses ( (1) yes, (2) no). Role limitations due to emotional problems part of the study instrument consist one type of scale with three responses with two responses ( (1) yes, (2) no). Energy /fatigue part of the study instrument consist one type of scale with three responses with Six responses((1) All of the time,( 2) Most of the time,(3) A good bit of the time, (4) Some of the time,(5) A little of the time,(6) None of the time). Emotional well-being part of the study instrument consist one type of scale with three responses with Six responses((1) All of the time,( 2) Most of the time,(3) A good bit of the time, (4) Some of the time,(5) A little of the time,(6) None of the time). Social functioning part of the study instrument consist one type of scale with three responses with five responses ((1) None,( 2) Very mild,(3) Mild, (4) Moderate, (5)Severe. Pain part of the study instrument consist one type of scale with three responses with six responses ((1) None,( 2) Very mild,(3) Mild, (4) Moderate, (5)Severe, (6) Very severe). General health part of the study instrument consist one type of scale with three responses with five responses ( (1) Excellent, (2) Very good,(3) Good ,(4) Fair,(5) Poor)). It has been emphasized that there is no lost data and then transforms the data into calculated data, arranged them in the Microsoft Office Excel 2016 program, and for statistical analysis transfer them to the Statistical Package of Social Sciences program (SPSS) version 26. Besides, to move the tables to the final results and presented for study, transforming the data to Microsoft Office Word 2016.

### **Reliability of the Study Instrument**

The reliability of the present questionnaire was evaluated by a pilot study utilizing Cronbach's Alpha coefficient test. the test has been conducted on all information questions as they are presented in the questionnaire . The test has revealed that the reliability is acceptable, with a Cronbach's alpha value of (0.824) for the information scale.

### **Data collection**

The data is collected via self-report using the developed questionnaire (Arabic version). The participants' data is collected via self-report that lasted from 29, January 2022, to 3, March 2022. From 344 nurses, a total of 350 have been obtained for statistical analysis, sex responses were eliminated because the participants did not complete the questionnaire in its entirety, The researcher met with the nurses after receiving permission from the hospital administrators to clarify the study subjects' and obtain their verbal agreement to participate in the study with the right to reject or withdraw participation and confidential details, then a copy of the questionnaire is distributed for each subject to be answers in full, Before their retrieval by the researcher.

## Results of the Study

Table (1) A comparison of the HRQoL between night and day shifts nurses

Health related quality of life dimensions	Shift type	Mean	SD.	Sig.
Physical functioning	Night Shift	56.43	24.60	.002*
	Day Shift	65.06	25.75	
Role limitations due to physical health	Night Shift	46.69	35.25	.014*
	Day Shift	37.50	34.04	
Role limitations due to emotional problems	Night Shift	49.84	38.56	.044*
	Day Shift	41.59	37.14	
Energy/fatigue	Night Shift	53.62	14.96	.037*
	Day Shift	56.95	14.52	
Emotional well-being	Night Shift	49.95	16.09	.000*
	Day Shift	57.60	14.69	
Social functioning	Night Shift	61.74	22.45	.495
	Day Shift	63.37	22.03	
Pain	Night Shift	64.51	24.70	.003*
	Day Shift	56.47	25.06	
General health	Night Shift	53.59	11.01	.795
	Day Shift	53.90	11.42	

This Table illustrates that there are statistically significant differences in the mean score between the day and night shift in all health related quality of life dimensions excepting the social functioning and general health.

## Discussion

The study findings shows there was significant relationships found between all health related quality of life dimensions (Physical functioning, Role limitations due to physical health, Role limitations due to emotional problems, Energy/fatigue, Emotional well-being and pain) in comparing between night and day shift nurses except social functioning and general health at P. value of (0.05), this result supported by (7). The aim of this study was to highlight if shift work with nights, as compared with day work only, is associated with risk factors predisposing nurses to poorer health conditions and lower job satisfaction. That mean the many nurses suffering from exhaustion because spent a long time with patient, and sampling process may be not taken all characteristic of nurses, so that there is no significant relationship founded between social functioning and general health in comparing between night and day shift nurses.

## Conclusion

Based on the study results and the discussion, the study concluded that the comparing between the HRQOL for night and day shift shows that there are statistically significant differences in the mean score, and also, the study confirms that the day shift has better HRQOL than the night shift.

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