

How to Cite:

Abdulhussein, A. K., & Falah, M. A. (2022). Assessment of physical functioning for nurses at day and night shift: A comparative study. *International Journal of Health Sciences*, 6(S2), 11368–11375. <https://doi.org/10.53730/ijhs.v6nS2.7980>

Assessment of physical functioning for nurses at day and night shift: A comparative study

Abdulhussein Kadhim Abdulhussein

Ministry of Health and Environment / Directorate of Health Department of Najaf, Iraq

Corresponding author email: abdulhussein94kadhim@gmail.com

Mansour Abdullah Falah

Assist. Prof., Ph.D., Department of Community Health Nursing, University of Kufa. Faculty of Nursing, Iraq

Email: mansura.alfatlawi@uokufa.edu.iq

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: assess of physical Functioning 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 physical Functioning is moderate. Conclusion: Compering between the

physical Functioning 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 physical Functioning than the night shift. Recommendations: The study suggests that contribute to reducing the effort on the nurses, such as dividing the official working hours into three shifts, morning, day and evening, should be followed.

Keywords---health related quality life, comparative study, nurses, physical functioning.

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

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 ³.

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 ⁴.

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 ⁵. 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 ⁶.

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 ⁷. 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) ⁸.

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. ⁹. 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.).

Nurses' daily activities have substantial implications for their health, potentially increasing the risk of physical and psychological issues. Nurses' health and well-being may also be linked to the quality of care provided to patients and the overall health of the community ¹¹. In hospitals, more personnel perform night shifts than in any other industry, Working the night shift may have a significant negative impact on a worker's life in a variety of ways, including physical, psychological, and behavioral health, as well as job performance ¹².

According to studies, persons who work night shifts are subjected to a disturbed circadian rhythm, stress, lack of physical exercise, and sleep debt, all of which can have a negative influence on their health ⁵. Nurses who work the night shift have been proven to have physiological problems as well as sleep problems, drowsy driving, family/child care challenges, and reduced leisure time are some of the concerns that emerge outside of work, new nurses starting night shift duty require evidence-based anticipatory instruction or interventions ⁹.

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 $Z^2 \times pq / d^2$ 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: 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 to examine the Physical functioning 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

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). 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 summary assessment of the physical functioning for night and day shift nurses

| Items | Night shift | | Day shift | |
|--|-------------|----------|-----------|----------|
| | MS. | Asses. | MS. | Asses. |
| 1.Vigorous activities, such as running, lifting heavy objects, participating in strenuous sports | 40.73 | Moderate | 51.16 | Moderate |
| 2. Moderate activities, such as moving a table, pushing a vacuum cleaner, bowling, or playing golf | 55.81 | Moderate | 65.12 | Moderate |
| 3. Lifting or carrying groceries | 60.17 | Moderate | 68.60 | Good |
| 4. Climbing several flights of stairs | 61.05 | Moderate | 69.48 | Good |
| 5. Climbing one flight of stairs | 47.09 | Moderate | 55.23 | Moderate |
| 6. Bending, kneeling, or stooping | 65.12 | Moderate | 73.26 | Good |
| 7. Walking more than a mile | 60.47 | Moderate | 68.31 | Good |
| 8. Walking several blocks | 52.62 | Moderate | 62.50 | Moderate |

| | | | | |
|----------------------------------|-------|----------|-------|----------|
| 9. Walking one block | 44.48 | Moderate | 52.33 | Moderate |
| 10. Bathing or dressing yourself | 76.82 | Good | 84.59 | Good |

Freq : Frequency ; MS : Mean of Scores ; Poor : MS = 0 - 33.33; Moderate : MS = 33.34 – 66.66 ; Good : Ms = 66.67-100.

This Table shows the descriptive statistics and Assessment physical functioning of nurses in night and day shift . In night shift it demonstrates that the assessment of the majority items is (Moderate) for all items numbered except number (10) it is considered (good) and for day shift items numbered (1,2,5,8,9) are (Moderate) assessment and items numbered (3,4,6,7,10) are (good) assessment.

Table (2)The overall assessment of the physical functioning for night and day shift nurses

| | Levels | Frequency | Percent | MS. | Asses. |
|-------------|------------------------|-----------|---------|-------|----------|
| Night shift | Yes, limited a lot | 31 | 18.0 | 56.43 | Moderate |
| | Yes, limited a little | 75 | 43.6 | | |
| | No, not limited at all | 66 | 38.4 | | |
| Day shift | Yes, limited a lot | 22 | 12.8 | 65.06 | Moderate |
| | Yes, limited a little | 61 | 35.5 | | |
| | No, not limited at all | 89 | 51.7 | | |

Freq : Frequency ; MS : Mean of Scores ; Poor : MS = 0 - 33.33; Moderate : MS = 33.34 – 66.66 ; Good : Ms = 66.67-100.

This Table reveals that the overall assessment for the physical functioning for nurses, is (moderate) for both night and day shift.

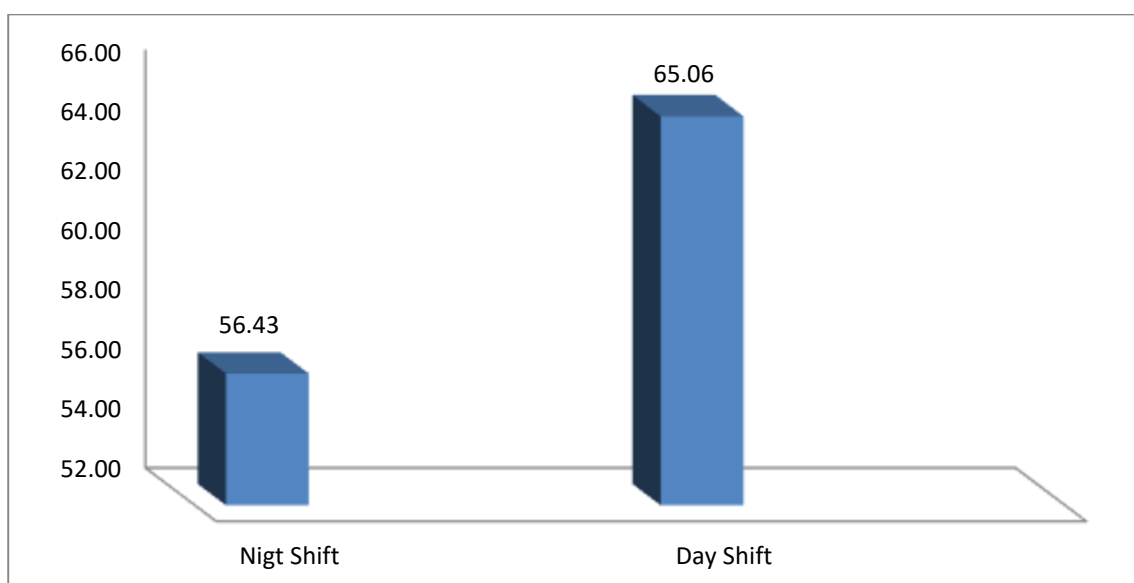


Figure (1) An illustration of the mean difference in the physical functioning among night and day shift nurses

Discussion

The current results show that there is a moderate assessment of physical functioning for nurses in night and day shift. this result come with Bjerck et al., (2018) The objective of this study is to determine the associations between health-related quality of life (HRQOL), fear of falling and physical function in older fallers receiving home care.

Conclusion

Based on the study results and the discussion, the study concluded that the compering between the physical Functioning 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 physical Functioning than the night shift.

References

1. Oyama Y. A literature review of factors related to hospital nurses ' health-related quality of life. Published online 2015:661-673. doi:10.1111/jonm.12194
2. Karimi M, Brazier J. Health, Health-Related Quality of Life, and Quality of Life: What is the Difference? *Pharmacoeconomics*. 2016;34(7):645-649. doi:10.1007/s40273-016-0389-9
3. Cruz JP, Cabrera DNC, Hufana OD, Alquwez N, Almazan J. *Optimism, Proactive Coping and Quality of Life among Nurses: A Cross-Sectional Study*. Vol 27.; 2018. doi:10.1111/jocn.14363
4. Ljevak I, Vasilj I, Curlin M, et al. The impact of shift work on psychosocial functioning and quality of life among hospital-employed nurses: A cross-sectional comparative study. *Psychiatr Danub*. 2020;32:262-268. doi:10.24869/psyd.2020.262
5. Ferri P, Guadi M, Marcheselli L, Balduzzi S, Magnani D, Di Lorenzo R. The impact of shift work on the psychological and physical health of nurses in a general hospital: A comparison between rotating night shifts and day shifts. *Risk Manag Healthc Policy*. 2016;9:203-211. doi:10.2147/RMHP.S115326
6. Dall'Ora C, Dahlgren A. Shift work in nursing: closing the knowledge gaps and advancing innovation in practice. *Int J Nurs Stud*. 2020;112(January). doi:10.1016/j.ijnurstu.2020.103743
7. Knutsson A, Alfredsson L, Karlsson B, et al. Breast cancer among shift workers: Results of the WOLF longitudinal cohort study. *Scand J Work Environ Heal*. 2013;39(2):170-177. doi:10.5271/sjweh.3323
8. Cullen K. Finnish Institute of Occupational Health Danish National Research Centre for the Working Environment Norwegian National Institute of Occupational Health. Published online 2013.
9. Vitale SA, Varrone-Ganesh J, Vu M. Nurses working the night shift: Impact on home, family and social life. *J Nurs Educ Pract*. 2015;5(10). doi:10.5430/jnep.v5n10p70
10. (Centers for Disease Control and Prevention 2015). No Title NIOSH Training for Nurses on Shift Work and Long Work Hours. <https://www.cdc.gov/niosh/work-hour-training-for-nurses/default.html>

11. Ali A, Rasheed A, Naz S. Health-related quality of life of nurses working in tertiary care hospital of Karachi. *Pakistan J Med Sci.* 2020;36(3):490-495. doi:10.12669/pjms.36.3.1267
12. Books C, Coody LC, Kauffman R, Abraham S. Night shift work and its health effects on nurses. *Health Care Manag (Frederick).* 2020;39(3):122-127. doi:10.1097/HCM.0000000000000297
13. Charan J, Biswas T. How to calculate sample size for different study designs in medical research? *Indian J Psychol Med.* 2013;35(2):121-126. doi:10.4103/0253-7176.116232
14. Bjerck M, Brovold T, Skelton DA, Bergland A. Associations between health-related quality of life, physical function and fear of falling in older fallers receiving home care. *BMC Geriatr.* 2018;18(1):1-8. doi:10.1186/s12877-018-0945-6