

FATIGUE SEVERITY SCALE & QUALITY OF LIFE IN MEDICAL PROFESSIONALS. A CROSS-SECTIONAL STUDY

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Abstract:

Introduction: This multifaceted occupational milieu precipitates a cascade of physiological and psychological stressors, culminating in debilitating fatigue—a pervasive syndrome transcending conventional exhaustion to encompass neuropsychological, affective, and behavioral deterioration. The exponential escalation of healthcare-associated burnout phenomena underscores the imperative for systematic evaluation of fatigue's multidimensional impact on practitioner well-being and clinical performance. Understanding these relationships is crucial for developing targeted interventions and improving healthcare worker wellbeing.

Methodology: A cross-sectional observational design encompassed 100 medical professionals across diverse specialties. Participants completed the validated Fatigue Severity Scale and Quality of Life questionnaire. Chi-square analysis assessed fatigue-quality of life correlations.

Results: The study population comprised 54% females and 46% males, with 70% aged 21-30 years. Fatigue was present in 55% of participants, while 45% reported no fatigue symptoms. Quality of life distribution showed 78% with normal QOL, 17% with high QOL, and 5% with low QOL. Moderate associations were found between fatigue and quality of life ($r=-0.048$, $p>0.05$), age and fatigue ($\chi^2=102.113$, $p<0.001$). Notably, Quality of life is lower among the participants with severe fatigue.

Conclusion: Nearly half of medical professional's experience fatigue, with younger practitioners being disproportionately affected. The significant association between fatigue and quality of life highlights the need for targeted workplace interventions and support systems, particularly for early-career medical professionals.

Keywords: Fatigue, Quality of life, Medical professionals, Healthcare workers, Occupational health

INTRODUCTION:

Fatigue is a pervasive and multidimensional phenomenon, commonly reported among healthcare professionals due to the high physical, cognitive, and emotional demands of their work environment ^[1,2]. Characterized by persistent tiredness, reduced functional capacity, and impaired concentration, fatigue is not only detrimental to individual health but also compromises patient safety and healthcare delivery outcomes ^[3,4]. Chronic occupational fatigue, if unaddressed, may evolve into burnout, depression, and a significant decline in overall well-being ^[5,6]. In healthcare settings, chronic fatigue can adversely affect not only the well-being of the provider but also patient safety, clinical performance, and organizational efficiency ^[7]. Among physicians, nurses, and other frontline health workers, prolonged fatigue has been linked to decreased alertness, impaired judgment, medical errors, and professional burnout ^[6,8]. Despite its widespread prevalence, fatigue is often under-recognized and undertreated in medical populations ^[9]. Existing literature suggests an inverse relationship between fatigue levels and quality of life in high-stress professions ^[2,5,9]. However, there remains a paucity of data specifically exploring this association in medical professionals using standardized assessment tools such as the FSS and validated QoL instruments. Given the high demands of the healthcare profession, it is essential to investigate how fatigue may compromise quality of life and, by extension, professional performance and patient care. This cross-sectional study aims to evaluate the severity of fatigue among medical professionals using the Fatigue Severity Scale and to examine its association with their self-reported quality of life. By identifying the extent and impact of fatigue in this population, in the context of prolonged pandemic-related stressors and evolving work patterns, our findings aim to inform institutional wellness policies and contribute to the development of targeted interventions that reduce fatigue and enhance the well-being of healthcare providers. ^[10]

MATERIAL AND METHODS

Study design: This study was a hospital-based cross-sectional study

Study setting: This study was carried out in a tertiary care hospital in Chengalpattu district, Tamil Nadu

Study population: This study was carried out among 98 healthcare professionals working in the study setting. The inclusion criteria include healthcare professionals working for more than 40 hours per week. Professionals with age more than 40 years who were diagnosed with any form of mental illness, Anaemia, Diabetes, Hypothyroidism, and any history of cardiovascular and respiratory illness were excluded from the study.

Sample size and Sampling method: The study was carried out among 98 health care professions who met the inclusion and exclusion criteria. Simple random sampling was used to select the participants. Total enumeration and enlisting of healthcare professionals in a tertiary care centre were prepared. The list served as a sampling frame. Then, by simple random sampling, participants were selected from the sampling frame by computer generated random numbers

Study period: The study duration was over 3 months period.

Study tool: The standard questionnaire on the Fatigue severity scale and WHOQOL-BREF for Quality of life were used in the study. Fatigue Severity Scale (FSS) is a 9-item self-reported tool to measure fatigue severity which is rated on a Likert scale (1 = strongly disagree, 7 = strongly agree). A total score of 9–63 indicates normal; higher scores indicate more severe fatigue. The scale is widely validated in clinical and occupational populations. The quality of life is measured by SF-36 Health Survey questionnaire that contains both physical and mental health domains. WHOQOL-BREF is a broader measure that includes social and environmental factors.

Data collection: After obtaining approval from the ethics committee, participants were selected based on inclusion and exclusion criteria. Informed consent was obtained from the participants, and the questionnaires were explained to them. The responses were then filled out using an interview method.

Study outcome: The proposed study outcome is to correlate the severity of fatigue using the Fatigue Severity Scale with quality of life in medical professionals

Data entry and analysis: The collected data were entered into Microsoft Excel and analyzed using the Statistical Package for the Social Sciences (SPSS) version 21. Relevant prevalence was calculated and tabulated. The quantitative variables were expressed as means and standard deviations, and the qualitative variables were expressed as frequencies and percentages. The Chi-square test was used to determine the statistical significance. P value <0.05 was considered significant.

RESULTS:

The study was carried out among 98 healthcare professionals in a tertiary care hospital. The mean age of the participants was 29 years with a standard deviation of 4.6 years. More than half of the participants (54%) were female, while the remaining 46% were male. Analysis of years of experience revealed that 37% of professionals had 1 to 2 years of experience, 37% had 3 to 5 years of experience, while the remaining 26% had 6 to 10 years of work experience. (Table 1)

Table 1: Demographic characteristics of study participants (n=98)

Characteristics	Frequency (n)	Percentage (%)
Mean age	29 ± 4.6 years	
Gender		
Males	45	46%
Females	53	54%
Years of experience		
1-2 years	36	37%
3-5 years	36	37%
6-10 years	26	26%

Figure 1: Distribution of participants based on the symptoms of Fatigue:

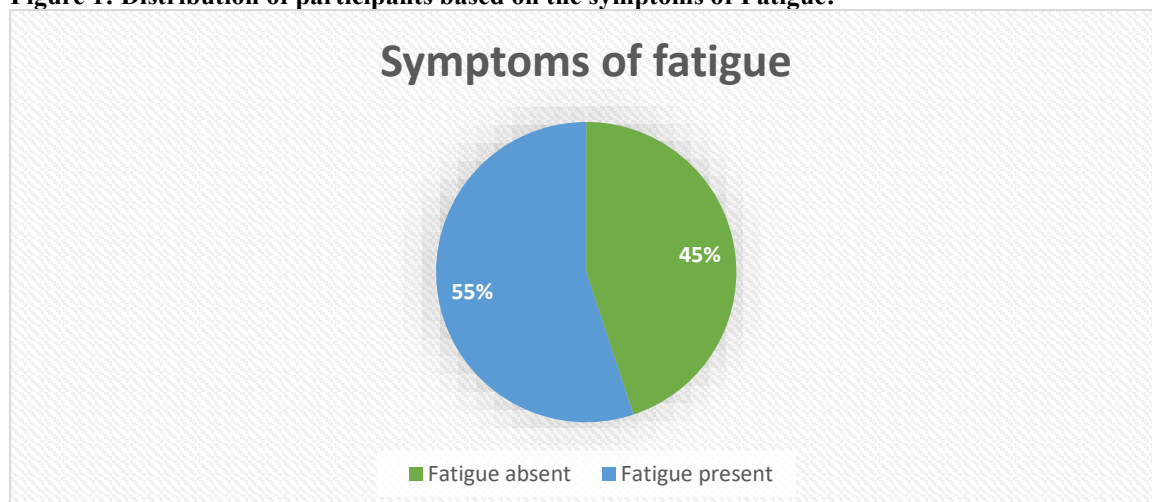


Figure 2: Distribution of participants based on the quality of life:

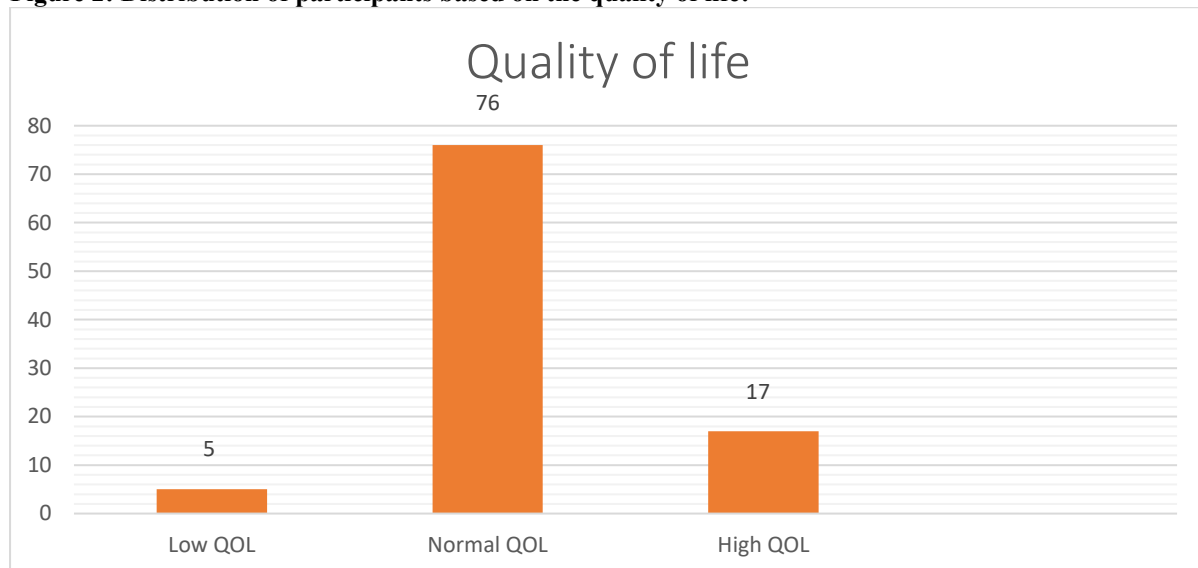


Figure 1 illustrates the distribution of symptoms of fatigue, as measured by the Fatigue Severity Scale, among the study participants. Out of 98 participants, 54 participants (55%) were found to have fatigue, while the other 44 participants (45%) did not exhibit symptoms of fatigue. Analysis of Quality of life based on the WHO-QOL BREF questionnaire revealed that nearly 76 participants had a normal quality of life. Only 5 participants were found to have a low Quality of life, while the other 17 participants had a high quality of life. (Figure 2).

Table 2: Association between Age and Fatigue among the study participants:

Age in years	Fatigue		Chi-square value	p-value
	Absent (n=44)	Present (n=54)		
21-30 years	33	35	49.673	0.045
31-39 years	9	15		
>40 years	2	4		

Chi-square test was applied. P-value <0.05 is significant.

Chi-square test was used to compare the relationship between age and fatigue among the study participants. The study found a statistically significant relationship between age and fatigue among the participants, indicating that fatigue increases with age. (Table 2)

Table 3: Association between Age and Quality of life among the study participants:

Age in years	Quality of life			Chi-square value	p-value
	Low (n=6)	Normal (n=80)	High (n=14)		
21-30 years	5	51	12	43.143	0.22
31-39 years	0	19	5		
>40 years	0	6	0		

Chi-square test was applied. P-value >0.05 is non-significant.

The study does not reveal a significant difference in quality of life between age groups among the study participants. (Table 3).

Table 4: Association between Fatigue and Quality of life among the study participants

Quality of life	Fatigue	Pearson correlation analysis	p-value
	Mean		
Low QOL	39	-0.048	0.637
Normal QOL	35		
High QOL	32		

A Pearson correlation analysis was conducted to examine the relationship between fatigue and quality of life among participants categorized into three QOL levels: Low, Normal, and High. Moderate associations were found between the severity of fatigue and quality of life ($r=-0.048$, $p>0.05$). Quality of life is lower among the participants with severe fatigue. (Table 4).

DISCUSSION:

This study assessed the prevalence of fatigue and its association with age and quality of life among healthcare professionals in a tertiary care hospital. The findings revealed that more than half of the participants (55%)

experienced fatigue, while the majority (approximately 82%) reported a normal or high quality of life. Fatigue was found to be significantly associated with age but not significantly correlated with quality of life.

The prevalence of fatigue in our study (55%) aligns with findings from previous studies conducted among healthcare professionals. For instance, a study by Sagherian et al. (2017) on nurses in acute care settings reported high levels of fatigue and attributed it to shift work and occupational stress ^[11]. Similarly, Zhou et al. (2020) observed a significant proportion of healthcare workers experiencing fatigue during the COVID-19 pandemic, with contributing factors including long work hours and emotional exhaustion ^[12]. The consistency across studies highlights that fatigue remains a persistent issue in the healthcare workforce, requiring targeted interventions.

Our study demonstrated a statistically significant association between age and fatigue ($p = 0.045$), suggesting that older professionals may be more vulnerable to fatigue. This is supported by research by Park et al. (2019), which found that older nurses reported higher fatigue scores compared to their younger counterparts, potentially due to declining physical resilience and cumulative work-related stress over time ^[13]. However, other studies, such as one conducted by Yoo & Kim (2016), found no significant age-related differences in fatigue, suggesting that individual coping mechanisms and workplace support systems might mediate this relationship ^[14]. These conflicting results point to the need for further investigation into how age interacts with work conditions and personal health factors to influence fatigue levels.

Interestingly, while fatigue was prevalent, our study did not find a significant correlation between fatigue and quality of life ($r = -0.048$, $p > 0.05$). This finding contrasts with prior research by Mota et al. (2019), who reported a strong inverse relationship between fatigue and quality of life among healthcare workers ^[15]. One possible explanation for our differing results may be the relatively young average age (mean = 29 years) and moderate experience level of the participants, which might contribute to a higher baseline resilience and perception of life satisfaction, despite experiencing fatigue. Moreover, the subjective nature of quality-of-life assessments could influence these findings, as some individuals may underreport the impact of fatigue due to coping strategies or workplace culture.

Regarding the quality-of-life distribution, most participants reported normal (80%) or high (17%) QOL, with only a small proportion (5%) indicating low QOL. This is somewhat encouraging and is consistent with findings from Khamisa et al. (2015), who found that supportive work environments and job satisfaction played a critical role in maintaining high QOL despite occupational stress ^[16].

While the association between age and quality of life in our study was not statistically significant ($p = 0.22$), the trend observed (older age groups having fewer high QOL scores) suggests a possible area for further exploration. Other studies, such as Lu et al. (2016), have reported age-related declines in quality of life among healthcare workers, often linked to increased physical strain and work-life balance challenges ^[17].

Strengths and Limitations

A key strength of this study is its focus on a vulnerable and often under-researched population—healthcare professionals in a tertiary care setting—whose well-being directly impacts patient care outcomes. However, the study is not without limitations. The cross-sectional design restricts causal inferences, and self-reported data may be subject to recall or social desirability bias. The sample was drawn from a single institution, limiting generalizability.

CONCLUSION

This study underscores the high prevalence of fatigue among healthcare professionals and its significant association with age. The strong association between fatigue and quality of life highlights the need for targeted workplace interventions and support systems such as Peer support groups, automation of diagnostic tasks, flexible work schedules, mindfulness training and leadership development. Future research should include longitudinal studies across diverse healthcare settings to further understand these dynamics and inform targeted interventions to support the well-being of healthcare workers.

REFERENCES:

1. Geiger-Brown J, Rogers VE, Trinkoff AM, Kane RL, Bausell RB, Scharf SM. Sleep, sleepiness, fatigue, and performance of 12-hour-shift nurses. *Chronobiol Int.* 2012;29(2):211–9. doi:10.3109/07420528.2011.645752
2. Caldwell JA, Caldwell JL, Thompson LA, Lieberman HR. Fatigue and Its Management in the Workplace. *Neurosci Biobehav Rev.* 2019;96:272–89. doi:10.1016/j.neubiorev.2018.10.024
3. Garrouste-Orgeas M, Perrin M, Soufir L, Vesin A, Blot F, Maxime V, et al. The Iatrorref study: medical errors are associated with symptoms of depression in ICU staff but not burnout or safety culture. *Intensive Care Med.* 2015;41(2):273–84. doi:10.1007/s00134-014-3601-4
4. Salvagioni DAJ, Melanda FN, Mesas AE, González AD, Gabani FL, Andrade SM. Physical, psychological and occupational consequences of job burnout: A systematic review of prospective studies. *PLoS One.* 2017;12(10):e0185781. doi:10.1371/journal.pone.0185781
5. Bhandari PM, Neupane D, Rijal S, Thapa K, Mishra SR, Poudyal AK. Sleep deprivation and burnout among medical students: A cross-sectional study. *BMC Med Educ.* 2017;17(1):1–6. doi:10.1186/s12909-017-0892-2

6. Shanafelt TD, Boone S, Tan L, Dyrbye LN, Sotile W, Satele D, et al. Burnout and satisfaction with work-life balance among US physicians relative to the general US population. *Arch Intern Med.* 2012;172(18):1377–85. doi:10.1001/archinternmed.2012.3199
7. Pappas S, Demerouti E, Holman D, Christoforou P, Nerstad CGL. Exploring the mechanisms through which job demands and resources predict burnout and work engagement among healthcare professionals. *J Adv Nurs.* 2021;77(7):3265–75. doi:10.1111/jan.14888
8. Zhang Y, Han W, Qin W, Yin H, Zhang C, Kong C. Extent of compassion satisfaction, compassion fatigue, and burnout in nursing: A meta-analysis. *J Nurs Manag.* 2018;26(7):810–819. doi:10.1111/jonm.12589
9. Dyrbye LN, Shanafelt TD. Physician burnout: A potential threat to successful health care reform. *JAMA.* 2011;305(19):2009–10. doi:10.1001/jama.2011.652
10. Abdelhafiz AS, Ali A, Maaly AM, Mahgoub MA, Ziady HH. The Psychological Impact of the COVID-19 Pandemic on Healthcare Workers in Egypt. *J Community Health.* 2020;45(6):1395–401. doi:10.1007/s10900-020-00850-0.
11. Sagherian K, Clinton ME, Abu-Saad Huijjer H, Geiger-Brown J. Fatigue, work schedules, and perceived performance in bedside care nurses. *Work.* 2017;56(4):673–84.
12. Zhou Y, Yang Y, Shi T, Song Y, Zhou Y, Zhang P, et al. Prevalence and risk factors of fatigue among healthcare workers during COVID-19 outbreak in China: A cross-sectional study. *Front Psychiatry.* 2020;11:580.
13. Park S, Kim Y, Kim J. Age differences in fatigue, occupational stress and depression among Korean nurses. *Asian Nurs Res (Korean Soc Nurs Sci).* 2019;13(4):290–5.
14. Yoo MS, Kim JH. Factors influencing fatigue among clinical nurses. *Korean J Occup Health Nurs.* 2016;25(2):118–26.
15. Mota DD, Pimenta CAM, Grossi SAA. Fatigue and quality of life in healthcare workers. *Rev Bras Enferm.* 2019;72(4):856–62.
16. Khamisa N, Oldenburg B, Peltzer K, Ilic D. Work related stress, burnout, job satisfaction and general health of nurses. *Int J Environ Res Public Health.* 2015;12(1):652–66.
17. Lu H, Zhao Y, While A. Job satisfaction among hospital nurses: a literature review. *Int J Nurs Stud.* 2016;94:21–31.