

Psychological Well Being and Quality of Sleep Among Health Care Professionals at Tertiary Care Hospital

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ABSTRACT

Introduction

Psychological well-being is linked to positive life outcomes and quality of sleep. Healthcare professionals often experience inconsistent sleep, affecting their well-being and patient care. This study aims to explore psychological well-being and quality of sleep of healthcare professionals and the association between them.

Methods

A cross-sectional descriptive study was conducted among 305 health care professionals (medical doctors=61, nurses=183, laboratory technicians=61) selected by purposive sampling. A pre-structured questionnaire including socio-demographics, Ryff's Psychological Well-being (PWB) scale and The Pittsburgh Sleep Quality Index (PSQI) were used. The result has been expressed using descriptive and inferential statistics. Pearson Correlation was used to find relationship between psychological well-being and quality of sleep.

Results

The mean age of participants was 35.01±3.67 years with female preponderance of 248 (81.3%). PWB differed significantly across professions ($p=0.01$). Low PWB was reported by 23(37.7%) laboratory technicians, followed by 38(20.8%) nurses and 20(32.8%) medical doctors. Overall, 35.10% of participants experienced poor quality of sleep including, 19(31.1%) medical doctors, 72(39.3%) nurses and 16(26.2%) laboratory technicians. Quality of sleep was not significantly associated with gender and type of profession. A weak negative correlation between PWB and PSQI scores ($r=-0.32$), indicating that higher PWB was associated with lower PSQI scores, and thus good sleep quality.

Conclusion

Psychological well-being and quality of sleep demonstrated considerable variation among healthcare professionals. Improving quality of sleep will be an effective strategy to decrease the risk of developing lower psychological well-being among healthcare professionals.

Keywords

Health care professional; psychological well-being; quality of sleep

INTRODUCTION

Psychological well-being is a key determinant of positive life outcomes, encompassing self-acceptance, autonomy, environmental mastery and personal growth.¹ It includes subjective, social and psychological components, as well as health-related behaviors and practices that give a person's life purpose and enable them to reach their full potential.² It is not merely the absence of mental illness but plays a preventive role in its onset and relapse.³

Research suggests a strong association between psychological well-being and quality of sleep⁴, where sleep duration can be both a cause and consequence of well-being.⁵ Sleep is a fundamental biological process essential for memory consolidation, energy conservation and brain function.⁶ Quality of sleep includes quantitative aspects such as sleep duration, sleep latency and number of arousals and qualitative aspects such as the depth and feeling of restfulness upon awakening.⁷ Optimal sleep is associated with better psychological well-being, reduced anxiety and improved cognitive function.⁷

Healthcare professionals are constantly under stress; dealing with sickness, suffering and death; and have an irregular work schedule and frequent shifts, which may all adversely impact their sleep.⁸ Approximately 50% of physicians and 75% of healthcare workers suffer from poor sleep quality.^{9,10} Excessive clinical workload and prolonged or consecutive duty hours increase stress levels, negatively impacting work performance, patient care, and personal health and well-being.¹¹

Despite existing studies on psychological well-being and sleep, limited research has explored their relationship among healthcare workers, particularly in our context. Hence, this study aims to assess psychological well-being, quality of sleep and their association among healthcare professionals.

METHODS

A cross-sectional descriptive study was conducted among health care professionals (HCPs) working at Tribhuvan University Teaching Hospital (TUTH) from August 2021 to December 2022. Ethical approval was obtained from Institutional Review Committee (IRB) of the Institute of Medicine, Approval number: 201 (6-11) E2, 078/079).

The total population of health care professionals at TUTH was 1,305, comprising 269 doctors, 810 nurses, and 226 laboratory technicians. The sample size was calculated using the Taro Yamane formula with a margin of error of 5% and a population size of 1305, yielding a required sample of 306.1, which was rounded to 305. Proportionate sampling was used based on the professional distribution ratio of

doctors, nurses, and paramedics (1:3:1), resulting in 61 doctors, 183 nurses, and 61 laboratory technicians. A purposive sampling technique was employed. Written informed consent was obtained from all participants after providing detailed information regarding the study objectives, confidentiality, inclusion and exclusion criteria, and voluntary nature of participation. Health care professionals who had experienced a traumatic or significantly stressful event within the preceding one month, as well as those diagnosed with chronic diseases or other significant medical illnesses, were excluded from the study.

Initially, total name list of the health care professionals was taken from human resource department of Teaching hospital. Then health care professionals were categorized into three groups: medical doctors, nurses, laboratory technicians. After getting approval from IRC, participants were approached by informing about objectives of the research. Those individuals meeting the inclusion criteria were asked for the consent and were allowed to fill the questionnaire which included socio-demographic information, Psychological Well Being questionnaire, The Pittsburgh Sleep Quality Index (PSQI). The responses were recorded and analysed using appropriate statistical tool according to the requirement of data.

PWB scale is developed by psychologist Carol D. Ryff that measures six aspects of wellbeing and happiness: autonomy, environmental mastery, personal growth, positive relations with others, purpose in life, and self-acceptance. In this study 42 items with a 7-point Likert scale based on how strongly they agree or disagree. The test-retest reliability is 0.82, internal consistency is 0.87. Higher scores mean higher levels of psychological wellbeing. Permission to use the scales for research has been taken from the author.

The PSQI was developed by Buysse, Reynolds, Monk, Berman and Kupfer. A self-administered tool consisting of 19 questions with 3-point scale. Each of the seven areas of sleep including subjective sleep quality, sleep latency, sleep duration, habitual sleep efficiency, sleep disturbances, use of sleep medication, and daytime dysfunction over the last month. A global sum of 5 or greater indicates a poor sleep quality. It has a sensitivity of 89.6% and specificity of 86.5%.

Statistical analysis was performed using SPSS version 24. Descriptive statistics summarized participant characteristics, while inferential analyses including independent t-tests, chi-square tests, one-way ANOVA, and Pearson correlation were used to examine relationships between psychological well-being, quality of sleep and socio-demographic variables. Statistical significance was set at a p-value of less than 0.05.

RESULTS

Mean age of total participants was 35.01 ± 3.67 years. Among 305 participants, majority were females 248 (81.3%), 132 (56.7%) were unmarried, 61(20%) were medical doctors, 183 (60%) were nurses and 61 (20%) were laboratory technicians.

Mean of Psychological well-being score was 174.38 ± 19.40. Most of the participants 144 (47.2%) had medium level of PWB followed by 81 (26.6%) having low PWB and 80 (26.2%) had high PWB. Mean score of PWB among gender are 174.82±18.97 (females) and 172.45±21.22 (male). No significant difference was found between gender (p =0.49).

Table 1 shows, Personal growth component of the psychological well-being having highest mean

value among both genders, followed by purpose in life, then self-acceptance, positive relation and environment mastery and lastly autonomy.

ANOVA test (Table 2) shows significant difference between psychological well-being and profession (*p<0.05).

Table 3 shows Personal growth component of the psychological well-being has highest mean value among all three professions, followed by purpose in life and self-acceptance.

Mean of Pittsburgh Sleep Quality Index (PSQI) score was 3.74±2.44.

However, no significant difference (p=0.12) was found among gender in regard to quality of sleep. (Figure 1)

Table 1. Components of psychological well-being according to gender

Components	Mean score of PWB		
	Overall	Male	Female
Autonomy	26.97±4.46	26.84± 4.20	27.56±5.48
Environment mastery	28.17±4.61	28.28±4.36	27.70±5.61
Personal growth	31.32±4.57	31.38 ± 4.22	31.12±5.89
Positive relation	28.22±3.84	28.44±3.92	27.26±3.39
Purpose in life	30.52±4.26	30.73±4.35	29.75±3.83
Self-acceptance	29.13±4.61	29.16±4.70	29.05±4.26

Table 2. Psychological well-being according to profession

Profession	High PWB		Low PWB		Overall	F	Sig.	Eta Squared
	N	%	N	%				
Doctors	24	39.3%	20	32.8%	176.32±23.03	4.68	0.01*	0.03
Nurses	46	25.1%	38	20.8%	175.97±18.20			
Laboratory technicians	10	16.4%	23	37.7%	167.67±17.73			

Table 3. Components of psychological well-being according to profession

Components	Mean score of PWB		
	Medical doctors	Nurse	Laboratory technicians
Autonomy	27.85±6.24	26.85±3.69	26.48±4.47
Environment mastery	28.66±5.33	28.52±4.26	26.62±4.61
Personal growth	32.44±5.57	31.53±4.20	29.61±4.12
Positive relation	27.75±4.04	28.40±3.77	28.16±3.92
Purpose in life	30.85±4.19	31.16±4.36	28.41±3.35
Self-acceptance	28.77±4.63	29.51±4.65	28.39±4.43

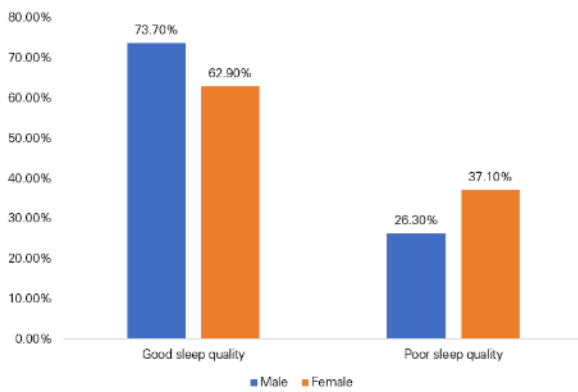


Figure 1. Quality of sleep according to gender

Table 4 illustrates that most participants perceived their sleep quality as good, with only a small proportion reporting poor subjective sleep. The majority experienced relatively short sleep latency and adequate sleep duration, with most obtaining more than seven hours of sleep per night. Habitual sleep efficiency was consistently high across the sample, indicating minimal difficulty in maintaining sleep once initiated. Furthermore, sleep disturbances and the use of sleep medication were uncommon, and most participants reported minimal daytime dysfunction, suggesting generally satisfactory sleep patterns overall.

Table 5 indicates Pearson correlation analysis that

Table 4. Distribution according to PSQI components

Components	Mean score of PWB	
	Value	n(%)
Subjective quality of sleep (Component 1)	Very good	79(25.9%)
	Fairly good	190(62.3%)
	Fairly bad	31(10.2%)
	Very bad	5(1.6%)
Sleep latency (Component 2)	<15 minutes	125(41.0%)
	16-30 minutes	74(24.3%)
	31-60 minutes	58(19.0%)
	>60 minutes	48(15.7%)
Sleep duration (Component 3)	>7 hours	205(67.2%)
	6-7 hours	71(23.3%)
	5-6 hours	20(6.6%)
	<5 hours	9(3.0%)
Habitual Sleep Efficiency (Component 4)	>85%	303(99.3%)
	75%-84%	2(0.7%)
	65%-74%	0
	<65%	0
Sleep disturbances (Component 5)	Not during the past month	135(44.3%)
	Less than a week	129(42.3%)
	Once or twice a week	41(13.4%)
	Three or more times a week	0
Use of Sleep medication (Component 6)	Not during the past month	287(94.1%)
	Less than once a week	15(4.9%)
	Once or twice a week	3(1.0%)
	Three or more times a week	0
Daytime dysfunction (Component 7)	No problems at all	162(53.1%)
	Only a very slight problem	118(38.7%)
	Somewhat of a problem	25(8.2%)
	A very big problem	0

Table 5. Quality of sleep according to profession

Profession	Good Sleep Quality		Poor Sleep Quality		Chi-square	df	Sig.
	N	%	N	%			
Doctors	42	68.9%	19	31.1%	3.97	2	0.137
Nurses	111	60.7%	72	39.3%			
Laboratory technicians	45	73.8%	16	26.2%			

showed a weak negative correlation between PWB and PSQI score ($r=-0.322$), indicating that higher psychological well-being was associated with lower PSQI scores, and thus good sleep quality. A significant relationship between quality of sleep and psychological well-being exists ($p<0.001$).

DISCUSSION

This study indicate that a significant proportion of participants reported low psychological well-being and poor sleep quality. The mean psychological well-being value is 174.38 ± 19.4 , which is relatively lower than previous study conducted among health professionals 210.68 ± 29.38 .¹²

PWB varied among healthcare professionals, with medical doctors reporting higher scores than nurses and laboratory technicians. A study found doctors had lower PWB, poor vitality and less social support from supervisors, especially in positive relationships, purpose in life and self-acceptance, compared to nurses and paramedics.¹³ These differences may be attributed to variations in job roles, levels of autonomy and perceived professional fulfilment. While some studies have reported similar trends, Allen and her colleagues in 2020, others have found conflicting results^{14,15}, highlighting the need for further research to explore contextual and occupational factors that influence psychological well-being across different healthcare professions.

Regarding gender differences, female healthcare professionals exhibited slightly higher PWB scores than their male counterparts, though the difference was not statistically significant. This aligns with some previous research^{16,17} but contrasts with studies that have reported higher well-being scores among males.^{12,18} Such discrepancies may stem from sociocultural influences, coping mechanisms and differing expectations in professional and personal life.

This study found personal growth had the highest mean score, followed by purpose in life, self-acceptance, positive relationships, environmental mastery, and autonomy. In contrast, a study among healthcare professionals ranked self-acceptance

highest.¹² Research supports higher female scores in positive relationships and personal growth^{19,16}, though some studies note gender differences due to age, culture or societal roles.²⁰

This study also revealed that a significant proportion (35%) of HCP's experience poor quality of sleep. This is consistent with Pappa et al. (2020), who reported sleep difficulties or insomnia in 40% of healthcare workers.⁹ Healthcare workers are at higher risk of poor sleep than other professionals.²¹⁻²³ Laboratory technicians had good sleep quality than doctors and nurses, in line with another study.¹⁰ Factors such as long working hours, shift work, high job demands, and stress are known contributors to sleep disturbances of health care professionals.²⁴ Although gender differences in sleep quality were not significant in our study, existing literature suggests that females may be more vulnerable to sleep disturbances.^{25,26} Long shifts and limited recovery time adversely affect both their well-being and patient care, with health care workers being particularly susceptible to sleep deprivation.^{10,27}

Moreover, psychological wellbeing has a weak negative correlation with poor sleep quality, because high score in PSQI indicates poor sleep quality. Quality of sleep can be considered as one indicator of psychological well-being.²⁸ A notable correlation exists between quality of sleep and psychological well-being, with poor sleep linked to increased psychological distress, depression and anxiety. As shown by the results there is a weak but significant relationship between psychological well-being and quality of sleep. This finding is consistent with a research impression where a significant relationship has been found among psychological distress and poor quality of sleep.⁴ Brim (2004) claims that numerous demographic factors, such as age, gender, ethnicity and degree of education, have been found to correspond with various aspects of psychological wellness and quality of sleep.²⁹ It might be affected by stressors (work, family or social); increasing the risk of having poor health.²³

Apparently, the relationship between psychological well-being and quality of sleep is bidirectional; poor sleep quality lowers the psychological well-being of individuals and psychological distress can also affect

the sleeping patterns of individuals.⁴ Lack of sleep negatively affects health professionals, leading to inadequate performance at work and a higher chance of medical mistakes.³⁰ Inadequate sleep also leads to decrease in job satisfaction, learning skills, overall quality of patient care and also health and well-being of concerned individuals.

Several limitations should be considered when interpreting our results. First, its cross-sectional design prevents causal inferences, necessitating longitudinal research to establish temporal relationships. Second, reliance on self-reported measures introduces potential biases such as recall and social desirability bias. Additionally, the study was conducted in a single healthcare institution, limiting generalizability to a broader population of healthcare professionals.

Future research should examine the influence of work shifts and coping mechanisms on psychological well-being and quality of sleep among health care professionals. Interventions focusing on sleep hygiene education, accessible mental health support are recommended to improve both sleep and psychological outcomes. At an institutional level, optimizing working conditions, such as regulating shift schedules and reducing workplace stressors, may help mitigate sleep deprivation and psychological distress, thereby promoting overall psychological and occupational health.

CONCLUSION

This study infers that some of the health care professionals had low level of psychological well-being and poor quality of sleep, along with their weak but significant association. Moreover, psychological well-being among healthcare professionals varied significantly. Although this study did not account clear association between psychological well-being and quality of sleep but different studies suggest that improving quality of sleep may be an effective strategy to decrease the risk of developing lower psychological well-being among health care professionals. However, other factors responsible for the poor quality of sleep, lowering psychological well-being level are a subject of future research.

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CONFLICT OF INTEREST

The author(s) declare that they do not have any conflicts of interest with respect to the research, authorship, and/or publication of this article.

AUTHOR CONTRIBUTIONS

NP – Designed the study, managed data collection and participant recruitment, analyzed and interpreted data, and prepared the manuscript for publication. SPO – Guided the research question and study design, ensured ethical compliance, and provided mentorship and critical feedback throughout the project. SS – Provided expertise in statistical analysis, assisted with data interpretation, and reviewed the discussion and ensured the ethical adherence. PMP – Reviewed research findings.

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