

Sleep Quality and Psychological Well-Being Among Nurses in Kerala

Christa Maria¹, Joseph C Mamman^{2*}, Dhanya N³

Abstract

Nurses play a vital role in healthcare delivery, yet their psychological well-being is frequently compromised by demanding work schedules and disrupted sleep. This study examined the relationship between sleep quality and psychological well-being among nurses in Kerala. This cross-sectional correlational study was conducted among 290 registered nurses in Kerala, selected through convenience sampling. The Sleep Quality Scale and Ryff's 42-item Psychological Well-being Scale were used to collect data. Results revealed a significant positive correlation between sleep quality and psychological well-being. Sleep quality emerged as a predictor, accounting for 3.5% of the variance in psychological well-being. Nurses on fixed day shifts and those with fewer weekly working hours reported significantly better sleep quality and psychological well-being. These findings highlight the need to prioritize sleep health among the nursing population. Institutional policies promoting consistent shift schedules and manageable workloads could foster better mental health outcomes. By enhancing sleep quality, we not only support the well-being of nurses but also improve the quality of patient care.

Keywords: Sleep quality, psychological well-being, nurses, Kerala, mental health

¹M.Sc. Student, Department of Applied Psychology, Central University of Tamil Nadu

²Associate Professor, Department of Applied Psychology, Central University of Tamil Nadu. mammanjosephc@gmail.com

³Research Scholar, Department of Applied Psychology, Central University of Tamil Nadu

Priceless are the services rendered by the nurses to humanity; however, nurses encounter various challenges in their profession, prolonged shifts, irregular working schedules, emotional labour, and chronic understaffing (Alghamdi & Bahari, 2025; Chana, Kennedy, & Chessell, 2015; Chen et al., 2022; Lasater et al., 2021; McVicar, 2003), as they strive to make significant decisions and provide the best care possible to their patients. Recognizing this, the World Health Organization (WHO) has emphasized the importance of supporting nurses' well-being as a global health priority (WHO, 2023). With an estimated 29 million nurses worldwide, WHO projects a shortage of 4.5 million nurses by 2030 (Boniol et al., 2022; World Health Organization, 2023).

Psychological well-being is a multidimensional concept that encompasses six dimensions- autonomy, environmental mastery, positive relations with others, purpose in life, personal growth, and self-acceptance (Ryff, 1989). Unlike subjective well-being, which emphasizes happiness and life satisfaction, psychological well-being considers the actualization of human potential and meaningful life engagement (Keyes, Shmotkin, & Ryff, 2002). Positive psychology, led by scholars like Seligman (2011), frames psychological well-being as an essential aspect of flourishing, highlighting the interplay between resilience, social support, emotional regulation, and life purpose.

Among various determinants, sleep stands out as a foundational component of overall health and well-being (Afiya, 2024; Simon et al., 2025). Sleep is a complex physiological process essential for cellular restoration, emotional regulation, and cognitive performance (Medic, Wille, & Hemels, 2017; Ramar et al., 2021). Poor sleep quality is strongly linked with physical ailments like cardiovascular disorders, immune suppression, and metabolic dysregulation (Amin et al., 2025; Irwin, 2019; C. Yang et al., 2024). Equally, its consequences extend to the psychological domain, influencing cognitive flexibility, emotional balance, and social functioning (Palmer et al., 2024; Stafford, Oduola, & Reeve,

2024; Straus et al., 2024; Vandekerckhove & Wang, 2017). Chronic sleep deprivation has been associated with significant neuropsychological consequences such as poor attention, impaired memory, emotional instability, and increased risk of psychiatric disorders (Committee on Sleep Medicine and Research, 2006; Han, Yang, & Huang, 2024; Khan & Al-Jahdali, 2023). Disruptions in the brain's reward and affective regulation circuits, particularly involving the prefrontal cortex and amygdala, contribute to greater vulnerability to mood disorders (Steardo et al., 2025). Conversely, adequate and high-quality sleep has been found to foster resilience, emotional clarity, and improved coping mechanisms (Hanson & Ruthig, 2012; Kozusznik et al., 2020; Lo Martire et al., 2024; Vandekerckhove & Wang, 2017). Zhai, Gao, and Wang (2018) reported a strong association between sleep quality and psychological well-being among undergraduate students.

Healthcare workers, especially nurses, are particularly vulnerable to sleep disturbances due to irregular schedules and rotating shifts. Shift Work Disorder (SWD) is prevalent among nurses (Anbazhagan et al., 2016), has been consistently linked to chronic fatigue, gastrointestinal disturbances, and heightened emotional distress (Åkerstedt & Wright, 2009; Chang et al., 2024; Flo et al., 2013; Rahimimoghadam et al., 2020). The misalignment between circadian rhythms and work demands impairs not only sleep quality but also increases the risk of burnout and mental health issues (Coelho et al., 2023; Stewart & Arora, 2019). Poor sleep among nurses has been linked with higher incidence of medical errors (Demir & Karadag, 2023; Lockley et al., 2004), interpersonal conflict (Setyowati et al., 2023), and reduced job satisfaction (Chang & Chang, 2019), thus directly impacting patient safety and care quality.

Globally, there is an increasing concern about the mental health of nurses (Getie et al., 2025; Liang et al., 2025; Varghese et al., 2021; J. Yang et al., 2024). Hemmati et al. (2021) reported that 32.4% of Australian nurses experienced depression, 41.2% experienced

anxiety, and 41.2% experienced stress, with job satisfaction being a significant predictor of these mental health issues. Similarly, Xie et al. (2020) identified that nurses in Iran and China experience considerable mental health challenges, with reported depression prevalence rates of 31% and 43.83%, respectively. Studies from India have also revealed alarming levels of psychological distress among nurses, with 50.8% experiencing stress, 74% experiencing anxiety, 70.8% experiencing depression, and 79.1% reporting at least one of these conditions (Kaushik et al., 2021; Uvais & Nalakath, 2023; Verma et al, 2021). Despite being a hub for nursing professionals, India faces critical shortages in the nurse-to-patient ratio (Roy, 2022; Thakur & Sood, 2024), worsened by poor working conditions that not only contribute to migration to developed countries but also adversely affect their sleep quality and psychological well-being (Sasidharan & Devakumar, 2024). Kerala has a unique healthcare landscape characterized by high health indicators, a large nursing workforce, extensive healthcare utilization, and substantial migration of nurses to national and international healthcare systems (Health Information Division, 2024; World Health Organization, 2017, 2022). At the same time, recent evidence from Kerala has highlighted considerable levels of burnout among nurses (Ambujam et al., 2026).

Building on this body of evidence, it is evident that sleep disturbances and psychological well-being among nurses are deeply interconnected and have significant implications for both workforce sustainability and patient safety. While global studies have established that poor sleep is linked to increased emotional exhaustion, impaired cognitive functioning, and higher risks of depression and anxiety, there remains limited empirical research that concurrently examines these factors within the Indian healthcare context. Given the unique structural challenges in India in general and Kerala in particular, such as understaffing, long shift durations, and limited psychosocial support, a deeper understanding of how sleep quality relates to psychological well-being is urgently needed. This study seeks

to fill this critical gap by investigating the association between sleep quality and psychological well-being among nursing professionals in Kerala, thereby contributing to the development of contextually informed strategies to improve the well-being of nurses and the quality of health care delivery.

With this backdrop, this study has the following objectives.

(1) To identify the relationship between sleep quality and psychological well-being among nurses in Kerala.

(2) To examine the influence of sleep quality on psychological well-being among nurses in Kerala.

(3) To identify whether there is any significant difference in sleep quality and psychological well-being with respect to selected sociodemographic variables (work shift type and weekly working hours).

Method

Research Design

The study employed a cross-sectional, correlational research design to examine the relationship between sleep quality and psychological well-being among nurses working in Kerala.

Sample

The sample comprised 290 registered nurses (26 males and 264 females; M = 34 years) selected through convenience sampling from various government (n = 111) and private (n = 179) hospitals across Kerala.

Inclusion Criteria

- Registered nurses.
- Currently employed in hospitals or healthcare facilities in Kerala.

Exclusion Criteria

- Nurses previously diagnosed with sleep or psychological disorders.
- Nurses on extended medical leave.
- Nurses taking medications that may influence sleep or psychological health.

Measures

Sleep Quality Scale (SQS; Yi, Shin, & Shin, 2006)

The SQS was used because it comprehensively measures multiple dimensions of sleep quality, which are relevant to their psychological well-being. The scale consists of 28 items assessing six dimensions of sleep quality: daytime symptoms, restoration after sleep, problems initiating and maintaining sleep, difficulty waking, and overall sleep satisfaction. Responses are rated on a 4-point Likert scale (0 = few, 1 = sometimes, 2 = often, 3 = almost always). The scale has strong reliability ($\alpha = .92$; test-retest = .81). The scale demonstrated good internal consistency in this study (Cronbach's $\alpha = .83$). Sample items include, "*I have difficulty falling asleep*" and "*I am satisfied with my sleep*".

Ryff's Psychological Well-Being Scale (PWBS; Ryff & Keyes, 1995)

The 42-item version of PWBS was used because it provides a comprehensive assessment of six key dimensions of psychological well-being: autonomy, environmental mastery, personal growth, positive relations with others, purpose in life, and self-acceptance. Items are rated on a 6-point Likert scale ranging from 1 (strongly disagree) to 6 (strongly agree). Previous research has reported internal consistency coefficients between .80 and .90. The PWBS showed excellent reliability (Cronbach's $\alpha = .94$) in this study. Sample items include, "*The demands of everyday life often get me down*", and "*I enjoy making plans for the future and working to make them a reality*".

Socio-Demographic Datasheet

Basic demographic and professional details (e.g., age, gender, years of experience, and type of institution) were collected using a structured proforma developed by the researcher.

Procedure

Data was collected through offline and online surveys. For offline data collection, printed questionnaires were distributed to nurses after obtaining permission from hospital authorities. Informed consent was obtained before participation. For online collection, a Google Form was disseminated via social media platforms. Nurses provided informed consent electronically before completing the survey. Confidentiality and anonymity of responses were assured in both methods of data collection.

Statistical Analysis

Data were analyzed using non-parametric statistical methods, as they did not meet the assumptions of normality. Spearman's rank-order correlation was employed to examine the association between sleep quality and psychological well-being. Simple linear regression analysis was performed to assess the predictive influence of sleep quality on psychological well-being. Group differences in sleep quality and psychological well-being across socio-demographic variables were examined using the Mann–Whitney U Test (for two groups) and Kruskal–Wallis H Test (for more than two groups).

Results

Table 1

Correlation Between Sleep Quality and Psychological Well-Being (N=290)

	Psychological Well-Being
Sleep Quality	-.184**

Note. ** $p > 0.01$

Table 1 shows that there is a statistically significant negative correlation ($r = -0.184$, $p < .01$), which reflects a positive relationship after accounting for the nature of scoring on the scales used. In the sleep quality scale, a higher score indicates poor sleep quality, whereas in the psychological well-being, a higher score implies higher well-being.

Table 2*Simple Linear Regression Predicting Psychological Well-Being from Sleep Quality*

Predictors	F	P	Beta	t	p	R ²
Sleep Quality	10.53	.001	-.19	3.24	.001	.035

Table 2 shows the result of simple linear regression analysis that sleep quality predicted psychological well-being among nurses, $p = .001$. The negative beta coefficient ($\beta = -.19$, $t = -3.24$, $p = .001$) indicates that poorer sleep quality was associated with lower psychological well-being. The model accounted for 3.5% of the variance ($R^2 = .035$).

Table 3*Difference in Sleep Quality and Psychological Well-Being with Respect to Shift Type*

Variable	Work shift	N	Mean Rank	U	p-value
Sleep Quality	Rotating	247	152.52	3575.50	.001
	Fixed day	43	105.15		
Psychological Well-Being	Rotating	247	141.6	4346.00	.024
	Fixed day	43	167.93		

Table 3 presents the differences in sleep quality and psychological well-being among nurses based on shift type. A statistically significant difference in sleep quality was observed between nurses working rotating shifts and those working fixed day shifts ($U = 3575.50$, $p = .001$), with mean ranks indicating that nurses on rotating shifts reported poorer sleep quality (Mean Rank = 152.52) compared to those on fixed day shifts (Mean Rank = 105.15). Similarly, psychological well-being differed significantly across shift types ($U = 4346.00$, $p = .024$), with nurses on fixed day shifts showing higher psychological well-being (Mean Rank = 167.93) than those on rotating shifts (Mean Rank = 141.6).

Table 4

Difference in Sleep Quality and Psychological Well-Being with Respect to Working Hours per Week

Variable	Working hours per week	N	Mean Rank	U	p-value
Sleep Quality	48 or below	229	138.41	5360.50	.005
	Above 48	61	172.12		
Psychological Well-Being	48 or below	229	150.49	5842.00	.04
	Above 48	61	126.77		

Table 4 presents the differences in sleep quality and psychological well-being among nurses based on weekly working hours. A statistically significant difference in sleep quality was observed between nurses working 48 hours or below and those working above 48 hours per week ($U = 5360.50$, $p = .005$), with nurses working longer hours showing poorer sleep quality (Mean Rank = 172.12) compared to those working 48 hours or below (Mean Rank = 138.41). Similarly, psychological well-being differed significantly based on weekly working hours ($U = 5842.00$, $p = .04$), with nurses working 48 hours or below reporting higher psychological well-being (Mean Rank = 150.49) than those working above 48 hours (Mean Rank = 126.77).

Discussion

When sleep suffers, so does mental health. The present study examined the relationship between sleep quality and psychological well-being among nurses, as well as the influence of shift type and working hours. The findings highlight the significant role of sleep quality in shaping psychological well-being and how occupational and contextual factors contribute to variations in these outcomes.

One of the key findings of the study is that sleep quality is positively associated with psychological well-being. This finding is consistent with the findings of Sameera et al., (2023), Pinheiro et al.,(2024) and Benjamin et al. (2024), who reported that poor sleep quality was associated with lower psychological well-being, while normal sleep quality was linked to fewer psychological problems. Hanson and Ruthig (2012) further observed that sufficient sleep contributes to more positive affective states, which in turn buffer against stress and enhance overall well-being. Importantly, the present findings extend this evidence to the nursing population, a group particularly vulnerable to sleep disruptions due to rotating shifts and long working hours (Caruso, 2013).

From a theoretical perspective, these results resonate with Ryff's (1989) model of psychological well-being, which posits that well-being multidimensional model of psychological well-being, which emphasizes autonomy, environmental mastery, personal growth, positive relationships, purpose in life, and self-acceptance. Sleep can plausibly support these dimensions by facilitating emotional regulation, cognitive clarity, and resilience—capacities that are compromised when sleep is poor (Palmer & Alfano, 2017). Thus, good-quality sleep may function as a protective resource for nurses, sustaining psychological functioning across multiple domains of well-being in the face of demanding work environments.

The present study also identified sleep quality as a significant predictor of psychological well-being among nurses in Kerala. Although sleep quality accounted for only 3.5% of the variance in psychological well-being scores, this effect is notable given the multifactorial nature of well-being, which is shaped by personal, occupational, and contextual factors. The finding indicates that sleep quality exerts a modest but meaningful influence on psychological health, underscoring its role as an important determinant within the demanding context of nursing work. This finding is consistent with the work of Hanson and Ruthig (2012),

who found that both better current sleep quality and perceived improvements in sleep quality predicted more frequent positive emotions, less frequent negative emotions, and fewer depressive symptoms. Research among the nursing population further reinforces this link. Dorrian et al. (2011) reported that nurses with poorer sleep experienced higher emotional exhaustion and lower job satisfaction, while Gomez-Garcia et al. (2016) found that inadequate sleep among hospital nurses was associated with decreased psychological well-being and greater burnout risk. Beyond occupational settings, a systematic review by Griffith and Mahadevan (2007) highlighted that moderate sleep disturbances can noticeably impair important cognitive and behavioural functions. This adds weight to the idea that sleep quality, even when not extreme deprivation, could yield measurable but modest effects on well-being in populations like nurses, where many stressors are already present.

The study found that nurses working fixed day shifts reported significantly better sleep quality than those in rotating shifts. This is consistent with Wang et al., (2021), who found that nurses with fixed shifts had better sleep quality. Similarly, Wu et al. (2024) reported poorer sleep quality among rotating or night-shift nurses. The relationship between shift patterns and sleep can be explained through the framework of circadian rhythm disruption. Human physiological and behavioural processes are regulated by an endogenous circadian clock, which operates on an approximately 24-hour cycle. Rotating and night-shift schedules disrupt this rhythm, leading to circadian misalignment that impairs hormone regulation—particularly melatonin and cortisol secretion—and interferes with sleep consolidation (Brum et al., 2022). In contrast, fixed-day shifts support a more stable routine, which remains more closely aligned with natural circadian processes, thereby promoting better sleep quality (Chang & Li, 2022).

The study also found that nurses working fixed-day shifts reported significantly better psychological well-being than those in rotating shifts. This is consistent with Chauhan and Jansari (2020), who found that female nursing staff working day shifts had significantly higher

psychological well-being than those on night shifts, suggesting that consistent daytime work supports better emotional balance, satisfaction, and social adjustment. Similarly, Abdou and Abdou (2019) reported that night shift schedules negatively affect the psychological well-being of nurses, leading to greater stress, mood disturbances, and interpersonal conflicts at work and home. The disruption of circadian rhythms, sleep deprivation, and social isolation inherent in night and rotating shifts appear to undermine psychological health, while the stability of day shifts allows for more regular sleep patterns, healthier social relationships, and better overall life satisfaction.

In addition to shift patterns, the present study found that nurses working 48 hours or less per week reported better sleep quality than those working longer hours. This aligns with Virtanen et al. (2009), who found that employees exceeding 55 work hours per week were more likely to experience sleep disturbances, and with Afonso, Fonseca, and Pires (2017), who observed that healthcare workers with extended schedules reported poorer sleep quality alongside elevated psychological distress. Together, these findings highlight the detrimental impact of excessive working hours on both sleep and well-being. They suggest that occupational determinants, such as workload and shift structure, may exert a stronger influence on sleep than demographic characteristics (Palanichamy, 2021; Wu et al., 2024). The adverse effects of extended working hours on sleep quality can be further understood through the lens of the Health Belief Model (Rosenstock, 1974). Nurses may be aware of their susceptibility to the consequences of poor sleep and recognize the severity of its effects on health and professional functioning. They may also perceive benefits in improving sleep quality. However, systemic barriers such as staffing shortages, mandatory overtime, or organizational culture may limit their ability to act on this awareness, thereby perpetuating sleep disruption. This theoretical framing highlights the tension between individual intentions and structural constraints in shaping health behaviours among nurses.

In addition to sleep quality, the present study found that nurses working 48 hours or less per week reported better psychological well-being than those working longer hours. A large-scale cross-sectional study found that extended working hours, particularly beyond 60 hours per week, were significantly associated with higher odds of depression and anxiety. Nurses who worked long hours reported poorer sleep quality, lower perceived organizational support, and reduced psychological capital, all of which contributed to psychological distress (Che et al., 2023).

Ultimately, these findings remind us that nurses, who serve as the backbone of healthcare systems, cannot be expected to provide optimal care without structures that protect their own well-being. Recognizing and addressing the interplay between work demands, sleep, and psychological health is not only a matter of workforce sustainability but also of human responsibility.

Implications

The findings have important implications for nursing practice and occupational health. The study contributes to a growing body of evidence highlighting sleep as a critical determinant of mental health among healthcare professionals. The findings highlight the need for interventions targeting well-being, including sleep-focused programs such as fatigue management programs, alongside stress-reduction strategies. Healthcare institutions may use the findings to develop better work scheduling practices, optimize shift rotations, and ensure adequate staffing levels to minimize sleep disruption and its adverse psychological consequences. The study adds context-specific evidence from Kerala and informs policymakers and healthcare administrators in designing workplace mental health and well-being programs tailored to the needs of nursing professionals.

Limitations

The present study has certain limitations that should be acknowledged when interpreting the findings. First, the use of convenience sampling restricts the generalizability of results, as the sample may not adequately represent the wider population of nurses in Kerala. Second, data were collected exclusively through self-report measures, which are vulnerable to common method biases, including social desirability and response fatigue. Third, the sample displayed uneven representation across certain sociodemographic variables, particularly gender, which may have influenced the associations observed. Finally, the cross-sectional design limits the ability to draw causal inferences; the relationships identified represent correlations at a single time point rather than directional effects.

Conclusion

This study highlights that prioritizing sleep health is not just a personal responsibility but a professional necessity. The positive association between sleep quality and psychological well-being is promising in several ways. Enhancing sleep quality can contribute to better psychological well-being of healthcare providers and, ultimately better patient care. This study may also lead to scope for rethinking policies at different levels to enhance psychological well-being of nurses.

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