



ORIGINAL RESEARCH PAPER

Clinical Psychology

"INFLUENCE OF SLEEP QUALITY ON EMPATHY AND EMOTIONAL REGULATION AMONG CAREGIVING PROFESSIONALS."

KEY WORDS: sleep quality, empathy, emotional regulation, caregiving professionals

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ABSTRACT

This study examines the relationships between sleep quality, empathy, and emotional regulation among caregiving professionals, including doctors, nurses, and psychologists. A total of 163 participants completed standardized questionnaires measuring these constructs. Statistical analyses revealed weak negative correlations between sleep quality and both empathy and emotional regulation; however, these associations were not statistically significant. A significant positive correlation was found between empathy and emotional regulation, suggesting a meaningful interplay between these psychological capacities. Regression analysis further confirmed that sleep quality did not significantly predict empathy or emotional regulation, but empathy did significantly predict emotional regulation outcomes. These findings imply that while sleep disturbances may not directly impair caregiving professionals' emotional or empathic functioning, fostering empathy may enhance their ability to regulate emotions effectively. The study emphasizes the importance of developing targeted interventions aimed at strengthening empathy and emotional resilience in caregiving roles, particularly in high-stress environments. Improving emotional regulation strategies may also indirectly support well-being, even when sleep quality is compromised. Further research with larger, more diverse samples and longitudinal designs is recommended to deepen understanding of these complex dynamics.

INTRODUCTION

Sleep quality plays a critical role in the psychological and emotional functioning of caregiving professionals, who often face high levels of stress and emotional demands. Caregiving professions like doctor, psychologist and nurse requires emotional engagement and empathy to manage the emotional demands of their work. But the demanding nature of caregiving responsibilities frequently results in irregular work schedules, high stress levels, and disrupted sleep cycles, which can negatively impact the quality of sleep.

Sleep quality is defined as one's satisfaction of the sleep experience, integrating aspects of sleep initiation, sleep maintenance, sleep quantity, and refreshment upon awakening (Kline et al., 2013). Sleep quality is a vital component of overall health, particularly for caregiving professionals who face high levels of stress and emotional demands. Poor sleep can aggravate emotional dysregulation, which can lead to increased irritability, anxiety, and reduced capacity for empathy. Research indicates that caregivers often experience disrupted sleep patterns due to their responsibilities which can negatively impact their mental health and caregiving abilities.

The American Psychological Association defined empathy as understanding a person from their frame of reference rather than one's own, or vicariously experiencing that person's feelings, perceptions, and thoughts (APA Dictionary of Psychology, n.d.). Empathy is essential in caregiving as it fosters trust and connection between caregivers and their clients. High levels of empathy enable caregivers to respond effectively to the emotional needs of their clients. However empathy can be challenging to maintain under stress, particularly when caregivers are experiencing fatigue or emotional strain.

Emotion regulation refers to the conscious or unconscious processes of monitoring, evaluating, modulating, and managing emotional experiences and expression of emotion in terms of intensity, form, and duration of feelings, emotion-related physiological states and behaviours (Kok, 2020). Effective emotional regulation strategies are crucial for caregivers to manage their emotions and maintain their well-being. Caregivers often employ various strategies, such as cognitive reappraisal and expressive suppression, to cope with the challenges they face. Research suggests that those

who utilize adaptive strategies are better equipped to handle stressors associated with caregiving. Emotional dysregulation can hamper the caregiver's capability to form and maintain a strong bond with the clients which can affect patient trust and satisfaction.

Numerous studies have investigated the complex relationships between sleep quality, empathy, and emotional regulation, particularly among caregiving professionals whose work is characterized by high emotional demands. Nicholson et al. (2021) looked into how maladaptive strategies for handling emotions, such as avoidance and impulsivity, can disrupt sleep and lead to psychiatric symptoms in university students. Their research revealed that individuals who struggled with emotion regulation often experienced poor sleep patterns and were more prone to depression and anxiety. On the other hand, individuals who employed adaptive techniques, such as cognitive reappraisal, tended to experience better sleep and improved mental well-being. These findings suggest that teaching better emotional regulation skills could lead to better sleep and overall health. In caregiving professions emotional demands are exceptionally high. Guadagni et al. (2017) demonstrated that when people don't sleep well, their ability to empathize particularly in response to negative emotions, is reduced. Their study underscored that interventions designed to improve sleep habits could boost empathic abilities, which are vital in caregiving roles. Similarly, Pérez-Fuentes et al. (2019) delved into how sleep duration, efficiency, and subjective quality affect the emotional well-being of healthcare workers. They discovered that poor sleep was linked to increased stress and lower mood levels, while better sleep duration and efficiency correlated with higher emotional intelligence and improved stress management.

Empathy fatigue often affects caregiving professionals due to constant exposure to the suffering of others, has also been associated with sleep quality. A study by Pérez-Fuentes et al. (2019) highlighted that nursing staff experiencing high levels of empathy fatigue also reported poor sleep quality. However, a strong sense of professional identity seemed to buffer these effects, suggesting that strengthening this aspect could enhance resilience against empathy fatigue and improve overall well-being.

Vandekerckhove and Wang (2018) highlighted that emotion

regulation and sleep influence each other. They emphasized that inadequate sleep exacerbates emotional dysregulation, while effective emotion regulation strategies improve sleep quality. They also noted that REM sleep is crucial for processing emotions and integrating experiences, which is key for maintaining emotional balance. Thompson et al. (2022) added to this by investigating how cognitive empathy (understanding others' emotions) and affective empathy (sharing and responding to others' emotions) relate to different emotion regulation strategies. Their research indicated that cognitive empathy was linked to adaptive techniques like reappraisal, while affective empathy was associated with less adaptive strategies such as suppression. Zhang et al. (2020) took this a step further by exploring how sleep quality, emotion regulation, and moral decision-making are interconnected. Their study found that poor sleep quality was significantly associated with difficulties in emotion regulation and impaired moral reasoning. Participants who didn't sleep well reported more emotional dysregulation and were more likely to make decisions that reflected compromised moral judgment.

Considering these findings, there's still a noticeable gap in the research regarding the combined effects of sleep quality on both empathy and emotional regulation among caregiving professionals. While individual relationships between these factors have been thoroughly examined, their interplay within the high-pressure world of caregiving remains somewhat of a mystery. When sleep suffers, emotional control often weakens, and empathic sensitivity diminishes, potentially harming professional performance and mental health in caregiving roles. On the flip side, promoting better emotion regulation skills alongside improved sleep habits could boost both empathy and emotional resilience among these professionals.

Gaining insights into these interactions is essential for creating effective interventions that strengthen caregivers' psychological well-being and enhance their professional capabilities. Tackling these challenges with targeted strategies to improve sleep habits, foster adaptive emotion regulation techniques, and reduce empathy fatigue could significantly improve well-being while boosting performance across various aspects of caregiving. This research aims to build on current knowledge by thoroughly exploring these relationships and guiding future studies and clinical practices.

This study explores the relationship between sleep quality, empathy, and emotional regulation in caregiving professionals to better understand the mental health challenges they face in high-stress environments. By focusing on this crucial group, this research hopes to offer practical insights into how we can help them become more resilient to stress and improve their ability to deliver compassionate care.

METHODS

The research aims to explore how sleep quality influences empathy and emotional regulation among caregiving professionals.

Objectives Of The Study

1. To assess the relationship between sleep quality and empathy of caregiving professionals.
2. To assess the relationship between sleep quality and emotional regulation of caregiving professionals.
3. To assess the relationship between empathy and emotional regulation of professionals.
4. To assess the impact of sleep quality on empathy of caregiving professionals.
5. To assess the impact of sleep quality on emotional regulation of caregiving professionals.
6. To assess the impact of empathy on emotional regulation

of professionals.

Hypothesis

- H01:** There is no significant relationship between sleep quality and empathy of caregiving professionals.
- H02:** There is no significant relationship between sleep quality and emotional regulation of caregiving professionals.
- H03:** There is no significant relationship between empathy and emotional regulation of professionals.
- H04:** There is no impact of sleep quality on empathy of caregiving professionals.
- H05:** There is no impact of sleep quality on emotional regulation of caregiving professionals.
- H06:** There is no impact of empathy on emotional regulation of professionals.

Research Design

This study adopts a correlational research design.

Participants

The study included 163 participants, consisting of 52 doctors, 60 nurses and 51 psychologists, with ages ranging from 24 to 50 years. All participants had at least 1 year of professional experience.

Procedure

The sample was collected using the purposive sampling method and the data were collected using questionnaires circulated through Google Forms shared with the participants. Furthermore, participants were told that participation was voluntary and were assured of the confidentiality of their responses.

Tools For The Study

1. Sleep Quality Scale (SQS):

The Sleep Quality Scale was used to assess the sleep quality of participants which evaluates aspects like difficulty falling asleep, frequency of awakenings during the night, and overall satisfaction with sleep. It is a 28-item self-report tool which was developed by Chul Shin and colleagues in 2006. It is a four-point Likert-type scale designed to assess six domains of sleep quality. It has been validated for individuals aged 18-59 and shows strong psychometric properties: an internal consistency of 0.92 and test-retest reliability of 0.81. Scoring ranges from 0 to 84, with higher scores indicating greater sleep issues.

2. Jefferson Scale Of Empathy (Generalized Version):

Jefferson Scale of Empathy (JSE) was used to assess the empathy of participants which measures cognitive and emotional components of empathy specifically within healthcare contexts. This scale evaluates how caregivers perceive their ability to empathize with patients and understand their emotional experiences. It was developed by Dr. Mohammadreza Hojat in 2001, measures empathy in healthcare professionals and students. The generalized version contains 20 items and employs a seven-point Likert scale for responses, ranging from 1 (strongly disagree) to 7 (strongly agree). Scores can range from 20 to 140, with higher scores indicating greater empathy. The scale has been standardized for various healthcare populations and demonstrates strong psychometric properties, including high reliability (Cronbach's alpha > 0.80) and validity.

3. Emotional Regulation Questionnaire (ERQ):

Emotional Regulation Questionnaire was used to assess the emotional regulation of participants focusing on two primary strategies, cognitive reappraisal which refers to the ability to reinterpret a situation to alter its emotional impact and expressive suppression which refers to the inhibition of emotional expression. It was developed by James J. Gross and Oliver P. John in 2003, is designed to assess individual differences in the habitual use of two emotion regulation strategies: cognitive reappraisal and expressive suppression.

The ERQ consists of 10 items and employs a 7-point Likert scale for responses, ranging from 1 (strongly disagree) to 7 (strongly agree). The scoring for the reappraisal subscale ranges from 6 to 42, while the suppression subscale ranges from 4 to 28. It has been standardized for adult populations and demonstrates strong psychometric properties. The internal consistency reliability, measured by Cronbach's alpha, is 0.79 for the reappraisal subscale and 0.73 for the suppression subscale, with good test-retest reliability.

Research Ethics

Informed consent was taken, and participants' confidentiality was ensured. Participants were given a briefing of the study.

Statistical Analysis

All data analyses were performed using jamovi statistical program, including descriptive statistics (M= mean, SD=standard deviation). Pearson Correlation was applied to test the relationship between sleep quality, empathy and emotional regulation, and linear regression analysis was performed to test the impact of sleep quality on empathy and emotional regulation.

RESULTS

Table 1: Descriptive statistics for sleep quality, empathy, and emotional regulation.

	Sleep quality	Empathy	Emotional regulation
N	163	163	163
Mean	34.7	96.6	47.1
Standard deviation	10.1	17.0	8.77

The mean sleep quality score was 34.7 (SD = 10.1), indicating moderate sleep disturbances among the participants. Empathy scores averaged 96.6 (SD = 17.0), suggesting a generally high level of empathy. Emotional regulation scores had a mean of 47.1 (SD = 8.77), showing moderate emotional regulation abilities.

Table 2: Correlations between sleep quality, empathy, and emotional regulation among caregiving professionals.

		Sleep quality	Empathy	
Empathy	Pearson's r	-0.105	—	
	df	161	—	
	p-value	0.181	—	
Emotional regulation	Pearson's r	-0.065	0.314	***
	df	161	161	
	p-value	0.413	< .001	

The results indicate that sleep quality had a weak negative correlation with empathy ($r = -0.105, p = 0.181$) and emotional regulation ($r = -0.065, p = 0.413$), suggesting that poor sleep quality is associated with lower empathy and emotional regulation. However, these relationships were not statistically significant hence the first and second null hypothesis is retained. The results also indicate that empathy and emotional regulation were significantly correlated ($r = 0.314, p < .001$), suggesting that higher empathy is related to better emotional regulation hence the third null hypothesis is rejected.

Table 3a: Linear regression analysis examining the relationship between sleep quality and empathy.

Model	R	R ²		
1	0.106	0.0112		
Predictor	Estimate	SE	t	p
Intercept	102.723	4.786	21.46	< .001
Sleep quality	-0.179	0.133	-1.35	0.180

The regression model was not statistically significant, with an R^2 value of 0.0112, indicating that sleep quality accounted for only 1.12% of the variance in empathy scores. The regression coefficient for sleep quality was -0.179 (SE = 0.133, $t = -1.35, p = 0.180$), suggesting a negative but non-significant

association hence the forth null hypothesis is retained.

Table 3b: Linear regression analysis examining the relationship between sleep quality and emotional regulation.

Model	R	R ²		
1	0.0709	0.00503		
Predictor	Estimate	SE	t	p
Intercept	49.1077	2.4400	20.126	< .001
Sleep quality	-0.0608	0.0676	-0.900	0.370

The model yielded an R^2 value of 0.00503, implying that sleep quality explained only 0.5% of the variance in emotional regulation scores. The regression coefficient for sleep quality was -0.0608 (SE = 0.0676, $t = -0.900, p = 0.370$), indicating a weak and non-significant negative relationship hence the fifth null hypothesis is retained.

Table 3c: Linear regression analysis examining the relationship between empathy and emotional regulation.

Model	R	R ²		
1	0.314	0.0985		
Predictor	Estimate	SE	t	p
Intercept	31.506	3.7775	8.34	< .001
Empathy	0.162	0.0385	4.19	< .001

The regression model yielded a significant result, with an R^2 value of 0.0985, indicating that empathy accounted for approximately 9.85% of the variance in emotional regulation scores. The regression coefficient for empathy was 0.162 (SE = 0.0385, $t = 4.19, p < .001$), demonstrating a statistically significant positive association hence the sixth null hypothesis is rejected.

DISCUSSION

This study investigates the influence of sleep quality on empathy and emotional regulation among caregiving professionals, a group frequently exposed to high emotional demands and stress. The findings reveal several nuanced relationships between these variables, contributing to the understanding of how sleep impacts psychological and emotional functioning in caregiving roles.

The study found no significant correlation between sleep quality and empathy among caregiving professionals. This aligns with research by Killgore et al. (2017), which suggests that while sleep deprivation can impair cognitive functions like attention and memory, its impact on empathy may vary across individuals. However, studies such as Guadagni et al. (2017) have demonstrated that poor sleep quality can reduce empathic responses, particularly in processing negative emotions. These discrepancies may be attributed to profession-specific factors or individual differences in resilience to sleep disturbances.

Similarly, no significant relationship was observed between sleep quality and emotional regulation in this study. This finding diverges from previous research, which indicates that poor sleep exacerbates emotional dysregulation (Ben Simon et al., 2020). Palmer and Alfano (2017) highlighted that individuals in emotionally demanding roles are more susceptible to the effects of poor sleep on self-regulation. The absence of a significant correlation in this study might reflect the coping mechanisms employed by caregiving professionals or the relatively moderate sleep disturbances reported by participants.

Additionally, the study found a significant positive correlation between empathy and emotional regulation, indicating that individuals with higher empathy levels tend to regulate their emotions more effectively. This result aligns with Gross and John's (2003) framework, which posits that empathy involves perspective-taking and emotional atonement, skills that facilitate adaptive emotion regulation strategies like cognitive reappraisal. Caregiving professionals who exhibit high empathy may be better equipped to manage their own

emotions while responding to the needs of others, enhancing their overall effectiveness in caregiving roles.

Moreover, the regression analyses indicates that sleep quality did not significantly predict empathy or emotional regulation. While previous research indicates that sleep disruptions can impair emotional processing (Tempesta et al., 2018), the caregiving professionals in this study may have developed compensatory strategies to maintain emotional competence despite sleep disturbances. It was also found that empathy significantly predicted emotional regulation. This aligns with research showing that emotionally attuned individuals are more skilled at managing their emotional responses (Mikulincer et al., 2018). The strong association found among nurses and psychologists highlights the role of empathy in workplace emotional resilience.

CONCLUSION

This study sheds light on the interplay between sleep quality, empathy, and emotional regulation among caregiving professionals. No significant correlations were found between sleep quality and either empathy or emotional regulation. However, there is a significant positive correlation between empathy and emotional regulation. The regression analysis revealed that sleep quality did not significantly predict empathy or emotional regulation among caregiving professionals, suggesting that sleep disturbances may not directly influence these psychological constructs. However, the study found that empathy significantly predicted emotional regulation, highlighting the critical role of empathic abilities in fostering effective emotional management. These findings underscore the interconnectedness of empathy and emotional regulation and suggest that fostering empathy may enhance caregivers' ability to regulate emotions effectively, improving their professional performance and psychological well-being.

Limitations And Future Research Suggestions

Some crucial limitations identified in this study include the relatively small sample size which limits the generalizability of findings to the broader population of caregiving professionals. A larger and more diverse sample would enhance the robustness and representativeness of the results. The study's focus on caregiving professionals restricts the generalizability of findings to other populations. The homogeneity of the sample group, particularly cultural factors, limits the applicability of results across diverse contexts. Additionally, the reliance on self-report measures introduces potential biases related to social desirability or subjective perceptions. Lastly, the cross-sectional design precludes causal inference; longitudinal studies are needed to explore temporal dynamics between sleep quality, empathy, and emotional regulation.

Despite these constraints, this study carries significant implications for both theoretical frameworks and practical applications. The findings underscore the importance of fostering empathy and emotional regulation skills to enhance caregiving performance and well-being. While sleep quality did not significantly correlate with these variables, interventions aimed at improving sleep hygiene could still benefit caregivers by reducing stress and fatigue, indirectly supporting their emotional resilience. Future research should aim to address the limitations identified, particularly by employing larger, more diverse samples and utilizing longitudinal designs. Additionally, examining profession-specific factors influencing these dynamics could provide tailored solutions for enhancing caregiver well-being. By focusing on these critical areas, researchers can contribute to developing effective interventions that support caregiving professionals' mental health while optimizing their capacity for compassionate care delivery.

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