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Research Paper

Insomnia and Job Performance Among Employees

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ABSTRACT

Insomnia is the most common sleep-related complaint, with a prevalence of 10%-48% in the general population. In South India, 18.6% of respondents reported insomnia. The current study aims to determine the severity level of insomnia among employees and how it impacts job performance. The individual work performance questionnaire was used to measure job performance, and the Insomnia severity index scale was used to assess the level of insomnia. The sample consisted of 150, of which 54.7% were female, and 43% were male. Through correlation and regression analysis, it was found that there is a highly significant relationship between Insomnia and Job performance among employees. The study emphasizes the organization's focus on employee well-being, especially sleep, which would positively impact the organization's growth.

Keywords: *Insomnia, job performance*

According to DSM-5, Insomnia is defined as difficulty in getting to sleep, staying asleep, or having a non-restorative sleep despite having an adequate opportunity for sleep, together with associated impairment of daytime functioning, with symptoms present for at least four weeks. Insomnia is the most common sleep-related complaint. Insomnia is associated with substantial impairment in an individual's quality of life, impacting health, work, and healthcare cost. (Yardi N & Adsule S, 2015) It is also evident that due to the pandemic, the mode of remote working has affected the sleep cycle of the employee. (Costa C et al, 2022).

Sleep is one of the essential components which determines how well an individual functions. Thus, in the workplace, the impact of sleep on an employee gets reflected in performance level. Job performance is a means to reach a goal or set of goals within a job, role, or organization (Campbell, 1990), but not the actual consequences of the acts performed within a job. Campbell (1990) affirms that job performance is not a single action but a "complex activity." The dimensions of job performance are task performance, contextual performance, and counterproductive behavior. The "behaviors that contribute to the production of a good or the provision of a service, such as completing job tasks, keeping knowledge up-to-date, working accurately and neatly, planning and organizing, and solving problems are called task performance. The second dimension is contextual performance, also known as

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organizational citizenship behavior (OCB). It can be defined as "behavior that contributes to the goals of the organization by contributing to its social and psychological environment" (Rotundo & Sackett, 2002). It includes tasks beyond job duties, initiative, proactivity, cooperating with others, or enthusiasm (Koopmans et al., 2011). The third dimension is counterproductive to work behavior, defined as "voluntary behavior that harms the organization's wellbeing" (Rotundo & Sackett, 2002). It comprises off-task behavior, presentism, complaining, doing tasks incorrectly on purpose, and misusing privileges (Koopmans et al., 2011). These deviant behaviors are related to negative consequences at the personal (Aubé, Rousseau, Mama, & Morin, 2009) and organizational (Rogers & Kelloway, 1997) levels.

Mullins (2014) presented a framework for the work-related antecedents and manifestations of sleepiness and provided evidence for potential moderators of these relationships. Insomnia results in a distinct pattern of physiological changes that contribute to reductions in information processing and changes in the experience of affect and emotion. Taken collectively, sleepiness reduces various types of performance, leads to increases in the rate of accidents, and is related to an increase in withdrawal and deviant behaviors. The work environment and the job itself can influence the amount of sleepiness that an individual experiences. Thus, the current study focuses on determining the relationship between insomnia and job performance in order to support the conclusion of Mullins (2014) framework model, which explains the complex dynamic between an individual's work and sleep and proves it is essential to include sleepiness within the framework of workplace psychology. Sleepiness has significant implications for organizations and their employees, even below the threshold for clinical diagnosis.

REVIEW OF LITERATURE

INSOMNIA

Today's working culture has brought many illnesses and stress-related issues, and insomnia is prevalent. One of the studies, It has been found that 14% of the study population had insomnia, which directly affected work performance in the office and at home. It also emphasizes the prevalence of undetected insomnia in daytime employees working in the corporate sector in India. 30% of the general population is affected by chronic insomnia. Insomnia impairs cognitive and physical functioning and is associated with a wide range of impaired daytime functions across several emotional, social, and physical domains. (Yardi N & Adsule S, 2015) The average daily working hours were significantly higher in the participants with insomnia than in those without insomnia. Low employment opportunities, physical environment, and low coworker support also were weakly associated with the risk for insomnia among workers. Among white-collar male daytime workers, psychological job stress factors such as interpersonal conflicts with fellow employees, job satisfaction, and social support were independently associated with a modestly increased risk of insomnia that included three subtypes considered to be defining for the disorder. (Nakata et al, 2004). Compared with good sleepers, people with persistent sleep disturbances are more prone to accidents, have higher rates of work absenteeism, diminished job performance, decreased quality of life, and increased health care utilization (Roth Thomas, 2007). Depending on the industry's size, there were differences in the prevalence of insomnia. Women also had higher insomnia than men, and age also played a significant role. (Lee, J. et al, 2021) The Shift work increases the risks of sleep disturbance and physical and psychological health problems. It also showed that workers engaging in night shifts experienced poor mental health and reported more sleeping problems than day workers. The fixed night shifts were associated with higher risks for burnout and mental health problems in women, but the

associations disappeared after controlling for insomnia, suggesting that insomnia may play a mediating role (Cheng W & Cheng Y, 2016).The symptoms of insomnia affect the work-life. It increases absenteeism and accident risk, reduces workplace productivity, inhibits career progression, and can degrade job satisfaction (Kucharczyk R. Erica et al., 2012).

The Covid 19 pandemic changed the work environment to remote working. The change has influenced the perception of work quality and performance. About two-thirds of the subjects reported mood alterations and sleep disturbances were more highly susceptible among women than men—sleep disturbances. (Costa, C. et al., 2022). Employees in critical societal occupations during the pandemic reported higher levels of insomnia symptoms than the general population before COVID-19. It is essential that organizations and society recognize impaired sleep as a serious challenge. Sleep is a crucial factor in employee health and performance, and a stronger focus on preventing insomnia is warranted (Sørengaard TA & Saksvik-Lehouillier I, 2021). From the exploratory study, the researcher suggested that reducing insomnia is essential to relieve DS, particularly among employees working excessive hours at internet companies. Insomnia may affect daytime behavior. It seems probable that insomnia impacts sick days and other indicators of workplace productivity. Several preliminary studies have suggested that insomniacs report more absenteeism at work than people who sleep well (Metlaine A et al.) Despite being the most common sleep-related problem, insomnia remains undiagnosed, mainly in the general population. Insomnia significantly impacts an individual's ability to maintain work, physical and social performance, and overall quality of life. (Yardi N & Adsule, 2015)

INSOMNIA AND JOB PERFORMANCE

Mullins (2014) framed a model on how the physiology of sleepiness impacts the workplace. He explains various findings on the effects of sleep-in regard to three dimensions: job, contextual and counterproductive behavior. Research links the brain's deactivation associated with sleepiness to subsequent deficits in vigilance task performance. Performance that requires motor function is also reduced in partially sleep-deprived individuals (Durmer & Dinges, 2005). The components of contextual performance dependent on effect and interpersonal skills are most likely to be affected by sleepiness. Sleep-deprived individuals are more likely to recognize emotions such as anger or happiness incorrectly. Because social interactions rely on the accurate recognition of emotion (van der Helm et al., 2010), individuals who are sleepy due to sleep loss may be more likely to misinterpret social situations. Sleepiness may also be related to an increase in deviant work behaviors due to increased negative affect, decreased decision-making ability, and reduced self-regulation experienced by sleepy individuals.

The interaction between sleep and work-related behaviors influences many aspects of employee performance, safety, health, and organizational-level success. (June J. Pilcher & Drew M. Morris,2020) Results of previous studies suggest that long work hours may contribute to chronic sleep loss, which may, in turn, result in work impairment. Risk for sleep disorders substantially increases the likelihood of adverse work outcomes, including occupational accidents, absenteeism, and presenteeism. (swanson M et al.).Workers with insomnia generally put in the same number of work hours as other workers, but their on-the-job performance is lower than other workers(Ronald C. Kessler, 2022)In general, results confirm that sleep is a necessary construct to consider when studying, or attempting to improve, performance in the organizational context (Alexandra A. Henderson & Kristin A. Horan, 2010).Exploratory analyses indicated that insomnia symptoms may be addressed effectively using an online intervention and that reductions in presenteeism were reported by

employees when their sleep improved. Raising awareness about the importance of sleep in the workplace and a targeted approach to help those in greatest need of assistance improves sleep and the loss of work productivity. (Colin A. Espie et al, 2018). A significant synergistic interaction between insomnia and objective short sleep duration was associated with poor workability. Given the high prevalence of insomnia in the working population and the widespread misconception of a disorder of the "worried well," its prevention and appropriate treatment should become the target of occupational health policy(Lian Yulong et al., 2015). Human resource management should gain a deeper understanding on how sleep-deprivation impacts the employee and organization in order to develop supporting network and intervention to focus on the employee well-being.

METHODOLOGY

The study aims to determine the relationship between insomnia and job performance and the level of impact of insomnia on job performance among employees. The researcher implemented a descriptive design to conduct the research. According to Williams (2007), descriptive research is a method that can determine the situation in the current phenomenon. Descriptive research aims to describe a population, problem, or phenomenon systematically—the what, where, when, and how questions will be answered but not why. The primary data were collected using a purposive sampling technique. The sample size is 150, where 76 are female and 69 are male employees. The inclusion criteria for the study are employees aged 20-60 can participate, and the exclusion criteria are employees with less than one year of experience. The researcher collected demographic details such as age, gender, marital status, location, and sector from the participants. Koopman's individual work performance questionnaire (IWPQ), which consisted of 25 items with a 5-point rating scale, was used to measure job performance. The scale has three dimensions which include Task performance, contextual performance, and counterproductive behavior. The insomnia severity index by Charles M. Morin, which consisted of 7 items with a 5-point rating scale, was used to measure the level of insomnia.

RESULT AND DISCUSSION

Descriptive analysis is used in the study. Out of 150 employees, 54.7% are female, and 45.3% are male. 84% of the sample belonged to the age group of 20-30years, rest were within the range of 31-50yrs. 81% of the respondent were single, and 27% were married. Around 42.7% of the respondents belonged to the IT sector, and 57.3% were employed in other sectors such as hospitals, education, and manufacturing.

Table 1: Level of severity of insomnia

Level of severity	Counts	% of Total
No Insomnia	53	35.30%
Subthreshold	57	38.00%
Moderate & above	40	26.70%

Among 150 respondents, 26% were found to suffer from insomnia, 38% were on the subthreshold level, and the rest, 35.3%, did not show any symptoms of clinical insomnia. The table shows the prevalence of insomnia among employees. From the previous, it has been found that the health, work performance, household duties, interpersonal conflicts, and other daily activities got affected among participants with insomnia (Yardi N & Adsule S, 2015)

H1: There is a significant relationship between insomnia and job performance among employees

The Shapiro-wilik test was conducted to check for the normality of the data. The P value was less than <o.o5, indicating that the data is not normally disturbed. Hence, Non-parametric analysis was used to test the hypotheses.

Table 2: Relationship between employees who have no clinically insomnia and job performance

Correlation Matrix

		Task performance	Contextual performance	Counterproductive behaviour	No clinical severity insomnia
Task performance	Spearman's rho	—			
	p-value	—			
Contextual	Spearman's rho	0.686	—		
	p-value	< .001	—		
counterproductive	Spearman's rho	-0.001	0.105	—	
	p-value	0.995	0.454	—	
No clinical severity insomnia	Spearman's rho	-0.027	0.230	0.224	—
	p-value	0.846	0.097	0.106	—

Note. * p < .05, ** p < .01, *** p < .001

The Spearman correlation matrix indicates no significant relationship between the three dimensions of job performance and participants without insomnia. From the descriptive table, it is also evident that the mean score of participants with no clinical insomnia has a higher performance score than other severity levels of insomnia participants. In a Swedish study of 2006, people of working age between 20-60years being “off work” in the previous week was reported by 7% of good sleepers, 13% of those reporting subjectively poor sleep, and 28% of those meeting criteria for insomnia,21. However, no data were reported on the duration of these absences. One study devised a six-item job performance scale to measure work productivity in a primarily white-collar sample and found that people with insomnia symptoms had significantly lower job performance scores than good sleepers. This difference remained significant after multivariate analyses controlling for health variables. (Kuppermann M et al, 2012)

Table 3: Relationship between subthreshold and job performance

Correlation Matrix

		Task performance	Contextual Performance	Counterproductive behaviour	Subthershold level of insomnia
Task performance	Spearman's rho	—			
	p-value	—			
Contextual Performance	Spearman's rho	0.554***	—		
	p-value	< .001	—		
Counterproductive behaviour	Spearman's rho	-0.278*	-0.063	—	
	p-value	0.036	0.640	—	

Subthershold level of insomnia	Spearman's rho	-0.276*	-0.264*	0.197	—
	p-value	0.038	0.047	0.143	—

Note. * p < .05, ** p < .01, *** p < .001

Table 3 shows a significant relationship between job performance and subthreshold insomnia. The analysis revealed that those with difficulty falling asleep, remaining asleep, or early awakening all reported a more significant impact on productivity loss than those that reported not having a sleep problem. (Colin A. Espie et al, 2018). Insomnia significantly impacts an individual's ability to maintain work, physical and social performance, and overall quality of life. Insomnia is associated with co-morbid conditions like anxiety, depression, and hypertension. Studies in a larger population are required to assess further the risk factors associated with insomnia and derive measures for early detection and treatment. (Yardi N & S Adsule, 2015)

Table 4: Relationship between job performance and participants with moderate level of insomnia

Correlation Matrix

		Task performance	**Contextual performance**	**Counterproductive**	**Moderate & Severe level of insomnia**
Task performance	Spearman's rho	—			
	p-value	—			
Contextual performance	Spearman's rho	0.482**	—		
	p-value	0.002	—		
Counterproductive	Spearman's rho	-0.332*	-0.169	—	
	p-value	0.037	0.297	—	
Moderate & Severe level of insomnia	Spearman's rho	-0.142	-0.023	0.380*	—
	p-value	0.382	0.889	0.016	—

Note. * p < .05, ** p < .01, *** p < .001

From the table, it can be inferred that counterproductive behavior is significantly correlated with participants diagnosed with moderate and severe clinical insomniacs. Deviant workplace behavior can be defined as a collection of deliberate behaviors that harm the organization or its members. Any counterproductive work behavior, voluntary or purposeful, that functions against the organization's passions can be termed as deviant behavior. A Study on female employees indicated a negative impact on job performance due to sleep deprivation, especially among working mothers. Such workers are also more likely to engage in workplace deviant behaviors (Deng, Y et al., 2022).

Table 5: Relationship between insomnia and job performance

		Insomnia Score	Task performance	Contextual Work performance	Counter productive behaviour
Insomnia Score	Spearman's rho	—			
	p-value	—			
Task performance	Spearman's rho	-0.179*	—		
	p-value	0.028	—		
Contextual Work performance	Spearman's rho	-0.070	0.592***	—	
	p-value	0.397	< .001	—	
Counterproductive behaviour	Spearman's rho	0.283***	-0.219**	-0.027	—
	p-value	< .001	0.007	0.747	—

Note. * p < .05, ** p < .01, *** p < .001

Table 4 summarises the overall relationship between insomnia and job performance. It indicates a significant negative correlation between insomnia and task performance. In the case of counterproductive, there is a significantly high correlation which denotes that an increase in insomnia will reflect in the workplace as counterproductive behavior. It affects the level of the job performance of the employee. Employees should be trained in effective sleep hygiene practices to improve employee health and productivity and potentially decrease deviance(Christopher J. Budnick & Larissa K. Barber, 2015). Another study examined the relationship between the work environment, sleep quality, and workers' job performance. Specifically, they collected data from 1000 Americans working a minimum of 30 h per week by asking questions about the work environment, job performance, and sleep quality. They found that 37% of respondents were facing sleep disorders. They concluded that extended work hours might cause chronic sleep loss leading to adverse work outcomes, such as absenteeism and occupational accidents.

On the other hand, employees who sleep well tend to perform better than those who lack proper sleep. Impulsive and spontaneous reactions are usually seen coming from those under sleep deprivation. They even behave socially awkwardly and resort to offensive behavior with their peers. (Swanson et al., 2011)

H2: There is a significant impact of insomnia on job performance

Table 6: Insomnia on task performance

Model Fit Measures

			Overall Model Test			
Model	**R**	**R^2**	**F**	**df1**	**df2**	**p**
1	0.196	0.0386	5.94	1	148	0.016

Model Coefficients - Task performance

Predictor	Estimate	SE	t	p
Intercept	12.364	0.7965	15.52	< .001
Insomnia	-0.167	0.0683	-2.44	0.016

Table 7: Insomnia on Counterproductive behaviour

Model Fit Measures

			Overall Model Test			
Model	**R**	**R^2**	**F**	**df1**	**df2**	**p**
1	0.282	0.0795	12.8	1	148	<0.001

Model Coefficients - Counterproductive behaviour

Predictor	**Estimate**	**SE**	**t**	**p**
Intercept	2.286	0.5485	4.17	< .001
Insomnia	0.168	0.0470	3.57	< .001

From the regression tables, it can be concluded that 3.86% and 7.95% of task performance and counterproductive behaviour are affected by insomnia respectively. Sleep's affective and cognitive consequences have implications for several performance outcomes, such as task performance, contextual performance, and safety behavior. In previous research, both affect (e.g., Shockley, Ispas, Rossi, & Levine, 2012) and cognitive resources (e.g., Ree, Earles, & Teachout, 1994) have been frequently identified as predictors of task performance. Contextual performance (e.g., organizational citizenship behaviors), impaired self-regulation (Barnes, 2012), and losses in job satisfaction associated with sleepiness (Barnes et al., 2013) have been identified as potential mechanisms to explain the effects of sleep.

CONCLUSION

Insomnia is a significant issue faced by employees in a current technology-based world. Integrating the concept of employee well-being, especially the quality of sleep, would positively affect the organization (Glavas, 2016). From the current study, it can be concluded that insomnia impacts job performance. Therefore, human resource management should focus on improving the employee's well-being by implementing intervention programs regarding sleep which could result in higher employee performance.

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Conflict of Interest
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