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Influence on Sleep Quality and Caffeine Intake on Depressive Symptoms Among Night Shift Workers of Young It Professionals

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Abstract

Night-shift work has become increasingly common in the information technology (IT) sector, exposing young professionals to disrupted sleep patterns and lifestyle changes that may adversely affect mental health. Poor sleep quality and increased caffeine intake are frequently reported among night-shift workers as coping mechanisms to combat fatigue and maintain alertness. However these factors may contribute to the development to depressive symptoms. The present study aims to examine the influence of sleep quality and caffeine intake on depressive symptoms among young IT professionals working night shifts. A quantitative correlational research design will be employed, with data collected from approximately 200 participants using standardised self-report measures, including the Pittsburgh Sleep Quality Index (PSQI), the Caffeine Consumption Questionnaire– Revised (CCQ-R), and the Patient Health Questionnaire-9 (PHQ-9). Descriptive and inferential statistical analyses will be conducted to examine relationships among the variables. Findings from the study may contribute to improved work place health strategies, sleep hygiene awareness, and mental health interventions for night-shift IT professionals.

Keywords: sleep quality, caffeine intake, depressive symptoms, night-shift work, IT professionals.

CHAPTER I
INTRODUCTION

Global service delivery models, international client coordination, and continuous operational requirements necessitate working during late-night hours. Although such schedules enhance organisational efficiency, they pose considerable risks to employees' physical and psychological well-being.

Sleep plays a vital role in emotional regulation, cognitive functioning, and overall mental health. Night-shift work disrupts the body's circadian rhythm, leading to irregular sleep schedules, reduced sleep duration, and poor sleep quality. Young IT professionals often experience difficulty obtaining adequate day time sleep due to environmental disturbances and biological alignment. Prolonged sleep disruption may result in fatigue, irritability, impaired concentration, and increased vulnerability to depressive symptoms.

Caffeine is commonly consumed by night-shift workers to counteract sleepiness and sustain alertness. Moderate caffeine intake may provide short-term benefits, excessive or poorly timed consumption can negatively affect sleep quality and exacerbate psychological distress. This creates a cycle in which insufficient sleep leads to increased caffeine consumption, further worsening sleep disturbances.

Impact of Technology and Screen Exposure on Sleep

Night-shift IT professionals are continuously exposed to digital screens for prolonged hours. Extended screen time, particularly during night hours, leads to increased exposure to blue light, which suppresses the secretion of melatonin—a hormone responsible for regulating sleep. Reduced melton in levels delays deep on set and disturb the sleep–wake cycle, making it difficult for individuals to achieve deep and restorative sleep during daytime hours.

Moreover, constant engagement with computers, mobile phones, and work-related notifications increases mental stimulation and cognitive arousal. This heightened alertness interferes with the body's natural ability to wind down, even after work hours. As a result, many night-shift workers report difficulty relaxing, racing thoughts, and restlessness before sleep, which further contributes to poor sleep quality and emotional exhaustion.

Work Stress, Performance Pressure, and Emotional Well-being

The IT sector is known for its fast-paced environment, strict deadlines, and high performance expectations. Night-shift workers often face additional stress due to reduced managerial support during odd hours, technical challenges, and pressure to coordinate with international teams. Persistent work stress activates the body's stress response system, leading to increased cortisol levels, which negatively affect sleep quality and mood regulation.

Chronic occupational stress may also lead to emotional burnout, reduced motivation, and feeling so helplessness. Overtime, this emotional strain can contribute to the development of depressive symptoms, particularly when combined with sleep deprivation and lack of social support. From a clinical psychology perspective, unmanaged work stress is a significant risk factor for mood disturbances among young professionals.

Social Isolation and Disrupted Inter personal Relationships

Night-shift work often results in reduced interaction with family members, friends, and social networks due to mismatched schedules. Young IT professionals may miss important social events, family gatherings, and opportunities for recreation, leading to feelings of loneliness and social isolation

Social isolation also limits opportunities for emotional expression and stress sharing, which are essential for psychological well-being. Over time, individuals may experience a sense of disconnection, low self-esteem, and emotional numbness. These psycho social factors interact with biological disruptions in sleep to further intensify depressive symptoms

Lifestyle Factors Associated with Night-Shift Work

Night-shift-work significantly alters daily routines, including eating habits, physical activity, and relaxation patterns. Irregular meal timings, unhealthy food choices, and reduced physical exercise are commonly reported among night-shift IT professionals. Such lifestyle factors contribute to physical fatigue, reduced energy levels, and impaired mood regulation.

Psychological Consequences of Chronic Sleep Deprivation

Chronic sleep deprivation affects various cognitive and emotional processes. Individuals with inadequate sleep often experience impaired attention, reduced problem-solving abilities, poor decision-making, and emotional hypersensitivity. These cognitive deficits may reduce work efficiency and increase the risk of errors, further contributing to work-related stress and self- criticism.

Emotionally , sleep deprivation reduces to learn to stress and increases negative emotional reactivity.

Individuals maybe come more irritable ,anxious, and emotionally unstable. Over time, repeated sleep loss may alter brain functioning related to emotion regulation, thereby increasing the likelihood of depressive

symptoms.

Caffeine Use and Psychological Dependence

While caffeine is socially accepted and widely used, consumption may lead to psychological dependence. Night-shift workers may begin to rely on caffeine not only for alertness but also as a perceived necessity for functioning. This reliance may mask underlying fatigue and emotional distress rather than addressing the root causes.

Excessive caffeine intake can also increase physiological symptoms su, gastrointestinal discomfort, nervousness, and sleep disturbances. These symptoms may be misinterpreted as anxiety or worsen existing mood problems. From a clinical psychology viewpoint, addressing maladaptive caffeine use is essential in managing sleep-related and mood-related concerns.

Gender and Individual Differences

Individual differences such as gender, personality traits, coping styles, and resilience levels may influence how night-shift work affects sleep and mental health. Some individuals may adapt better to night shifts, while others experience severe psychological distress. Young professionals with poor coping strategies or high neuroticism may be more vulnerable to depressive symptoms.

Understanding these individual differences is important for personalized assessment and intervention. Clinical psychologists must consider both individual and environmental factors when evaluating mental health outcomes among night-shift workers.

Preventive and Mental Health Promotion Perspective

Early identification of sleep disturbances and depressive symptoms can prevent the progression of more severe mental health disorders. Psycho education on sleep hygiene, responsible caffeine use, stress management, and work-life balance can empower young IT professionals to adopt healthier coping strategies.

Workplace mental health programs, counselling services, and flexible scheduling policies may significantly improve psychological well-being. Clinical psychologists can play a key role in designing and implementing prevent in vein terventions with in organizational settings.

Young Adulthood and Mental Health Vulnerability

Young adulthood is a critical developmental period marked by career establishment, increased responsibility, and identity formation. During this stage, individuals are particularly sensitive to environmental stressors and lifestyle changes. Night-shift work during young adulthood may interfere with the development of healthy routines related to sleep, diet, physical activity, and social engagement.

Despite experiencing psychological distress, young professionals may hesitate to seek mental health support due to stigma, lack of awareness, or fear of negative career implications. As a result, depressive symptoms may remain unrecognized and untreated, increasing the risk of longterm psychological difficulties.

Need for the Study

Night-shift work is increasingly prevalent among young professionals in the information technology (IT) sector, making them particularly vulnerable to circadian rhythm disturbances and sleep-related difficulties. Poor sleep quality has been shown to adversely affect emotional regulation and overall psychological well-being. In addition, excessive caffeine consumption, commonly adopted as a coping strategy to manage fatigue and maintain alertness, may further impair sleep quality and negatively influence mood. Depressive symptoms among night-shift workers often remain unrecognized and untreated due to work demands, irregular schedules, and limited access to mental health resources.

CHAPTER II
REVIEW OF LITERATURE

Shift Work and Sleep Disturbances

Chang et al. (2024) investigated shift work sleep disorder and reported that chronic misalignment between work schedules and circadian rhythms was significantly associated with sleep fragmentation and daytime fatigue. Their findings suggested that prolonged circadian disruption increases vulnerability to emotional instability, particularly depressive and anxiety symptoms. The authors emphasized that circadian rhythm disruption acts as a major biological stressor affecting mood regulation mechanisms.

Similarly, Yeo et al. (2022) conducted a comparative study between shift workers and non-shift workers and found that individuals working irregular schedules reported significantly poorer sleep quality and higher levels of depressive symptoms. The study highlighted that cumulative sleep deprivation over time contributes to emotional dysregulation and reduced psychological resilience. These findings support the notion that persistent sleep disturbances play a critical role in the development of mood-related problems among shift workers.

Caffeine Consumption Among Shift Workers .

Ruiz et al. (2023) explored the relationship between caffeine intake and depressive symptoms in young adults and reported mixed findings. Moderate caffeine consumption was associated with slightly lower levels of depressive symptoms, possibly due to its stimulating effects on neurotransmitter systems. However, high levels of caffeine intake were strongly linked to sleep disturbances, which in turn increased vulnerability to depressive symptoms. The authors concluded that the effects of caffeine on mood depend largely on dosage, timing, and individual sensitivity.

Caffeine, Sleep Quality, and Mood Regulation

Lee and Kim (2023) focused on technology professionals and found that late-night caffeine consumption significantly delayed sleep onset and reduced overall sleep quality. Participants who reported frequent late-night caffeine use also exhibited lower mood levels, reduced motivation, and increased emotional exhaustion. These findings indicate that reliance on caffeine as a compensatory mechanism for sleep loss may create a cycle of sleep disruption and mood impairment.

Jones and Smith (2022), in a comprehensive review, concluded that chronic sleep disruption combined with habitual stimulant use significantly increases the risk of depressive symptoms among night-shift workers. Their review emphasized that caffeine may mask fatigue temporarily while worsening sleep-related problems over time, ultimately contributing to psychological distress.

CHAPTER III
METHODOLOGY PROBLEM STATEMENT

The present study aims to examine the influence of sleep quality and caffeine intake on depressive symptoms among young IT professionals working night shifts.

Aim of the Study

The aim of the study is to examine the influence of sleep quality and caffeine intake on depressive symptoms among young IT professionals engaged in night-shift work.

Objectives of the Study:

The objectives of the study areas follows:

1. To assess the level of sleep quality among night-shift IT professionals.
2. To assess caffeine intake levels among night-shift IT professionals.

3. To examine the relationship between sleep quality and depressive symptoms.
4. To examine the relationship between caffeine intake and depressive symptoms.
5. To examine the combined influence of sleep quality and caffeine intake on depressive symptoms.

Hypotheses

The following hypotheses were formulated for the study:

H1:There will be a-significant relationship between sleep quality, caffeine intake, and depressive symptoms among night-shift IT professionals.

H0:There will be no significant relationship between sleep quality ,caffeine intake ,and depressive symptoms among night-shift IT professionals.

Research Design

A quantitative correlational research design was adopted to examine the relationships among sleep quality, caffeine intake, and depressive symptoms.

Sample and Sampling Method

The sample consisted of approximately 200 young IT professionals working night shifts. Convenience sampling was used to select participants who met the inclusion criteria and voluntarily consented to participate in the study.

Inclusion Criteria

Participants who were aged between 20 and 30 years, employed in the IT sector, working regular night shifts, and willing to provide informed consent were included in the study.

Exclusion Criteria

Individuals working day shifts, those outside the specified age range, and individuals diagnosed with severe psychiatric conditions were excluded from the study.

Operational Definitions

- Sleep Quality: Subjective assessment of sleep duration, disturbances, and restfulness.
- Caffeine Intake: Average daily caffeine consumption from various sources.
- Depressive Symptoms: Emotional and behavioral indicators of depression.

Variables of the Study

The independent variables of the study were sleep quality and caffeine intake. The dependent variable was depressive symptoms.

Tools Used

The following standardized tools were used for data collection:

1. Pittsburgh Sleep Quality Index(PSQI)
2. Caffeine Consumption Questionnaire–Revised(CCQ-R)
3. Patient Health Questionnaire-9(PHQ-9)

Statistical Analysis

Data were analyzed using descriptive and inferential statistical techniques. Descriptive statistics included measures such as mean and standard deviation. Inferential analysis involved Pearson's correlation and multiple regression analysis to examine relationships among the study variables.

Procedure

Prior to data collection, permission was obtained from the concerned authorities, and all ethical considerations were strictly adhered to throughout the study. Participants were approached through both online and offline modes and were informed about the purpose and nature of the research. Informed

consent was obtained from all participants before participation, and they were assured of confidentiality, anonymity, and their right to withdraw from the study at any point without any negative consequences.
After obtaining informed consent,ademographic information sheet was administered to collect details such as age, gender, work schedule, and duration of night-shift standardisedself-reportquestionnaireswereadministeredinastructuredmanner.Sleepquality was assessed using the Pittsburgh Sleep Quality Index (PSQI), caffeine intake was measured using the Caffeine Consumption Questionnaire–Revised (CCQ-R), and depressive symptoms were assessed using the Patient Health Questionnaire-9 (PHQ-9).
Participants were provided with clear instructions regarding the completion of the questionnaires and were encouraged to respond honestly to all items. Adequate time was allotted for completing the assessments, and any doubts or clarifications raised by the participants were addressed by the researcher.
Upon completion of data collection, the responses were coded and entered into statistical software for analysis. Descriptive and inferential statistical techniques were employed to analyze the data and to the relationships among sleep quality, caffeine intake, and depressive symptoms among night-shift IT professionals.

CHAPTER IV
RESULTS AND DISCUSSION

This chapter presents the results and interpretation of the statistical analysis conducted to understand the relationship between sleep quality, caffeine intake, and depressive symptoms among night shift IT professionals.

Table 1
Descriptive statistics showing the mean and standard deviation of Sleep Quality, Caffeine Intake, and Depressive Symptoms.

Variables	Mean	Standard Deviation	N
Sleep Quality	9.26	2.166	299
Caffeine Intake	234.85	111.725	299
Depressive Symptoms	10.31	1.923	299

The descriptive statistics table shows that the total sample size was N = 299. The mean score for Sleep Quality is 9.26 with a standard deviation of 2.166, indicating moderate variation in sleep patterns among the participants. The mean score for Caffeine Intake is 234.85 with a standard deviation of 111.725, suggesting noticeable differences in caffeine consumption levels among night shift IT professionals. The mean score for Depressive Symptoms is 10.31 with a
standard deviation of 1.923. The standard deviation values indicate variability in sleep quality,
caffeine intake, and depressive symptoms among the participants in the study.

Table 2
Correlational analysis showing the relationship between Sleep Quality, Caffeine Intake, and Depressive Symptoms.

Pearson's Correlation	Significance (r) (p)	Variables	Decision
Sleep Quality & Depressive Symptoms	-.065.	.263	Accept H_0
Caffeine Intake & Depressive Symptoms.	0.24	.674	Accept H_0

The Pearson correlation analysis showed that the relationship between sleep quality and depressive symptoms was r = -0.065, p = .263 (p > 0.05). Since the p-value is greater than 0.05, the relationship is not statistically significant. This means that in the present study, sleep quality did not show a meaningful relationship with depressive symptoms among the participants.

Similarly, the correlation between caffeine intake and depressive symptoms was found to be r = .024, p = .674 (p > 0.05). Because the p-value is again greater than 0.05, this relationship is also not statistically significant.

Therefore, the null hypothesis (H_0), which states that there is no significant relationship between sleep quality, caffeine intake, and depressive symptoms among night shift IT professionals, is accepted.

Although the correlations were slightly positive or negative, they were very weak and not strong enough to be considered meaningful in a statistical sense.

Discussion

The present study was conducted to understand the influence of sleep quality and caffeine intake on depressive symptoms among night shift IT professionals. Individuals working night shifts often experience changes in their natural sleep cycle, irregular sleep schedules, and increased reliance on stimulants such as caffeine to stay alert during work hours. Because of these factors, it is often assumed that poor sleep and higher caffeine consumption may contribute to psychological distress and depressive symptoms.

However, the findings of this study showed that sleep quality and caffeine intake did not have a statistically significant relationship with depressive symptoms among the participants.

The relationship between sleep quality and depressive symptoms was found to be weak and negative (r = -0.065), but it was not statistically significant. This suggests that participants who reported poorer sleep quality did not necessarily report higher levels of depressive symptoms in this study.

Similarly, the relationship between caffeine intake and depressive symptoms was very weak and positive (r = .024) and was also not statistically significant. This indicates that higher levels of caffeine consumption among night shift IT professionals did not appear to significantly influence their depressive symptom levels.

One possible explanation for these findings is that depressive symptoms are influenced by many different factors, rather than just sleep quality or caffeine intake. Factors such as work-related stress, job satisfaction, workload, work-life balance, social support, and individual coping styles may play a larger role in determining mental health outcomes.

Another possible reason could be that many night shift IT professionals gradually adapt to their work schedules. Over time, they may develop coping strategies such as maintaining a consistent sleep routine, managing caffeine intake, or adopting lifestyle adjustments that help them handle the demands of night shift work.

In addition, caffeine is often used as a short-term strategy to maintain alertness and productivity, especially in demanding work environments. While excessive caffeine consumption can sometimes affect sleep patterns or mood, moderate intake may not necessarily lead to depressive symptoms.

It is also important to understand that depression is a complex psychological condition influenced by biological, psychological, and social factors. Sleep quality and caffeine intake may play a role, but they may not independently predict depressive symptoms without considering other contributing factors.

Overall, the findings of the study suggest that sleep quality and caffeine intake alone may not be sufficient to explain depressive symptoms among night shift IT professionals. This highlights the importance of

examining broader occupational and psychological factors when studying mental health among individuals working in night shift environments.

CHAPTER V
SUMMARY AND CONCLUSION

Summary

The present study was carried out to examine the influence of sleep quality and caffeine intake on depressive symptoms among night shift IT professionals. The main aim of the research was to understand whether sleep disturbances and caffeine consumption have a significant impact on the mental well-being of individuals who work during night shifts.

A quantitative correlational research design was used for the study. The sample consisted of 299 night shift IT professionals. Standardised questionnaires were used to measure the participants' sleep quality, caffeine intake, and depressive symptoms.

The collected data were analyses using SPSS statistical software. Descriptive statistics were used to understand the overall characteristics of the data, and Pearson correlation analysis was conducted to examine the relationships between the variables.

The results of the analysis showed that there was no statistically significant relationship between sleep quality and depressive symptoms. Similarly, caffeine intake also did not show a significant relationship with depressive symptoms. Although weak correlations were observed between the variables, these relationships were not strong enough to be considered statistically meaningful.

Overall, the findings suggest that depressive symptoms among night shift IT professionals may not be determined solely by sleep quality or caffeine intake. Instead, other factors may also play an important role in influencing their psychological well-being.

Conclusion

Based on the findings of the study, it can be concluded that sleep quality and caffeine intake did not show a statistically significant influence on depressive symptoms among night shift IT professionals in the present sample.

Although night shift work is often linked with sleep disturbances and higher caffeine consumption, the results of this study indicate that these factors alone may not directly lead to depressive symptoms. Mental health and psychological well-being are influenced by several interconnected factors such as work environment, occupational stress, coping abilities, social support, and individual resilience.

Therefore, depressive symptoms among night shift IT professionals should be understood as the outcome of multiple interacting factors rather than being explained only by sleep quality or caffeine intake.

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