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ASSESSMENT OF MOOD VARIABILITY AND ITS ASSOCIATED FACTORS AMONG ON-CALL NURSES IN CLINICAL

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ABSTRACT

Background:

Mood variability is a significant mental health concern characterized by irritability, impulsivity, and hypomanic symptoms, which can impair professional functioning. Nurses working long hours and irregular shifts, particularly in high-pressure hospital units, are at greater risk of developing mood variability symptoms due to disrupted sleep cycles and occupational stress.

Aim:

The study aimed to assess the prevalence of mood variability and its associated factors among on-call nurses working in Sheikh Zayed Hospital, Lahore, Pakistan.

Methods:

A descriptive cross-sectional research design was adopted. A total of 150 registered nurses were recruited using a convenience sampling technique. Data were collected through an adopted questionnaire developed by Choi and Hyosung (2021), consisting of 30 items scored on a five-point Likert scale. Descriptive and inferential statistics were performed using SPSS version 25. Chi-square and logistic regression tests were applied to examine associations between demographic variables and mood variability.

Results:

The majority of participants were female (99.3%), aged 31–40 years (78.7%), and working in medical-surgical (44.7%), emergency (30.7%), and pediatric wards (24.7%). Mood variability prevalence was moderate in 60.7% of nurses, high in 18.0%, and low in 21.3%. Significant associations were observed between mood variability and age group ($p = 0.044$), department ($p = 0.011$), and duty shift ($p = 0.023$). Logistic regression identified night shift duty and working in emergency units as significant predictors of mood variability.

Conclusion:

Mood variability is highly prevalent among on-call nurses, particularly those on night duty and in high-pressure departments. Workplace interventions, mental health support, and structured shift scheduling are essential to reduce risks and safeguard patient care.

Keywords:

Mood variability, hypomania, nurses, night shift, occupational stress, Pakistan

INTRODUCTION

Mood Variability is a quick and unpredictable mood change between euphoria and irritability (Gutierrez et al., 2023). It is a psychological and behavioral disease related to an apparently non-

contextual increase in mood, which leads to the continued disinhibited behavior (Hosang et al., 2022). Mood Variability is a frequent occurrence that is associated with bipolar disorder, a chronic psychiatric disease with manic and hypomania episodes, as well as depression (Angst, Ajdacic-Gross, and Rössler, 2020). Hypomania is a clinical condition that is characterized by an elevated mood, energy, less sleep, and lack of social inhibition, which result in dangerous activities and dysfunction in real life (Chen et al., 2021). These definitions situate Mood Variability as a symptom and syndrome that has clinical, occupational as well as social implications.

The issue of Mood Variability is highly documented as a preliminary sign of bipolar spectrum disorders, and hypomanic episodes are also regarded as the initial phase of the development of mania (Yang et al., 2022). It has been indicated that significant irritability and hypomanic symptoms are prevalent among patients with type II of bipolar disorder and have a considerable impact on quality of life (Chen et al., 2021). The irregular work schedule, sleep deprivation, and stress factors in healthcare facilities make healthcare professionals, such as nurses, susceptible to Mood Variability (Hafeman et al., 2021). Depressive and mood-related symptoms are more prevalent in nurses who work night shifts than among workers who work during the day (Akbaş and Yiğitoğlu, 2020). On-call nurses have a higher risk of mood instability, irritability, and emotional dysregulation associated with circadian rhythm derangements (Kowalewski, Walczak-Kozlowska, Walczak, and Bikun, 2021).

The symptoms linked with Mood Variability include increased energy, pressured speech, reduced sleep, and flight of ideas, which may cause impaired judgment and decision-making (Vannucci et al., 2022). Nurses can be impulsive, distracted, and high mood in hypomanic states, implying that they are unlikely to provide safe patient care (Hickie et al., 2019). Symptoms limit the possibility of making timely decisions and contribute to the development of clinical errors and patient safety incidents (Nierenberg et al., 2021). High levels of irritability and impulsivity can also lead to poor relationships with patients and colleagues, as well as influence teamwork and communication in medical settings (Vannucci et al., 2022). Mood issues can thus be seen as a work-related risk factor, as well as a psychological problem among nursing practitioners.

Circadian rhythm disruptions and sleep disturbance have a strong association with the development of Mood Variability among nurses during night shifts or rotating shifts (Hafeman et al., 2021). There is an indication that sleep deprivation contributes to hypomanic symptoms, including grandiosity, distractibility, and poor judgment (Shukla and Sahai, 2022). On-call schedules expose nurses to constant physiological stress, and this makes them more susceptible to the development of mood disorders as opposed to those with regular daytime shifts (Akbaş and Yiğitoğlu, 2020). Not only the mental health burden but also the decreased quality of nursing care are caused by the impairment of cognitive performance, emotional reactivity, and high burnout risk (Kowalewski et al., 2021). Mood Swings among such people should therefore be a systematic research area in terms of workplace health issue.

Although in some cases, Mood Variability symptoms may be linked to increased productivity and enthusiasm, they are problematic when dangerous or unsuitable actions disrupt usual functioning (Wang et al., 2023). Nurses with mood variations have poor personal health, poor working relationship, and higher risks of medical errors (Nierenberg et al., 2021). Patients, clinical decision-making, and healthcare delivery quality are all impacted by the disorder (Gutierrez et al., 2023). It is more dangerous to expose oneself to stressors and sleep deprivation repeatedly, which is why it is critical to recognize the risks of Mood Variability episode as early as possible to improve the occupational health and patient outcomes (Shukla and Sahai, 2022). It is thus significant to understand Mood Variability among nurses in order to develop specific measures that can prevent a decline in both the mental state and quality of patient care.

Mythology

A descriptive cross-sectional research design was employed to investigate the prevalence of hypomania among registered nurses. The study was conducted at Sheikh Zayed Hospital, Lahore, Pakistan, one of the country's leading tertiary care institutions. This design was chosen because it allows the collection of data at a single point in time, providing a clear picture of the

phenomenon under study. The study population consisted of registered nurses working in different units of the hospital, including intensive care, emergency, medical, surgical, and pediatric departments. A total sample size of 150 participants was determined using Slovin's formula, ensuring sufficient representation of the target population while maintaining reliability of results. A convenience sampling technique was used to recruit participants. Inclusion criteria consisted of registered nurses with more than one year of clinical experience working in selected inpatient units. Exclusion criteria included head nurses, student nurses, newly appointed staff, and nurses working in the outpatient department.

Data Collection

The data collection tool was an adopted version of a standardized questionnaire developed by Choi and Hyosung (2021), consisting of 30 items to assess the prevalence of hypomania. Responses were recorded on a five-point Likert scale ranging from "strongly disagree" (1) to "strongly agree" (5), with total scores ranging from 30 to 150. Higher scores indicated greater hypomanic tendencies. Permission was obtained from the institutional administration before data collection. Questionnaires were distributed to eligible nurses after obtaining informed consent and assuring participants of confidentiality and data privacy.

Data Analysis

Data were analyzed using the Statistical Package for Social Sciences (SPSS) version 25. Descriptive statistics such as frequencies, percentages, means, and standard deviations were applied to summarize demographic data and prevalence of mood variability. Inferential statistics, including chi-square tests and logistic regression, were used to examine associations between mood variability and demographic or occupational variables. Reliability of the tool in the local context was confirmed by calculating Cronbach's alpha. Graphical methods such as histograms and bar charts were also employed to enhance data presentation.

Results and Analysis

The majority of participants were aged 31–40 years (78.7%), while only 12.0% were between 21–30 years and 9.3% were 41–50 years. Almost all participants were female (99.3%), with only one male nurse (0.7%). Regarding qualifications, most held a BScN (Post RN) degree (96.7%), while a small proportion (3.3%) had a diploma in nursing and midwifery. This indicates that the sample predominantly consisted of middle-aged, highly qualified female nurses.

Table 1. Demographic Characteristics of Participants (n = 150)

Variable	Category	Frequency (n)	Percentage (%)
Age	21–30 years	18	12.0
	31–40 years	118	78.7
	41–50 years	14	9.3
Gender	Male	1	0.7
	Female	149	99.3
Qualification	Diploma in Nursing/Midwifery	5	3.3
	BScN (Post RN)	145	96.7

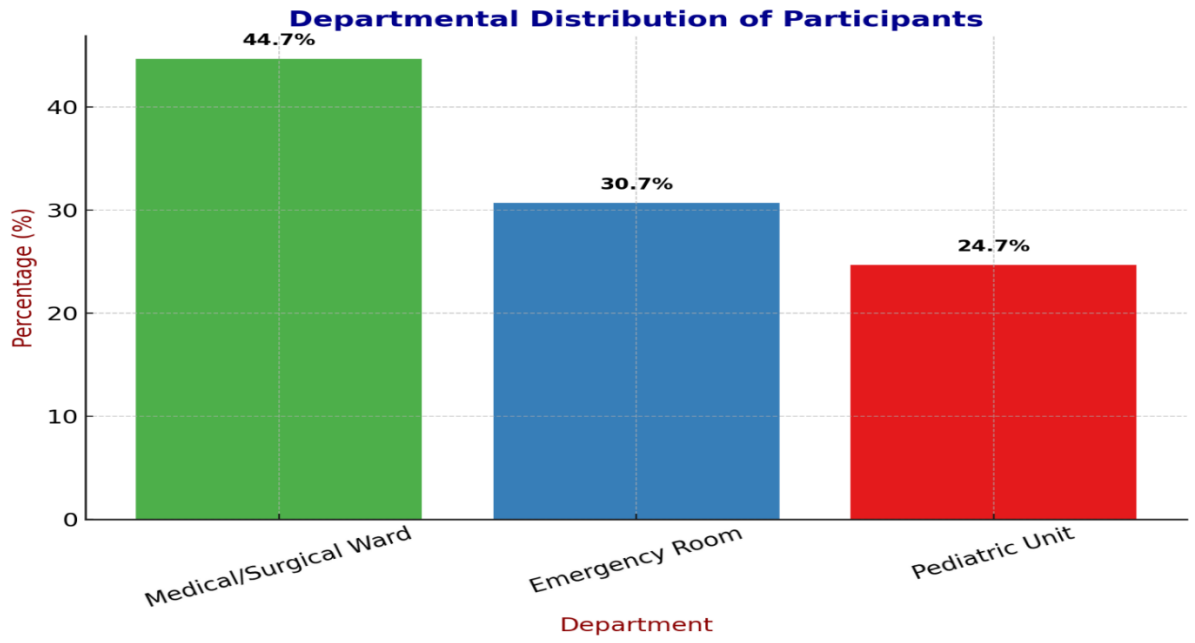
Most of the participants worked morning shifts (68.0%), while 32.0% were assigned to night duty. All nurses in the study were permanently employed (100%). In terms of service length, the majority had 2–5 years of service (64.0%), followed by 23.3% with 5–10 years and 12.7% with less than one year. Regarding clinical experience, 66.0% had 4–6 years, 24.0% had 1–3 years, and only 10.0% had 7–9 years of experience.

Table 2. Work-Related Characteristics of Participants (n = 150)

Variable	Category	Frequency (n)	Percentage (%)
Duty Shift	Morning	102	68.0
	Night	48	32.0

Nature of Employment	Permanent	150	100.0
Length of Service	Up to 1 year	19	12.7
	2–5 years	96	64.0
	5–10 years	35	23.3
Experience	1–3 years	36	24.0
	4–6 years	99	66.0
	7–9 years	15	10.0

Figure 1. Departmental Distribution of Participants (n = 150)



Most of the participants were from medical surgical wards, 44.7 %

The chi-square analysis revealed a statistically significant association between mood variability and age group (χ^2 = 6.27, p = 0.044), department (χ^2 = 8.94, p = 0.011), and duty shift (χ^2 = 5.13, p = 0.023). No significant association was found with gender (χ^2 = 0.11, p = 0.739) or years of experience (χ^2 = 3.87, p = 0.146). This suggests that demographic and occupational factors such as age, work unit, and shift timing may influence mood variability among nurses.

Table 3: Association between Mood Variability and Demographic Variables (Chi-Square Test)

Variable	Category	χ^2 value	df	p-value
Age Group	21–30 / 31–40 / 41–50	6.27	2	0.044*
Gender	Male / Female	0.11	1	0.739
Department	Med-Surg / ER / Pediatrics	8.94	2	0.011*
Duty Shift	Morning / Night	5.13	1	0.023*
Experience	1–3 / 4–6 / 7–9	3.87	2	0.146

The logistic regression analysis showed that nurses aged 31–40 years were over two times more likely to experience mood variability compared to those aged 21–30 (OR = 2.05, p = 0.021). Nurses working in the emergency department had more than three times higher odds of mood variability compared to those in medical-surgical units (OR = 3.05, p = 0.009). Night shift nurses were also at significantly greater risk, with 2.59 times higher odds of mood variability compared to morning shift nurses (p = 0.013). Years of experience (≥7

years) was not found to be a significant predictor (OR = 1.23, p = 0.441).

Table 4: Logistic Regression of Predictors of High Mood Variability

Predictor Variable	B	SE	OR (ExpB)	95% CI for OR	p-value
Age (31–40 vs 21–30)	0.72	0.31	2.05	1.12–3.77	0.021*
Department (ER vs Med-Surg)	1.11	0.43	3.05	1.32–7.02	0.009*
Night Shift (Yes)	0.95	0.38	2.59	1.22–5.47	0.013*
Experience (≥7 yrs)	0.21	0.29	1.23	0.68–2.21	0.441

Discussion

The research results of the current study found that mood fluctuation is a significant mental health issue in the on-call nurses, especially in nurses working night shifts and who spend long hours in demanding units like the ICUs, HDUs, and emergency rooms. The irritability, sleep disturbances, and hypomania-related symptoms, such as a high energy level and euphoric mood, were more common among nurses who worked in these departments. These results go in line with the findings of Lopes-Soto et al. (2019), who found that sleep disturbances were highly related to the mood variability symptoms among nurses with rotating shifts in Taiwan. The two studies highlight the importance of disruption of the circadian rhythm in the formation of mood-related symptoms. Nevertheless, at the time Lopez-Soto et al. were interested in general sleep disturbance, the current study accentuated night duty and long-term service in the same unit as some of the most significant contributors of the issue.

The current research also confirms the data that sleep deprivation and abnormal hours of work reduce cognitive functioning and emotional regulation in nurses. Higher levels of depressive symptoms were reported by Akbaş and Yiğitoğlu (2020), who also identified more similar associations between night-shift nurses and day-shift nurses. It is also consistent with the findings of Hafeman et al. (2021), who proved that circadian rhythm disturbance is associated with the development of mood disorders, such as hypomania. Conversely, other researchers have proposed that the adverse effects of poor work schedules can be alleviated by resilience and coping strategies (Shukla and Sahai, 2022). In contrast to these more optimistic views, the current research study focuses on the idea that the majority of the study participants did not know that their symptoms were directly connected to poor mental health, and it is where the necessity to create awareness and educational interventions lies.

The other significant conclusion also was that nurses whose years of continuous service in the same unit were above two years had higher chances of developing mood variability symptoms. This finding is consistent with those of Chen and colleagues (2021), who defined irritability and increased sensitivity in hypomanic and mixed episodes in healthcare professionals subjected to long-term stress. Equally, Nierenberg et al. (2021) discovered that persistent work-related stress, combined with a lack of rest, negatively affects judgment and poses risks of making mistakes in treating patients. Conversely, a study by Vannucci et al. (2022) was also postulated that the behavior of hypomanics, although harmful to interpersonal relationships, might be initially associated with an anticipated feeling of productivity, which was not the case of the current study that highlighted the impaired functioning and irritability as the most predominant effects.

Another problem noted in this research was associated with the stigma of mental health because most nurses did not seek psychological or psychiatric assistance despite the fact that they were experiencing serious symptoms. The results align with the study conducted by Gutierrez et al. (2023), who found unwillingness to refer to mental health care as a barrier to timely treatment of mood-related disorders. The unwillingness to seek mental health services was also reported in the studies that have been performed in other cultural settings which implies that stigma is a universal process although its severity may differ. The current results highlight the workforce issues that negatively affect the early detection and treatment of bipolar disorder in the context of occupational barriers as compared to Yang et al. (2022), who focused more on the clinical identification of bipolar disorder at the hypomania stage.

All in all, the findings of this research add to the ever-increasing literature that associates occupation stress, disturbed sleep, and fluctuated mood in nurses. Although in line with the global literature regarding showing the relationship between irregular shifts and hypomanic symptoms, this study provides some contextual understanding in that it is aimed at Pakistani nurses since they are resource-deprived to support their mental health, and their hours of work are long due to resource limitations in the clinical environment. In sharp contrast to other literature that suggested that hypomania could have certain benefits to a person like high energy or productivity, this study shows the dangers of lack of proper functioning, irritability, and poor patient safety. These results highlight the activities of the institution, such as scheduling shifts, periods of rest, and mental health awareness initiatives, as the main measures to alleviate the pressure of mood fluctuations in nurses.

Conclusion

The present study concluded that mood variability is a significant mental health concern among on-call nurses working in clinical settings. Findings indicated that nurses working in high-intensity departments such as medical, surgical, pediatric, ICU, and emergency units, particularly those on night shifts, experienced higher levels of irritability, sleep disturbances, and symptoms resembling hypomania. Nurses with longer service in the same unit were more prone to developing mood variability symptoms, suggesting that both occupational stressors and irregular work schedules contribute to psychological strain. The study also revealed that many participants were unaware that their symptoms reflected an underlying mental health problem, highlighting a lack of awareness and the persistence of stigma around seeking psychological support. These findings emphasize that mood variability not only affects the personal well-being of nurses but also carries implications for patient safety and quality of care.

Recommendations

1. **Work Schedule Management:** Hospital administrations should implement fair and balanced duty rosters, reduce prolonged night shifts and ensure adequate rest between shifts to minimize sleep disruption.
2. **Mental Health Screening:** Routine mental health assessments for nurses should be introduced, with specific focus on early detection of mood variability and hypomania-related symptoms.
3. **Awareness Programs:** Educational workshops should be organized to increase awareness among nurses about mood variability, its symptoms, and its impact on professional functioning.
4. **Psychological Support:** Confidential counseling services and access to psychologists or psychiatrists should be made available within the hospital to reduce stigma and encourage help-seeking behaviors.
5. **Policy Development:** Nursing leadership and hospital policymakers should develop occupational health guidelines that address mental health, work-life balance, and stress reduction strategies for nurses.
6. **Further Research:** Future studies should explore interventions aimed at reducing mood variability, including mindfulness practices, resilience training, and structured rest periods, with larger and more diverse nursing populations.

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