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Original Research

Screening for Psychological distress and their Determinants among Clinical nurses in Tertiary Care Teaching Institution, India: A cross-sectional Survey.

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Abstract

Background: Nurses are continually subjected to physical and mental stress because of their employment. Estimating the prevalence of and its association with psychological distress among nurses is critical for developing health promotion initiatives. We conducted this study to investigate the incidence of psychological distress and related characteristics among nurses working in a teaching institute in Jharkhand.

Methodology: We conducted cross-sectional research involving 452 clinical nurses between December 2024 and February 2025. We examined psychological distress using a self-administered general health questionnaire-12 (GHQ-12). Participants with a GHQ-12 score > three were classified as having psychological distress. The chi-squared test and multiple logistic regression analysis were performed to identify the components related to psychological distress.

Results: More than one-fourth of nurses, 25.2% (95% CI: 21.3 - 29.5), had psychological distress. Psychological distress was significantly higher among age group of 26-30 years (aPR=3.1, 95% Cl: 1.3 - 7.3) those who were not doing any physical activity (aPR=2.2, 95% Cl: 1.3 -3.6), those with poor sleep quality (aPR=2.0, 95% Cl: 1.0 -3.), and those having online screen time >3 hours (aPR=3.1, 95% Cl: 1.3 - 7.3).

Conclusion: We report a high prevalence of psychological distress among nurses, especially among the age group of 26-30 years, those having poor sleep quality, and those not doing physical activity and having online screen time of more than 3 hours. We highlight that reducing workplace stress and improving sleep hygiene can be vital in improving mental health status.

Keywords: GHQ-12; Psychological distress; Clinical Nurse.

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Introduction

Health professionals are especially vulnerable to constant stress, which can lead to physical, psychological, and cognitive symptoms.[1] Healthcare professionals have been more concerned with improving their activities and the care offered to patients than caring for their health, especially regarding occupational risks and mental health. [2] Among the various professionals in the healthcare industry, the role of nurses is paramount. It has been observed that nurses spend a longer time caring for ill people than physicians.[3] Nurses constitute two-thirds of the health workforce in India. India currently has 1.7 nurses available per thousand population, which is 32% less than the global nurse population. This shortage leads to overburdening work and job stress from the work environment's physical, social, and psychological aspects.[4] Additionally, it has been noted that nurses experience the highest stress levels [5,6]. Development of psychological distress among nurses is influenced by various factors such as insomnia, night shift, job profile, fatigue, lack of social support, work experience, peer interaction and perfectionism, workload, and workplace safety. Poor mental health has a significant impact on nurses and leads to increased medical error, absenteeism, decreased work performance, and increased conflict. [7,8] According to a study of 9,387 nurses in 35 countries, nearly half of nurses experience public aggression, and up to 61% suffer from anxiety or depression [9]. However, mental health remains a neglected issue, especially among nurses in India; only 24% of healthcare organizations provide adequate mental health support for nurses [10]. Early identification, diagnosis, and intervention of mental health problems among nurses can mitigate adverse effects. [11,12] Consequently, it is imperative to investigate the risk factors for psychological distress in nurses to provide a reference for formulating relevant intervention strategies. Therefore, this study aimed to screen for psychological distress and determine socio-demographic and behavioural determinants for positively screened clinical nurses in tertiary care teaching hospitals.

Methods:

We conducted a cross-sectional study among permanent nursing employees from January 2025 to February 2025 in a tertiary care hospital in Jharkhand. The hospital has an inpatient bed capacity of 700 and caters to OPD services to approximately 1000 patients daily. The nursing services department has 520 employees (senior nursing officer and nursing officer). The hospital has been running an employee wellness program for the last 3 years that encourages employees to undergo in-house annual health checks.

The sample size was determined using the formula for estimating a single proportion. The expected proportion of clinical nurses' common mental health disorders was kept at approximately 50%, and the sample size was estimated at a 5% level of significance and 5% absolute precision. The sample size required for the study was calculated to be 384. However, anticipating incomplete questionnaires, a convenience sample of 452 nurses who consented was included.

The study tool was pretested, semi-structured, and prepared after an extensive review of available literature and consulting experts in the related field of our institution. We collected information on the socio-demographic profile and psychosocial health status of clinical nurses. We collected information on factors affecting mental health through self-reported responses by the study subjects. Sleep disturbance was considered when any of the following symptoms were reported: difficulty in initiating sleep, maintenance of sleep, or early arousal. Physical activity in the study was recorded based on World Health Organization (WHO) guidelines of at least 150-300 minutes of moderate-intensity aerobic activity or 75-150 minutes of vigorous-intensity aerobic activity. For substance use, those who currently use or have ever used it in the past were included.

The General Health Questionnaire-12 (GHQ-12) is a self-administered questionnaire for screening common mental health problems. It is a 12-question tool with a 2-point scoring (yes and no) and is designed to identify the presence of possible non-psychotic mental health disorders, that is, anxiety,

depression, and psychological distress. The 12 questions of GHQ assess the extent to which a respondent experienced happiness, depression, anxiety, and sleep disturbance in 1 month preceding the interview. A two-point scoring scale is reliable. The presence of three or more is suggestive of mental health disorders, requiring further assessment. [13,14]

Data was analysed using Statistical Package for Social Sciences (SPSS) version 25 software (SPSS Inc. Released 2009. PASW Statistics for Windows, Version 18.0. Chicago, Illinois, USA: SPSS Inc.). Descriptive statistics, such as frequencies and percentages, were used to summarise the categorical variables and the mean and standard deviation for continuous variables. The bivariate analysis (Chi-square test) was used to assess the association between various socio-demographic characteristics and psychosocial factors with mental health problems as per the GHQ score. Modelling was done using multiple logistic regressions to identify significant risk factors. The study was carried out after obtaining approval from the Institute Ethics Committee (Human Studies-AIIMS/DEO-2025-437/INI-04). Written informed consent was taken from the study subjects. Privacy and confidentiality were maintained during data collection and analysis.

Results:

In our study, we studied a total of 452 clinical nurses from tertiary care teaching institutions in Jharkhand. Out of 452 Nurses, 273 (60.4%) nurses belonged to 26 – 30 years, the majority of them female 332 (73.4%), unmarried 245 (54.6%), working in super speciality wards 104 (43.0%) like Gastroenterology, Neurology, Burns, cardiothoracic with shift duty 309 (68.36%).

Table 1 shows multiple responses to various questions of GHQ as given by clinical nurses, suggesting deviation from mental well-being. In this study, one-fourth (25.2%, 95% CI: 21.3 - 29.5) of clinical nurses reported three or more symptoms suggestive of mental health problems, which is a concerning observation.

Table 1: Distribution of clinical nurses according to the responses to individual items on GHQ-12 screening tool (n-452)

GHQ-12	Yes (%)	No (%)
Are you able to concentrate on what you are doing?	408 (90.3)	44 (9.7)
Lost sleep over worry?	243 (53.8)	209 (46.2)
Can you make decisions?	437 (96.7)	15 (3.3)
Do you feel you are under strain?	292 (64.6)	160 (35.4)
Can you face up to your problems?	405 (89.6)	47 (10.4)
Can you overcome your difficulties?	404 (89.4)	48 (10.6)
Do you enjoy day-to-day activities?	363 (80.3)	89 (19.7)
Have you been feeling unhappy and depressed?	296 (65.5)	156 (34.5)
Have you been losing confidence in yourself?	352 (77.9)	100 (22.1)
Do you feel you are not playing a useful role?	357 (79.0)	95 (21.0)
Do you feel you are worthless?	412 (91.2)	40 (8.8)

Do you feel reasonably happy?	359 (79.4)	93 (20.6)
GHQ 12 item total score		
Less than 3	338 (74.8)	
More than 3	114 (25.2)	
GHQ- General Health Questionnaire		

Several socio-demographic and psychosocial factors have shown a significant association with the presence of mental illness symptoms as per the GHQ score. Among socio-demographic characteristics, age group has shown a significant association with the presence of mental health problems among clinical nurses as per the GHQ score. Among psychosocial factors, abnormal sleep patterns, co-morbidity, physical activity status, and online screening time have been found statistically significant to the presence of mental health problems among clinical nurses as per the GHQ score. [Tables 2 & 3]

Table 2: Distribution of clinical nurses based on their GHQ score and socio-demographic characteristics

Socio-demographic factors	**GHQ score**		**X2, df, P**
	≥3	<3	
Age group			
≤25 years	17 (41.5)	24 (58.5)	$\chi2$ =9.62
26 – 30 years	72 (26.4)	201 (73.6)	df=2
>30 years	25 (18.1)	113 (81.9)	p=0.008*
Gender			
Male	24 (20.0)	96 (80.0)	$\chi2$ =2.36
Female	90 (27.1)	242 (72.9)	df=1 p=0.12
Education qualification			
Diploma	20 (27.0)	54 (73.0)	$\chi2$ =0.70
Undergraduate	76 (24.1)	239 (75.9)	df=2
Postgraduate	18 (28.6)	45 (71.4)	p=0.70
Post held			
Nursing officer	92 (27.0)	249 (73.0)	$\chi2$ =2.27
Senior nursing officer	18 (19.8)	73 (80.2)	df=2
Assistant nursing superintended	4 (20.0)	16 (8.0)	p=0.32
Marital status			
Unmarried	58 (27.2)	187 (76.3)	$\chi2$ =0.68

Married	56 (27.1)	151 (72.9)	df=1 p=0.44
Type of family			
Nuclear	65 (22.5)	224 (77.5)	$\chi2$ =0.09
Joint family	49 (30.1)	114 (69.9)	df=1 p=0.75
Working area			
Medical ward	22 (26.8)	60 (73.2)	$\chi2$ =3.34
Surgical ward	14 (25.0)	42 (75.0)	df=4
Super speciality ward (Gastro, Uro, Bruns, etc,)	28 (26.9)	76 (73.1)	p=0.50
Intensive and critical care unit	39 (27.3)	104 (72.7)	
OT & Interventional Lab	11 (16.4)	56 (83.6)	
Nature of duty			
Shift duty	84 (27.2)	225 (72.8)	$\chi2$ =1.99
General duty	30 (21.0)	113 (79.0)	df=1 p=0.16
Note: * statistically significant (p<005)			

Table 3: Distribution of clinical nurses based on their GHQ score and psycho-social characteristics

psycho-social characteristics	**GHQ score**		**X2, df, P**
	≥3	<3	
Sleeping pattern			
Good	42 (13.4)	272 (86.6)	$\chi2$ =76.5
Poor	72 (52.2)	66 (47.8)	df=1 p=<0.001*
Substance use history			
Yes	4 (40.0)	6 (60.0)	$\chi2$ =1.18
No	110 (24.9)	332 (75.1)	df=1 p=0.28
Co-morbidity			
Yes	24 (44.4)	30 (55.6)	$\chi2$ =12.1
No	90 (22.9)	308 (77.4)	df=1 p=0.001*
Doing physical activity			
Yes	46 (17.0)	68 (37.6)	$\chi2$ =24.4

No	225 (83.0)	113 (62.4)	df=1 p=<0.001*
Online screen time			
<3 hours	48 (19.8)	195 (80.2)	$\chi 2$ =8.32
>3 hours	66 (31.6)	143 (68.4)	df=1 p=0.05*
Note: * statistically significant (p<005)			

Multiple logistic regressions were done to compute the corrected odds ratio for the effect of various socio-demographic and psychosocial factors on having a high GHQ score. GHQ score ≥3 (i.e., high) was taken as a dependent factor, and all the significant socio-demographic and psychosocial factors on bivariate analysis were taken as independent factors. **Table 4** shows the adjusted and unadjusted odds ratios. The adjusted odds ratios revealed that nurses in the age group of 26 – 30 years were 3.1 times (P = 0.01) more likely to have mental health problems as compared to the reference category, that is, the ≤25 years of age group. On the contrary, the nurses not having any medical or surgical illness other than a mental health disorder were 2.0 times (p=0.04) more likely to have mental health problems. Regarding sleeping patterns, nurses had disturbance in sleep 5.7 times (p<0.001) and did not do any physical activity 2.1 times (0.001), and the unadjusted odds ratio shows that online more > than 3 hours/per day 1.8 times (p=0.04) were more likely to have these issues.

Table 4: Results of multiple logistic regression analysis with GHQ score

Variable	**Unadjusted odds Ratio (95% confidence Interval**	**P**	**Adjusted odds Ratio (95% confidence interval**	**P**
Age group				
≤25 years	Ref (1)	-	Ref (1)	-
26 - 30 years	3.2 (1.5 – 6.8)	0.003*	3.1 (1.3 -7.3)	0.01*
>30 years	1.6 (0.9 – 2.6)	0.064	1.5 (0.8 – 2.7)	0.12
Co-morbidity				
Yes	Ref (1)	-	Ref (1)	-
No	2.7 (1.5 -4.9)	0.01*	2.0 (1.0 -3.8)	0.04*
Sleeping pattern				
Good	Ref (1)	-	Ref (1)	-
Poor	7.06 (4.4 -11.2)	<0.001*	5.7 (3.5 – 9.4)	<0.001*
Doing physical activity				
Yes	Ref (1)	-	Ref (1)	-

No	2.9 (1.9 -4.5)	<0.001*	2.2 (1.3 -3.6)	0.001*
Online screen time				
<3 hours	Ref (1)	-	Ref (1)	-
>3 hours	1.8 (1.2 -2.8)	0.04*	1.3 (0.8 -2.1)	0.25
Note: * statistically significant (p<005)				

Discussion:

In this study, over one-fourth (25.2%) of the study participants experienced psychological issues. This prevalence is higher compared to that in studies using the GHQ-12 scale carried out among the nurses of public hospitals in Karnataka (6.5%) and central India (21%).[15,16] The differences might be because the study in Karnataka used a Likert scale (0–3) along with a higher cut-off score of >15, and the study in central Indian nurses used the GHQ-28 questionnaire. The prevalence found in this study was lower than that of Ethiopian nurses (27.7%) and South Indian teaching hospital nurses (27.2%). [10,17] The discrepancies might be ascribed to different health care and staff-patient ratios (1:16–1:40 inwards and 1:2–1:4 in ICUs).

The prevalence of psychological issues was significantly higher among nurses in the age group of 26 – 30 years. These study findings are in line with the work conducted by Flint AJ et al. [18], in contrast to the results reported in the study conducted by AlAteeq DA.et al. [19]. Which reported that the 30–39 age group had higher scores of depressions and anxiety than other age groups among health care providers. It may also be attributed to the higher response rate, as they represent 60% of our sample.

The present study reflects no significant relationships between gender and GHQ-12 score (>3). This study's finding was not supported by a study conducted on South Indian nurses. [10] The prevalence of psychological distress was significantly higher among women (28.3%) compared to men using GHQ-12. The participants were mostly female nurses. This is because in the hospitals where the study was done, the overall ratio of male to female nurses was 1:20, and the male nurses were working only in emergency and trauma, orthopaedics, and surgery wards. Also, the proportion of male nurses working during the day shift was further less; hence, our sample comprised most female nurses. The nurses working in intensive care units had higher GHQ 12 scores than those working in other areas, though the differences were not statistically significant (p-0.50) in our study. These similar trends were observed in the work conducted by Kaushik A et al. [20]

The prevalence of psychological distress was significantly higher among those having poor sleep quality, which was consistent with studies conducted among Ethiopian nurses (AOR = 3.82, 95% CI: 1.52–9.579) and South Indian clinical nurses.[10,17] The reason for the poor sleep quality in the current study could be due to six or more night shifts per month at the level of nursing officers and higher workplace stress. A napping policy of 30 min on the night shift, shift rescheduling arrangements, and sleep hygiene intervention can be an ideal strategy for improving sleep quality, and sleep health must be added to mental health services [21, 22]. The prevalence of psychological distress was significantly higher among those who were not doing physical activity (AOR =2.2, 95% CI: 1.3 -3.6). Similarly, Kua Z et al. [23] also showed that healthcare workers who had reduced their weekly physical activity duration were at significantly higher risk of developing moderate-to-severe depression and stress. Conversely, those who had increased the number of days spent on physical activity were significantly less likely to report any depressive symptoms.

The association between depression and screen use time is known to exist in different populations. For example, a study with college students in China has noted that the odds of depression were 1.76 times greater among those with over 2 hours of daily screen use time compared to those with lower use times.[24] Similarly, the current study also shows that the odds of a GHQ-12 score were 1.3 times higher among those with >3 hours of daily screen use time.

WHO established a set of guidelines on "protecting workers' health" to promote mental health in order to safeguard employees from stress.[25] Personality profile evaluation is a proactive method for determining a nurse's risk of psychological discomfort at the individual level.[7] Similar to this, a thorough framework for policies promoting mental health can be created at the organizational level to address mental health conditions that result in psychological distress.[25]

We investigated the nurses' psychological distress, physical activity, and sleep quality. Considering the shortage of nurses in all health care settings in India, especially the primary care setting, and the heavy workload, evidence of psychological distress, sleep quality, and stress is scarce. To restore mental health, public health managers, practitioners, and administrators must understand the causes of psychological issues among nurses.

The study also carries certain limitations. The study was cross-sectional in nature, and cause-and-effect relationships could not be established. As a self-administered survey, there is a chance of reporting and recall bias. Qualitative studies are planned to identify the complexity of mental health problems encountered in the workplace, which will aid in planning.

Conclusion:

According to this study, a significant percentage of nurses (25.2%) experienced psychological distress. Age, physical activity, online screen time, and sleep quality were all found to be significant predictors of psychological discomfort. Consequently, a training program on stress management and sleep hygiene, incorporating mental health elements into yearly physicals, and filling nursing positions as per Standards Inspection Unit (SIU) standards should all be considered to address psychological discomfort.

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