A Study of Depression and Associated Factors among Nurses Working in Tertiary Care Hospitals in Karachi

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ABSTRACT

OBJECTIVE: To assess the frequency of depression and its associated factors among nurses.
STUDY DESIGN: A Cross-sectional observational Study
PLACE AND DURATION: Dow University and Civil Hospitals Karachi, 2nd May to 28th June 2017
METHODOLOGY: Data were collected through the Patient Health Questionnaire-9 (PHQ-9). Individual with PHQ-9 score < 5 were considered as either minimal or no depression whereas score ≥ 5 described individuals had any kind of depression. The chi-square test of independence was used to explore the association of depression with other variables.
RESULTS: Among total of 154 participants, majority were staff nurses 66.9% whereas 13.6% and 8.4% were head and assistant head nurses respectively. Among all study participants, 69.4% had any one of the depression level mild, moderate, moderately severe or severe (score ≥ 5). Job nature, duty timings and monthly income were statistically associated significantly with depression (p-values 0.004, 0.023 and < 0.0001 respectively).
CONCLUSION: Among all study participants mild depression category was the most prominent. Study job nature, duty timings and monthly income were determined as significant factors.

KEYWORD: Nurse, Depression, Causes, Shift Duty, Study, Income.

HOW TO CITE THIS:
Ali A, Rasheed A, Naz S, Siddiqui MA. A Study of Depression and Associated Factors among Nurses Working in Tertiary Care Hospitals in Karachi. Isra Med J. 2018; 10(3): 138-142.

INTRODUCTION

The human life has been overwhelmed with pressure and increasing stressors of depression, anxiety and stress on extreme and persistent exposure to the tense situation could be a threat to physical and mental health[1]. The job structure could be one of the reasons for depression and often the job is to consider as an important element of individual social identity. In a work environment, the requirement of human communication and contact are the reasons to raise the stress[2].
Nurses are the back bone of health care system and nursing work performance play a significant role on the quality of healthcare system. Heavy workload, poor working environment and insufficient time for patient care may have negative effect on the nurses' health status[3-6]. Nature of job and various tasks may cause psychological problems among nurses which result in physical, behavioral and mental problems[7].
Depression is one of the leading problems among health care providers and cause physical, psychological and emotional problems[8]. Depression and anxiety are aggravated by life stressors which link to past, present and future concerns[9]. The DSM 5 criteria for depression includes, a person who suffers from depression should have symptoms for least a 2-week period. Depression can be characterized as depressed mood, markedly diminished interest or pleasure, significant weight loss when not dieting or weight gain, insomnia, feelings of worthlessness, diminished ability to think or concentrate, fatigue, tiredness, or loss of energy and recurrent thoughts of death[10].
Limited studies related to depression have been found in nursing profession[11]. Depression among nurses may be associated with upsurge level of stress they face daily in a hospital without appropriate interventions. Due to complex working conditions, job demands and job characteristics, nurses might be at greater risk of depressive symptoms[12]. Numerous studies can be found on depression among hospitals patients and general-public, but depression among nurses themselves has been comparatively lacking[11]. A research study conducted in southern Taiwan reported prevalence of minor psychiatric disorders among nurses as 48.8% [13].
A shift worker has rapidly increased globally over last few

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Received for Publication: 11-11-17
1st Revision of Manuscript: 10-04-18
Accepted for Publication: 16-04-18

decades. Nurses working for long hours in a condition often suffer from the excessive workload, intense stress and minimal social support. Shift work and long-term night duties become less empathetic and more cynical and might be linked with health-related problems such as sleeping disorders, fatigue, anxiety, depression, and difficulties in maintaining routine lifestyle[14-17]. About 20% of full time workers are involved in shifting duties in developed countries. Approximately 29% of people never settle into shifting duties and experience serious health related problems[18]. In Europe and America, 20% of shifting workers are part of night duties[19,20].

Majority of the nurse work in shift duties, so it is essential to identify risk factors related to their health. Nurses are the back bone in health care profession and perform a substantial role to provide quality care to patients. Physical and psychological health of the nurses may be affected due to shift duties. Conduct of such studies may help to highlight the risk of health related problem among nurses.

The primary focus of this study is to estimate the frequency of depression and their associated factors in nursing workforce at two tertiary care hospitals in Karachi. Literature shows that several researches[21-24] have been conducted on depression in Pakistan, many of them based on general population, doctors and medical students, but clinical area of the nurses has been silent. Therefore, the objective of this study was to identify the prevalence of depression and its associated factors among nurses.

METHODOLOGY

This cross-sectional observational study was conducted at Civil Hospital and Dow University of Health Sciences Hospital, Karachi over a period of two months from 2nd May to 28th June 2017. A total of 154 nurses (> 18 years of age) were included. Among both genders most prominent age category was 26-35 (male 79.1% and Female 61.8%). The criteria for inclusion in this study was as nurses with at least one-year clinical experience and working in fixed or rotational duties. Study participants were selected randomly who fulfilled inclusion criteria and gave written informed consent. Ethical approval to conduct this study was taken from Institutional Review Board (IRB) – Dow University of Health Sciences. Sample size calculation was performed using means and standard deviations of day time and rotational time[25], level of significance as 5% and power of the test: 80%.

Study participants' demographics were obtained and for assessment of depression the Patient Health Questionnaire-9 (PHQ-9) was employed. PHQ-9 is an effective tool for screening depression and has been used in various researches studies worldwide[26-28]. The PHQ-9 is a brief 9-item questionnaire designed to detect major depressive disorders according to the criteria from the Diagnostic and Statistical Manual for Mental Disorders (DSM-IV) [29]. The PHQ-9 has been extensively employed in various population and clinical-based studies as a screening and diagnostic instrument[30]. Each of the 9 items of the questionnaire consist four categories from 0 (not at all) to 3 (nearly every day), resulting possible minimum and maximum scores 0 and 27 respectively. All data were analyzed through SPSS version 21.0. Categorical variables were reported through frequencies and percentages and mean and standard deviations were calculated for quantitative variables. Individual with PHQ-9 score less than 5 were considered as has minimal or no depression whereas score ≥ 5 described any kind of depression.

Data Analysis: The chi-square test of independence was used to explore the association of depression with other variables. P-values < 0.05 were considered as significant.

RESULT

Data were collected from 154 participants working in fixed and rotational duties. The mean weight and height of the study participants were 65.57±12.73 and 5.44±0.372 respectively. Table I shows that 55.8% (n=86) nurses were males and 44.2% (n=68) were females. Most of the study participants were registered nurses (66.9%) and few were head nurse and assistant head nurses 13.6% (n=21) and 8.4% (n=13) respectively. It was observed that 67.5% (n=104) of the nurses had income in between 21000-40000. Among all study participants 107 (69.5%) had any one of the depression level mild, moderate, moderately severe or severe (score ≥ 5).

Table I also represents distribution and association of nurses' characteristics with depression. It was determined that Job nature, duty timings and monthly income were statistically significantly associated with depression with p-values 0.004, 0.023 and < 0.0001 respectively, while gender, level of education, marital status and designation were found insignificant with p-value 0.931, 0.143, 0.224 and 0.574 respectively.

TABLE-I: DISTRIBUTION AND ASSOCIATION OF NURSES' DEMOGRAPHIC CHARACTERISTICS WITH DEPRESSION (n=154)

		Depression (%)	No Depression (%)	P-value
Gender	Male	60 (69.77)	26 (30.23)	0.931
	Female	47 (69.1)	21 (30.9)	
Level of Education	Matric	16 (88.9)	2 (11.1)	0.143
	Intermediate	32 (74.4)	11(25.6)	
	Graduate	42 (64.6)	23 (35.4)	
	Post-graduate	17 (60.1)	11(39.9)	
Marital Status	Single	50 (74.7)	17(25.3)	0.224
	Married	57(65.5)	30 (34.5)	

Job Nature	Permanent	39(57.3)	29(42.7)	0.004
	Contract	68 (79.0)	18 (21.0)	
Duty Timings	Fixed	47 (61.0)	30 (39.0)	0.023
	Rotation	60 (77.9)	17 (22.1)	
Designation	Head nurse	15 (71.4)	6 (28.6)	0.574
	Assistant Head nurse	7 (53.8)	6 (46.2)	
	Staff nurse	74 (71.8)	29 (28.2)	
	Others(supervisor/manager)	11 (64.7)	6 (35.3)	
Monthly Income(PKR)	< 20000	4 (23.5)	13 (76.5)	< 0.0001
	21000-40000	83 (79.8)	21 (20.2)	
	41000-60000	15 (65.2)	8 (34.8)	
	> 60000	5 (50)	5(50)	

* P-value (chi-square) < 0.05 was considered as significant

Table II further explains depression category, it was observed that one-third of the nurses experienced mild depression and 21% had moderate depression whereas, 10.4% and 4.5% nurses were found to have moderately severe and severe depression

TABLE-II: FIGURE OF DEPRESSION LEVEL AMONG NURSES (n=154)

Depression Category	n	%
Minimal or No Depression (0-4)	47	30.5
Mild (5-9)	51	33.2
Moderate (10-14)	33	21.4
Moderately Severe (15-19)	16	10.4
Severe (>19)	7	4.5
Total	154	100

DISCUSSION

This research study was conducted to determine the frequency of depression and its association with work related factors among nurses in Karachi. Many researches have been conducted on validity of Patient Health Questionnaire [29, 31, 32] but there is scarceness of the studies showing depression prevalence among nurses using PHQ-9. Researcher's findings revealed that percentages of mild and moderate depression among nurses were 30.5 % and 33.1% respectively, which is nearly similar to the study conducted in 2006 in Hong Kong where percentage of depression was 33.8%. Whereas nurses with moderately severe and severe depression in our study were 10.4% and 4.5% respectively[32]. These findings are also consistent with study conducted in 2016 among doctors in Lahore [23] which reported percentage of mild depression as 34%. However, there are few studies in Pakistan that showed slightly higher percentage of anxiety and depressive symptoms, 45.5% among medical students' study conducted in Lahore [22] and study conducted in Multan[21] showed prevalence of depression as 43.89%. The prevalence of depression among nurses in Pakistan is quite alarming. Literature shows that previous Chinese studies that employed the Zung Self-Rating Depression Scale (SDS) to assess depressive symptoms, the prevalence of depressive symptoms among nurses working in hospitals were ranged from 32.0% to 45.3%[33-35]. A study conducted in Taiwan reported high prevalence (52.5%) of depressive symptoms among nurses working in hospital[11].

In our study nurses working on contract basis found to be more depressed as compared to nurses who have permanent jobs. Furthermore, significant association was obtained between job nature and depression among study participants. Most of the study participants in our study belonged to the income group Rs.21000-Rs.40000, therefore highest proportion of depressed nurses were found in this income group. Furthermore, nurses with income > Rs.60000 have similar proportions of depression and no depression. This income variable showed significance association with depression in our study participants. These findings are supported by the cross-sectional study[35] conducted among Chinese nurses, where among three income categories (in thousands, 20-39HKD, 40-59HKD, ≥ 60HKD), the nurses who had middle one were found to be more depressed as compared to others.

Our study also revealed significance association of depression with duty timings. Depression was found more prominent among nurses who perform rotational duties meaning shift changes between morning, evening and night on irregular basis as compared to fixed duties. Similar findings were also found in study[1] conducted among Iranian nurses where shift duty nurses had more depression score in comparison with fixed duty. Another study [35] conducted among nurses in public hospital in southern China also revealed that nurses who work greater than 45 hours / week, along with those who perform> 2 night shifts / week, were at higher risk of experiencing depressive symptoms, this also confirmed our study findings. The reason might be frequent shifting of duties and long hours night duties disturb sleep pattern and circadian rhythm. These finding are also supported by study conducted in United State but contradict with other studies[36].

In recent decades, studies have revealed that anxiety, stress and depression is more frequent among females due to their physiological characteristics and in accordance with a Turkish research study, where females experienced a higher level of stress and depression as compared to males[35]. In contrast to these findings our study result shows no real difference of depression prevalence among both genders.

CONCLUSION

Among all study participants mild depression category was found to be the most prominent. Study job nature, duty timings and monthly income were determined as significant factors.

LIMITATIONS

Due to a cross-sectional study, it is hard to establish causality between depression and its factors. Other longitudinal studies would be conducted to confirm the present conclusions. Moreover, the sample was taken from nurses working in two public hospitals in Karachi, Pakistan. Thus, and the findings must be tested in other and different types of health facilities in Karachi.

Contribution of Authors:
Ali A: Conceived idea, Designed research methodology, Manuscript writing
Rasheed A: Statistical Analysis, Interpreted data and Manuscript finalization
Naz S: Data Collection, Literature review
Siddiqui MA: Manuscript drafting and Proof reading

Disclaimer: None.
Conflict of Interest: None.
Source of Funding: None.

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