DEPRESSION AND ASSOCIATED SOCIO DEMOGRAPHIC FACTORS AMONG PERSONNEL REPORTING TO A FIELD HOSPITAL FOR ROUTINE MEDICAL CARE

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ABSTRACT

Objective: To determine the prevalence of depression and associated socio demographic factors among personnel reporting to a field hospital in Sudan for routine medical care and analyze socio demographic factors associated with depressive symptoms.

Study Design: Cross sectional descriptive study.

Place and Duration of Study: This study was conducted in a field hospital, from Apr 2015 to Mar 2016 in Sudan

Methodology: The sample population comprised of 226 personnel who reported to the hospital for routine medical care. Beck Depression Inventory (BDI) was used to record the presence and severity of depressive symptoms. The following socio-demographic variables (rank, age, gender, ethnicity, education, marital status, socioeconomic status, family type, service in mission area, smoking habits, living conditions, lack of social support) were taken on a separate sheet.

Results: Out of 226 subjects 58.4% had no depressive symptoms, 15.5% had mild, 21.2% had moderate and 4.9% had severe depressive symptoms. Unsatisfied with living condition in mission area, having more than 6 months of service and lack of social support were correlated with depressive symptoms. Tobacco smoking was highly associated with depression, while female gender and low education had a weak association with depressive disorder.

Conclusion: The high prevalence of depressive symptoms in our study highlights the importance of developing good mental health care facilities for personnel deployed on different missions.

Keywords: Depressive symptoms, Risk factors.

INTRODUCTION

Some individuals are serving in harsh terrain, hostile environment, hot weather and unsatisfactory living conditions of Africa region. A great variety of stressors such as instability, epidemics, traumatic events, isolation, boredom, remaining away from families influence the mental health of these individuals and pre-dispose them to various psychological disorders including major depressive disorder[1]. Depression at work place drastically reduces job satisfaction resulting in reduced productivity, frequent absentees from work place and increases disability[2].

Deployment at various areas have been

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assoicated with high rate psychiatric morbidity including major depressive disorder among them[3].

These personnel avoids reporting depressive symptoms to their seniors and health caring staff due to fear of repatriation and loss of high amount of salary, which may drastically affect their mental health[4]. The poor mental health of these personnel has obviously negative impact on mission success yet it has been neglected[4].

A search of the literature revealed that no study on psychiatric morbidity in such personnel serving in Africa has been done. To the best of our knowledge, this is our first study done in Sudan with the aim of describing the prevalence depression and associated socio demographic features among patients reporting at the medical reception center at a hospital at Darfur. The

information from this study will be of benefit in detecting depression among these personnel, conducting more studies on depressive disorder among these personnel and assistance in establishing better mental health facilities in this and other hospitals.

METHODOLOGY

This cross sectional study was conducted in a field hospital, from April 2015 to March 2016 in Sudan.

The participants included in this study were personnel who reported to medical reception center for routine medical care during the data collection period (April 2015 to March 2016). As regards to selection and inclusion criteria, the study population included personnel aged 18 years and older (both males and females) who were attending the medical reception center of the field hospital for various health related issues. The study excluded those suffering from significant medical, surgical disorder and also patients with known current or past history of mental illness and who used psychoactive substances. The study also excluded non-consenting individuals and also those who were unable to understand English. The study further excluded those in an emergency condition needing urgent medical care or admission. Non-probability convenient sampling was done. A total of 226 subjects were approached who gave verbal consent and met inclusion and exclusion criteria.

Permission was taken from Hospital Ethics Committee and the subjects were educated regarding the nature of the study and benefits of early detection of depression and its risk factors among personnel working in Darfur region.

The demographic details of the patients participating in the research were entered in a specially designed proforma. The confounding variables were taken care of by detailed history taking about any current or previous major medical, surgical, psychiatric illness and any current or previous evidence of illicit substance/drug use. Those subjects with confounding variables were excluded from the study. The researcher

then administered BDI to assess the presence and severity of depressive symptoms. According to the BDI-II, the grading of depression was done, a grade of 0 to 13 was considered minimal/not depressed, a grade of 14 to 19 was considered mild, a grade of 20 to 28 was considered moderate and a grade of 29 to 63 was considered to be severe depression. The range of the 21 scale was 0-63 with 14 cut off score was taken as significant major depressive disorder[5]. Personnel suffering moderate to severe depression were counseled and offered therapeutic as well as non-pharmaceutical interventions.

Descriptive statistics were used to describe the characteristics of participants and the distribution of BDI. There were 12 variables in total. In the collected data, Beck Depressive Inventory score (BDI) was taken as dependent variable while the rest of the variables including rank,
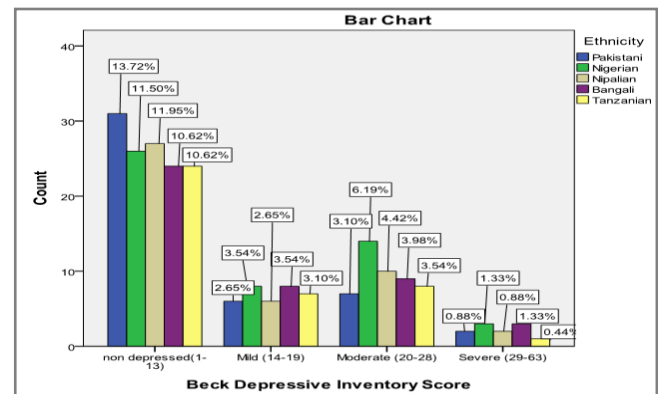

Figure: BDI percentages in different Ethnicities.

gender, ethnicity, education, marital status, family type, service in the mission area, smoking, living conditions and lack of social support. BDI was given the scores as 1=non-depressed (1-13), 2=mild (14-19), 3=moderate (20-28) and 4=severe (29-63). The analysis was performed by using SPSS version 20.0. To identify the relationship between dependent and independent variables, a cross tab was applied and chi-square value against each variable was also notified. Frequencies and percentages of each variable with their sub categories were calculated and presented in a tabular form. All the significant and insignificant

factors were identified by their *p*-value. *p*-value <0.05 was taken as significant.

RESULTS

As mentioned already the total sample (n=226) of study subjects consisted of active personnel both males 203 (89.8%) and 23 (10.2%)

marital status, family type, education level, service and other variables including frequency of depression are shown in table-I. The most contributing and highly significant factors (with a *p*-value 0.000) towards the prevalence of depression were service in mission area (those who had spent more than 6 months had more

Table-I: Demographical features of the study group and their Beck Depressive Inventory (BDI) Scores.

Socio Demographic Features	Non Depressed	Mild Depression	Moderate Depression	Severe Depression	*p*-value
Total	n (%)	n (%)	n (%)	n (%)	
Gender	132 (58.4)	35 (15.5)	48 (21.2)	11 (4.9)	
Male	120 (53.1)	32 (14.2)	44 (19.5)	7 (3.1)	0.034
Female	12 (5.3)	3 (1.3)	4 (1.8)	4 (1.8)	
Ethnicity	132 (58.4)	35 (15.5)	48 (21.2)	11 (4.9)	
Pakistan	31 (13.7)	6 (2.7)	7 (3.1)	2 (0.9)	
Nigerian	26 (11.5)	8 (3.5)	14 (6.2)	3 (1.3)	
Nipalian	27 (11.9)	6 (2.7)	10 (4.4)	2 (0.9)	0.969
Bengali	24 (10.6)	8 (3.5)	9 (4.0)	3 (1.3)	
Tanzanian	24 (10.6)	7 (3.1)	8 (3.5)	1 (0.4)	
Education	132 (58.4)	35 (15.5)	48 (21.2)	11 (4.9)	
Matriculate	72 (31.9)	24 (10.6)	38 (16.8)	10(4.4)	
Secondary Education	43 (19)	7 (3.1)	7 (3.1)	1 (0.4)	0.030
Graduate	17 (7.5)	4 (1.8)	3 (1.3)	-	
Marital status	132 (58.4)	35 (15.5)	48 (21.2	11 (4.9)	
Bachelor	29 (12.8)	7 (3.1)	9 (4.0)	4 (1.8)	
Married	93 (41.2)	28 (12.4)	35 (15.5)	7 (3.1)	0.492
Divorced/Separated	10 (4.4)	-	4 (1.8)	-	
Family type	132 (58.4)	35 (15.5)	48 (21.2)	11 (1.8)	
Nuclear	78 (34.5)	29 (12.8)	28 (12.4)	6 (2.7)	0.058
Extended	54 (23.9)	6 (2.7)	20 (8.8)	5 (2.2)	
Service in mission area	132 (58.4)	35 (15.5)	48 (21.2)	11 (1.8)	
<3 months	36 (15.9)	2 (0.9)	2 (0.9)	-	
months	78 (34.5)	9 (4.0)	8 (3.5)	3 (1.3)	0.000
>6 months	18 (8.0)	24 (10.6)	38 (16.8)	8 (4.9)	
Smoking	132 (58.4)	35 (15.5)	48 (21.2)	11 (1.8)	
Yes	7 (3.1)	19 (8.4)	43 (19.0)	9 (4.0)	0.000
No	125 (55.3)	16 (7.1)	5 (2.2)	2 (0.9)	
Living Conditions	132 (58.4)	35 (15.5)	48 (21.2)	11 (1.8)	
Satisfactory	126 (55.8)	12 (5.3)	8 (3.5)	2 (0.9)	0.000
Non satisfactory	6 (2.7)	23 (10.2)	40 (17.7)	9 (4.0)	
Lack of social support	132 (58.4)	35 (15.5)	48 (21.2)	11 (1.8)	
Yes	9 (4.0)	20 (8.8)	37 (16.4)	9 (4.0)	0.000
No	123 (54.4)	15 (6.6)	11 (4.9)	2 (0.9)	

females. One hundred and thirty-two peronnel (58.4%) were not suffering major depressive disorder (table-I). Detailed results about gender,

depression with a severity of 4.9% than those who had spent less than 3 months who were not depressed, smoking (smokers had higher

percentage 4.0% (table-I) in terms of depression severity than those who did not smoke 0.9%), living conditions (those respondents who were not satisfied with their living conditions were definitely more depressed and showed the severity with a percentage of 4.0% than those who were satisfied and had less depression with a percentage of 0.9%) and lack of social support, Ethnicity, marital status, and type of family in which they were living were not significant socio-demographic factors in the contribution towards the existence of depression among soldiers. According to correlation (bivariate) results, service in the mission area (0.533**), smoking (-0.733), living conditions (0.714) and lack of social support (-0.654**) (table-II) showed a strong, significant association with depressive disorder among sol-

personnel returning from Iraq and Afghanistan which showed that 11.4% of personnel were depressed before going and that number increased to 15% after return[6]. These personnel were suffering more depression (21.1%) as compared to 7% Australian personnel who suffered depression while they were serving on one or more of areas between 1989 and early 2002[7]. Depression in our studied sample population was slightly higher as compared to Saudi personnel service at Taif air base which revealed 17.1% were suffering depressive disorder[8]. In one of study by Ahmed *et al*[3] the prevalence rate of depression in Pakistani personnel sevice at Liberia was 25 percent which is almost similar to the finding of our study.

Despite the increasing knowledge about psychiatric disorders, people suffering depres-

Table-II: The correlated factors relating to Depressive Disorder: Correlation (Bivariate).

Socio Demographic Features	Beck Depressive Inventory Score		
Total	Mean ± SD	Pearson Correlation	Sig.(2-tailed)
Gender	1.10 ± 0.303	0.096	0.148
Ethnicity	2.92 ± 1.394	0.013	0.851
Education	1.47 ± 0.681	-0.224**	0.001
Marital status	1.85 ± 0.506	-0.033	0.622
Family type	1.38 ± 0.485	-0.007	0.923
Service in mission area	2.21 ± 0.724	0.533**	0.000
Smoking	1.65 ± 0.476	-0.733**	0.000

diers. Rest of the variables like gender, ethnicity, education, marital status and family type showed a weak, statistically insignificant association with dependent. None of the variables contained exactly 0 value that means all the variables had some association with BDI either strong or weak, positive or inverse.

DISCUSSION

Personnel serving in different areas face various stressors including coming under fire, witnessing traumatic events, reading thousands of miles away from their families, isolation and unsatisfactory living conditions[8]. Our study found high rate of depressive disorder among personnel which showed 15.5% had mild depression, 21.2% had moderate depression and 4.9% had severe depressive disorder which is considered relatively high when compared with

sion are not detected and do not receive adequate treatment[9]. Literature revealed even developed countries like Americans who were suffering psychiatric disorders were unlikely to directly seek mental healthcare. Depression is under-diagnosed and undertreated illness, around 350 million people live with depression globally[10].

Depressed personnel are at high risk of suicide[11]. In one of the longitudinal study done in America on the basis of more than 151,000 personnel, it was, found that the risk factors for suicide within the these indivduals were male sex and mental disorders particularly depressive disorder[12].

The relationship between job stress and mental illness in the any organization including army suggests that efforts to reduce work related stress in the organization would decrease the

costs of psychiatric illness among personnel[8]. Despite the importance of early detection and management of depression, the current study may be the first screening of depression in personnel in Darfur Sudan. Although few studies have been conducted in a population of Sudan which revealed high psychiatric morbidity. One study carried in Juba revealed (36%) locals met symptom criteria for PTSD and (50%) of local people met symptom criteria for depression[13].

Various studies revealed that low education and female gender are associated with the depressive disorder[14] but our study showed a weak association of female gender and low education with depressive symptom. This may be due to the training of females before deployment to remote areas, positive perception of assigned job due to financial benefits and sedentary jobs given to the female in remote areas. The most contributing and highly significant factors towards the prevalence of depressive disorder in these personnel as per our study was having service of more than 6 months in remote area. This may be due to prolonged period of separation from home and family. This was in accordance with findings of the past studies[15]. Most of the indiviuals except Pakistanis did not visit their home countries during sevices period of one year which was highly associated with depressive disorder. Unsatisfactory living conditions were associated with depressive symptoms in our studied population. This was in accordance with past studies[16]. Lack of social support was also found significantly associated with depressive symptoms. A literature search revealed the lack of social support was not only associated with the depressive disorder and PTSD but it was also one of the causes of suicide among certain personals[17].

Our study found smoking tobacco filled cigarettes also had a strong link with depressive symptoms. Use of these may give temporary relief due to nicotine euphoric effects but in long term it has been associated with severe physical ailments. Our finding was similar to a study done in Pakistan by Zubair *et al*[18]. In conclusion, this study revealed that prevalence of depression among some indivduals is high. Many factors predispose to the occurrence of depression among studied participants which include having more than 6 months of service in an area, unsatisfactory living condition, and lack of social support and use of tobacco filled cigarettes. Our study has few limitations as well. Only those personnels were approached who themselves reported to the hospital. Randomized selection of study subjects from all personnel who were serving in an area was not done. Therefore the results of our current study cannot be generalized.

CONCLUSION

Prevalence of depressive disorder among some personnel is significantly high. Heads of institutious at all levels should emphasize on the mental health of employees. Regular lectures by a unit medical officer in collaboration with a Psychologist and Psychiatrist should be conducted on stress management.

CONFLICT OF INTEREST

This study has no conflict of interest to be declare by any author.

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