SOCIODEMOGRAPHIC CORRELATES AND PATTERN OF PSYCHIATRIC DISORDERS IN THE HOSPITALIZED PATIENTS OF THE ARMED FORCES INSTITUTE OF MENTAL HEALTH

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ABSTRACT

Objective: To determine the sociodemographic correlates and pattern of psychiatric disorders in patients admitted at Armed Forces Institute of Mental Health (AFIMH).

Study Design: Hospital based cross sectional study.

Place and Duration of Study: This study was conducted at the Armed Forces Institute of Mental Health (AFIMH) Rawalpindi, from Apr 2015 to Jul 2015.

Methodology: All patients meeting the inclusion criteria admitted during the study period were enrolled after their informed consent. Psychiatric interview was carried out using the Present State Examination (PSE) and diagnosis was made according to the ICD 10 criteria.

Results: Out of 190 enrolled subjects, 148 (77.9%) were male with mean age ± SD of 32.96 ± 10.87 years while 42 (22.1%) were females with mean age ± SD of 31.19 ± 12.13 years. Post stratification chi square test revealed that age was an effect modifier for bipolar affective disorder (*p*-value 0.004) and substance use disorder (*p*-value 0.04). Gender was an effect modifier for depression (*p*-value 0.001), dissociative disorder (*p*-value 0.005) and substance use disorder (*p*-value 0.0001). Marital status was an effect modifier for depression only. The most common psychiatric diagnosis was bipolar affective disorder (38.9%) followed by depression (23.2%) and substance use disorder (20%). Other diagnosis included schizophrenia (7.4%), adjustment disorder (5.8%), dissociative disorders (4.2%) and PTSD (0.5%).

Conclusion: Younger age was positively associated with bipolar affective disorder and substance use disorder. Depression and dissociative disorders were positively associated with female gender where as substance use disorder was associated with the male gender.

Keywords: Frequency, Psychiatric diagnosis, Psychiatric inpatients.

INTRODUCTION

There is a global increase in the prevalence of the psychiatric disorders and depression has become the leading cause of disability in the world[1]. Mental disorders accounted for the largest proportion of disability adjusted life years (DALYs) (56.7%), followed by neurological disorders (28.6%) and substance use disorders (14.7%)[2]. These disorders are managed both in the indoor and the outdoor settings depending upon the severity of the illness and the availability of the psychiatric services.

Psychiatric admissions are the main stay of the treatment for the acutely disturbed patients in the low and middle income countries as community services are scarce. Even in the countries with well developed community psychiatric services there remains the need of psychiatric hospitalizations for the management of severely ill patients[3]. Health care services monitor the admission patterns to improve the services for meeting the needs of the community. In England it was found that the admission rates declined for depression, bipolar disorder, dementia and obsessive compulsive disorder and increased for post traumatic stress disorder, eating disorders and alcohol use disorders[4]. This changed the nature of care required for psychiatric inpatients. A study from Nepal found schizophrenia (50.1%), mood disorder (33.5%) and substance abuse

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Received: 31 Jan 2019; revised received: 20 Jan 2019; accepted: 25 Jan 2019

(9.3%) as common disorders in the admitted patients[5]. In Pakistan few studies have been published on the admission trends of psychiatric inpatients. A Pakistani study found that depression (18.5%), bipolar disorder (16.9%), drug addiction (15.2%) and schizophrenia (11.5%) were the common disorders in the admitted patients of a tertiary care hospital[6]. Our study aims at supplementing the existing research in the region on the sociodemographic correlates and patterns of psychiatric admissions in the tertiary care hospital. It will also be useful in studying the changes in the hospital admission trends from the past and making future comparisons. Moreover, it will provide direction for the development of the future psychiatric facilities that will enhance patient care.

METHODOLOGY

This cross sectional study was conducted at Armed Forces Institute of Mental Health (AFIMH) Rawalpindi over three months period from April 2015 to July 2015 after approval of the ethical review board of the institute. Admitted patients were enrolled in this study after their informed consent through consecutive sampling technique. Patients having comorbid illnesses (diabetes mellitus, hypertension, stroke, acute confusional state, ischemic heart disease, hyperthyroidism and hypothyroidism) were excluded from this study. Sample was calculated using the WHO sample size calculator and the following parameters were used; confidence level=95%, population proportion=11.5%[7], precision=5%. The Consultant Psychiatrist through semi-structured interview based on Present State Examination (PSE) interviewed the patients and the diagnosis wasmade based on the International Classification of Diseases (ICD) version 10 . The data was recorded on the study performa along with other study variables. Qualitative variables like gender, marital status, education, and psychiatric diagnosis were measured as frequencies and percentages. Quantitative variable such as age was presented as mean and standard deviation. Effect modifiers like age, gender, education and marital status were controlled by stratification and then post stratification Chi square test/Fisher exact was applied and *p*-value ≤0.05 was considered significant.

RESULTS

Out of the total of 190 cases, 148 (77.9%) were males, 42 (22.1%) were females with the mean ± SD age of 32.57 ± 11.15 years. A total of 10 (5.3%) were uneducated while 180 (94.7%) were educated, 90 (47.4%) were single, 84 (44.2%) were married, 10 (5.3%) were divorced while 6 (3.2%) were widower.

Post stratification chi square test revealed that age was an effect modifier for bipolar affective disorder (*p*-value 0.004) and substance use disorder (*p*-value 0.04). Gender was an effect modifier for depression (*p*-value 0.001), dissociative disorder (*p*-value 0.005) and substance use disorder (*p*-value 0.0001) (table-I). Marital status was an effect modifier for depression only.

The most common psychiatric diagnosis was bipolar affective disorder (38.9%) followed by depression (23.2%) and substance use disorder (20%). Other diagnosis included schizophrenia (7.4%), adjustment disorder (5.8%), dissociative disorders (4.2%) and PTSD (0.5%).

DISCUSSION

There is a growing increase in the prevalence of psychiatric disorders in the low and middle income countries and Pakistan is no exception to it. The disease burden is high and trained professionals are scarce leading to a huge treatment gap on ground. According to World Health Organization (WHO) mental health survey, 1 in 27 depressed individual gets access to the minimum treatment for depression in the low to middle income countries[8]. In Pakistan there is one psychiatrist for five hundred thousand population. According to a study the prevalence of depression and anxiety disorders in Pakistan is about 30%[9]. The prevalence of substance use disorders has increased from 2.6% to 6.7% with about 6.7 million drug addicts in the country[10]. There is lack of community psychiatric services in Pakistan and with the increasing disease burden psychiatric admissions are likely to increase in

the future. This study found that bipolar affective disorder 74 (38.9%) was the commonest condition in the psychiatric inpatients. These results differ from previous Pakistani studies that found depression to be the commonest indoor diagnosis followed by bipolar affective disorder.

The high admission rate for bipolar affective disorder in this study is possibly due to the seasonal variation in the frequency of manic and hypomanic episodes. The rates are higher in the spring and summers and lowest in autumn. The mean age of onset of the bipolar disorder is around 17 years[11]. Our study showed that age is an effect modifier for the bipolar illness and majority of the patients were in the younger age group.

The behavioral disturbances and risky behaviours in the manic states are so severe that the community management becomes nearly impossible and admission is warranted as there is risk of violence.

Physical violence by the patients is quite common in the acute psychiatric wards that lead to a negative impact on the staff and other patients. Violent acts in the psychiatric ward can lead to myriad of consequences including fear, shock, anxiety, depression, anger and sleep disturbances in the other patients. Survey reports indicate that 75% to 100% of the staff at some point in their carrier has been assaulted by the patients in the acute psychiatric wards. This results in diminished morale, increased sick leave and high turnover of the staff leading to reduced staffing that increases the risk of violent events. On the other hand perceived threat of violence by the patients can lead to increased use of coercive methods such as restraints, seclusion and enforced medication that can be counter productive and trigger violent acts instead of cooperation[12].

Several studies have been conducted to find the association between indoor violence and various clinical and sociodemographic factors. Cornaggia *et al* found that past history of violence, involuntary admission, longer hospital stay, hostility, impulsivity and same gender of the aggressor and the victim were associated with violence in psychiatric inpatients[13]. A recent metaanalysis of studies conducted across various psychiatric settings by Dack and colleagues revealed that single, male gender, young age, diagnosis of schizophrenia, longer hospital stay, involuntary admission, history of violence, self destructive behavior and substance use were significantly associated with indoor aggression[14].

Table: Showing gender is an effect modifier in various psychiatric disorders.

Diagnosis	Male n (%)		Female n (%)		*p*-value
	Yes	No	Yes	No	
Depression	24 (16.2)	124 (83.8)	20 (47.6)	22 (52.4)	0.001
Bipolar Affective Disorder	59 (39.8)	89 (60.2)	15 (35.7)	27 (64.3)	0.626
Schizophrenia	12 (8.1)	136 (91.9)	2 (4.7)	40 (95.3)	0.464
Adjustment Disorder	11 (7.4)	137 (92.6)	-	42 (100)	0.069
Substance use disorder	38 (25.6)	110 (74.4)	-	42 (100)	0.0001
Dissociative Disorder	3 (2.0)	145 (98)	05 (11.9)	37 (88.1)	0.005
PTSD	1 (0.67)	147 (99.3)	-	42 (100)	0.593

Depression is the leading psychiatric disorder with about 300 million people suffering from it across the globe. Severely depressed patients, presence of psychotic symptoms and suicidal risk need indoor treatment[15]. In a study in England depression (29.6%) was the most common reason for admission followed by schizophrenia (26%) and substance use disorder (19.1%)[16]. The most consistent finding across all of the studies on the prevalence and incidence of unipolar major depression is that it is approximately two fold more common among women than men. This gender difference begins in early adulthood, is most pronounced in people between the ages of 30 and 45, and also persists in the elderly. Because there are no data (aside from biological–hormonal

differences) that show that female gender per se means increased vulnerability for depression, increased stress sensitivity, maladaptive coping strategies, and multiple social roles (all of which are frequently seen in women) and substance use disorders that can mask depressive symptoms (more frequently seen in men) have been suggested for the explanation of the gender difference. In addition to these psychosocial theories, recent studies show that because prior anxiety disorders are more common in women, preceding anxiety disorder may also be a significant factor contributing to the higher depressive morbidity in women. Thus, gender difference in unipolar major depression seems to result from the complex interaction of the mentioned biological and psychosocial variables. Minor depressive disorder and recurrent brief depressive disorder are also more common among women, but the difference is not so marked as that in major depression[17]. This study also revealed that depression was common in females than males which is consistent with previous studies. Marital status has been associated with depressive symptoms and our study yielded similar findings. However the relationship between marital status and depression is modified by gender and age. The likelihood of depression is increased in single, divorced or widowed men with age, whereas it is declined in widowed or divorced women with increasing age[18]. This study found depressive disorder in 23.2% of the psychiatric inpatients. Taj *et al* found depression (18.7%) to be the commonest indoor diagnosis followed by dissociative disorder (16.7%) and bipolar affective disorder (11.6%)[19].

According to regional studies the indoor frequency of dissociative disorders varies from 5-15% with mixed and motor dissociative symptoms being a common presentation predominantly in females[20]. Our study also revealed significant gender difference in the prevalence of indoor dissociative patients with female preponderance.

Drug abuse in an emerging problem with upward trends in substance use disorder in this region. Nearly 4.25 million individuals in the country are dependant on substance with opiates dependence amounting to about 1.06 million. In Pakistan, men of younger age group are significantly more involved in drug taking than females. Cannabis is the commonest substance used in Pakistan (3.6%) with nearly 4 million users in the country. In females prescription opioids and sedatives abuse in more frequent than cannabis and heroin use. Regular opioid user reported no access to treatment services in Khyber Pakhtunkhwa (KPK) (93%), Baluchistan (95%) whereas 14% in Punjab and 33% in Sindh reported access to drug treatment services[10]. Our study revealed 20% of the indoor patients, predominantly males reported for substance use disorder. Previous studies revealed around 8-15% of drug dependant patients in indoor settings[21]. There is a considerable increase in the percentage of individuals seeking drug treatment. This may be due to geographical proximity of the study centre to KPK where prevalence of drug abuse is upto 10.9%, increased awareness amongst drug users and their families for treatment or an indirect effect due to increasing prevalence of drug abuse in the community.

Injection drug users (IDU's) who are estimated to be 104, 804 to 420,000 are vulnerable to the HIV infection and upto 40% HIV prevalence has been reported amongst them. Contaminated needle sharing remains the mainstay of transmission of the infection. Harm reduction efforts, HIV testing and counselling, antiretroviral therapy and safe needle and syringe programmes are being conducted by the government[22].

Substance use disorder is often co morbid with other psychiatric disorders. There is a strong association between cannabis abuse and schizophrenia. The community prevalence of schizophrenia is about 1%. To date, no population or culture has been identified in which schizophrenic illnesses do not occur. Also, there is no strong evidence that the incidence of schizophrenia varies widely across populations, provided that the populations being compared are large enough to allow a low-incidence disorder such as schizophrenia to 'breed'. The evidence that psy-

chosocial factors or culture play an aetiological role in schizophrenia is also weak. However, there are well-replicated findings of some significant variation in the course and outcome of schizophrenia across populations and cultures which involves, above all, a higher rate of symptomatic recovery and a lower rate of social deterioration in traditional rural communities. Data supporting this conclusion were provided by the WHO studies which found a higher proportion of recovering or improving patients in developing countries such as India and Nigeria than in the developed countries. Sampling bias (e.g, a higher percentage of acuteonset schizophreniform illnesses of good prognosis among Third World patients) was not a likely explanation. A better outcome in the developing countries was found in patients with various modes of onset, and the initial symptoms of the disorder did not distinguish good-outcome from poor-outcome cases. What causes such differences in the prognosis of schizophrenia remains largely unknown. The follow-up in the WHO studies demonstrated that outcome of paranoid psychoses and affective disorders were also better in the developing countries. Such a general effect on the outcome of psychiatric disorders may result from psychosocial factors, such as availability of social support networks, non-stigmatizing beliefs about mental illness, and positive expectations during the early stages of psychotic illness, from unknown genetic or ecological (including nutritional) factors influencing brain development, or from an interaction between cultural and biological factors[23]. Usman *et al* found indoor frequency of schizophrenia (11.6%) which is higher than our study (7.4%). Use of depot antipsychotics, mobilization of social support, community management and revolving door policy may explain this apparent decline in admission rate[24].

Adjustment disorders are characterized by an emotional response to a stressful event. Typically, the stressor involves financial issues, a medical illness, or relationship problem. The symptom complex that develops may involve anxious or depressive affect or may present with a disturbance of conduct. The prevalence of the disorder is estimated to be from 2 to 8 percent of the general population. Women are diagnosed with the disorder twice as often as men, and single women are generally overly represented as most at risk.

The severity of the stressor or stressors does not always predict the severity of the disorder; the stressor severity is a complex function of degree, quantity, duration, reversibility, environment, and personal context. For example, the loss of a parent is different for a child 10 years of age than for a person 40 years of age. Personality organization and cultural or group norms and values also contribute to the disproportionate responses to stressors.

Pivotal to understanding adjustment disorders is an understanding of three factors: the nature of the stressor, the conscious and unconscious meanings of the stressor, and the patient's preexisting vulnerability. A concurrent personality disorder or organic impairment may make a person vulnerable to adjustment disorders. Vulnerability is also associated with the loss of a parent during infancy or being reared in a dysfunctional family. Actual or perceived support from key relationships can affect behavioral and emotional responses to stressors[25].

In one study, 5 percent of persons admitted to a hospital over a 3-year period were classified as having an adjustment disorder. Up to 50 percent of persons with specific medical problems or stressors have been diagnosed with adjustment disorders. Furthermore, 10 to 30 percent of mental health outpatients and up to 50 percent of general hospital inpatients referred for mental health consultations have been diagnosed with adjustment disorders. Our study showed that 5.8% of admitted patients were diagnosed as adjustment disorder which is similar to other studies. Studies of trauma repeatedly indicate that supportive, nurturing relationships prevent traumatic incidents from causing permanent psychological damage[25].

Pakistan army has been deployed in war against terrorism for more than a decade. Troops have been exposed to the hardships of war and terrorism. Disasters and natural calamities also afflicted the region in recent times. Hines *et al* reported prevalence of PTSD (upto 12.9%) in soldiers deployed in Iraq and Afghanistan[28]. However this study found very low prevalence of PTSD in this region despite increased exposure to traumatic experiences at a population level. It is probable that genetic factors in combination with the socio-cultural milieu render our soldiers and civilian population resilient to stress but it needs further research[25].

The current infrastructure of the psychiatric services in Pakistan is developing and the newer trend of integration of the psychiatric services within the general hospital settings aims at increasing accessibility of the psychiatric services to the patients and reducing stigma. There is a lack of research on the infrastructure of the psychiatric services in Pakistan. There is a need to have purpose built psychiatric outpatients and wards for improved violence management, patient safety and rehabilitation along with adequately trained staff for enhanced patient care in the region.

CONCLUSION

Younger age was positively associated with bipolar affective disorder and substance use disorder. Depression and dissociative disorders were positively associated with female gender where as substance use disorder was associated with the male gender. Marital status was found to be associated with depression only and not other psychiatric disorders. Education level was not significantly associated with any psychiatric disorder. Bipolar affective disorder was the commonest indoor diagnosis followed by depression.

CONFLICT OF INTEREST

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

REFERENCES

1. Friedrich MJ. Depression is the leading cause of disability around the world. J Am Med Assoc 2017; 317(15): 1517–17.
2. Whiteford H, Ferrari A, Degenhardt L, Feigin V, Vos T. The Global Burden of Mental, Neurological and Substance Use Disorders: An Analysis from the Global Burden of Disease Study 2010. Plos One 2015; 10(2): e0116820.
3. Gadit AA. Mental Health Model: comparison between a developed and a developing country. J Med [serial online]. 2007; 1(1): e1-10.
4. Green BH, Griffiths EC. Hospital admission and community treatment of mental disorders in England from 1998 to 2012. Gene Hosp Psych 2014; 36(4): 442–48.
5. Shrestha MR, Sherchan S, Shakya R, Joshi D. Monthly pattern of psychiatric morbidity and duration of stay among the patients admitted in Mental Hospital, a central level tertiary care hospital. Nepal Med Coll J 2011; 13(2): 133–36.
6. Usman S, Yousaf A, Asif A, Chaudhry HR. Frequency of various Psychiatric disorders managed in indoor setting of a Teaching Hospital. J Fatima Jinnah Med Coll Lahore 2007; 1(1-2): 7–10.
7. Ndetei DM, Khasakhala L, Maru H, Pizzo M, Mutiso V, Ongecha-Owuor FA, et al. Clinical epidemiology in patients admitted at Mathari psychiatric hospital, Nairobi, Kenya. Social Psych Epide 2008; 43(9): 736-41.
8. Thornicroft G, Chatterji S, Evans-Lacko S, Gruber M, Sampson N, Aguilar-Gaxiola S, et al. Undertreatment of people with major depressive disorder in 21 countries. British J Psych 2017; 210(2): 119–24.
9. Mirza I, Jenkins R. Risk factors, prevalence, and treatment of anxiety and depressive disorders in Pakistan: systematic review. Bmj 2004; 328(7443): 794-803.
10. Talpur A, George TP. A review of drug policy in the Golden Crescent: Towards the development of more effective solutions. Asian J psych 2014; 12(1): 31–35.
11. Hochman E, Valevski A, Onn R, Weizman A, Krivoy A. Seasonal pattern of manic episode admissions among bipolar I disorder patients is associated with male gender and presence of psychotic features. J Affec Disord 2016; 190(1): 123–27.
12. Garcia I, Kennett C, Quraishi M, Durcan G. Acute Care 2004: A National survey of adult psychiatric wards in England. Sainsbury Centre for Mental Health; 2005.
13. Cornaggia CM, Beghi M, Pavone F, Barale F. Aggression in psychiatry wards: a systematic review. Psychiatry research. 2011; 189(1): 10-20.
14. Dack C, Ross J, Papadopoulos C, Stewart D, Bowers L. A review and meta analysis of the patient factors associated with psychiatric in patient aggression. Acta Psych Scandi 2013; 127(4): 255-68.
15. World Health Organization (WHO. Health literacy. The solid facts. Self. 2018.
16. Thompson A, Shaw M, Harrison G, Ho D, Gunnell D, Verne J. Patterns of hospital admission for adult psychiatric illness in England: analysis of Hospital Episode Statistics data. British J Psych 2004; 185(4): 334–41.
17. Parker G, Hadzi Pavlovic D. Is any female preponderance in depression secondary to a primary female preponderance in anxiety disorders?. Acta Psych Scandi 2001; 103(4): 252-56.
18. Jang SN, Kawachi I, Chang J, Boo K, Shin HG, Lee H, et al. Marital status, gender, and depression: analysis of the baseline survey of the Korean Longitudinal Study of Ageing (KLoSA). Social science medi 2009; 69(11): 1608–15.
19. Taj R, Akhter S, Nazar Z, Farooq S. Inpatients Psychiatric Morbidity at Pakistan Institute of Medical Sciences (PIMS). J Pak Psych Soc 2005; 2(1): 34-36.
20. Hashmi AM, Mazhar N, Malik AK. The burden on her soul: Conversion disorder in developing countries. Annal King Edward Med Univer 2012; 18(1): 9-9.

21. Usman S, Yousaf A, Asif A, Chaudhry H. Frequency of various Psychiatric disorders managed in indoor setting of a Teaching Hospital. J Fatima Jinnah Med Coll Lah 2007; 1(1-2): 7-10.
22. Bergenstrom A, Achakzai B, Furqan S, ulHaq M, Khan R, Saba M. Drug-related HIV epidemic in Pakistan: a review of current situation and response and the way forward beyond 2015. Harm Reduc J 2015; 12(1): 43-50.
23. Bhugra D. The global prevalence of schizophrenia. PLoS Med 2005; 2(5): e151-60.
24. Kishimoto T, Hagi K, Nitta M, Leucht S, Olfson M, Kane JM. Effectiveness of long-acting injectable vs oral antipsychotics in patients with schizophrenia: a meta-analysis of prospective and retrospective cohort studies. Schizophr Bulle 2017; 44(3): 603-19.
25. Busch AB, Yoon F, Barry CL, Azzone V, Normand SL, Goldman HH. The effects of mental health parity on spending and utilization for bipolar, major depression, and adjustment disorders. Am J Psych 2013; 170(2): 180–87.