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ORIGINAL ARTICLE

Association of deliberate Self Harm among patients with Bipolar Disorder in Karachi

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ABSTRACT

Aim: To evaluate the association of suicide attempt among bipolar disorder patients and evaluate the associated risk factors.
Methodology: The target population of the study was adult psychiatric patients who visited the outpatient department of an institute of behavioral sciences in Karachi. A case-control study was conducted in the outpatient department of two major psychiatric services in Karachi. Participants of age above 15 years were recruited through non-purposive sampling and data was collected by a structured questionnaire.
Results: From January to April 2021, of the 146 selected psychiatric patientsa, high prevalence of suicide attempts was observed in patients with young age between 20 to 30 years (p=0.000) Almost41.1%of participants were illiterate and 63% belonged to low socioeconomic status) Approximately 43.8% (p=0.00) cases had a history of mental trauma and 24.7% 76.7% (p=0.007) cases had a family history of suicide. It was found that 91.8% (p=0.00) of depression was related to suicide attempt the factors associated with suicide attempt were females, young age, illiteracy, lower socioeconomic status, presence of bipolar disorder, substance abuse, mental trauma, depression, family history of suicide and self-harm.
Conclusion: We conclude that there is an association between suicide attempts and bipolar disorder. Mental illnesses are becoming an emerging public health problem. Deeper research into the relationship between suicide attempts and substance abuse, or family history and awareness in psychiatric patients is needed.
Keywords: Bipolar Disorder, Suicide Attempt, Self-Harm, Trauma, Suicidal Ideation

INTRODUCTION

Bipolar disorder, also known as manic depression, is a mental condition characterized by extreme mood swings, as well as changes in sleep, activity, thinking, and behavior. People with bipolar disorder experienceperiods of extreme happiness and extreme sadness. They normally feel normal in between those periods. The highs and lows of mood can be thought as two "poles" of mood, so it's named as "bipolar" disorder[1].

Delusions (believing things that aren't true and can't be reasoned out of) and hallucinations (seeing or hearing things that aren't there) affect about half of persons who are experiencing mania. This refers to mania's milder symptoms, in which a person does not have delusions or hallucinations and their severe symptoms do not interfere with their daily lives. The term "depressive" refers to a person's feelings of sadness or depression. Those symptoms are similar to those reported in major depressive disorder, sometimes known as "clinical depression," which is characterized by the absence of manic or hypo-manic episodes[2].

Depressive symptoms are more common in patients with bipolar illness than manic or symptoms. Relapse and recurrence are common in people with bipolar disorder. Exacerbation of manic and/or depressive disorders frequently necessitates psychiatric hospitalization, putting a strain on healthcare resources[3]. Many patients have their first episode while they are young, and repeating episodes can have a negative impact on patient's lives over time. IN reality, suicide attempts usually exacerbate the long-term course of bipolar disease[4].

Bipolar disorder comes in a variety of forms, including Bipolar I disorder: It is characterized by highly unpredictable behavior, including manic "up" phases that last at least a week or are severe enough to necessitate medical attention. Extreme "down" episodes that last at least two weeks are also common. Bipolar II disorder: This variety also has irregular highs and lows, but it is not as severe as bipolar I illness. Cyclothymic disorder is characterized by episodes of manic and depressive behavior lasting at least two years in adults and one year in children and Teen-agers. The symptoms aren't as severe as they are in bipolar disorder I or II[5].Misuse of drugs and alcohol can lead to more episodes in any form of bipolar disorder. Bipolar disorder and alcohol use disorder, referred to as "dual diagnosis," necessitates the assistance of a specialist who can manage both conditions[6].

Bipolar disorders are the most common psychiatric condition associated with suicide. Suicide heave the hook in the chain of suicidal thoughts and actions. This spectrum begins with risk-taking behaviors, progresses through various degrees and forms of suicidal thought, and concludes with suicide attempts and suicide[7]. Suicide is a frequent endpoint for many patients with severe psychiatric disease, as it is both a stereotypical and highly personal act. Patients with bipolar illness have a higher risk of suicide than those with other psychiatric or physical conditions, but identifying the exact risk is challenging for a variety of reasons[8]. One of the leading reasons of increased mortality in people with mood disorders is suicide as a result of depressive episodes. Major mood disorders, such as bipolar disorder, are extremely curable at all ages, but only a small percentage of those who are affected are diagnosed and treated appropriately[9]. Every year, almost a million individuals die by suicide around the world. The majority of suicide research comes from high-income countries. Outside of the Western world, only a few nations report suicide data to the World Health Organization on a regular basis. In Islamic countries suicide or suicide attempt considered as a criminal act that's why they are under-reported[10].

METHODS

A case-control study was conducted from January to June 2021 to evaluate the association between bipolar disorder and suicide attempt. A purposive non-random sampling technique was used to recruit patients from the outpatient department of an institute of behavioral sciences and a governmenthospital in Karachi. Equal number of cases and controls were selected. Questions regarding sociodemographic characteristics, clinical characteristics, and suicidal history were interviewed by the primary investigator. The questionnaire comprised of 34 questions regarding sociodemographic, clinical characteristic and suicidal history. Patient who were not willing to participate and refuse to consent were excluded.

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Data was analyzed using SPSS version 16.0.Descriptive statistics were computed for all study variables. Categorical variables were assessed by computing frequencies and percentage. The inferential analysis included chi- square test and Fisher's exact test for expected frequency of less than 5.

Logistic regression was applied because the dependent variable was dichotomous. Uni-variate logistic Analysis was used to identify the factors associated with suicide attempt. Odds Ratio (OR) with 95% confidence interval for each variable of interest werecomputed- values was estimated by Likelihood ratio test for the significance of beta coefficient. Factors with p value < 0.2 were incorporated into multivariate regression.

RESULTS

Total of 146 psychiatric outpatients were examined, of these seventy-three (50%) cases had attempted suicide in their past while others seventy-three (50%) controls not attempted suicide.

Table 1 shows that the socio demographic characteristics among suicide attempts and controls, suicide attempt was associated with age, gender and marital status of the psychiatric patient in bi-variate analysis. High prevalence of suicide attempts was observed in patients with young age between 20 to 30 years (p=0.00) and cases mostly living alone that is 63.0% (p=0.00). The frequent reported case participants were illiterate that is 41.1% (p=0.01) and belonging to low socioeconomic status 63% (p=0.02) dependence only on 10 to 20 thousand rupees monthly income (p=0.00).

Table-1:Socio Demographic Characteristics of Cases and Controls

	Cases n=73(%)	**Controls n=73(%)**	**Total N=146**	**P value**
Age				0.00
20-30 years	43 (58.9%)	29 (39.7%)	72 (49.3%)	
31-40 years	29 (39.7%)	22 (30.1%)	51 (34.9%)	
41and above years	1 (1.4%)	22 (30.1%)	23 (15.8%)	
Gender				0.59
female	51 (69.9%)	48 (65.8%)	99 (67.8%)	
male	22 (30.1%)	25 (34.2%)	47 (32.2%)	
Marital status				0.10
married	26 (35.6%)	27 (37.0%)	53 (36.3%)	
divorced	34 (46.6%)	26 (35.6%)	60 (41.1%)	
single	4 (5.5%)	13 (17.8%)	17 (11.6%)	
separate	9 (12.3%)	7 (9.6%)	16 (11.0%)	
Education				0.03
illiterate	30 (41.1%)	42 (57.5%)	72 (49.3%)	
primary	30 (41.1%)	17 (23.3%)	47 (32.2%)	
secondary	9 (12.3%)	5 (6.8%)	14 (9.6%)	
higher	4 (5.5%)	9 (12.3%)	13 (8.9%)	
Family Type				0.10
Alone	46 (63.0%)	20 (27.4%)	66 (45.2%)	
Nuclear	10 (13.7%)	33 (45.2%)	43 (29.5%)	
Joint	17 (23.3%)	20 (27.4%)	37 (25.3%)	
Employment status				0.27
Yes	54 (74.0%)	48 (65.8%)	102 (69.9%)	
No	19 (26.0%)	25 (34.2%)	44 (30.1%)	
Monthly income				0.00
Rs. 10,000- 20,000	30 (55.6%)	23 (47.9%)	53 (52.0%)	
RS.21,000- 30,000	21 (38.9%)	8 (16.7%)	29 (28.4%)	
RS. 31,000 and above	3 (5.6%)	17 (35.4%)	20 (19.6%)	
socioeconomic status				0.02
low	46 (63.0%)	34 (46.6%)	80 (54.8%)	
middle	26 (35.6%)	31 (42.5%)	57 (39.0%)	
high	1 (35.6%)	8 (42.5%)	9 (39.0%)	

Table 2 presented clinical diagnosis of the overall case control study. This table shows the association of clinical characteristics with suicide attempt. High prevalence of suicide attempts was identified in patients with co-morbid that is 65.8% (p=0.49) and they mainly had comorbidity of psychiatric illness that is 41.7% (p=0.001). Among cases 50% (p=0.24) were diagnosed with mental disorder out of which 38.2% (p=0.00) were bipolar disorder. Approximately 87.7% (p=0.79) cases were taking medications for their mental illness among 53.1% (p=0.00) cases was taking antidepressants which is associated with suicide attempt. Although 89.0% (p=0.046) cases had a significant high prevalence of alcohol and substance abusers which involve frequent use of marijuana that is 60.0% (p=0.00).

Table-2: Clinical Characteristics of Cases and Controls

Clinical characteristics	**Cases n=73(%)**	**Controls n=73(%)**	**Total N=146**	**P value**
Co-morbid				0.30
yes	48 (65.8%)	42 (57.5%)	90 (61.6%)	
no	25 (34.2%)	31 (42.5%)	56 (38.4%)	
*Name of co-morbid				0.34
Hypertension & diabetic	8 (16.7%)	11 (26.2%)	19 (21.1%)	
substance use disorder	20 (41.7%)	19 (45.2%)	39 (43.3%)	
Psychiatric illness	20 (41.7%)	12 (28.6%)	32 (35.6%)	
Diagnosed mental disorder				0.38
Yes	68 (93.2%)	65 (89.0%)	133 (91.1%)	
No	5 (6.8%)	8 (11.0%)	13 (8.9%)	
**Name of mental disorder				0.00
Major depressive disorder	11 (16.2%)	33 (50.8%)	44 (33.1%)	

Nervous disorder	9 (13.2%)	17 (26.2%)	26 (19.5%)	
Bipolar	26 (38.2%)	5 (7.7%)	31 (23.3%)	
Schizophrenia	21 (30.9%)	6 (9.2%)	27 (20.3%)	
unknown	1 (1.5%)	4 (6.2%)	5 (3.8%)	
Current Psycho Pharmacological Treatment				0.79
YES	64 (87.7%)	65 (89.0%)	129 (88.4%)	
No	9 (12.3%)	8 (11.0%)	17 (11.6%)	
***Name of Medication**				0.00
Anti-depressants	34 (53.1%)	4 (6.0%)	38 (29.0%)	
Anticonvulsant	7 (10.9%)	13 (19.4%)	20 (15.3%)	
Mood stabilizer	7 (10.9%)	21 (31.3%)	28 (21.4%)	
Anti-psychotics	16 (25.0%)	29 (43.3%)	45 (34.4%)	
Physical disability				0.01
Yes	5 (6.8%)	16 (21.9%)	21 (14.4%)	
No	68 (93.2%)	57 (78.1%)	125 (85.6%)	
Alcohol use				0.46
Yes	65 (89.0%)	62 (84.9%)	127 (87.0%)	
No	8 (11.0%)	11 (15.1%)	19 (13.0%)	
****Substance abuse**				0.00
cocaine	0 (0%)	2 (10.5%)	2 (5.1%)	
heroin	1 (5.0%)	8 (42.1%)	9 (23.1%)	
tobacco/nicotine	7 (35.0%)	0 (0%)	7 (17.9%)	
marijuana	12 (60.0%)	9 (47.4%)	21 (53.8%)	

Table 3 shows that the history of suicide among cases and controls, mostof patients with Bipolar disorder had a history of suicide attempt that is 50% (p=0.00), and 38.4% (p=0.00) cases were attempted suicide at-least once in their past while 45.2% (p=0.00) cases attempted twice in their past. Among cases family history of suicide is a significant factor that is 76.7% (p=0.007)

Table 3: History Among Cases And Controls

Suicidal history among cases	
Attempted suicide n (%)	
Yes	73 (50%)
number of attempts n (%)	
once	28 (38.4%)
twice	33 (45.2%)
more than twice	12 (16.4%)

Table 4: Uni-variate analysis that there were significant associations of Age: P-value0.021,OR=2.175(CI 95%: 1.123-4.213) Education:P-value0.048,OR=1.942(CI 95% :1.006-3.749) Socioeconomic status: P-value0.047,OR=1.954(CI 95% :1.009-3.786)Physical disability:P-value0.014,OR=3.818(CI95%:1.317-11.064)Substance-abuse:P-value 0.007,OR=21.111(CI 95% :2.331-191.162)Trauma

History among cases and controls				
History	**Cases n=73(%)**	**Controls n=73(%)**	**Total N=146**	**p-value**
Exposure to trauma				0.00
Traumatic grief	32 (43.8%)	2 (2.7%)	34 (23.3%)	
physical	0 (0%)	12 (16.4%)	12 (8.2%)	
sexual abused	4 (5.5%)	4 (5.5%)	8 (5.5%)	
Community violence	8 11.0%)	5 (6.8%)	13 (8.9%)	
complex	25 (34.2%)	2 (2.7%)	27 (18.5%)	
none	4 (5.5%)	48 (65.8%)	52 (35.6%)	
Self-harm	0.00			
never	6 (8.2%)	48 (65.8%)	54 (37.0%)	
only ideation	10 (13.7%)	18 (24.7%)	28 (19.2%)	
attempted	57 (78.1%)	7 (9.6%)	64 (43.8%)	
Suicidal ideation	0.00			
never	13 (17.8%)	37 (50.7%)	50 (34.2%)	
rarely	9 (12.3%)	17 (23.3%)	26 (17.8%)	
sometimes	33 (45.2%)	10 (13.7%)	43 (29.5%)	
very often	18 (24.7%)	9 (12.3%)	27 (18.5%)	
Family history of mental disorder				0.00
yes	56 (76.7%)	32 (43.8%)	88 (60.3%)	
no	17 (23.3%)	41 (56.2%)	58 (39.7%)	
Impact of Depression				0.00
not at all	1 (1.4%)	4 (5.5%)	5 (3.4%)	
some what	5 (6.8%)	29 (39.7%)	34 (23.3%)	
very much	67 (91.8%)	40 (54.8%)	107 (73.3%)	
Mental health condition				0.25
excellent	0 (0%)	4 (5.5%)	4 (2.7%)	
good	13 (17.8%)	13 (17.8%)	26 (17.8%)	
average	18 (24.7%)	21 (28.8%)	39 (26.7%)	
somewhat poor	20 (27.4%)	14 (19.2%)	34 (23.3%)	
poor	22 (30.1%)	21 (28.8%)	43 (29.5%)	

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P-value 0.000,OR=9.362(CI 95% :4.407-19.891) depression: P-value 0.206,OR=4.17(CI 95% :0.46-38.28) Family history P-value 0.000,OR4.221(CI 2.069-8.610)Self harm: P-value 0.000,OR=9.336(CI4.398-19.818) Suicidal ideation: P-value 0.000,OR=9.769(CI 95% :4.534-21.052)Bipolar disorder: P-value 0.01 OR= 20.80(CI 95%: 1.90-227.27).There was no significant association of income level with suicide attempt.

Table 4 :Uni variate Analysis to identify association of suicide attempt among bipolar disorder patients (n=146)

	Odds Ratio (95% CI)	p-value
Age (>30 years old)	2.18 (1.12-4.21)	0.02
Education(illiterate)	1.94 (1.01-3.75)	0.05
Income (above Rs.20)	1.36 (0.62-2.97)	0.44
Socioeconomic(lower SES)	1.95 (1.01-3.79)	0.05
Disability(yes)	3.82 (1.32-11.06)	0.01
Substance Abuse(yes)	21.11(2.33-191.12)	0.01
Trauma(1)(yes)	9.36 (4.41-19.89)	0.00
Depression(1)(no)	4.17 (0.46-38.28)	0.21
Family History(no)	4.22 (2.07-8.61)	0.00
Self-Harm(1)(no)	9.34 (4.39-19.81)	0.00
Suicidal Ideation(1)(no)	9.77 (4.53-21.05)	0.00
Bipolar disorder	20.80(1.90-227.27)	0.01

Table 5: The multivariate analysis showed that cases less than 30 years of age are 1.7 times more likely to attempt suicide as compare to older subjects among controls P-value0.12(CI 95%: 0.87-3.47).Patients with lower socio economic status among cases are 1.7 times more likely to attempt suicide as compare to controls P value 0.14 (CI 95%: 0.85-3.34) Patients who were uneducated cases are 5.7 times more likely to attempt suicide as compare to educated patients among controls P-value 0.22 (95%CI 0.358-93.31). Cases with physical disability are 3.8 times are more likely to attempt suicide as compare to controls P value 0.01 (CI 95%:1.32-11.06) Cases with bipolar disorder are 20.8 times more likely to attempt suicide as compare to other mental disorder among controls P value 0.01 (CI 95%:1.90-227.27) Cases with substance abuse are 7.6 times more likely to attempt suicide as compare to people without substance abuse among controls P-value 0.23(95% CI 0.27-215.28).

Table 5: Multi variate Analysis to identify association of suicide attempt among bipolar disorder patients (n=146)

	Odds Ratio (OR)	Confidence Interval 95%	p-value
	7.69	0.12-1.03	0.06
Physical disability (yes)	3.82	1.32-11.06	0.01
Age (<30 years)	1.73	0.87-3.47	0.12
Education (illiterate)	5.78	0.358-93.31	0.22
Socioeconomic (lower SES)	1.68	0.85-3.34	0.14
Mental disorder			
Major depressive disorder	1.33	0.13-13.23	0.81
Nervous disorder	2.12	0.21-21.89	0.53
Bipolar disorder	20.80	1.90-227.27	0.01
Schizophrenia	14.00	1.31-150.02	0.03

DISCUSSION

Studies of suicide attempts among patients with bipolar disorder are very few in worldwide and mostly descriptive case series. In Pakistan, it is the first study that has identified the relation among suicide attempt and bipolar disorder and recruit its risk factors using non-randomized case control methodology. In this study we examine 146 patients, to explore how patients with suicide attempt differ from patient who never attempted suicide, on the basis of socio demographic, clinical characteristics and suicidal history. In the sociodemographic profile, age, education and socio economic status has a significant relation with suicide attempt among bipolar disorder, similar to our findings, a study from London, reported that among bipolar disorder young age is more vulnerable to suicide attempt.1[11]. Another study analyzed that illiteracy and lower socioeconomic status also a significant factor of suicide attempt[12]. In the clinical profile several risk factors contribute to risk of suicide attempt including diagnosed bipolar disorder, use of antidepressant, physical disability and substance abuse, similarly Rihmer explained prevalence of bipolar disorder I and II is most common psychiatric disorder which attribute to suicide attempt[13]. According to small proofs studies, antidepressant may raise the suicidality among bipolar disorder[14,15]. Schaffer and Carra has been identified that substance abuse is strongly associated with increased suicide attempt[16,17]. In the suicidal history profile several factors contributing major significance in relation with suicide attempt like in our results mental trauma, self-harm, suicidal ideation, family history of suicide and depression are strongly associated with suicide attempt. Holly C identified traumatic exposure (including domestic violence, sexual harassment, bullying) in the past was highly associated with suicide attempt[18]. Tondo L, among examine that bipolar disorder self-harm interacts with traumatic exposure and increases the risk of suicide attempt[19]. Study from USA has identified family history of suicide had a strong relation with complete suicide and suicide attempt[20]. Similarly family history interacts with suicidal ideation and increase the risk of suicide attempt among bipolar disorder[21].Holma KM, identified depression is one of the leading risk factor of suicide attempt among bipolar disorder[22].

CONCLUSIONS

In our study, we found that there is an association between suicide attempts with age less than 30 years, lower SES, lack of education, physical disability, Bipolar disorder and substance abuse. The findings could help with the best preparation of suicide prevention strategies in psychiatric outpatients. More research into the relationship between suicide attempts and substance abuse, or family history and awareness in psychiatric patients is needed.

Recommendations: Suicide attempt is highly significant is related to family history of any mental disorder, this risk factor would be control by conducting awareness sessions regarding mental disorder, and controlled its adverse effects, and council subject's family .To improve their lifestyle, many actions should be implemented such as increase education and awareness about this topic. People with Physical disability and mental disorder especially BPD are at greater risk of SA, therefore it is needed to manipulate this risk factor. We would educate subject's family to co-operate with him/her and provide social support to him/her, simultaneously BPD treat with lithium medication which is a suicidal preventive drug hence in this way he/she get psycho social support which may definitely reduce the risk factor of suicide attempt. To cope suicide attempt we need to control suicidal ideation first we have to stop suicide inducing drugs like antidepressants and recommend psychotherapy, when it paired with drug treatment, has shown promise in improving the overall course of the condition and possibly lowering the risk of suicide.

Conflict of interest: Nil

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