ORIGINAL ARTICLE

RATES AND DETERMINANTS OF MEDICATION ADHERENCE IN PATIENTS WITH BIPOLAR AFFECTIVE DISORDER: A CROSS-SECTIONAL STUDY

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ABSTRACT

1- To find out rates of medication adherence in patients with bipolar affective disorder.

2 - To find out the impact of demographic factors, use of substances, and positive family history of bipolar affective disorders on medication adherence in patients with bipolar affective disorder.

Materials And Methods: In this study, 386 patients who were suffering from Bipolar Affective Disorder (BAD), were included through a convenient sampling technique from Government Sarhad Hospital for Psychiatric Diseases Peshawar. Data was collected through a self-prepared questionnaire. Odds ratio (OR) with 95% confidence interval (CI) were calculated with the help of SPSS version 24, while using Chi square test and Logistic Regression Analysis.

Results: Among 386, 302 (78.2%) were males while 84 (21.8%) were females. Regarding education 164 (42.5%) were educated up to the primary level. Familial and sporadic cases were 138 (35.8%) and 248 (64.2%) respectively. Moreover, 232 (60.1%) had poor while 154 (39.9%) had good medication adherence. The frequencies of use of any substance, tobacco, and substance other than tobacco were 222 (57.5%), 214 (55.4%) and 114 (29.5%) respectively. There is a statistically significant impact of gender, education, positive family history of BAD, use of any substance, tobacco, and substance other than tobacco on medication adherence. At the same time, marital status, age of onset of BAD, and current age have no statistically significant impact on medication adherence.

Conclusion: Gender, education, positive family history of BAD, use of any substance, tobacco, and substances other than tobacco are statistically significant while marital status, age of onset of BAD, and current age have no significant impact on medication adherence in BAD.

Keywords: Substance use, Family history of BAD, Demographic factors, Medication adherence, Bipolar affective disorder.

This article may be cited as: Shakeel M, Riaz Q, Bibi A, Sarwar G. Rates And Determinants Of Medication Adherence In Patients With Bipolar Affective Disorder: A Cross-Sectional Study. J Med Sci 2024 July-September;32(3):217-220

INTRODUCTION

Bipolar affective disorder (BAD) is usually a lifelong intermittent psychiatric illness characterized by manic, hypomanic, depressive, and mixed episodes. Its lifetime prevalence is almost 1% to 3%. [1] Its etiology includes both genetic factors e.g. positive family history of similar illness and environmental risk factors e.g. substance misuse, early life adversities, and current life events, etc. [2, 3, 4]

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Date Received: 22/09/2022
Date Revised: 24/07/2024
Date Accepted: 25/07/2024

Comorbid use of substances is quite common among patients with BAD that not only plays its role as a precipitating factor but also has an impact on prognosis including adherence. [5] The lifetime prevalence of comorbid use of substances is highly variable among different studies and has been reported to be up to 72.2%. Similarly, 32.5% of patients with BAD are currently using substances. Alcohol and cannabis are at the top to be used. [6] The prevalence of poor medication adherence for BAD is from 10% to 60% (median=40%). [7] According to another study, BAD is more common in adolescents, having male gender, who are uneducated, belonging to rural areas, and are married. [8] The poor adherence to medication is a multi-causal phenomenon and is affected by the male gender, illiteracy, use of substances, early age of onset, increased severity of illness, and lack of insight. [9, 10] According to other studies, drug abuse not only initiates symptomatology in such patients but also affects treatment adherence. [11, 12] In patients

with BAD use of substances, ethnicity, education, age, severity of illness and comorbid OCD have significant impact while gender has no significant impact on medication adherence. [13, 14] According to another study, marital status, gender, age of the patient, age of onset of disease, duration of the disease, and severity of the disease have no impact on medication adherence. [15] Poor medication adherence can not only cause an increased risk of suicide, almost 5.2 fold but also cause frequent hospitalization, a threat to the lives of others, and hence increase psychosocial and financial disruption for their families does exits. [16] Moreover, no such study has been conducted in recent past in this geographical area to determine the rates and determinants of medication adherence in patients with BAD. Therefore, our study will find rates and determinants of medication adherence for BAD with updated and accurate statistics.

MATERIALS AND METHODS

In this cross-sectional analytical study, 386 patients were included (Indoor and outdoor) from Government Sarhad Hospital for Psychiatric Diseases Peshawar through a non-probability convenience sampling technique from 5th October 2020 to 25th September 2021, after taking approval from the Head of the institution and informed consent from the patient or his/her guardian. The sample size was calculated while considering the prevalence of poor medication adherence in BAD as 50% (CI= 95%). [7] Any patient who met the criteria of ICD-10 (International Classification of Diseases version 10) research version for bipolar affective disorder current episode depression, hypomanic, manic, or mixed and received treatment for at least one month was included. Information was gathered through a self-prepared questionnaire filled by a trained health worker after confirmation of diagnosis by a consultant psychiatrist.

Medication adherence was defined as "the patient is taking medicines in dosage as advised by the psychiatrist for at least one month or since the last visit to the psychiatrist whichever is longer". [17] Substances were grouped into three: 1. Use of any substance (including tobacco), 2. Use of tobacco, and 3. Use of substances other than tobacco.Frequency and percentage were used for categorical variables, while mean and standard deviations were used for continuous variables. With the help of the chi-square test and binary logistic regression analysis OR with 95% CI was calculated. SPSS version 24 was used for all statistical analysis.

RESULTS

In the sample, the majority were males {302 (78.2%), and the females were 84 (21.8%)}. The mean age of the patient was 38.76±14.24 years, and the mean age of onset of BAD was 26.31±10.12 years. Individuals who had education at least up to primary level were 164 (42.5%). The majority of the sample were married 302 (78.2%) while 84 (21.8%) were single. Familial cases were 138 (35.8%) and 248 (64.2%) were the sporadic cases. The frequencies of the use of any substance, tobacco, and substance other than tobacco were 222 (57.5%), 214 (55.4%), and 114 (29.5%) respectively. Regarding medication adherence, patients with poor medication adherence were 232 (60.1%) while 154 (39.9%) were having good

Table No 1. Impact of demographic factors, use of substances, and positive family history of BAD on medication adherence

Variables		Medication Adherence		Sig.	OR with 95% C.I
		Poor	Good		
Gender	Male	190	112	0.033	1.69(1.04-2.76)
	Female	42	42		
Education	Uneducated	144	78	0.026	1.59(1.05-2.40)
	Educated	88	76		
Marital status	Single	54	30	0.376	1.25(0.75-2.07)
	Married	178	124		
Use of any substance	Yes	146	76	0.008	1.74(1.15-2.63)
	No	86	78		
Use of Tobacco	Yes	144	70	0.001	1.96(1.29-2.96)
	No	88	84		
Use of Substance other than tobacco	Yes	94	20	0.000	4.56(2.66-7.81)
	No	138	134		
Positive family history of BAD	Yes	70	68	0.005	0.54(0.35-0.83)
	No	162	86		
Age of onset of BAD		232	154	0.986	1.00(0.97-1.02)
Current age		232	154	0.455	0.99(0.97-1.01)

(BAD= Bipolar affective disorder, CI= confidence interval, OR= Odd ratio)

medication adherence.

Among demographic factors gender, and education had a statistically significant impact on medication adherence while marital status, age of onset of BAD, and current age of patient had no significant impact on medication adherence. The statistical values are given in the table. Similarly, medication adherence was significantly affected by the use of any substance, use of tobacco, and use of substances other than tobacco. Moreover positive family history of bipolar effective disorder significantly affects the medication adherence. the quantification of the effect is given in the table 1.

DISCUSSION

Patients with BAD are frequently reported with poor medication adherence. Contrary to the study of Narayanan et al. [12] , the frequency of poor medication adherence is 61.5%. Comorbid use of substances is also quite common in BAD which also affects medication adherence. In our study, the frequency of use of any substance, tobacco, and substances other than tobacco is 57.5%, 55.4%, and 29.5% respectively. These values are almost near to those reported by a previous study. [5] The use of Substances not only precipitates BAD but also exacerbates the symptomatology of BAD which may lead to loss of insight and hence poor medication adherence. [11] Moreover, time and money needed for medication adherence are utilized for the use of substances. Therefore, in our study, the risk of poor medication adherence is increased if the patient is using any substance with an OR of 1.74 (95% CI=1.15−2.63). Similarly, the use of tobacco and substances other than tobacco also increases the risk of poor medication adherence with OR of 1.96 (95% CI=1.29−2.96) and 4.56 (95% CI=2.66−7.81) respectively. Gonzalez-Pinto et al also concluded similarly. [10] In our study, the familial cases have 1.85 times the odds of good medication adherence compared to the sporadic cases (95% CI=1.2-2.85). These findings are contradictory to earlier studies. [18, 19] Those families who had other similar patients may have more education regarding the importance of early detection of symptomatology, early referral, and a need for regular intake of medication. Males have 1.69 times the odds of poor medication adherence as compared to females (95% CI= 1.04-2.76) which is in line with the literature. [14] This may be due to the reason that males are mostly financially and socially autonomous in our society and may divert their financial and social autonomy to the use of substances instead of medication and hence poor adherence to treatment. Alternatively, it is also possible that males are socially dominant so it is usually difficult for subordinates within the family to refer him in time and enforce. The odds of good medication adherence are 1.59 times higher for those patients who are educated compared to those who are uneducated (95% CI=1.05-2.40). One of the previous studies has similar findings. [13] The mean age of onset of BAD has statistically no significant impact on medication adherence (p=0.52). Similarly, current age (38.76 ± 14.24 years) and marital status have statistically no significant impact (p>0.05) on medication adherence. These findings are contradictory to earlier studies. [9, 10, 13, 14]

No laboratory test was done during this study to confirm or exclude the claim of the patients regarding the use of substances. Moreover, patients or attendants were asked about medication adherence so recall bias may be a factor. The severity of illness, level of education, employment/ financial status, and use of individual substances e.g., Cannabinoids, Alcohol, Opioids, sedative-hypnotics, stimulants, Hallucinogens, and volatile solvents, etc. may affect adherence differently and were not studied in this study individually. Therefore further studies are needed in the future with a large sample size, taken from the community, and also to include these factors in the analysis.

CONCLUSION

The frequency of poor medication adherence in BAD is 60.1%. Gender, education, positive family history of BAD, use of any substance, tobacco, and substance other than tobacco have a significant impact, while marital status, age of onset of BAD, and current age have no significant impact on medication adherence in patients with BAD.

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CONFLICT OF INTEREST: Authors declare no conflict of interest

GRANT SUPPORT AND FINANCIAL DISCLOSURE: NIL

Authors Contribution:

Following authors have made substantial contributions to the manuscript as under

Authors	Conceived & designed the analysis	Collected the data	Contributed data or analysis tools	Performed the analysis	Wrote the paper	Other contribution
Shakeel M	✓	×	✓	✓	✓	✓
Riaz Q	✓	✓	×	✓	×	×
Bibi A	×	✓	×	×	✓	×
Sarwar G	×	✓	✓	×	×	✓

Authors agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

Ethical Approval:

This Manuscript was approved by the Ethical Review Board of Pak-International Medical College, Peshawar. Vide No. 06/DMR/PIMC. Dated: 29 07 2020