Original Article

Investigating Public Awareness and Attitudes towards People with Bipolar Disorder in Punjab, Pakistan: A Cross-Sectional Study

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ABSTRACT

Bipolar Disorder (BP) is a psychiatric disorder that causes severe mood swings. As the leading cause of cognitive impairment, it affects many people worldwide. This study examines public awareness and attitudes towards bipolar disorder BP in Punjab, Pakistan, highlighting a literature gap. Non-professional community views and stigmatization of BP are examined in the specified region of Pakistan. **Objective:** To understand risk aspects to create a supportive environment for BP patients and informing future awareness and education efforts. **Methods:** This study used a validated questionnaire that included sociodemographic factors such as age, gender, degree of education, and employment status. The questionnaire was based on general, medical, and social categories. Responses for all sections were either "Agree," "Disagree," or "Do not know." These answers were assessed using computing language 1 = Agree, 0 = Disagree, and 2 = Do not Know. Python was used for data analysis in this study. **Results:** The study found that despite some awareness, there were significant misconceptions and negative attitudes toward those living with the disorder. Overall, the study states a low level of awareness regarding bipolar disorder among the surveyed population, with only around 48% having high awareness and positive attitudes toward bipolar disorder sufferers. **Conclusions:** Current research findings significantly affect Pakistan's mental health policy and education. Improving public understanding and reducing stigma surrounding mental health issues is crucial for ensuring that those with bipolar disorder and other mental health conditions can access the care and support they need.

INTRODUCTION

Bipolar disorder (BP), often called manic-depressive disease, is a psychological condition marked by excessive high and low mood swings [1]. It is known to be the biggest reason for mental retardation, affecting millions of individuals globally [2]. BP may severely impact a person's quality of life by disrupting their social connections, work, and daily routines. Among medical students in Pakistan, it is estimated that 26.84% have bipolar spectrum disorder [3]. According to the World Health Organization (WHO), BP is the sixth leading global cause of disability [4]. This

mental illness is categorized into four stages. The first stage, i.e., "prodromal" or "pre-onset" stage characterized by altered sleep patterns, mood fluctuations, and increased anxiety [5], the second stage, i.e., "acute" or "onset" stage characterized by elevated or irritated mood, an abundance of energy, a diminished need for sleep, rapid thinking, and impulsive actions [6], third stage, i.e., cyclothymia characterized by long-term unstable moods but they are not suicidal [7]. The fourth stage is typified by alternating attacks of depression and mania [8]. BP has

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far-reaching consequences for the individual's loved ones, caretakers, and the community. Treatment for this condition typically involves expensive hospitalizations, pharmaceuticals, and counseling sessions [9]. Pakistan is home to individuals of many different ethnicities and religions, each of which may have its own set of complex beliefs. The evil eye, Jinn possession, and other forms of black magic are widely believed to exist in this culture and religious devotees often visit famous spiritual leaders' tombs [10]. This cultural belief system in Pakistan may affect the understanding of the stigma surrounding mental illnesses [11]. Personal conversations with clinical psychologists and psychiatrists in Pakistan indicate that certain misconceptions persist, despite increased awareness of BP than ever before. Few studies in Pakistan have examined public knowledge of BP [12-15]. Current trends in psychiatry favor the preventative strategy over the therapeutic model, as the residential location is also associated with education [16]. Public needs to be aware of BP so that it can be diagnosed early and managed appropriately [17]. In the specific context of Pakistan, comprehending and effectively dealing with mental health problems presents a distinctive obstacle owing to the complex interweaving of cultural, social, and religious ideologies that are widespread [18]. This study aims to assess the mental health attitudes of Pakistan regarding the recognition, causes, risk factors, proper treatment, and diagnosis of one of the most effective forms of mental illness, BP. An additional purpose of the present research was to identify the demographic subgroups with the least awareness of BP so that they can be targeted during individual and national mental health initiatives.

METHODS

The views and attitudes of men and women in Punjab, Pakistan toward those with BP were investigated using a cross-sectional survey approach [19]. The data for investigations was gathered between January 2023 and June 2023. This study was primarily based on a validated questionnaire. The questionnaire was developed in English and Urdu, respectively. The final questionnaire was developed in English and Urdu and included sociodemographic factors, such as age, gender, degree of education, and employment status. The questionnaire was based on general, medical, and social categories. The general category included basic information (seven questions), the medical category about treatment (six questions), and the social category about social acceptance and awareness (six questions). Responses for all sections were either "Agree" = 1, "Disagree"= 2, or "Do not Know" = 3. A question was added at the end of the questionnaire to know about the public's point of view on BP prevention and treatment. The expected completion time for the survey was between five and seven minutes. A sample size of 1,000 was targeted, which exceeded the suggested minimum of 600 participants. The sample size was determined by employing formula

$$n = \frac{P(100-p)z^2}{E^2}$$

to attain a margin of error of 4% at a confidence level of 95% [20]. A combination of random and representative sampling techniques was used to enhance the reliability and validity of the findings. The Pandas library in Python was used for Data Cleaning and as an exploratory approach for sample size determination [21]. A total of 801 out of 1,000 participants were included in the final analysis after excluding 199 individuals who either inaccurately completed the questionnaires or failed to provide demographic information (showed null values) from the initial sample. The study included participants aged between 16 and 45 years who were residents of Punjab, Pakistan. This research focused on individuals from the general population without a prior understanding of mental health and bipolar disease. To ensure the study's emphasis on young to middle-aged people, participants who were 45 years old or older were excluded. Healthcare experts, including physicians, psychiatrists, psychologists, and herbalists, were also omitted from the study because of their extensive expertise and comprehension of mental health matters, specifically bipolar illnesses. Importing, cleaning, and transforming the raw data into an analyzable format were accomplished with the help of Python [22]. The following Python libraries were used for the statistical analysis. NumPy library was used to make it easier to perform calculations and transformations on matrices and arrays [23]. Matplotlib complete toolkit used to create static, animated, and interactive visualizations [24]. Pandas was the main library for data analysis and was used to manipulate and analyze the data using NumPy and Matplotlib features [23]. Statistical diagrams were generated using Python's Seaborn library, which was used to transform all data-related questions into answerable visualizations using a declarative dataset-oriented API [25].

RESULTS

Table 1 shows the sociodemographic characteristics and frequencies of the participants that took part in this cross-sectional study. The findings from the General Category indicated in

Table 1: Sociodemographic characteristics of the participants (*N*=801)

Characteristics	Frequency (%)
Age Group	
16–20	124 (15.48)
21–25	188 (23.47)

26-30	161 (20.09)
31-35	123 (15.35)
36-40	101 (12.60)
41-450	104 (12.98)
Gender	
Male	414 (51.68)
Female	387 (48.31%)
Education Level	
University	441 (55.05)
College	271 (33.83)
School	85 (10.61)
Islamic Scholar	4 (0.49)
Residence Status	
Urban	446 (55.68)
Rural	355 (44.32)
Career	
Unemployed	717 (89.51)
Employed	48 (5.99)
House Wife	31 (3.87)
Business	5 (0.62)

Table 2 exhibit diverse public perspectives, wherein 64.41% of participants believed that adults are more susceptible to mental diseases. In comparison, 33.33% of the participants established a connection between BP and spirituality. Regarding the vulnerability of distinct genders to BP, viewpoints were nearly evenly divided, with 38.07% and 40.94% of the respondent perceiving men and women as more vulnerable, respectively.

Table 2: Results of a survey conducted on public perception of bipolar disorder at the general level of information

General Category			
Questions	Agree (%)	Disagree (%)	Not Aware (%)
Do you think adults are more likely to have a mental illness?	516 (64.41)	216 (26.96)	69 (8.61)
Some people relate bipolar disorder with spirituality, do you think its spiritual condition?	267 (33.33)	417 (52.05)	117 (14.60)
Do you think a bipolar disorder patient can harm you?	384 (47.94)	304 (37.95)	113 (14.11)
Do you think men are more susceptible to bipolar disorder?	305 (38.07)	322 (40.19)	174 (21.72)
Do you think women are more susceptible to bipolar disorder?	328 (40.94)	307 (38.32)	166 (20.72)
Can you judge a person by his/her physical appearance that he/she is suffering from bipolar disorder?	280 (34.95)	361 (45.06)	160 (19.97)
Do you think Bipolar patients are physically and emotionally calm?	258 (32.21)	388 (48.44)	155 (19.35)

Within the Medical Category presented in Table 3, a significant proportion of respondents (approximately 68.28 %) expressed a belief that BP is a condition that can be cured. Furthermore, 58.55% of the participants reported that medicine was the most effective form of therapy for BP.

Table 3: Results of a survey conducted on public perception of bipolar disorder on the medical level of information

Medical Category			
Questions	Agree (%)	Disagree (%)	Not Aware (%)
Do you think bipolar disorder is inherited or not?	268 (33.45)	363 (45.31)	170 (21.22)
Do you think Feeling sad, hopeless or irritable are common symptoms of bipolar disorder?	382 (47.69)	221 (27.59)	198 (24.72)
Bipolar Disorder can be diagnosed with medical testing.	264 (32.95)	314 (39.20)	223 (27.84)
Do you think bipolar disorder is cure-able?	547 (68.28)	167 (20.84)	87 (10.89)
Do you think Medication is the best treatment for bipolar disorder?	469 (58.55)	220 (27.46)	112 (13.98)
Can Bipolar Disorder be healed by religious or magic healers?	329 (41.07)	290 (36.20)	182 (22.72)

Conversely, 41.07% of the respondents believed that religious or magical healers may also offer healing for BP. Notably, a significant proportion of individuals, 69.16% of respondents within the Social Category shown in Table 4, believed that society should embrace BP patients. However, it is important to highlight that a much lower percentage (26.59 %) indicated their willingness to enter a marital relationship with an individual diagnosed with BP. While a majority of 56.30% expressed disagreement with the notion that persons with bipolar disorder (BP) impose obligations on their families, opinions regarding their capacity to function well in professional settings varied. Additionally, 22.09% reported feeling ashamed of having a family member with BP.

Table 4: Results of a survey conducted on public perception of bipolar disorder on the social acceptance level of information

Social Category			
Questions	Agree (%)	Disagree (%)	Not Aware (%)
Should the society accept bipolar disorder patient?	554 (69.16)	183 (22.84)	64 (7.99)
Can you marry a person who is suffering from bipolar disorder?	213 (26.59)	464 (57.93)	124 (16.48)
Is it true that people consider a person with bipolar disorder as someone who is suffering from black magic?	350 (43.69)	265 (33.08)	186 (23.22)
Is a bipolar disorder patient burden on his/her family?	264 (32.95)	451 (56.30)	86 (10.73)
Do you think bipolar disorder patient can work & perform jobs as a normal individual?	341 (42.57)	320 (39.95)	140 (17.47)
Do you feel embarrassed, if you have any bipolar disorder patient in your family?	177 (22.09)	519 (64.79)	105 (13.12)

In Table 5, the total observations in each subgroup are calculated along with their subgroup-wise mean scores. The scores for each observation were considered. The total mean score of all observations was 14.68, used as a high and low awareness parameter. Each observation was

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verified using this parameter. If the score was more than or equal to 14.68, it was considered high awareness; if it was less than 14.68, it was classified as low awareness. The percentage of total highly aware observations against each subgroup was calculated by adding the number of highly aware observations. The percentage of each subgroup's participation in either high or low awareness levels was calculated.

Table 5: High and Low Bipolar Awareness and Attitudes of the Public Based on Sociodemographic Characteristics

Characteristics	Total No.	Mean Score	Low Awareness and Negative Attitudes Towards BP Patients < 14.68 (%)	High Awareness and Positive Attitudes Towards BP Patients > 14.68 (%)
Gender				
Female	387	14.75	203 (46.0)	184 (52.0)
Male	414	14.61	242 (54.0)	172 (48.0)
Age Group				
16–20	124	14.35	71 (16.0)	53 (15.0)
21–25	188	14.68	103 (23.0)	85 (24.0)
26–30	161	15.04	87 (20.0)	74 (21.0)
31–35	123	15.45	59 (13.0)	64 (18.00)
36–40	101	14.32	60 (13.0)	41 (12.0)
41–45	104	13.93	65 (15.0)	39 (11.0)
Education Level				
College	271	14.97	151 (34.0)	120 (34.0)
Islamic Scholar	4	16.50	2 (0.0)	2 (1.0)
School	85	14.84	50 (11.0)	35 (10.0)
University	441	14.45	242 (54.0)	199 (56.0)
Residence Status				
Rural	355	14.63	202 (45.0)	153 (43.0)
Urban	446	14.72	243 (55.0)	203 (57.0)
Career				
Business	5	15.0	3 (1.0)	2 (1.0)
Housewife	31	13.0	20 (4.0)	11 (3.0)
Unemployed	717	15.0	393 (88.0)	324 (91.0)
Employed	48	14.0	29 (7.0)	19 (5.0)

Figure 1 displays public suggestions about the treatment and prevention of BP. The participants offered recommendations based on their highest awareness and understanding of BP. The most frequently recommended suggestion for preventing and treating BP was seeking professional guidance from a psychiatrist or psychologist, as indicated by a prevalence rate of 14.0% (n=112). Recreational activity emerged as the second most frequently mentioned suggestion, accounting for 11.4% (n=91) of the responses. Additional recommendations were proposed, such as seeking guidance from a magic healer, which accounted for 10.0% (n=80) of the responses. Islamic teachings, including references to the Quran and engaging in prayer, were suggested by 7.9% (n=63) of the participants. Consulting a medical professional was advised by 7.7% (n=62) of the respondents. 7.6% (n=61) of

the individuals recommended engaging in physical fitness activities at a gym. Lastly, 6.6% (n=53) of the participants mentioned seeking counseling from family and friends. Ultimately, a considerable proportion of the participants, specifically 34.8% (n=279), did not offer any recommendations about the prevention and management of BP.
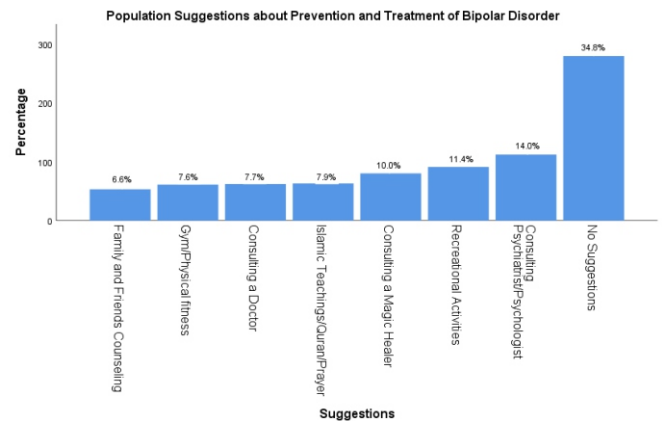

Figure 1: Population Suggestions about the Prevention and Treatment of the Bipolar Disorder

DISCUSSION

The present study employed a cross-sectional survey methodology to collect data from 1,000 participants aged 16 to 45 in Punjab, Pakistan. The primary objective of the study was to assess the sentiments held by the participants about BP. This study examines individual's perceptions of the origins, treatment, and societal acceptability of bipolar disorder (BP). After excluding certain people, the ultimate sample size comprised 801 participants. The research utilized the Python Pandas package for data analysis to explore various viewpoints on BP. As mentioned earlier, the viewpoints comprised factors such as gender vulnerability, belief in the treatability of bipolar disorder, social approval, and concerns surrounding personal connections with persons impacted by bipolar disorder. The study findings indicated that only 48% of the participants exhibited good awareness regarding their blood pressure (BP) levels. The research further proposed the incorporation of psychiatric consultations and involvement in recreational activities as feasible approaches for the prevention and management of hypertension. A study by Alosaimi *et al.*, [26] examined how much people in Saudi Arabia have knowledge about bipolar disorder (BP). Their results showed that people have a lot of wrong concepts about BP. Their research showed that only 49.5% of the participants knew anything about BP beforehand, and most thought it was because of supernatural forces, weak faith, or character flaws. Similarly, in our study, 33.33% of the participants found a link between BP and spirituality. On the other hand, most

people (41.07%) said they believed that religious or magical practitioners could help people. Both studies agreed that medical help for BP is important, but they also pointed out that society still has attitudes that make BP look bad. A study by Shakeel, *et al.,* [15] showed some essential details of public awareness about Bipolar Disorder (BP). Their study emphasizes the impact of interest in mental illnesses on awareness of bipolar disorder (BP), which aligns with the findings of our study. Our study also observed diverse perspectives among the general public, revealing a lack of consensus regarding susceptibility to bipolar disorder across different genders. Moreover, both studies highlight a shared conviction regarding the treatability of bipolar disorder (BP). However, certain groups of participants exhibit a dependence on non-medical interventions, such as religious or magical healing. Significantly, both studies also exhibit a common reluctance when it comes to engaging in marital relationships with individuals who have been diagnosed with bipolar disorder. Implications for policy and practice in mental health education in Pakistan are substantial in light of the results of the current study. To ensure that persons with bipolar disorder and other mental disorders have access to care, it is essential that the public get a better knowledge of these issues and that the social stigma associated with them be reduced. A recent cross-sectional study by Mohsin *et al.,* [27] illustrates a worldwide phenomenon in which people with mental health disorders face enormous bias, significantly impeding their capacity to access healthcare assistance. Misconceptions significantly impact people living in Pakistan, influencing their actions and contributing to the country's poor socioeconomic conditions. The already dire circumstances are made much worse by the widespread prevalence of illiteracy. Therefore, it is crucial to track and evaluate the educated public's understanding of mental health issues, including schizophrenia, bipolar disorder, anxiety, and depression. Creating ground-breaking healthcare policies and programs is essential for reducing societal stigma.

CONCLUSIONS

In conclusion, this research study, which relied on survey data, yielded significant findings on the general population's perceptions of BP. The findings indicated that only 48% of those included in the survey had satisfactory awareness of BP. While a subset of individuals has extensive knowledge and favorable attitudes regarding BP, a more significant proportion of the population holds contrasting perspectives. Participants exhibiting higher degrees of awareness were more prevalent than those displaying lower levels throughout a diverse array of demographic categories, including those with better educational attainment, residents residing in rural

locations, and individuals without work. In contrast, a significant proportion of individuals demonstrated low comprehension rather than high awareness across all age cohorts and educational backgrounds. This phenomenon was particularly evident among the male population, particularly those aged between 21 and 25 years.

Authors Contribution

Conceptualization: MH, OU, NK, HM
Methodology: MH, OU, HM, NH, SZ, MM, LZ
Formal analysis: MH, OU, SZ, LZ
Writing-review and editing: MH, OU, NK, HM, NH, SZ, MM, LZ

All authors have read and agreed to the published version of the manuscript.

Conflicts of Interest

The authors declare no conflict of interest.

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