INTRODUCTION

Bipolar disorder (BD) is one of the leading causes of disability across the world. The World Health Organization estimated that BD was the 46th greatest cause of disability and mortality in the world among 291 diseases. There is considerable literature on the clinical course of BD as well as the safety and efficacy of various treatments, whereas the literature on their quality of life (QoL) is quite sparse. The scant QoL research in BD could be due to the absence of a “disease-specific” measure of QoL for bipolar populations or due to the uncertainty about the ability of patients with BD to reliably complete self-report measures, especially in a manic phase. The current therapeutic strategies for BD have increased the survival of these patients. Thus, QoL has emerged as a significant medical outcome measure.

QoL has a multifaceted definition, which encompasses the richness of the person’s experiences and their perception of social, occupational, and personal functioning. The World Health Organization has described QoL as “individuals’ perception of their position in life in the context of the culture and value systems, in which they live and in relation to their goals, expectations, standards, and concerns.” Compared with the general population, health-related QoL scores have been lower for bipolar patients. Studies focusing on elderly bipolar patients reflected poorer QoL compared to normal comparison subjects.

ABSTRACT

Context: Bipolar disorder (BD) in elderly individuals is a prevalent and disabling condition. The disorder also has an impact on the quality of life (QoL). However, very few studies have systematically examined the magnitude of QoL impairments in bipolar patients, especially in the older age group. Aims: The objective was to study the QoL and its correlation with sociodemographic factors and clinical variables in elderly BD patients. Settings and Methods: A cross-sectional study was done in the psychiatry department at a tertiary hospital. Subjects and Methods: We examined QoL scores of 100 elderly (age range: 60–82 years) patients with BD on regular maintenance treatment for 1 year. Psychopathology was assessed using the Young Mania Rating Scale and Hamilton Rating Scale for Depression (HAMD-D). QoL was assessed using QoL scale (World Health Organization QOL [WHO-BREF]). Statistical Analysis Used: Statistical Package for the Social Sciences was used, and analysis of variables was done using unpaired t-test and Pearson correlation coefficient. Results: Female patients had significantly lower scores on physical and psychological domains in the WHO quality of life-BREF scale (P < 0.01). The unmarried/divorced/widowed population had lower QoL scores in the physical and social relationships domains (P < 0.01). Patients with lower socioeconomic status had lower QoL scores on physical and environmental domains of QoL (P < 0.05). There was significant negative correlation between the QoL and the total number of episodes (P < 0.05; \( R^2 = 0.09 \)) and between the QoL and duration of illness (P < 0.05; \( R^2 = 0.05 \)). Higher HAM-D scores were associated with poor QoL (P < 0.05; \( R^2 = 0.07 \)). Conclusions: This study offers insight into patterns of QoL in BD in the elderly. The study concludes that the duration of illness and the total number of episodes have a significant negative impact on QoL. Furthermore, undercurrent depressive features can be overlooked, leading to decline in the QoL.

Key words: Bipolar disorder, elderly, quality of life, World Health Organization quality of life-BREF
Female patients had worse QoL scores than male patients. Furthermore, increased age was a predictor for poor QoL. Among other factors, lower literacy rates, lower socioeconomic status, and prolonged duration of illness have been reported to be associated with poor QoL. Most of the studies showed poorer scores in patients with more depressive episodes and current depressive symptoms.

Cognitive impairment was more common and severe in geriatric patients. Comorbid general medical illnesses were more common in older patients compared to younger bipolar patients. Functioning was also worse in geriatric bipolar patients than younger patients. The effect of treatment had favorable outcomes on QoL scores. Perceived adverse effects were associated with lower QoL scores.

Old age brings with it a variety of changes and adjustments, which are not easy to deal with. Comorbidities and resulting polypharmacy must also be taken into account. Retirement and bereavement are other life events which may affect the disease progression and can act as a stressor. In patients with BD for a long period, compliance with medication may also get interrupted which itself may be due to a host of factors such as increasing adverse effects, financial problems, and unwillingness to continue long-term medication. This results in poor drug adherence and relapses. The treatment plan, hence, needs to be tailor-made in these patients. BD in old age is a growing public health problem. Greater research on BD in older people will assist in enhancing services to this group across their life span. There are no published data on QoL in elderly BD patients in Indian population. Hence, the present study was planned to study the QoL in elderly BD patients and its sociodemographic and clinical correlates.

**SUBJECTS AND METHODS**

**Study design**

The study design was cross-sectional. Participants were 100 elderly outpatients fulfilling the study inclusion-exclusion criteria, recruited over 1-year period from a tertiary hospital. After the study protocol was approved by the Institutional Ethics committee, information about the study was conveyed to all faculty and residents of our department for referral of appropriate patients. The authors screened the elderly patients in the outpatient department (OPD) referred on their OPD days (Monday/Wednesday/Friday), and those fulfilling the inclusion-exclusion criteria were given detailed information about the QoL study. Key inclusion criteria were as follows: men or women aged 60 years and older; the diagnosis of BD according to the ICD-10 DCR criteria; and on regular maintenance treatment for 1 year. Those patients willing to give written informed consent were enrolled in the study. The patients were on a regular maintenance treatment on mood stabilizer with or without antipsychotic medicines. They had a regular monthly follow-ups on OPD basis and were behaviorally stable on clinical interview. Patients with comorbid psychiatric illnesses and/or medical illnesses requiring urgent medical attention were excluded from the study. Few patients refused to participate due to time constraints, as accompanying caregivers were unwilling to stay back. Thus, the selection of patients was done using convenience sampling.

A semi-structured pro forma was used to obtain the sociodemographic data, the clinical history, and document the findings of detailed physical, neurological, and mental status examination. Psychopathology was assessed using the Young Mania Rating Scale (YMRS) and Hamilton Rating Scale for Depression (HAM-D). QoL was assessed by the World Health Organization QoL (WHOQOL)-BREF scale.

**Young Mania Rating Scale**

The YMRS developed by Young et al. in 1978 is an 11-item, multiple-choice diagnostic questionnaire, which is used to measure the severity of manic episodes. Each question refers to specific aspects of the patient’s behavior and mood in the past 24 h. A score of 13 or higher indicates a potential case of mania or hypomania, whereas a score of 21 or above indicates a probable case. A score of ≤12 indicates the remission of symptoms. Cronbach’s alpha coefficient of 0.72 indicates the acceptable reliability of YMRS. The cutoff point, sensitivity, and specificity of the YMRS were found to be 12.5, 0.93, and 0.96, respectively. It has shown a good validity and reliability in clinical use.

**Hamilton Depression Rating Scale**

Hamilton Rating Scale for Depression abbreviated HAM-D, is a multiple-item questionnaire used to provide an indication of depression, and as a guide to evaluate recovery. It is a 17–21-item observer-rated scale to assess the presence and severity of depressive states. Max Hamilton originally published the scale in 1960 and revised it in 1966, 1967, 1969, and 1980. The questionnaire is designed for adults and is used to rate the severity of their depression by probing mood, feelings of guilt, suicide ideation, insomnia, agitation or retardation, anxiety, weight loss, and somatic symptoms. 0–7 is normal, score of 8–13 indicates mild depression, 14–18 indicates moderate depression, 19–22 is severe depression, and ≥23 is very severe depression. The scale has appropriate validity and reliability estimates. Cronbach’s alpha range was 0.71–0.85 tested at various intervals, proving the internal consistency of the scale.

**World Health Organization quality of life-BREF quality of life assessment**

QoL was measured using the WHOQOL-BREF QoL scale. This is a brief version, derived from the WHOQOL 100, a 100-item scale. The WHOQOL-BREF contains a total of 26 questions. To provide a broad and comprehensive assessment, one item from each of the 24 facets contained in the WHOQOL-100 has been included. In addition, two items from the overall QoL and general health facet have been included. The questions are grouped under physical health, psychological, social relationships, and environment domains. It assesses the individual’s personal goals, standards, concerns and their perceptions in the context of their culture, and value systems. It has shown to be an adequate measure for assessing QoL at the domain level in a population of adult psychiatric outpatients. The scale also demonstrates acceptable psychometric performance in older people. WHOQOL-BREF domain
scores demonstrate good discriminant validity, content validity, internal consistency, and test-retest reliability. On this scale, numerically lower scores depict worse QOL. As per a cross-sectional study by Silva et al., cutoff <60 for overall QoL obtained excellent sensitivity (76.8%) and negative predictive value (81.4%) for assessing older adults with probable worse QoL.\textsuperscript{[28]}

**Statistical analyses**

Summary statistics were computed for baseline demographic, clinical, and QOL measures. For the WHOQOL-BREF, the raw scores were calculated and then transformed using Statistical Package for Social Sciences (IBM SPSS Version 25.0, Chicago, USA). The results obtained were tabulated and statistical analysis was done. Continuous variables were assessed by unpaired t-test. Correlation between variables was assessed using the Pearson correlation coefficient. Significance levels for all analyses were set at the $P < 0.05$.

**RESULTS**

The samples include 100 patients (59% men and 41% women) with age range of 60–82 years (mean age: 68.19 years with a standard deviation of 5.76 years). Out of 100 patients, 71 were in the age group of 60–70, whereas the remaining 29 were above 71 years. Fifty-five percent of the patients were married, 30% were widowed, and 11% were divorced, whereas 4% were unmarried. As per socioeconomic status, 87% of the patients belonged to the lower class, 8% to the lower-middle class, and 5% belonged to the upper-middle class.

Eight percent of the patients scored positive for mild depression on HAM-D assessment; the rest had no depression. These depressive symptoms, however, were only obtained on HAM-D assessment and not on clinical interview. The mean duration of illness among the patients was found to be 39.93 years. The mean number of episodes/patient over the duration of illness was 8.92. The average number of manic episodes/patient was 5.7, and the number of depressive episodes/patient was 2.92. Thirty-four percent of patients had medical comorbidities. Sixteen percent of patients had a family history of BD in first-degree relatives.

The mean QoL score on the WHOQOL-BREF scale among the patients was 53.40, which indicates a poor QoL as per the Silva et al. study which estimated a cutoff point <60 on the WHOQOL-BREF scale for assessing older adults with worse QoL.\textsuperscript{[28]} Thus, our study indicates that even in euthymic phase, QoL is affected in elderly bipolar patients. Increasing age is a predictor for worse QoL and increasing disability.\textsuperscript{[29]} A study on euthymic bipolar patients in the younger population (age = 37.59 ± 10.08) used the same instrument where the mean QoL Score was 77.54. This translates to a better QoL in the younger age group as compared to elderly.\textsuperscript{[30]} In contrast, a Western study of QoL in elderly bipolar showed higher scores on emotional subscales of QoL as compared to the younger population.\textsuperscript{[6]}

**Sociodemographic factors and quality of life**

We found a statistically significant association between gender and QoL ($P < 0.01$). The female elderly bipolar

### Table 1: Association between sociodemographic factors and quality of life (World Health Organization Quality of Life-BREF Scale)

| Demographic factor | Mean QoL | $P$  |
|--------------------|----------|------|
| Gender             |          |      |
| Male ($n = 59$)    | 54.53    | <0.01* |
| Female ($n = 41$)  | 51.78    |      |
| Marital status     |          |      |
| Married ($n = 55$) | 55.38    | <0.01* |
| Unmarried/divorced/widowed ($n = 45$) | 50.98 |      |
| Socioeconomic status |       |      |
| Lower ($n = 87$)   | 52.98    | <0.05* |
| Middle ($n = 13$)  | 56.25    |      |
| Residence          |          |      |
| Rural ($n = 74$)   | 53.27    | 0.65  |
| Urban ($n = 26$)   | 53.78    |      |

* $P < 0.05$ - Statistically significant. QoL: Quality of life

### Table 2: Correlation between clinical factors and quality of life (World Health Organization Quality of Life-BREF scale)

| Clinical factor | $r$ (Pearson correlation) | $P$  |
|-----------------|---------------------------|------|
| Duration of illness | $-0.24$ | $<0.05^*$ |
| Total number of episodes | $-0.31$ | $<0.05^*$ |
| Manic episodes | $-0.18$ | 0.07 |
| Depressive episodes | $-0.16$ | 0.11 |
| Mixed episodes | $-0.14$ | 0.18 |
| HAM-D score | $-0.28$ | $<0.05^*$ |
| YMRS score | $-0.03$ | 0.8 |

* $P < 0.05$ - Statistically significant. HAM-D: Hamilton Rating Scale for Depression, YMRS: Young Mania Rating Scale

There was a significant negative correlation between the total number of episodes and the QoL ($P < 0.05; R = -0.31$) and between the duration of illness ($P < 0.05; R = -0.24$) and the QoL using Pearson correlation as shown in the scatter plots [Figures 1 and 2]. The HAM-D score was significantly correlated with the QoL ($P < 0.05; R = -0.28$). Higher HAM-D scores were associated with poor QoL [Figure 3]. There was no significant correlation between the YMRS score, family history, medical comorbidity, number of manic episodes, number of mixed episodes, or number of depressive episodes and the QoL [Table 2].

**DISCUSSION**

In our study, the mean QoL score on the WHOQOL-BREF scale was 53.40, which indicates a poor QoL as per the Silva et al. study which estimated a cutoff point <60 on the WHOQOL-BREF scale for assessing older adults with worse QoL.\textsuperscript{[28]} This translates to a better QoL in the younger age group as compared to elderly.\textsuperscript{[30]} In contrast, a Western study of QoL in elderly bipolar showed higher scores on emotional subscales of QoL as compared to the younger population.\textsuperscript{[6]}

The married patients had better QoL ($P < 0.05$). The female elderly bipolar patients had lower scores on physical and psychological domains in the WHOQOL-BREF scale. There was no significant difference between the married and unmarried/divorced/widowed population in the physical and social relationships domains ($P < 0.01$). The married patients had better QoL scores. A statistically significant association was found between socioeconomic status of patients and QoL using unpaired t-test ($P < 0.05$) [Table 1]. Patients with lower socioeconomic status had lower scores on physical and environmental domains compared to the psychological and social domains in the WHOQOL-BREF scale.
patients had lower scores on physical and psychological domains. In other studies of BD, women scored lower in the domains of pain and physical health.[10,31] The reason for this could be higher incidence of medical comorbidity in females compared to males. Evidence also suggests that women are more likely to experience depressive than manic episodes, which might explain differences in QoL.[32]

In addition, the perceived levels of physical symptoms and pain could vary according to gender. This calls for a gender-tailored intervention in patients, with a focus on the role of pain and its adequate management to improve outcomes.[10]

Marital status had a significant positive impact on QoL ($P < 0.01$). As compared to married patients in our study, unmarried/divorced/widowed patients had lower scores on physical and social relationship domains. This is similar to the study by Hosseini and Yousefi, who found that divorced BD patients had lower functioning compared to married patients.[33] This can be attributed to the decline in the social relationships and social support in widowed/divorced patients. However, a Western study showed that both married or divorced had a worse functional impairment in comparison with those who were single or never married.[34]

Patients with lower socioeconomic status had lower scores on physical and environmental domains on the WHOQOL BREF Scale. High unemployment and low education rate have been associated with low QoL.[13] An Indian study by Thomas et al. found that the factor of not being an earning member was associated with poor QoL in BPAD.[29] However, in the Western study by Sylvia et al., social disadvantage was significantly associated with worse functioning and symptoms, but unexpectedly only marginally associated with QoL.[34]

As compared to Western studies, our study showed increasing age and socioeconomic status to be important predictors of QoL. Married status in the Indian population had a likely protective effect on QoL. As compared to men, women had consistently poorer QoL across various studies.

**Clinical variables and quality of life**

Khan et al. found a significant negative correlation between physical and psychological health and family history of psychiatric illness in bipolar patients.[13] Our study did not find any association between QoL and family history of patients. The reason for this could be the fact that we considered family history of only BD and no other psychiatric illnesses. Further, it has been noted that positive family history played a role in disability but did not affect QoL.[29]

There was a significant negative correlation between QoL and duration of illness of our patients ($P < 0.05$). In an Indian study on younger bipolar patients (age 20–60), both duration of illness and duration of ill period were significantly related to QoL.[20] In a similar study, older age was associated with lower scores on social relationship domain on WHOQOL-BREF.[30] These findings are consistent with previous studies which found that younger age of onset was a significant predictor of QoL.[35] A younger age of onset implies a longer duration of illness, especially in the geriatric population. In contrast, in a few Western studies conducted on bipolar patients who included elderly patients, longer duration of illness did not correlate with QoL.[8,14]
The total number of episodes negatively correlated with lower QoL scores in our study. Bo et al. in their recent study also found that QoL on WHOQOL-BREF was negatively associated with recurrence times. A total number of episodes had effect on QoL in periods of euthymia with past episodes of depression being a stronger determinant of the same. Higher numbers of episodes result in poor social adjustment and negatively correlated with physical health.

Our study found that patients with mild depression as per HAM-D scale assessment had significantly lower QoL. An inverse association has been noted between HAM-D scores and QoL psychological domain of WHOQOL-BREF. This corroborates with many studies which indicated that persistent depressive symptoms could be the primary determinant of impaired QoL. The number of past episodes of depression over the duration of illness also had a negative impact on QoL. Thus, an endeavor to diagnose subthreshold depressive symptoms and treat them adequately can help to improve QoL in the long run.

Across all studies, a total number of episodes throughout the course of illness and pointedly depressive episodes contributed to poor QoL. Residual and subsyndromal depressive symptoms also result in poor QoL.

**Strengths and limitations**

It is one of the first Indian studies to assess the profile of elderly bipolar patients and their QoL using a structured and standardized instrument (WHOQOL-BREF). We have assessed the patients in the inter-episodic stage of illness, thereby removing the confounding variable of impact of episodes on QoL.

However, our study was conducted in a tertiary care government hospitals. This could have potentially led to the recruitment of patients with more severe illness seeking treatment, resulting in poorer QoL among respondents. Along with sociodemographic factors and clinical profile, other factors such as medications and their adverse effects also have a possible role in determining the QoL in BD. These factors were not evaluated in this study.

**CONCLUSIONS**

This study offers insight into patterns of QoL in BD in the elderly in the Indian context. The findings suggest that poor QoL is observed even in the euthymic stages of the illness. As compared to Western studies, increasing age and duration of illness were found to be significantly associated with worse QoL. In the cultural context, socioeconomic status and marital status were crucial factors affecting QoL. The finding of association of female gender, total number of episodes, and persistent depressive symptoms with poor QoL was comparable to Western studies. It highlights the importance of regular QoL assessment on BD patients in both clinical practice and research. These QoL determinants can also predict and identify recurrence symptoms. Efforts to treat residual symptoms may enhance QOL in BD patients. This can also bring us closer to develop treatment regimens that promote both symptoms reduction and improve QoL for the patients.

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**Conflicts of interest**

There are no conflicts of interest.

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