# Perceived Quality of Life and Associated Factors Among Patients with Severe Mental illness in Ethiopia: A Cross-sectional Study

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# Abstract

**Background:** Severe mental illness is strongly associated with an impaired quality of life. This intern can affect the treatment adherence and outcomes of the illness. However, due attention was not given this alarming issue Therefore; assessment of quality of life of patients with severe mental illness and its correlates is a yardstick measure for the effectiveness of the mental health service.

**Methods:** An institutional based cross-sectional study was conducted from May 1 to 16, 2018 at Amanuel Mental Specialized Hospital. A systematic random sampling technique was used to get a total number of 394 samples. Data were collected using interview-administered questionnaires. World Health Organization Quality of Life Brief Version, The collected data were coded, entered into EpiDATA version 3.1 and analyzed by using SPSS version 20. Simple and multiple linear regression analysis were used to assess the contributing factors of quality of life in the participants and B coefficient with 95% CI confidence interval was used. The statistical significance was accepted at p-value < 0.05.

**RESULT**: Mean quality of life score of patients with severe mental illness for each domain (mean± SD) was 41.3±7.5, 42.8±8.2, 38.9±8.9, and 41.8±6.5 for physical, psychological, social and environmental, respectively. Multiple regression analysis showed the age of participants was strongly positively correlated with all domains of quality of life. It predicts above 45% of the variability in each domain. Social support is also another strong predictor which was negatively correlated with all domains of quality of life, except physical.

**Conclusion:** The study revealed that the mean score quality of life of patients with severe mental illness in each domain was low. This demonstrates a need for improving quality of among people with severe mental illness. Moreover, prevention and early intervention of co-morbid medical conditions is also recommended too.


# Background

Quality of life is defined by the World Health Organization as “individuals' observations of their position in life in the perspective of their culture and value systems and including the persons' physical health, psychological state, level of independence, social relationships, personal beliefs and their relations to outstanding features of the environment[1].In recent times, quality of life is considered as an important indicator of the impact of diseases on the patients who are suffering from severe mental illness and is significantly affected in those patients [2].

Severe mental illness (SMI) is a name given for groups of mental health problems explained by a mental, behavioral, or emotional disturbances which markedly affects functionality, major life activities and quality of life of people suffering with the illness [3]. The World Health Organization estimated that severe mental illness (SMI) affects 4% of the adult populations worldwide[4] and 4.2% in U.S adults[3]. These disorders are stated as most important causes of disability due to health-related conditions representing a total of 19.1% in developing countries[5]. People with severe mental illness have a diminishing QOL, frequently at levels that are equal to or exceed those of medical illnesses[6]. This significantly affects the treatment adherence, rates

of relapse, ability to perform and/or enjoy occupational and social activities, future outlook, medical problems [2] [7, 8] [9].

Patients with severe mental illness and their relatives are increasingly in need of improvements not only their symptoms, but their functionality and quality of life of patients too[10]. This concludes that there should be a successful holistic approaches of treatment considering impairments in functionality and QOL [11, 12]. However, professionals have a considerable focus only on pharmacological treatments for symptomatic recovery by neglecting the other social, psychological, and environmental conditions of the client [13] [6].

Despite this diverse and complicated out comes, quality of life of people with severe mental illness is not well addressed in developing countries, particularly in Ethiopia. Therefore, this study was aimed to assess the quality of life and its correlates among people with severe mental illness in Ethiopia which will be used as a base line for further investigations.

## Methods

# Study design and period

An institutional based cross sectional study was conducted from May 1$^{st}$ to June 16t$^{h}$, 2018 at Amanuel, Mental Specialized Hospital.

# Study setting

The study was conducted at Amanuel Mental Specialized Hospital. The hospital is the only specialized psychiatric hospital in the country since its establishment, 1930. It serves for patients coming from the entire regions of the nation. The hospital has 259 beds and 18 outpatient departments that serve patients with psychiatric disorders, of these 8 OPDs serve for patients with SMI. I t is reported an average of 5,442 patients with severe mental illness are visiting the hospital monthly.

# Sample size and sampling

The number of sample required for the study was calculated using single population mean with assumptions of $\boldsymbol{\delta}^2$ = standard deviation of the mean quality of life score SD from a previous published study in Nigeria is 9.65[14] with Margin of error (1 unit). By adding a 10% of non-response rate, the final sample size became 394. All patients with severe mental illness who were eligible for the study (age ³ 18 years and received treatment for at least 6 months) were included.

Systematic random sampling was employed to select the study participants. Initially, the total expected number of patients with severe mental illness during the study period was calculated from the records of the hospital. Then, the sampling interval (K) was determined by dividing the total number of eligible individuals to the sample size to be drawn. Lottery method was used to select the first participant between one and K. Subsequently, K value was added until the proposed sample size was reached.

# Instrument

Interviewer administered questionnaire was used for data collection. The questionnaire had different domains including socio-demographic factors, clinical factors, psychosocial characteristics, and the World Health Organization Quality of Life – Brief (WHOQOL-BRFE).

The outcome variable (quality of life) was measured using WHOQOL-BRFE. It is a cross culturally validated tool and used to assess the patients' quality of life. The WHOQOL-BREF includes 26 items measuring the following domains: physical health, psychological health, social relationships, and environment. QOL raw scores are transformed in to a range between 0-100. Scores are scaled in a positive direction (i.e. higher scores correspond to better quality of life and vice versa).[15]. Data for the independent variables were also collected using validated tools. Oslo Social Support Scale was used for measuring social support level and categorized into three levels (poor ="3-8", moderate= "9-11", strong ="12-14")[16], Psychotropic Medication adherence level was measured using Morisky Medication Adherence Screening Tool and a cutoff point <4 was used [17] and perceived stigma was assessed using Jacoby Stigma Scale which a score of 1 and above indicate the patient is stigmatized [18].

The questionnaire was originally prepared in English and translated into the local language (Amharic) and back to English to check the accuracy. The questionnaire was pretested at St. Paul's hospital among 5% of the calculated sample. Two days training were given for the data collectors and supervisors. Six BSc psychiatric nurses supervised by two MSc level mental health professionals collected the data.

# Data analysis and interpretation

The collected data were coded, entered in to EPiDATA version 3.1 and exported to SPSS version 20 for analysis. Simple and multiple linear regression analysis were used to assess the correlates of independent factors with perceived quality of life. In the final model, variables with a p value of < 0.05 were considered as statistically significant. The strength of the correlation was measured by B coefficient with 95% confidence interval.

## Results

# Socio-demographic characteristics of respondents

Out of 394 study participants invited for interview, 387(98%) participated in the study. The mean standard deviation age of respondents was 40(SD ± 8) years. More than half, (58.4%) of respondents were males and 80.6% reside in urban areas. Majority (54%) of the participants married. (Table 1)

Table 1
Socio-demographic characteristics of patients with SMI having follow up at AMSH, Addis Ababa, Ethiopia, 2018, (n = 387)

| Variables | Categories | Frequency | Percentage |
|---|---|---|---|
| Age (M ± SD) | | | 40 ± 8 |
| Sex | Male | 226 | 58.4 |
| | Female | 161 | 41.6 |
| Ethnicity | Amhara | 180 | 46.5 |
| | Oromo | 160 | 41.3 |
| | Tigre | 30 | 7.8 |
| | Others* | 17 | 4.4 |
| Religion | Orthodox | 201 | 51.9 |
| | Muslim | 103 | 26.6 |
| | Protestant | 70 | 18.1 |
| | Others** | 13 | 3.4 |
| Residence | Urban | 312 | 80.6 |
| | Rural | 75 | 19.4 |
| Marital status | Single | 209 | 54.0 |
| | Married | 99 | 25.6 |
| | Divorced | 60 | 15.5 |
| | Widowed and separated | 19 | 4.9 |
| Educational status | unable to read and write | 24 | 6.2 |
| | primary education | 110 | 28.4 |
| | secondary education | 73 | 18.9 |
| | Diploma, degree and above | 180 | 46.5 |
| Occupational status | Private business | 141 | 36.4 |
| | Unemployed | 150 | 38.8 |
| | Employed | 79 | 20.4 |
| | Others**** | 17 | 4.3 |

NB. *Gurage, wolayta, Somaliee, Afar ,** Catholic, wakefeta, Hawariyat, ****Farmer, Student

| Variables | Categories | Frequency | Percentage |
|---|---|---|---|
| Living arrangement | With families | 280 | 72.4 |
| | Alone | 107 | 27.6 |
| NB. *Gurage, wolayta, Somaliee, Afar ,** Catholic, wakefeta, Hawariyat, ****Farmer, Student | | | |

# Clinical and substance related characteristics of respondents

Most, (61.0%) of the participants had a diagnosis of schizophrenia and 16% were bipolar disorder. (Table 2)

Table 2
Clinical and substance related characteristics of participants at AMSH, Addis Ababa, Ethiopia, 2018, (n = 387)

| Variables | Categories | Frequency | Percentage |
|---|---|---|---|
| Age of onset(M ± SD) | | | 31 ± 10 |
| Type of diagnosis | Schizophrenia | 236 | 61.0 |
| | Bipolar | 62 | 16.0 |
| | Major depression | 89 | 23.0 |
| Duration of the illness | Less than 5 years | 100 | 25.8 |
| | 5–10 years | 219 | 56.6 |
| | Greater than 10 years | 68 | 17.6 |
| Comorbid medical diagnosis | No | 320 | 82.7 |
| | Yes | 67 | 17.3 |
| Medication adherence | Adherent | 191 | 49.4 |
| | Non- adherent | 196 | 50.6 |
| Current substance use | Yes | 117 | 30.2 |
| | No | 270 | 69.8 |

# Psychosocial characteristics

Regarding to psychosocial characteristics of respondents, majority of them have moderate social support (n = 186, 48.1%) and (36.7%) were stigmatized due to their illness.

# Quality of life scores of people with severe mental illness

The mean quality of life score of patients with severe mental illness for each domain (mean ± SD) was 41.3 ± 7.5, 42.8 ± 8.2, 38.9 ± 8.9, and 41.8 ± 6.5 for physical, psychological, social and environmental, respectively.

# Factors associated with quality of life on patients with severe mental illness

Both simple and multiple linear regression were computed and variables with a P-value of < 0.25 were considered as candidates of multiple linear regression. Variables with P- value less than 0.05 were considered as significantly correlated with quality of life and B coefficient was to predict the strength of the correlations of variables with quality of life. (Table 3)

Table 3
Multiple linear regression models of quality of life among people with severe mental illness, Ethiopia, 2018(n = 387)

| Variables | Physical | Psychological | Social | Environmental |
|---|---|---|---|---|
| | Unstandardized B Coefficient with 95% CI | Unstandardized B Coefficient with 95% CI | Unstandardized B Coefficient with 95% CI | Unstandardized B Coefficient with 95% CI |
| Age of participants | 0.34(0.27, 0.42)*** | 0.37(0.27, 0.47)*** | 0.53(0.42, 0.64)*** | 0.44(0.36, 0.52)*** |
| Age of onset of illness | 0.26(0.20, 0.33)*** | 0.27(0.19, 0.36)*** | 0.07(-0.02, 0.17) | -0.09(-0.07, 0.05) |
| Comorbid No<br>medical yes<br>illness | Ref<br>-4.12(-5.33,-2.90)*** | Ref<br>-1.87(-3.39,-0.36)** | ### | ### |
| stigma No | Ref | Ref | Ref | Ref |
| yes | -2.38(-3.38, -1.37)** | -1.02(-2.33,0.29) | 0.74(-0.82 ,2.31) | 0.38(-0.67, 1.44) |
| Residency | | | | |
| Urban | ### | ### | Ref | Ref |
| Rural | | | 0.93(-1.31, 3.11) | -0.98(-2.56, 0.59) |
| Living condition | | | | |
| With family | Ref | Ref | Ref | Ref |
| Living alone | -1.92(-3.09, -0.74)* | 0.41(-0.92, 1.76) | -1.27(-2.79, 0.24) | -0.52(-1.61 ,0.57) |
| Medication adherence | | | | |
| Adherent | Ref | Ref | Ref | Ref |
| Non-adherent | -0.42(-1.34, 0.49) | 0.95(-0.24, 2.16) | -0.59(-1.92 ,0.74) | -0.17(-1.15,0.81) |
| Level of social support | | | | |
| Strong | Ref | Ref | Ref | Ref |
| Poor | -0.65(-1.71, 0.41) | -4.87(-6.45,-3.33)*** | -3.79(-5.37,-2.26)*** | -3.49(-4.65,-2.34)*** |
| Moderate | 0.55(-0.42, 1.52) | -1.29(-2.74, 0.14) | -0.30(-2.07, 1.47) | -0.25(-1.21 ,0.71) |

*p < 0.05, ** p < 0.01, *** p < 0.001,### Variable not included in the regression models

ref: reference

| Variables | Physical | Psychological | Social | Environmental |
|---|---|---|---|---|
| Current No | Ref | Ref | Ref | Ref |
| sub/user yes | -1.19(-2.43, 0.05) | -0.11(-1.56, 1.34) | -1.29(-2.87 ,0.28) | 0.79(-0.38, 1.96) |
| Follow up duration | | | | |
| Duration < 5 years | Ref | Ref | Ref | Ref |
| Duration 5–10 years | 0.02(-1.06, 1.07) | 0.01(-1.32, 1.34) | -3.09(-4.61,-1.58)* | -2.29(-3.42,-1.13)*** |
| Duration > 10 years | -1.67(-2.89, -0.41)*** | -0.73(-2.28 ,0.81) | -0.46(-2.24,1.29) | -0.58(-1.83, 0.67) |
| Occupation | | | | |
| Employed | ### | ### | ### | Ref |
| Jobless | | | | -0.68(-2.04 ,0.66) |
| Private business | | | | 0.09(-1.31 ,1.47 ) |
| Student | | | | 1.22(-0.56, 3.02) |
| *p < 0.05, ** p < 0.01, *** p < 0.001,### Variable not included in the regression models | | | | |
| ref: reference | | | | |

# Discussion

The quality of life of people with severe mental illness in Ethiopia was low. The mean scores of quality of life were 41.3,(40.62, 42.14), 42.8, (41.94, 43.61),38.9,(38.01, 39.84), and 41.8 ( 41.12, 42.43) with 95% CI for physical psychological, social and environmental domains, respectively. These results are supported by the conclusions of previous studies done in Brazil [19], South Africa[20] and Germany[21].

In contrast to this finding, studies from China and Turkey reported a lower results of quality of life of people with severe mental illness [22, 23]. This could be due the fact to the studies had used a small in (China n = 105 and Turkey n = 100) and also the study inclusion of first visit patients. Moreover, there is good social cohesion and collectivist life style in Ethiopia, not individualistic like developed and western nations. However, studies from Italy, Spain and the UK revealed a higher QOL scores in those countries [24–26]. This might be due to the fact that there were better availabilities of strong health care system and shorter duration of the illness in western nations.

In the present study, it was found that there was a significant correlation between the age of the patients and all domains of QOL. This finding is in line with the studies from Canada, UK and three European countries (France, Germany and UK); as the age of respondents become older, there were a better the quality of life of

people with severe mental illness. This might be due to the fact that people mostly accept themselves and their lives as they become older [27–29].

Early onset of and longer duration of the illness had a markedly diminished perception of their physical and psychological health of QOL. This finding, is parallel with a previous research in China and Malaysia [30] that states patients with early onset of mental illness were more likely to have an unfavorable prognosis, higher rates of chronicity, and reduced QOL[31]. Co morbid medical conditions had inversely correlated QOL scores in the physical and psychological domains. The result is congruent with the study from Sudan and Nigeria [32, 33].

The physical domain of quality of life of participants who were stigmatized because of their illness decreased by 2.38 unit. Nigeria (51), Jordan[34, 35], Czech [36]. Taiwan [37] as people with the stigma of mental illness perceive themselves as having a lowered self-esteem and self-efficacy which results in less satisfaction in the important life of domain.

Similarly, the better social support of people with severe mental illness positively predicts for higher QOL in almost all domains. This finding is supported by other studies of Thailand [38]. Germany[19], United state [39, 40]. and China also showed that [41].

Living alone was related to a lower physical domain of QOL score as compared with living together with the family. Those Patients who are living alone reduced their physical health of QOL by 1.92 units. This finding is in agreement with the study from Sweden[42] .

# Conclusion

The study revealed that the mean score quality of life of patients with severe mental illness in each domain was low. This demonstrates a need for improving quality of among people with severe mental illness. Moreover, prevention and early intervention of co-morbid medical conditions is also recommended too.

# Limitations

The cross sectional nature of the study design might not show the direction of cause and effect relationships between quality of life and its correlates.

# Abbreviations

AMSH=Amanuel Mental Specialized Hospital, BD=Bipolar Disorder, BSc= Bachelor of Science, CI=Confidence Interval, CMD=Common Mental Disorder, CMHS=College Of Medicine and Health Science, DSM=Diagnostic and Statistical Manual of American Psychiatric Association, ETB= Ethiopian Birr, HRQOL=Health Related Quality Of Life, MDD=Major Depressive Disorder, MMAS=Morisky Medication Adherence Scale, MSc= Master of Science, OPD= Outpatient Department, OSSS= Oslo Social Support Scale, QOL=Quality Of Life, SD= Standard Deviation, SPSS=Statistical Package for Social Science, SQOL=Subjective Quality Of Life, WHOQOL-BREF=World Health Organization Quality of Life Brief Version

## Declarations

# Ethics approval and consent to participate

Ethical clearance was obtained from Institutional review board (IRB) of University of Gondar and Ethical committee of AMSH. Since the study subjects were age ≥ 18; both informed and written consents were obtained from all participants after a brief explanation about the purpose of the study. The participants were informed as they have the right to withdraw the interview at any time they wish. The collected data were kept confident and used only for the purpose of the study. And all necessary methods were carried out in accordance with the guidelines and regulations of the institution.

# Consent to publish

Not applicable

# Data availability

All the data included in the manuscript can be accessed from the corresponding author Seid Shumye upon request through the email address of "seidshumye22@gmail.com".

# Competing interests

The authors declare that they have no competing interests.

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# Author contributions

S.S. and T.A participated in the conception, proposal writing, and data analysis. H.D., M.E. and Z.B. wrote the main manuscript. N.M. reviewed the manuscript. All Authors agree to be accountable for all aspects of the work. All authors participated in revising the article, and gave final approval of the version to be published.

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