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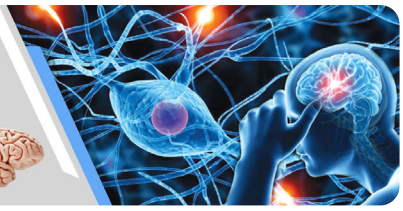
Research Article

JOURNAL OF PSYCHIATRY AND PSYCHIATRIC DISORDERS

ISSN: 2572-519X



Quality of Life of People with Schizophrenia Compared to Controls: A Case-Control Study

Abraha Gosh Woldemariam[a] and Gloria Thupayagale-Tshweneagae[b]

Abstract

Background: Studies are reporting that quality of life of people with schizophrenia is lower than the general population. However, there is scarcity of evidences regarding the quality of life of people with schizophrenia as compared to healthy people in developing countries particularly in Ethiopia.

Objective: The purpose of this study was to assess the quality of life of people with schizophrenia in comparison to healthy controls.

Design and Methods: About 140 respondents were conveniently selected and recruited in this case-control study from Adare General Hospital in which 37 respondents were people with schizophrenia (cases), while 103 respondents were healthy controls. Scores of quality of life of cases and controls were compared using Mean-Rank and Mann-Whitney U test and p-value less than 0.05 were taken as significant value.

Results: Findings of the present study demonstrated that respondents with schizophrenia (cases) have significantly lower scores of Physical component summary (U=70.5, z=-8.685, p<.001, r=-.734), and Mental component summary (U=79.0, z=-8.634, p<.001, r=-.730). scores of quality of life of schizophrenia patients were also lower on Physical functioning (U=310, z=-9.553, p<.001, r=-.808), Role Physical (U=419, z=-8.975, p<.001, r=-.759), Body pain (U=1395.5, z=-3.501, p<.001, r=-.296), General health (U=320, z=-7.514, p<.001, r=-.635), Vitality (U=353, z=-7.398, p<.001, r=-.625), Social functioning (U=213.5, z=-9.398 p<.001, r=-.794), Role emotion (U=144.5, z=-9.985, p<.001, r=-.844) and Mental health (U=178, z=-8.199, p<.001, r=-.693) domains than controls (non-cases).

Conclusion and Recommendation: The researcher had concluded that Schizophrenia patients in Ethiopia have significantly lower quality of life compared to healthy controls. Additional measures are required to improve patients' functionality and quality of life.

Keywords: Quality of life; Schizophrenia; Controls; Case-Control

Introduction

World Health Organization (WHO) defines quality of life as 'an individual's 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, and concerns' [1]. Quality of life has been identified to be an important independent predictor of relapse and rehospitalisation on people with schizophrenia [2]. Several studies in developed countries are reporting that people with schizophrenia have lower quality of life than the general population [3,4]. On his study, Yun Young Song had demonstrated there was poor quality of life among people with schizophrenia than healthy controls [5]. Matthew M. Kurtz and Arielle

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Citation: Abraha Gosh Woldemariam, Gloria Thupayagale-Tshweneagae. Quality of Life of People With Schizophrenia Compared To Controls: A Case-Control Study. Journal of Psychiatry and Psychiatric Disorders. 7 (2023): 46-51.

Received: May 16, 2023
Accepted: May 25, 2023
Published: June 12, 2023

Woldemariama AG and Thupayagale-Tshweneagae G., J Psychiatry Psychiatric Disord 2023
DOI:10.26502/jppd.2572-519X0184

Tolman lso found that insight to illness, neuro-cognition and depressive symptoms were inversely related to the quality of life of people with schizophrenia [6]. Quality of life of people with schizophrenia can be further worsened due to co-morbidities of other psychiatric disorders and substance misuse [5]. In Nigeria, 100 people with schizophrenia were screened for the presence of depression during the course of schizophrenia, and their quality of life was compared based on their depression status. According to this study, depression occurred on 27% of people with schizophrenia and the quality of life of these schizophrenia patients was considerably affected as compared to those who do not have depressive symptoms [7]. Misuse of mind-altering substances like alcohol and other drugs of abuse alone can affect users' quality of life [8,9]. For example, a longitudinal study which was done in Norway has reported that majority (59%) of research participants with substance use disorder (n=202) had seriously impaired quality of life with a score of less than 0.55 of QoL-5 scale [10]. For the most part, when this misuse of mind-altering substance co-occurs with severe mental health problems like schizophrenia, the quality of life of individuals will be amplified to the worst level [11]. However, robust information on the quality of life of schizophrenia patients comparing to healthy controls and on the combined effect of dual diagnosis of severe mental health problems and drug/substance misuse on quality of life is insufficient in Ethiopia as well as in East Africa. The present study is required to focus on filling this knowledge gap.

Methods

An observational analytical case-control study was conducted from 01 January2016to30December2016at Adare General Hospital which is located in Hawassa city, the administrative city of southern Ethiopia. 'Cases' were 18 to 50 years old that have a diagnosis of schizophrenia with no co-morbidity of medical or other psychiatric disorders and mental retardation. Controls were 18 to 50 years old that do not have any chronic medical or psychiatric disorders and those who were relatives, friends or caregivers of people with schizophrenia. Eligible schizophrenia patients and close associates who visited psychiatric clinic of Adare hospital during the study period were recruited as study subjects. A total of 140 respondents with 37 cases and 103 controls were conveniently selected and recruited in this case-control study. All existing cases who visited psychiatric clinic during the study period were invited to participate conveniently based on the following eligibility criteria:

Inclusion criteria for cases

A. Age: 18 to 50 years
B. Clinical diagnosis of schizophrenia
C. No co-morbidity of other Mental or Physical Disorders
D. No Mental Retardation

Inclusion criteria for controls

1. Age: 18 to 50 years
2. Should be relatives/friends/caregivers of people with schizophrenia
3. No history of any chronic Psychiatric or medical illness
4. No Mental Retardation

Data Collection Procedure and Tools

Trained research assistances have collected a primary data through interviews. Structured and pretested questionnaire were used in the interview. The investigator had developed a tool for socio-demographic data. However, SF-36 health survey was used to collect data on respondent's quality of life. SF-36 health survey is standardised 36 items questionnaire that were translated, adapted and validated in Ethiopian language [12]. This health survey questionnaire assesses generic health-related quality of life. It includes physical and mental concept summaries (PCS and MCS respectively) and eight specific health domains. The first four domains comprise physical component summary, while the rest four comprises the mental component summary. 1) Physical Functioning (PF) is 10 items domain that assesses both the presence and extent of physical limitations. 2) Role Physical (RP) is 4 items domain and measures role limitation owing to physical problems. 3) Bodily Pain (BP) is two items domain; one item is relevant to the intensity of body pain, while the second item is relevant to the extent of interference with work or normal activities due to body pain. 4) General Health (GH) consists of five items; one item rates health from excellent to poor and four items address respondent's view and expectations of their health. 5) Validity (VT) is four-item domain and measures energy level and fatigue to capture differences in subjective well-being. 6) Social Functioning (SF) is two-item domain assesses impact of either physical or emotional problems on respondents' social functioning and the degree to which physical or emotional problems interfere with normal social activities. 7) Role Limitation (RE) is three-item domain that assesses health-related role limitations due to emotional problems. 8) Mental health (MH) is five-item domain that includes items from the four major mental health problems (anxiety, depression, loss of emotional control and psychological wellbeing).

Scores on each domain-specific scales range from zero to 100, with higher score represents better health-related quality of life and lower scores reflect poor quality of life. There is additional one item, 'general health item', in this questionnaire. This item asks respondents to rate the amount of change they experienced in their health over a 1-year period [13].

Validity and Reliability

Validity is the ability of a tool to measure what it should

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DOI:10.26502/jppd.2572-519X0184

and reliability is the ability of a tool to produce consistent results [14]. To reduce threats of content validity, SF-36 was adapted and a forward-backward translation to local language Amharic was done following the steps set by the developers. Finally, translations were reviewed to determine whether the content of the questionnaire had appropriately addressed the research objectives. The overall reliability of the instrument (SF-36) was tested using Cronbach's alpha during the pre-test and it was found to be 0.89, which exceeds the acceptability threshold (alpha, 0.70). Cronbach's alpha was also calculated for the eight health domains and was found to be above 0.70 for all domains.

Data Analysis

Collected data were entered to computer software called Statistical Package for the Social Sciences (SPSS v23 program) and were coded, checked and cleaned for errors and prepared for analysis. Tables were used to summarise and describe variables. Median was used for the comparison of age between cases and controls and, median and percentiles were used to summarise scores of quality of life between cases and controls. While mean rank was used to compare the difference in scores of Quality of Life between cases and controls. Mann-Whitney U test and Kruskal-Wallis 1-way ANOVA were used to test score differences in quality of life between cases and controls and among different age groups and among respondents with different educational backgrounds respectively.

Ethical clearance

{X – Information removed for blind peer review}

Ethical clearance was obtained from University of X Health Studies Higher Degrees Committee (HSHDC) and necessary approval letters were obtained from responsible bodies like, X University Research and Dissemination Office, Southern Nation Nationalities and Peoples' Region Health Bureau and from officials of Adare General Hospital. Informed consent was signed from respondents before data collection.

Results

Demographic descriptions

Most of (70.3%) respondents in case group (schizophrenia patients) were younger compared to 47.6% of respondents in control group (see Table- 4.1). The difference in age between cases and controls was not by chance, respondents in case group were significantly younger (Mdn=27years) than respondents in control group (Mdn=31years), U=1360, z=-2.581, p=0.010, r=-0.218 (not in the tables). In marital status, the proportion of being single (unmarried, separated, divorced & widowed) was higher for respondents in case group than controls. Around 73% (n=27) of respondents in with schizophrenia were single (unmarried, divorced, widowed or separated) in their marital status; whereas, only 38.8% (n=40) of respondents in control group were single (Table- 4.1). On the other hand, more than half (52.4%) of respondents in control group able to learn up to secondary school (grade 9 to 12) or above (college and university); however, majority (62.2%) of respondents with schizophrenia had no formal education (illiterate) or were able to complete up to elementary school (grade 1 to 8) only, see Table- 4.1. Table- 4.1 also presents that there were important differences in employment among respondents in case and control groups. For example, 62.2% of respondents with schizophrenia were unemployed when compared to 30.1% of unemployed respondents in control group (Table- 4.1).

Scores of quality of life

Table.2 presents statistical descriptions, and floor and ceiling percentage of the two component summaries and eight health domain scores for cases and controls. Here many of the respondents in case group had lower Physical Component Summary scores (Mdn=47.3) than respondents in control group (Mdn=95). For the Mental Component Summary, approximately 75% of respondents in control group had scores above the 25th percentile, while about 75% of respondents in case group had scores less than 42.4 (75th percentile) when compared to controls, see Table 2.

Table 2 also demonstrates scores of cases and controls on the eight health domains. For the Physical Functioning (PF) Domain more than half of cases scored magnificently lower scores (Mdn=15) when compared to respondents in control group (Mdn=100). Around 43.2% of cases had scored the lowest possible score (floor effect) in the physical functioning domain, however, 93.2% of controls have scored the highest possible score (ceiling effect) of the physical functioning domain. Respondents also showed differences in their score on the role physical and general health domains. For instance, controls showed higher Role Physical (Mdn=100) and general health (Mdn=80) than cases, see Table-3.2. Although the median scores for cases and controls in body pain scale is the same, differences were pragmatic in score distribution between the two groups. For example, about 62.2% of cases had scored at the ceiling while 87.4% of controls had scored at ceiling.

Scores for vitality, social functioning, role emotion and mental health domains were also found to be different among case and controls. For the Vitality domain, controls have higher median scores (Mdn=62) than cases (Mdn=25). Similarly, controls showed higher scores of social functioning (Mdn=100), role emotion (Mdn=100) and mental health (Mdn=80) domains when compared to cases, see Table 2.

To be more confident, the researcher had used a Mann-Witney U test to compare score differences between cases and controls and had computed a mean rank score, U, z, p-value, and r. All these are presented in Table-3 above.

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DOI:10.26502/jppd.2572-519X0184

Table 1: Socio-demographic characteristics of cases and controls at Adare General Hospital, Southern Ethiopia, (N=140)

Demographic Information		Controls n=103		Cases n=37		Total N=140	
		Count	%	Count	%	No	%
Age (yrs)	≤ 30	49	47.6	26	70.3	75	53.6
	> 30	54	52.4	11	29.7	65	46.4
	Total	103	100	37	100	140	100
	Mean	32			28		
	Median	31			27		
	Mode	30[a]			28		
	St. deviation	8.22			7.687		
	Minimum	18			18		
	Maximum	50			45		
Gender	Female	25	24.3	14	37.8	39	27.9
	Male	78	75.7	23	62.2	101	72.1
Ethnicity	Sidama	62	60.2	17	46	79	56.4
	Others[b]	41	39.8	20	54.1	61	43.6
Marital status	Married	63	61.2	10	27	73	52.1
	Single[c]	40	38.8	27	73	67	47.9
Education	No or Elementary school[d]	49	47.6	23	62.2	72	51.4
	Secondary or Above[e]	54	52.4	14	37.8	68	48.6
Religion	Muslim	10	9.7	2	5.4	12	8.6
	Christian	93	90.3	35	94.6	128	91.4
Occupation	Employed	72	69.9	14	37.8	86	61.4
	Unemployed	31	30.1	23	62.2	54	38.6

Key: Single=unmarried, separated, divorced & widowed

Table 2: Sample descriptions of scores of the two component summaries and eight health domains by respondent's schizophrenia status, Adare Hospital, SNNPR, Ethiopia (N=140).

Category	Statistics	Comp. Summaries		Health domains							
		PCS	MCS	PF	RP	BP	GH	VT	SF	RE	MH
Controls	Mean	92.8	82.7	97.4	97.7	95.3	80.7	59.6	94.7	97.1	79.4
	25%	91.3	81	100	100	100	75	50	100	100	75
	Median	95	85.5	100	100	100	80	62	100	100	80
	75%	97.5	89.8	100	100	100	90	69	100	100	90
	SD	7.6	10.9	11.1	10.2	13.6	12.1	15.4	16.2	10.5	16.4
	Minimum	53	30	35	25	25	25	19	12	25	20
	Maximum	100	100	100	100	100	100	100	100	100	100
	%Floor	0	0	0	0	0	0	0	0	0	0
	%Ceiling	2.9	1	93.2	92.2	87.4	2.9	1.9	86.4	89.3	8.7
	N	103	103	103	103	103	103	103	103	103	103
Cases	Mean	49.6	27.9	32.8	38.5	82.5	44.4	24.5	30.9	24.6	31.6
	25%	35	10.4	0	0	60	22.5	9	6	0	15
	Median	47.3	21.5	15	25	100	35	25	12	0	30
	75%	66.4	42.4	62.5	78	100	69.5	38	62	46	60
	SD	20.5	21.2	38.1	39.6	26.1	24.7	19.5	32	32.9	20.8
	Minimum	5	1	0	0	0	5	0	0	0	0
	Maximum	91	84	100	100	100	82	75	100	100	80
	%Floor	0	0	43.2	32.4	2.7	0	18.9	24.3	51.4	10.8
	%Ceiling	0	0	13.5	18.9	62.2	0	0	5.4	5.4	0
	N	37	37	37	37	37	37	37	37	37	37

Key: PCS=physical component summary, MCS=mental component summary, PF=physical functioning, RP=role physical, BP=body pain, GH=general health, VT=vitality, SF=social functioning, RE=role emotion, MH=mental health

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DOI:10.26502/jppd.2572-519X0184

Table 3: Comparison of score differences between cases and controls on the eight SF-36 health domains and two component summaries at Adare Hospital, Southern Ethiopia (N=140).

SF-36 Domains and CS	Mean Rank		U	Z	p-value	r
	Cases (N=37)	Controls (N=103)				
Physical Component Summary (PCS)	20.91	88.32	70.5	-8.685	<.001	-0.734
Mental Component Summary (MCS)	21.14	88.23	79	-8.634	<.001	-0.73
Physical Functioning (PF)	27.38	85.99	310	-9.553	<.001	-0.808
Role Physical (RP)	30.32	84.93	419	-8.975,	<.001	-0.759
Body Pain (BP)	56.72	75.45	1395.5	-3.501	<.001	-0.296
General Health (GH)	27.65	85.89	320	-7.514,	<.001	-0.635
Vitality (VT)	28.54	85.57	353	-7.398	<.001	-0.625
Social Functioning (SF)	24.77	86.93	213.5	-9.398,	<.001	-0.794
Role Emotion (RE)	22.91	87.6	144.5	-9.985,	<.001	-0.844
Mental Health (MH)	23.81	87.27	178	-8.199,	<.001	-0.693

Based on Table 3, in all specific health domains and the two component summaries cases have demonstrated significantly lower scores than controls.

Discussion

Findings of the present study showed that respondents with schizophrenia have significantly lower scores of quality of life in all the eight health domains and the two component summaries than respondents in control group. These findings are similar with other studies. For example, Yun Young Song (2011:204) demonstrated that people suffering from schizophrenia had poor quality of life when compared to healthy controls. Similarly, another study in Ethiopia has reported that there were considerably low scores of quality of among schizophrenia patients when compared to the general population [12]. On the contrary, results of the present study pointed out that some socio-demographic variables like education and employment had influenced the quality of life of respondents with schizophrenia. The results of the present study demonstrate that schizophrenia patients who were uneducated or who have learned up to elementary school (up to Grade 8) had low quality of life than those who were learned up to secondary school or above (Grade 9 to college). These findings are comparable to a study conducted by [14] in which some socio-demographic characteristics were reported to affect the quality of life of schizophrenia patients. Quality of life of unemployed respondents was also lower when compared to employed respondents and findings of this study were similar to a study done by [15] and to a literature review conducted by [16,17]. In general, this study has confirmed that schizophrenia patients have significantly poor quality of life and higher functional disabilities than healthy individuals. This poor quality of life and functional disabilities among schizophrenia patients can be explained to the nature and severity of the illness schizophrenia. Both positive and negative symptoms of schizophrenia can make schizophrenia patients to experience physical, mental and social impairments in their daily lives. The psychotropic medications used for the treatment of schizophrenia in developing countries like Ethiopia are mainly conventional antipsychotics. Conventional antipsychotics are effective in reducing psychotic symptoms, particularly the positive symptoms, of schizophrenia. However, these psychotropic medications have higher side effect and are less effective on reducing the negative symptoms of schizophrenia. As result, they are less effective on improving the quality of life and functionality of schizophrenia patients in to comparable degree, in which, additional measures are required to improve patients' functionality and quality of life.

Conclusion

Results of the present study allowed the identification of discriminatory predictors contributing to the risk of having poor quality of life among schizophrenia patients. According to the findings of the present study, schizophrenia patients have showed significantly poor quality of life than healthy respondents. Respondent's Educational and occupational statuses are variables that were found to be independent predictors of poor quality of life of schizophrenia patients.

Acknowledgement

I wish to express my sincere gratitude to all who buttress me in any way at all to complete this study, including:-

University of South Africa, department of health studies for reviewing and providing me an ethical clearance.

SNNPRs Health bureau and Adare General Hospital for allowing me to conduct this study and

The staff of Adare General Hospital whose support made this research possible.

The department of psychiatry, Dilla University for their

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DOI:10.26502/jppd.2572-519X0184

patience and understanding whilst I am absent from work for conducting this study.

All of my friends who encouraged and supported me in materials and

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