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Original Research Article

Impact of depression severity on quality of life and functional impairment: a comparative cross-sectional study

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ABSTRACT

Background: Major depressive disorder (MDD) is a widespread health issue linked to high mortality rates, functional impairment, disability, increased healthcare expenses, reduced quality of life, and psychosocial dysfunction. Dysfunction in social participation, productivity, and sense of subjective well-being persists even after reduction in depressive symptoms. Achieving symptomatic remission is not enough in the treatment of depression, but also understanding, assessing functional impairment, and Quality of Life together with symptom severity should be a holistic approach for the treatment of depression.
Methods: A cross-sectional comparative study design was used. 60 individuals with depression samples were collected based on the purposive sampling method from a tertiary care hospital. Another 60 samples were collected from the general population for the normal control group on the basis of inclusion and exclusion criteria.
Results: There were significant differences found in all four domains of QoL between the experimental and control groups, where the normal control group outperformed in all four domains of QoL with higher mean scores than the experimental group. The global score of the experimental group in WHODAS varies significantly (p=0.00) from the control group. The experimental group has higher dysfunction (83.28±10.29) in comparison to the control group (59.50±9.54).
Conclusions: Functional impairment and QoL functioning are significantly affected in persons with depression. Shifting focus from only depression symptoms severity to consideration of functional impairment and QoL functioning would be a holistic approach for depression assessment and management.

Keywords: Functional Impairment, QoL, MDD

INTRODUCTION

Depression is a major mental health problem that primarily affects a person's emotional state. In major depressive disorder (MDD) a person experiences long periods of extreme sadness, loneliness, helplessness, fatigue, a feeling of worthlessness or excessive inappropriate guilt, decreased ability to think or concentrate, repeated thoughts of suicide, and also diminished that person's interest in pleasurable activities. A person having MDD also faces problems of psychomotor agitation in nearly every day activities, and most importantly, these above problems cause significant distress and impair that person's social and occupational functioning.

Major depressive disorder is a common condition with a high rate of recurrence, chronicity, and staggering economic burden, including disability in the workforce.[1] By 2030, MDD is projected to become a leading cause of

global disease burden according to the World Health Organization (WHO).[2]

Functional impairment is the reduction in physical, mental, and social functioning capacity that is sufficient to interfere with managing the day-to-day tasks of MDD and often affects a person's level of functioning in family and social relationships. Functional impairment due to depressive symptoms is also of clinical importance.[3]

Functional impairment in patients with MDD is very common; more than 90% of patients report functional impairment in at least one area during a major depressive episode and this can persist even after depressive symptoms improve.[4-6] Incomplete functional recovery has been associated with an increased risk of relapse or recurrence of depression.[7] Although there is evidence and opinions about how functional disability patterns change depending on the severity of depression.[4,8] Researchers have found more conflicting evidence that suggests depressive symptoms and functional handicap can coexist.[9] In other words, there is evidence that mood symptoms by themselves do not adequately account for the degree of a functional handicap, and that functional improvement does not invariably follow a decrease in depressed symptoms.

Research conducted in both high-income and low- and middle-income countries (LMICs) has shown that depression is linked to substantial functional impairment, reduced quality of life, greater healthcare utilization, increased morbidity and mortality risk, as well as an overall decline in health status.[10-12]

Quality of life functioning in patients with depression is significantly impacted by the symptoms of the disorder, which can affect various aspects of an individual's physical, emotional, social, and occupational well-being. Depression is not just a matter of feeling sad or having a low mood; it can interfere with the ability to perform daily activities, engage in social relationships, and maintain work or school performance.

The functional impairment in patients with depression has been emphasised.[13,14] Patients were evaluated using the DSM-IV-TR criteria and included if they had a Hamilton Depression Rating Scale (HDRS) score of 8 or higher. They administered the parent/caregiver rating form of the Korean Vineland Adaptive Behaviour Scale to assess functional outcomes in the patients. Patients with MDD showed significant differences in both global and domain-specific functional abilities compared to those of the normal group (all t>_6.35, $p<0.05$) and the patient's premorbid IQ (all t>4.30, $p<0.001$). Among clinical factors, the number of depressive episodes showed a negative correlation with overall adaptive functioning ($r = -0.32$, $p<0.05$) and expressive communication ($r = -0.42$, $p<0.01$). This study found impairment in both broad and various functional areas in patients with MDD, suggesting the importance of quantitatively assessing functional outcomes and acquiring information about functioning from informants other than patients.

A study examined data from 3,703 outpatient participants in the initial treatment phase of the Sequenced Treatment Alternatives to Relieve Depression (STAR*D) study.[13] Participants rated the severity of 14 depressive symptoms and indicated how much their depression interfered with psychosocial functioning both overall and within five specific areas: work, home management, social activities, private activities, and close relationships. The study investigated differences in how individual symptoms were linked to impairment, estimated the unique variance each symptom shared with impairment, and analysed whether symptoms had varying effects across different functional domains. Findings revealed that the association between symptoms and impairment varied significantly, with individual symptoms accounting for between 0.7% (hypersomnia) and 20.9% (sad mood) of the total explained variance. Additionally, the symptoms showed significantly different effects across the five areas of impairment. Sad mood and concentration difficulties had the strongest unique associations with functional impairment and were consistently among the most disabling symptoms across all domains. These findings support the increasing recognition that relying solely on total symptom scores can obscure important distinctions between individuals with depression and that valuable insights can be gained by closely examining individual symptoms. Of the 3,703 outpatients in the study, 2,234 (60.3%) were female, and the mean age was 41.2 years (SD=13.2). For detailed demographic information. The mean impairment score was 23.52 (SD=9.29), indicating a moderately severe level of impairment. Among participants, 307 (8.3%) reported no functional impairment, 875 (23.6%) experienced significant impairment, and 2,521 (68.1%) reported severe functional impairment. This study aimed to assess the rate of functional impairment and QoL functioning in individuals with depression and normal controls.

METHODS

Study design

This was cross-sectional comparative study used for the research.

Study period

The study was conducted from February, 2025 to November, 2025.

Study sample

This study used a purposive sampling method where 60 individuals diagnosed with depression were selected from the Mental Health Institute, S.C.B. Medical College and Hospital, Cuttack, Odisha. Another 60 samples were

collected from the general population for the normal control group on the basis of demographic homogeneity.

Inclusion criteria for the experimental group

Subjects were included in the experimental group if they met the following criteria: they were diagnosed with Major Depressive Disorder (MDD) according to the ICD-10 criteria; had a moderate level of depression based on the Beck Depression Inventory-II (BDI-II); had a minimum illness duration of six months; were aged 25-45 years; had an educational qualification of matriculation or above; and provided written informed consent to participate in the study.

Exclusion criteria for the experimental group

Subjects were excluded from the experimental group if they had comorbid psychotic disorders, any major medical condition, or a previous history of major health conditions. Participants with a prior history of receiving psychotherapy were also excluded from the study.

Inclusion criteria for the normal control group

Subjects were included in the normal control group if they had a BDI-II score of 13 or below, were aged 25-45 years, had an educational qualification of matriculation or above, and provided written informed consent to participate in the study.

Exclusion criteria for the normal control group

Subjects were excluded from the normal control group if they had a current or past history of psychiatric illness or any major medical condition.

Procedure

Ethical committee approval was obtained before the beginning of this research. 60 participants were selected in each group (experimental and normal control). The study was initiated by building rapport by defining the purpose of the study, taking a history based on a history-taking format, providing explanations about the study, and further assessments done by using BDI-II, QOL, WHODAS, and GHQ. Those who scored less than 3 in GHQ were included as part of the normal control group.

Semi-structured history taking performa

It provides information regarding socio-demographic details, along with presenting complaints, history of risk behavior, history of past illness, treatment history, personal history, and mental status examination. It helps in the diagnosis, treatment, and separating depression from other mental health conditions.

WHODAS 2.0

The WHODAS 2.0 is a widely used and practical tool designed to evaluate health and disability, whether in large populations or in day-to-day clinical settings. Released by the World Health Organization in 1988, it was primarily intended to measure functioning among psychiatric inpatients. WHODAS 2.0 measures functioning (i.e., an objective performance in a given life domain) in six domains of life. Test-retest reliability had an intra-class coefficient of 0.69–0.89 at the item level; 0.9-0.96 at the domain level; and 0.98 at the overall level.

Beck depression inventory-II

Beck Depression Inventory-II (BDI-II), is a self-administered and self-report scale that contains 21 items and assesses the severity of depressive symptoms. The highest scores mean a greater level of depression and vice versa. The test has high internal consistency coefficients for both outpatient and college student samples, with Cronbach's alpha values of .92 and .93, respectively. The revised version, BDI-II, has also shown high internal consistency (α=0.91), strong one-week test-retest reliability (r=0.93), and a substantial positive correlation (r=0.71) with the Hamilton Depression Rating Scale.

WHOQOL-BREF

The World Health Organization Quality of Life - BREF (WHOQOL-BREF) is a self-report questionnaire that assesses 4 domains of quality of life (QOL): physical health, psychological health, social relationships, and environment. Furthermore, two measures assess general health and overall quality of life.

General health questionnaire

The 12-item General Health Questionnaire (GHQ) is a self-administered screening test prepared to identify mental health problems, typically in the last two weeks. It has a 4-point Likert scale (0/1/2/3) or bimodal scoring (0-0-1-1) with a high score indicating a higher level of psychological distress. GHQ has a higher level of reliability and validity, with a mean Cronbach's alpha reliability coefficient of 0.84.

RESULTS

Table 1 compares the socio-demographic variables between the experimental and control groups with having a sample size of 60 subjects in both groups. In marital status, most of the subjects in experimental and control groups are married with having no significant difference. (p=0.35). For education group, 63.3% in experimental and 73.3% in control group are graduate. 36.7 in experimental and 26.7 in control group are matriculate, with significant value of 0.16, that indicates there is no significant difference within the group. Regarding occupation, there no significant difference between the

group, (X^2=0.30, p=0.35), as 48.3% of the experimental and 53.3 of control group were employed. In socio-economic status, nearly equal proportion of subjects belong from both rural and urban population. In experimental and control group, which indicates no significant difference. (X^2=1.20, p=0.18). There is no significant difference (X^2=0.53, p=0.29), in the sex of both the groups with having 43.3% of male, 56.7% of female in experimental group and 50% in each of the control group.

Table 1: Comparison of socio-demographic profile between experimental and control group.

Socio-demographic variables		Experimental (n=60)		Control (n=60)		χ2	P value
		Number	Percentage	Number	Percentage		
Marital status	Married	34	56.7	37	61.7	0.31	0.35
	Unmarried/ separated/widow	26	43.3	23	28.3		
Education	Matriculation	22	36.7	16	26.7	1.38	0.16
	Graduation	38	63.3	44	73.3		
Occupation	Employed	29	48.3	32	53.3	0.30	0.35
	Unemployed	31	51.7	28	46.7		
SES	Lower	40	66.7	35	58.3	0.88	0.22
	Middle+ Upper	20	33.3	25	41.7		
Habitat	Rural	29	48.3	35	58.3	1.20	0.18
	Urban + Suburban	31	51.7	25	41.7		
Sex	Male	26	43.3	30	50	0.53	0.29
	Female	34	56.7	30	50		
Factor	Group	N	Mean±SD	T	df		P value
Age	Control	60	35.48±6.39	1.76	118		0.08
	Experimental	60	33.53±5.71				

The t test results indicate, no significant difference (t=1.76, p=0.08) with mean age of the control group being 35.48 and in experimental group being 33.53, suggesting that the age distribution is similar across the two groups.

The above table 2 gives a comparative analysis of experimental and control group across four domains of WHOQOL, where significant differences found in all the domains. Control groups has better physical health function as their mean score 66.70 is higher than the mean score of experimental groups i.e., 62.15. In psychological health, control group out performs the experimental group as the control group mean is 68.1 and the experimental group mean is 56.8 and there is a significant difference between both the group with p value of 0.08. In social relationship, the control group (mean=68.01±16.67) significantly vary from the experimental group (mean = 35.40±13.57) with a t value of 11.74 and p value 0.00. In environmental health, the control group mean 73.23±11.29 which indicates significant difference from the experimental group which having been of 63.23±9.34 with a t value of 5.28 and p value 0.00. These results indicate significant differences in the outcomes, with the control group showing better QoL across all domains.

Table 2: Comparison of WHOQOL between experimental and control group.

Factors	Group	Number	Mean±SD	T	df	P value
Physical health	Control	60	66.70±11.94	2.18	118	0.031*
	Experimental	60	62.15±10.88			
Psychological health	Control	60	68.21±13.21	5.57	118	0.008**
	Experimental	60	56.68±9.06			
Social relationships	Control	60	68.01±16.67	11.74	118	0.000**
	Experimental	60	35.40±13.57			
Environment	Control	60	73.23±11.29	5.28	118	0.000**
	Experimental	60	63.23±9.34			

*P<0.05, **P<0.01

The above-mentioned table 3 gives a comparative analysis of WHODAS between the experimental and control group across seven domains as well as the global score. The global score of the experimental group varies

significantly (p=0.00) from that of the control group. The experimental group has higher dysfunction in comparison to the control group as the experimental group mean is 83.28±10.29 which is higher than the mean of the control group which is 59.50±9.54. In the cognitive domain, the control group mean is 8.26±1.94, demonstrate significantly lower score to the experimental group mean score i.e., 9.40±2.31, with a t value of 2.90 and p value is 0.04. The control group also performed lower on self-care (mean=6.80±2.33) compared to the experimental group (mean=9.58±1.61) with a t value of 7.58 (p=0.01). Similarly, in getting around, the control group mean is 7.93±1.83 lower than the experimental group mean, 11.95±3.53, with a t value of 7.80 and p value is 0.01. With a t-value of 12.30 (p<0.001), the experimental group (mean=19.56±2.83) outperforms the control group (mean=13.31±2.72) in life activities. With a t-value of 10.30 (p<0.001), the control group (mean = 15.63±3.88) is once more significantly lower than the experimental group (mean=22.10±2.92) in participation. Finally, with a t-value of 7.86 (p<0.001), the control group (mean=7.65±1.86) exhibits a significant deficit in mobility when compared to the experimental group (mean=10.66±2.34). These results highlight significant differences in functional outcomes, with the experimental group consistently higher than the control group across all domains.

Table 3: Comparison of WHODAS between experimental and control group.

Factors	Group	Number	Mean±SD	t	df	P value
Total	Control	60	59.50±9.54	13.12	118	0.00**
	Experimental	60	83.28±10.29			
Cognition	Control	60	8.26±1.94	2.90	118	0.04*
	Experimental	60	9.40±2.31			
Self-care	Control	60	6.80±2.33	7.58	118	0.00**
	Experimental	60	9.58±1.61			
Getting around	Control	60	7.93±1.83	7.80	118	0.00**
	Experimental	60	11.95±3.53			
Life activities	Control	60	13.31±2.72	12.30	118	0.00**
	Experimental	60	19.56±2.83			
Participation	Control	60	15.63±3.88	10.30	118	0.00**
	Experimental	60	22.10±2.92			
Mobility	Control	60	7.65±1.86	7.86	118	0.00**
	Experimental	60	10.66±2.34			

*P<0.05, **P<0.01

DISCUSSION

The study analyzed the functional impairment and QoL functioning of persons with depression and a normal control group. Chi-square test was carried out on categorical variables, where homogeneity was found in both the groups on marital status (p =0.35), education (p=0.16), occupation (p=0.35), SES (p=0.22), habitat (p=0.18), and sex (p=0.29).

In all four domains of WHOQOL, significant differences were found between persons with depression and the normal control group. The control group had better physical health function as their mean score 66.70 is higher than the mean score of the experimental group, i.e., 62.15. In psychological health, the control group outperforms the experimental group, as the mean is 68.1 and the experimental group mean is 56.8, along with a significant difference between both groups with a p value of 0.08. In social relationships, the control group (mean = 68.01±16.67) significantly varies from the experimental group (mean = 35.40±13.57), with a t value of 11.74 and p value .00. In environmental health, the control group mean 73.23±11.29 which indicates significant difference from the experimental group which having been of 63.23±9.34 with a t value of 5.28 and p value 0.00.

The above findings align with literature which reported poor health-related quality of life (HRQoL) in patients with depression compared to other populations of the same age.[15] Results also remained consistent with previous studies of depressive disorder; reportedly, these people have diminished interest in activities that were pleasurable, recurrent pain and discomfort, and anxiety/depression dimensions. In the study, mean EQ-VAS and utility scores of people with depression in pre-intervention were significantly lower than same age peers in the general population. Regarding utility scores, our result is consistent with previous research that people with depressive disorder reported lower utility scores than the general population (0.73 vs 0.84, respectively).

The observed relationship between depression and HRQoL aligns with the previous research findings, which corroborate and suggest that depressive symptoms may directly or indirectly affect HRQoL through the mediation of impaired functioning. Similar results were in a study comparing health-related quality of life in patients with depression and controls; along with significant

differences between the groups, it was also found that depression impacts perceived physical functioning and bodily pain, along with general health-related awareness.[16]

Functional impairment was assessed by using WHODAS in both the experimental and control groups. The global score of the experimental group varies significantly (p=0.00) from that of the control group. The experimental group has higher dysfunction in comparison to the control group, as the experimental group mean is 83.28±10.29, which is higher than the mean of the control group, which is 59.50±9.54. In the cognitive domain, the control group mean is 8.26±1.94, demonstrating a significantly lower score than the experimental group mean score, i.e., 9.40±2.31, with a t value of 2.90 and p value of 0.04. The control group also performed lower on self-care (mean=6.80±2.33) compared to the experimental group (mean=9.58±1.61) with a t value of 7.58 (p=0.01). similar result was also found in getting around, life activities, participation, and mobility. These results highlight a significant prevalence of functional impairment in all the domains of the experimental group compared to the control group.

The above findings are corroborated by a 2-year observational study among 1,159 outpatients where functional impairment in MDD was correlated with the severity of depression as well as the severity of perceived cognitive symptoms.[17] This is further supported by a study on functional disability among 1385 Chinese patients with MDD, which found that functional impairment was not only significantly prevalent among participants but also mediated the link between depressive symptoms and QOL.[18]

The present study has several limitations. Numerous confounding variables such as duration of illness, treatment pattern, and comorbid illnesses were not examined and may have impacted the results. The small sample size and the single-center design further limit the statistical power and external validity of the study. Due to its cross-sectional nature, the study cannot infer a causal relationship between depression and QoL. Lastly, the study did not employ any intervention or follow-up to assess whether the treatment improved QoL and functional ability.

CONCLUSION

The study findings highlight the noticeable impact of depression on an individual's life functioning and overall well-being. The severity of depression increases disability and reduced QoL, emphasising the multi-dimensional burden of depressive illness. Therefore, the focus should shift from mere depressive symptom severity and include a comprehensive assessment and a holistic treatment plan that targets functional impairment and QoL.

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