International Journal of Science and Research Archive
eISSN: 2582-8185
Cross Ref DOI: 10.30574/ijsra
Journal homepage: https://ijsra.net/

(RESEARCH ARTICLE)

Check for updates

Effectiveness of cognitive behavioral therapy on quality of life in persons with depression: a case-control study

Prasanta Kumar Sethi [1,*] and Jashobanta Mahapatra [2]

[1] *Ph.D. Scholar, Utkal University, Vani Vihar, Odisha, India.*
[2] *Associate Professor and HOD, Department of Clinical Psychology, Mental Health Institute (Centre of Excellence), SCB Medical College and Hospital, Cuttack, Odisha, India.*

International Journal of Science and Research Archive, 2026, 18(01), 111-117

Publication history: Received on 30 November 2025; revised on 05 January 2026; accepted on 08 January 2026

Article DOI: https://doi.org/10.30574/ijsra.2026.18.1.0003

Abstract

Background- Major depressive disorder (MDD) is a common condition with a high rate of recurrence, chronicity, and staggering economic burden, including disability in the workforce. By 2030, MDD is projected to become a leading cause of global disease burden according to the World Health Organization. Depression is strongly associated with impairment in quality of life (QOL). The impairment remains persistent even after recovery from depressive symptoms. Hence, there has been increasing recognition that symptomatic remission is an insufficient goal of treatment for MDD and that return to premorbid psychosocial functioning should be targeted.

Aims and Objectives- To find out the effectiveness of CBT in the recovery of QoL.

Methods and Materials- Pre and post test with control group intervention was used. 30 samples were collected based on the purposive sampling method from the Mental Health Institute, S.C.B Medical College and Hospital, Cuttack, Odisha. Assessment was done by using Semi-Structured History Taking Performa, Beck Depression Inventory-II, WHOQOL-BREF. SPSS 20 was used for statistical analysis of data.

Results- The combined intervention of CBT and Pharmacotherapy produced better effect than only CBT and only pharmacotherapy across all four domains of QoL. However, only CBT also produced relatively similar effects as of combined interventions in the other three domains of QoL except physical health.

Keywords: Depression; Pharmacotherapy; CBT; Physical health; Psychological health; Social relationships; Environment

1. Introduction

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

* Corresponding author: Prasanta Kumar Sethi

Major depressive disorder (MDD) 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 diseases burden according to the World Health Organization (WHO)[2].

Although depressed patients are generally less severely impaired in everyday lives than patients with other mental disorders such as autism and schizophrenia [3, 4, 5, 6], the impairment of social functioning, defined as "anindividual's ability to perform and fulfill normal social roles", is considered an important sign of depression [7] and are correlated with unemployment, disability, decreased work performance [8].

The concept of quality of life is centered on the individual's perception of his health status and his position in the socio-cultural context in which he lives and in relation to his expectations and to other aspects of his life that he values. Depressive illness leads to pronounced decrements in the quality of life QoL., as reflected in subjective well-being and the performance of routine activities and social roles. QoL is a broad construct, encompassing affective, cognitive, behavioral and physical components [9]. Depression is characterized by disturbances in many or all of these areas, which may explain why QoL is even lower in depression than in serious somatic disorders like diabetes or arthritis [10].

Studies have shown that cognitive behavioral therapy is effective in the treatment of major depressive disorder. Most studies found that cognitive behavioral therapy is equal in efficacy to pharmacotherapy and is associated with fewer adverse effects and better follow-up than pharmacotherapy. Some of the best controlled studies have indicated that the combination of both therapy is more efficacious than either therapy alone, although other studies have not found that additive effect.

Studies examining CBT as a maintenance treatment—provided alone or in combination with or sequentially with antidepressants—have found it has an enduring effect that extends beyond the end of treatment and equals the impact of continuing antidepressants [11, 12, 13, 14]. A recent meta-analysis of 10 trials where CBT had been provided to patients after acute treatment found that the risk of relapse was reduced by 21% in the first year and by 28% in the first 2 years [15].

Aims and Objectives: - The objective of the study is to find out the effectiveness of CBT on QoL functioning of individuals with depression. Aim of the study to find out the most effective intervention approach out of three different treatment patrons.

2. Material and methods

A case control study design was employed for this study, where 30 individuals diagnosed with depression as per ICD 10 were selected from Mental Health Institute, SCB Medical college, Cuttack using a purposive sampling method. All participants with moderate depression and quality of life dysfunction were selected for the study by using BDI- II test and WHO QoL questionnaires for screening. Further the 30 participants were randomly divided and assigned to three groups, namely Group A with antidepressant therapy, Group B with Antidepressant therapy as well as CBT and, Group C with only CBT. After 12 CBT sessions, the pre and post statistical analysis and interpretation was done using SPSS version 20. Before the employment of the screenings and interventions, approval from the Institutional Ethics Committee was taken, and all the participants recruited as per the inclusion- exclusion criteria, followed by an informed consent to participate in the study. They were detailly briefed regarding the research with confidentiality maintained throughout the process. Participant withdrawal autonomy without any consequences was also assured.

2.1. Tools used

2.1.1. Semi Structured History Taking Performa

It was used to collect socio-demographic details, along with clinical history details of participants of the research.

2.1.2. Beck Depression Inventory – II

Beck Depression Inventory II (BDI –II), is a self- report scale which contains 21 items. The purpose of the BDI–II is to measure the severity of depression in adults. The scores for each of the 21 questions are added and then the total is obtained. The highest possible total for the Whole test is 63.The lowest possible score for the Whole test is 0. Highest Scores mean greater level of depression and Vice- versa. . Beck's study reported a coefficient alpha rating of .92 for outpatients and .93 for college student samples. The BDI-II positively correlated with the Hamilton Depression Rating Scale, r = 0.71, had a one-week test–retest reliability of r = 0.93 and an internal consistency α=.91.

2.1.3. WHOQOL-BREF

The World Health Organization Quality of Life – BREF (WHOQOL-BREF) is a self-report questionnaire which assesses 4 domains of quality of life (QOL): physical health, psychological health, social relationships, and environment. The assessment conceptually fits with the WHO definition of QOL. WHOQOL-BREF can provide data for both research and clinical purposes.

2.2. Statistical Analysis

The data was analyzed using SPSS-20.0. Chi-square test was used to analyzed the sociodemographic details. The Kruskal-wallis H test with Dunn's post-hoc test was used to compare the pre-post intervention of the three groups.

2.3. Ethical consideration

Institutional ethics committee approval was taken before commencement of the study. Each participant were, briefed regarding the research and were included in the study post their informed consent.

3. Results

Table 1 Socio-demographic Details

Variable		Group A Count	Group B Count	Group C Count	X^2	p - value
Education	Matriculation	3	4	4	0.287	0.866
	Graduation	7	6	6		
Sex	Male	6	7	6	0.287	0.866
	Female	4	3	4		
Occupation	Employed	6	7	5	0.833	0.659
	Unemployed	4	3	5		
Religion	Hindu	10	9	10	2.069	0.355
	Muslim	0	1	0		
Marital Status	Married	5	6	6	2.118	0.714
	Unmarried	4	4	4		
	Others	1	0	0		
Age (Mean ± SD)		34.50 ± 5.12	33.00 ± 4.94	33.01 ± 5.78	-	.78

A baseline comparison of categorical variables between the three study groups (Group A, Group B and Group C) was done to find their equilibrium before intervention. Results of the Chi square test indicated that the groups did not differ by level of education (χ^2 = 0.29, p =. 866), sex (χ^2 = 0.29, p =. 866), occupation (χ^2 = 0.83, p =. 659), religiosity (χ^2 = 2.07, p =. 355), or being in relationship with someone (χ^2 = 2.12, p = 0.714). These results indicated the equivalence of demographic characteristics among these groups and an even distribution of all categorical variables. The Kruskal–Wallis test was used for testing age differences between the groups.

The mean ages (± SD) for Groups A, B, and C were 34.50 ± 5.12 years, 33.00 ± 4.94 years, and 33.01 ± 5.78 years, respectively. The test indicated no statistically significant variation in age between the groups (p = .78).

Table 2 Within Group Comparison of Physical Domain of QoL

Compared Groups	Groups	N	Pre-Mean Rank	Post-Mean Rank	Pre-U Value	Post-U value	Pre-P value	Post-P value
A Vs. B	A	10	9.4	6.55	39	10.5	0.39	0.02
	B	10	11.6	14.45				

B Vs. C	B	10	9.9	11.45	44	40.5	0.64	0.45
	C	10	11.1	9.55				
A Vs. C	A	10	12.2	14.1	33	14	0.18	0.005
	C	10	8.8	5.9				

The given table presents an analysis of pre-test and post-test comparisons between the three groups in the Physical domain of QoL. In pre-test comparison, no significant difference was found across all the three groups as the p values in the comparison between A and B was 0.39, between B and C was 0.64, and between groups A and C was 0.18. On the other hand, significant difference was found in the post-test comparison of group A and B (p= 0.02) with group B having a higher effect as indicated by the larger mean-rank (14.45). Along with that, significant difference was found in the comparison between A and C (p= 0.005), with group A producing better effects as observed by the higher mean-rank (12.2) than group C (8.8). Further, no significant difference was noted in the comparison between group B and C. To sum up the given table findings, interventions given to group A and B brought better changes in the Physical domain of QoL.

Table 3 Within Group Comparison of Psychological Domain of QoL

Compared Groups	**Groups**	**N**	**Pre-Mean Rank**	**Post-Mean Rank**	**Pre-U Value**	**Post-U value**	**Pre-P value**	**Post-P value**
A Vs. B	A	10	8.95	5.95	34.5	4.5	0.22	0
	B	10	12.05	15.05				
B Vs. C	B	10	10.9	10.1	46	41	0.75	0.45
	C	10	11.4	9.6				
A Vs. C	A	10	9.1	11.9	36	7.5	0.26	0.01
	C	10	6.25	14.75				

The above table presents before and after intervention comparison of the three groups in Psychological domain of QoL. When comparing groups A and B, no meaningful difference was found prior to the intervention (p = 0.22). However, the post-intervention results showed a highly significant difference (p = 0.00), suggesting that the intervention had an effect on group B, as post intervention mean rank of group B (15.05) was higher than group A (5.95). Post intervention comparison between group B and C showed no significant difference (p = 0.45), while the comparison between treatment group A and C showed significant difference (p = 0.01), where the mean rank of group C (14.75) is higher than group A (11.9) suggesting the effect of intervention on group C. Overall, these findings indicate that both the interventions given to the groups B and C produced similar changes in Psychological domain of QoL.

Table 4 Within Group Comparison of Social Domain of QoL

Compared Groups	**Groups**	**N**	**Pre-Mean Rank**	**Post Mean Rank**	**Pre-U Value**	**Post-U value**	**Pre-P value**	**Post-P value**
A Vs. B	A	10	8.55	5.75	30.5	2.5	0.1	0
	B	10	12.45	15.25				
B Vs .C	B	10	11.7	11.2	38	43	0.33	0.54
	C	10	9.3	9.8				
A Vs .C	A	10	9.85	6	43.5	5	0.6	0
	C	10	11.15	15				

The above table presents before and after intervention comparison of the three groups in Social domain of QoL. Prior to the intervention, there was no significant difference across the three groups when comparisons are made, where the significant values between group A and B was 0.1, between group B and C was 0.33, and between groups A and C was

0.6. However, post intervention analysis indicates significant difference between group A and B (p=0.00), with the intervention having a better effect on group B as the posttest mean-rank of group B is higher (15.25). Similar result was found in the comparison of group A and C, where group C had better effect with a higher mean-rank (15.00). However, upon comparison between Group B and C, no significant difference was found (p = 0.54). Largely, these findings suggest that interventions given to both the groups B and C brings about equal changes in the Social domain of QoL, even though group B had a higher mean-rank (11.2) in comparison to group C mean-rank (9.8).

Table 5 Within Group Comparison of Environmental Domain of QoL

Compared Groups	Groups	N	Pre-Mean Rank	Post-Mean Rank	Pre-U Value	Post-U value	Pre-P value	Post-P value
A Vs. B	A	10	8.2	6.65	27	11.5	0.07	0.002
	B	10	12.8	14.35				
B Vs. C	B	10	12.25	11.7	32.5	38	0.16	0.31
	C	10	8.75	9.3				
A Vs. C	A	10	9.3	7.2	38	17	0.35	0.009
	C	10	11.7	13.8				

The above results represent the pre-test and post-test comparison of the three groups in the Environmental domain of QoL. When comparing group A and B, no meaningful difference was found prior to the intervention (p = 0.07). Nevertheless, the post-intervention results showed a highly significant difference (p = 0.002), suggesting that the intervention had a higher effect on group B, evidenced by the post intervention mean rank of group B (14.35) which was higher than group A (6.65). Post intervention comparison between group B and C showed no significant difference (p = 0.31). Moreover, the comparison between treatment group A and C showed significant difference (p = 0.009), where the mean rank of group C (13.80) is higher than group A (7.2) suggesting the higher effect of intervention on group C. Overall, these findings indicate that both the interventions given to the groups B and C produced similar changes in Environmental domain of QoL.

4. Discussion

Homogeneity was found in categorical variables of the three study groups, as no significant difference was found in education, sex, occupation, religiosity, and relationship across the three randomly assigned treatment groups.

This study was intended to explore domain specific analysis of QoL in persons with depression. It was found that pharmacological intervention had a better impact in comparison to those who were kept in CBT only, when the physical health domain was assessed. The combined treatment of CBT and pharmacological interventions also produced similar effect as those groups who took pharmacotherapy. No such improvement was found in the group with only CBT.

The combined intervention and only CBT brought notable improvement across all other three domains of QoL namely psychological, social relationship and environment on group B and C respectively. No such changes were found in the participants who were in the only pharmacotherapy group across all the three domains of QoL. Interestingly even though combined treatment produced a little better effect on all the domains of QoL, but the only CBT intervention also produced nearly similar effect expect physical health domain. These findings coincide with numerous meta-analyses published in the last decade which have clearly shown that both psychological and pharmacological treatments are efficacious for reducing symptoms in depression [16]. Recent literature, however, has suggested that functioning and quality of life (QoL) improvement might be equally important for people with depression as their symptom amelioration [17, 18, 19].

5. Conclusion

The study showed the impact of three different treatment approaches on the quality of life (QoL) of individuals with depression. In the physical health domain of QoL, pharmacological intervention was found to be more impactful than CBT alone. The combined approach of pharmacological intervention and CBT produced greater improvement in all four domains of QoL.

Even though combined intervention inclines to slightly better overall QoL improvement, CBT alone has also produced significant improvement in psychological, social, and environmental domains of QoL, except for physical health. So, it is concluded that pharmacological therapy and CBT interventions are effective in bringing improvement in QoL, and CBT alone also has a significant effect on the improvement of QoL.

Compliance with ethical standards

Acknowledgments

The authors appreciate Swetapadma Narayani Acharya and Somani Acharya, MPhil. Clinical Psychology Trainees, of Mental Health Institute (CoE), SCB Medical College and Hospital, Cuttack, for their support throughout the study.

Disclosure of conflict of interest

No conflict of Interest to be disclosed.

Statement of ethical approval

Approval for the research was secured from the Institutional Ethics Committee.

References

[1] Gilmour H, Patten SB. Depression and work impairment. Health Rep. 2007;18:9–22.

[2] Collins PY, Patel V, Joestl SS, et al. Grand challenges in global mental health. Nature. 2011; 475(7354): 27–30.

[3] Bazin, N., Brunet-Gouet, E., Bourdet, C., Kayser, N., Falissard, B., Hardy-Baylé, M.-C.,Passerieux, C., 2009. Quantitative assessment of attribution of intentions toothers in schizophrenia using an ecological video-based task: a comparisonwith manic and depressed patients. *Psychiatry Res*. 167, 28–35, http://dx.doi.org/10.1016/j.psychres.2007.12.010.

[4] Derntl, B., Habel, U., 2011. Deficits in social cognition: a marker for psychiatric disorders? Eur. Arch. Psychiatry Clin. Neurosci. 261, 145–149, http://dx.doi.org/10.1007/s00406-011-0244-0.

[5] Lee, K.H., Farrow, T.F.D., Spence, S.A., Woodruff, P.W.R., 2004. Social cognition,brain networks and schizophrenia. Psychol. Med. 34, 391–400

[6] Weniger, G., Lange, C., Rüther, E., Irle, E., 2004. Differential impairments of facialaffect recognition in schizophrenia subtypes and major depression. PsychiatryRes. 128, 135–146, http://dx.doi.org/10.1016/j.psychres.2003.12.027.

[7] Hirschfeld, R.M., Montgomery, S.A., Keller, M.B., Kasper, S., Schatzberg, A.F., Möller,H.J., Healy, D., Baldwin, D., Humble, M., Versiani, M., Montenegro, R., Bourgeois,M., 2000. Social functioning in depression: a review. J. Clin. Psychiatry 61,268–275.

[8] Rizvi, S.J., Cyriac, A., Grima, E., Tan, M., Lin, P., Gallaugher, L.A., Mcintyre, R.S.,Kennedy, S.H., 2015. Depression and employment status in primary andtertiary care settings. Can. J. Psychiatry Rev. Can. Psychiatr. 60, 14–22.

[9] Spilker, B., 1990. Quality of Life Assessments in Clinical Trials. Raven Press, New York.

[10] Wells, K.B., Stewart, A., Hays, R.D., Burnam, M.A., Rogers, W., Daniels, M., Berry, S., Greenfield, S., Ware, J., 1989.

[11] Evans MD, Hollon, SD, DeRubeis RJ, et al. Differential relapse following cognitive therapy and pharmacotherapy for depression. Arch Gen Psychiatry. 1992;49(10):802-808.

[12] Vittengal JR, Clark LA, Dunn TW, et al. Reducing relapse and recurrence in unipolar depression: a comparative meta-analysis of cognitive-behavioral therapy's effects. J Consult Clin Psychol. 2007;75(3):475-488.

[13] Hollon SD, DeRubeis RJ, Shelton RC, et al. Prevention of relapse following cognitive therapy vs medications in moderate to severe depression. Arch Gen Psychiatry. 2005;62(4):417-422.

[14] Paykel ES, Scott J, Teasdale JD, et al. Prevention of relapse in residual depression by cognitive therapy: a controlled trial. Arch Gen Psychiatry. 1999;56(9):829-835.

[15] Clarke K, Mayo-Wilson E, Kenny J, et al. Can non-pharmacological interventions prevent relapse in adults who have recovered from depression? A systematic review and meta-analysis of randomised controlled trials. Clin Psychol Rev. 2015;39:58-70.

[16] Cuijpers P, Geraedts AS, van Oppen P, Andersson G, Markowitz JC, van Straten A. Interpersonal psychotherapy for depression: a meta-analysis. Am J Psychiatry. 2011 Jun;168(6):581-92. doi: 10.1176/appi.ajp.2010.10101411. Epub 2011 Mar 1. Erratum in: Am J Psychiatry. 2011 Jun;168(6):652. PMID: 21362740; PMCID: PMC3646065.

[17] Zimmerman M, McGlinchey JB, Posternak MA, Friedman M, Attiullah N, Boerescu D. How should remission from depression be defined? The depressed patient's perspective. Am J Psychiatry. 2006 Jan;163(1):148-50. doi: 10.1176/appi.ajp.163.1.148. PMID: 16390903.

[18] Ishak WW, Ha K, Kapitanski N, Bagot K, Fathy H, Swanson B, Vilhauer J, Balayan K, Bolotaulo NI, Rapaport MH. The impact of psychotherapy, pharmacotherapy, and their combination on quality of life in depression. Harv Rev Psychiatry. 2011 Nov-Dec;19(6):277-89. doi: 10.3109/10673229.2011.630828. PMID: 22098324.

[19] Lam RW, Parikh SV, Michalak EE, Dewa CS, Kennedy SH. Canadian Network for Mood and Anxiety Treatments (CANMAT) consensus recommendations for functional outcomes in major depressive disorder. Annals of Clinical Psychiatry. 2015 May;27(2):142-9.

Authors short Biography

	Prasanta Kumar Sethi A clinical psychologist, and a PhD scholar of Utkal University, Vani Vihar, Odisha. He has around 10 years of experience in the field of mental health, and practical knowledge in diagnosis, assessment and psychotherapy of individuals with mental health issues. He has numerous research publications and actively works in the field to advocate for mental well-being and associated research.
	Dr. Jashobanta Mahapatra Associate Professor and HOD, Department of Clinical Psychology, Mental Health Institute (Centre of Excellence), SCB Medical College and Hospital, Cuttack, Odisha, India. He has over 35+ years of experience in the field, along with being a Life-member of the Indian Association of Clinical Psychologists. He is one of the pioneers in the field of clinical psychology evolution in Odisha, and has actively played a role in various research, training, and policy-making.