Linking Depression Severity to Economic Burden and Quality of Life: A Cross-Sectional EQ-5D-5L–Based Cost of Illness Study

Aditya Parashar[1*], Piyush Mittal[2]

[1]Research Scholar, Department of Pharmacy Practice, Teerthankar Mahaveer College of Pharmacy, Teerthankar Mahaveer University, Moradabad, India. Email: adyt909@gmail.com. Orcid ID: 0000-0002-5616-7956 (Corresponding Author)

[2]Professor, School of Pharmacy, Sharda University, Greater Noida, India.

Abstract

Clinical depression is now one of the major contributors to public health concerns. Increases in Depression severity led to an economic burden on the patient, including increased healthcare spending and wage loss.

A cross-sectional observational study was conducted among patients diagnosed with clinical depression at the Department of Psychiatry, Teerthankar Mahaveer Hospital, TMU, Moradabad, U.P., India. Depression severity was assessed using the Hamilton Depression Rating Scale (HAM-D), and health-related quality of life was measured using the EQ-5D-5L value set. The cost of illness is collected and measured by a bottom-up approach.

A total of 357 patients shows that a decrease in quality of life in EQ5D5L with an increase in depression severity from 0.477(mild) to 0.314(severe). HRQOL impairment was observed across all EQ-5D-5L dimensions, with a strong negative correlation between HAM-D scores and utility ($r = 0.284$, $P < 0.001$). The average treatment cost is 5662.61. Depression severity is negatively correlated with total cost ($r = 0.597$, $P < 0.001$). whereas HRQOL did not significantly correlate with direct medical cost and non-medical cost, occupation emerged as the only significant $\beta = 0.146$, $P=0.008$) in multivariable analysis.

Increasing depression severity is associated with a substantial decrement in HRQOL and significantly higher economic burden, primarily productivity loss. HRQOL and cost components appear to operate independently of depression severity. These findings highlight the need for early screening to detect and for timely intervention to improve patient care.

Keywords: Depression, EQ-5D-5L, HAM-D, Cost of illness, Health-related quality of life, Out-of-pocket expenditure, Utility values.

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Introduction: Clinical depression, also known as major depressive disorder or simply depression emerging as one of the most common global public health challenges, affecting over 280 million people worldwide, which is estimated to be 3.8% of the total. [1] It is predominantly higher in women, individuals with chronic stress exposure, those living in rural areas and people with limited social support. [2] Depression commonly coexists with anxiety, substance use, and other psychiatric comorbidities, which further worsen its functional abilities and increase the risk of suicidal behaviour. [3] International evidence shows that depression substantially impairs decision-making ability and overall health management. [4]

Numerous studies have reported on the detrimental impact of MDD on overall health-related quality of life (HRQoL) in terms of interpersonal relationships, and psychological and physical functioning, noting that the psychological impairment can persist even after remission of MDD symptoms. [5]

Further, previous studies have shown that depression affects work productivity and increases healthcare resource utilisation (HRU), [6] leading to higher direct and indirect costs with increasing severity of depression. Studies have evaluated the burden of MDD on QoL, work productivity and activity impairment (WPAI), HRU, and health economic outcomes across depression severity groups. [7,8] The economic burden in adults with MDD is high, with 37.9% increase ($237 billion to $326 billion) in all costs from 2010 to 2018 in the US. This burden includes costs attributable not only to MDD management (37.0%) but also to comorbid conditions (63.0%). [9]

The report on Global Burden of Disease estimates the point prevalence of unipolar depressive episodes to be 1.9% for men and 3.2% for women, and the one-year prevalence has been estimated to be 5.8% for men and 9.5% for women. It is estimated that by the year 2020, if current trends for demographic and epidemiological transition continue, the burden of depression will increase to 5.7% of the total burden of disease, and it

would be the second leading cause of disability-adjusted life years (DALYs), second only to ischemic heart disease.[10] In India, 1 in 20 individuals experience depression during their lifetime, making it a major health contributor to national disease burden. [11]

In view of the morbidity, depression as a disorder has always been a focus of attention of researchers in India. Various authors have examined its prevalence, non-sociological issues, psychosocial risk factors, including life events; symptom measurement in the cultural context; comorbidity; psychoneurobiology; treatment; outcome; prevention; disability; and burden. Some studies have also sought to address various issues in children and the elderly. [12]

The economic burden of depression in India is approximately 1.2% of Gross National Product (GNP), estimated at nearly 290-485 billion rupees per year. Additionally, out-of-pocket expenditure is approximately 18,000 rupees per patient per year. [13]

State mental health survey conducted by U.P. Government says that about 8.7% population suffer from mental illness, another epidemiological study conducted in Moradabad among adolescents reported 27.5% had signs of depression, with similar rates in rural and urban settings. In response, the Indian government has integrated depression and other related disorder screening into the primary care objective. [14]

Understanding the real-world economic and humanistic burden of depression remains challenging, as the existing databases, like the National Sample Survey Organisation (NSSO), offer useful information on combined mental disorders, but not separately for depression. The global economic burden of MDD was 83.1 billion USD in 2000 and rose to 210.5 billion USD in 2010 in the USA, representing more than threefold growth over 10 years. Indirect costs, productivity losses, abstinence, and caregiver burden contributed nearly half of the total burden. [15] Similar patterns reported in Europe, China and in other low- and middle-income countries (LMICs) where underdiagnosis, undertreatment and treatment gaps have a significant impact. [16]

The EQ-5D, developed by the European Quality of Life Group (EuroQol Group), is currently one of the most widely used questionnaires in HRQoL research. [17] The original version of the EQ-5D was introduced in 1990 and contains five dimensions: *Mobility, Self-Care, Usual Activities, Pain/Discomfort*, and *Anxiety/Depression*. For each dimension, there were three levels to describe the severity, namely, *have no problems, have some problems*, and *have extreme problems*, which could describe 243 different health states. [18]

The EQ5D5L has emerged as a sensitive and globally accepted utility measure for depressive symptoms severity. Previous international research studies show that utility values range from 0.452-0.60 in mild and 0.20 – 0.40 in severe cases. [19]

Assessing HRQOL using a standardised tool is essential for capturing the functional impairment associated with depression. However, there is limited Indian evidence available on depression severity, HRQOL and cost of illness studies. This research gap limits the ability of policymakers, clinicians, and health economists to design cost-effective interventions. [20]

The present study addresses the gap by evaluating the association between depression severity, HRQOL and economic burden among patients seeking care. Using EQ-5D-5L utility values, HAMD severity categories, and other demographic parameters, this study examines how increasing depression severity affects functional impairment and out-of-pocket expenditures, including productivity loss.

Methodology: A facility-based cross-sectional observational study was conducted in the Department of Psychiatry at Teerthankar Mahaveer University Hospital, Moradabad. A total number of 357 patients are included in the study based on the inclusion criteria-patients clinically diagnosed with depression are assessed by HAM-D individual score >7, who are aged 18 years and above, and other inclusion and exclusion criteria, like other psychiatric disorders, drug abuse patients are excluded.

Sample Size- The sample size was calculated by considering the estimated population size of 5000, an anticipated prevalence, and an error of 0.05. In this process using a standard 2-step approach. First, the initial sample size for an unknown or large population (n_0) was estimated using the formula,

$$n_0 = \frac{(Z^2 \times p(1 - p))^2}{E^2}$$

The sample size was estimated using standard assumptions for a 95% confidence level, maximum variability, and a 5% margin of error. Based on these assumptions, the initial required sample size was calculated as 384.

Since the study population was finite, a finite population correction was applied. After adjustment, the required sample size was approximately 217 for a population of 500, 278 for a population of 1,000, and 357 for a population of 5,000. For very large or effectively infinite populations, the sample size remained close to 384.

Data collection-Data were collected through a combination of patient interviews or caregiver inputs and medical records. Clinical and demographic information, treatment details, and cost components are documented in a structured data collection sheet. HRQOL was measured by EQ5D5L (English, India, and Hindi) version after taking permission from the Euro QOL group for non-commercial research purposes. /Depression severity was further classified using HAM-D. The cost of illness is estimated by the bottom-up approach to capture direct medical costs (consultation, investigation, medications), direct non-medical costs (travel, food, accommodation) and indirect costs (productivity loss, absenteeism, and caregiver burden).

EQ5D5L utility values were derived using the Indian value set to quantify HRQOL and compare outcomes across the severity groups.

Statistical analysis- Outcomes were evaluated at the end of the study, and statistical analyses were performed using IBM SPSS Statistics version 31.0. Continuous variables were represented as mean ±SD, while categorical variables were presented as proportions.

All continuous variables were examined for normality (using the Shapiro–Wilk test) and homogeneity of variances (using Levene's test) to ensure that the assumptions of parametric analysis were met.

Regression analysis was employed to determine the predictive influence of sociodemographic variables (e.g., age, gender, and education) on health-related quality of life (HRQoL) as measured by the EQ-5D-5L instrument, justifying its use for identifying significant determinants of HRQoL among depressive patients.

Pearson's correlation analysis was used to evaluate the strength and direction of linear relationships between continuous variables—specifically, depression severity (HAM -D), cost-of-illness parameters, and QoL domains. This method was chosen because the data met normality assumptions, allowing for a valid interpretation of linear associations.

One-Way ANOVA was conducted to assess mean differences in QoL scores across groups with varying depression severity (mild, moderate, moderately severe, and severe). This test was justified as it determines whether statistically significant differences exist between the mean values of more than two independent groups when assumptions of normality and homogeneity of variance are satisfied.

The study focused on investigating the relationship between depression severity, health-related quality of life and cost of illness among patients diagnosed with depression. Further, a comprehensive understanding of the financial impact of clinical depression and its implications for resource allocation, policymaking, and the development of cost-effective interventions.

Result: A descriptive study was conducted on 357 participants, and a statistical analysis was conducted on all enrolled participants.

Table 1: Characteristics association between sociodemographic status of participants and Quality of Life Instruments Transformed Scale, n=357

Characteristics	Mild	Moderate	Severe	β	t	p Value
Gender						
Female	91	53	47	0.019	0.367	0.714
Male	80	54	32			
Educational qualification						
Illiterate	11	9	8	0.021	0.386	0.700
Primary school	22	10	10			
Secondary school	93	58	35			
Graduate	32	27	24			
Postgraduate	13	3	2			
Age						
18-40 Year	103	70	44	-0.025	-0.452	0.651
41-60 Year	54	26	30			
61-80 Year	13	10	4			
81 and Above Years	1	1	1			
Marital Status						
Married	102	60	54	-0.004	-0.078	0.937
Unmarried	48	36	18			
Divorced	4	3	2			
Separated	8	5	1			
Widow/Widower	9	3	4			
Occupation						
Service	48	21	12	0.146	2.661**	0.008
Professional	6	3	1			
Student	20	17	11			
Labour	21	14	4			
Business	32	20	15			
Housewife	16	17	14			
Unemployed	12	1	2			
Farmer	3	4	2			
Non-Working/	5	5	1			

Retired Personnel						
Dependent	8	5	13			
Comorbidity						
Anxiety Disorders	158	177	82	0.009	0.167	0.867
Chronic Medical Conditions	107	70	72			
Sleep Disorder	103	83	72			
Eating Disorders	14	8	10			

**Correlation is significant at the 0.01 level (2-tailed).

The present study analysed the sociodemographic and clinical profile of participants (N = 357) and examined their association with depression severity categorised as mild, moderate, and severe. The findings provide valuable insight into demographic distribution patterns and their predictive relevance.

Gender

The study population demonstrated a female predominance across all levels of depression severity. Although females appeared slightly more represented in the severe category compared to males, regression analysis showed no statistically significant association between gender and depression severity.

This suggests that while female predominance exists in the sample—consistent with epidemiological patterns of depression—the severity levels were not significantly influenced by gender in this population. Thus, biological or psychosocial gender-related differences may not be strong predictors of depression severity within this context.

Educational Qualification

Educational attainment varied considerably among participants. The majority were educated up to secondary school level, while only a small proportion were illiterate. Higher education levels (graduate and postgraduate) also showed representation across severity categories.

However, regression findings revealed no statistically significant relationship between educational qualification and depression severity. Although education is often considered protective due to improved coping skills, awareness, and access to resources, the present findings suggest that educational level alone may not substantially influence depression severity within this sample.

Age

Most participants were aged 18–40 years, followed by those aged 41–60 years. Older age groups had comparatively fewer participants. Despite a higher number of middle-aged and young adult participants, age was not significantly associated with depression severity. This indicates that depression severity was relatively evenly distributed across age groups in this population. Although midlife stressors and developmental transitions may contribute to depressive symptoms, age alone did not significantly predict severity levels in this study.

Marital Status

Married individuals constituted the largest group. Other categories, such as unmarried, divorced, separated, and widowed participants, were less represented.

Regression analysis demonstrated no significant association between marital status and depression severity. These findings suggest that, within this population, marital status did not significantly influence depression levels. While marriage can serve as a protective social support factor or a source of stress, its impact on depression severity was not statistically meaningful in this sample.

Occupation

Occupational distribution was diverse, including service employees, professionals, students, labourers, businesspersons, housewives, unemployed individuals, farmers, retired personnel, and dependents.

Notably, occupation was the only variable that demonstrated a statistically significant association with depression severity. Although the association appears modest, it indicates that employment status or type of occupation may meaningfully influence depressive severity. Occupational stress, job insecurity, workload, financial instability, and role strain may contribute to variations in depression levels. The presence of higher severe cases among certain occupational categories (e.g., housewives and dependents) suggests that psychosocial stressors related to economic dependence or domestic responsibilities may play a role.

Thus, occupation emerges as a relevant social determinant in understanding depression severity in this study.

Comorbidity

Participants reported multiple comorbid conditions, including anxiety disorders, chronic medical conditions, sleep disorders, and eating disorders. Anxiety disorders were highly prevalent across all severity categories.

Despite the high prevalence of comorbid conditions, regression analysis did not show a statistically significant association between comorbidity and depression severity. Although clinically comorbidities may exacerbate symptom burden and complicate

treatment, they did not independently predict severity levels in this statistical model.

Overall Interpretation

The findings indicate that among the examined sociodemographic and clinical variables, occupation was the only significant predictor of depression severity. Gender, educational qualification, age, marital status, and comorbidity did not demonstrate statistically significant associations.

This suggests that, in this population, structural and socioeconomic factors related to employment may exert a stronger influence on depression severity than demographic or clinical background characteristics. These results highlight the importance of workplace mental health interventions, occupational counselling, and targeted psychosocial support for vulnerable employment groups.

In conclusion, while depression affects individuals across demographic boundaries, occupational factors appear to play a more critical role in influencing severity levels within this study population.

Table 2: Correlation of Depression Severity With EQ-5D-5L Utility-Based Evaluation

Severity	Mild n=171	Moderate n=107	Severe n=79	Overall n=357	Correlation (r)	p Value
Mobility	0.124±0.100	0.164±0.133	0.144±0.126	0.140±0.118	0.121*	.022
Self-care	0.109±0.074	0.143±0.111	0.123±0.089	0.124±0.091	0.137**	.010
Usual activity	0.116±0.081	0.165±0.095	0.144±0.088	0.138±0.088	0.137**	.010
Pain/discomfort	0.138±0.128	0.130±0.107	0.185±0.159	0.146±0.131	0.155**	.003
Anxiety/depression	0.065±0.061	0.070±0.059	0.080±0.062	0.070±0.061	0.137**	.010
EQ5D5L Index Value	0.447±0.231	0.329±0.204	0314±0.258	0.382±0.237	-0.284**	.000

**Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

The relationship between depression severity and health-related quality of life (HRQoL) was evaluated using the EQ-5D-5L index value across different levels of depression, viz., mild, moderate, and severe categories. Mobility score is lower in mild depression and increases with depression severity. Similar trends are observed in other domains, such as self-care, Usual activities, and pain/discomfort. The anxiety/depression domain demonstrated a progressive increase from mild to moderate and severe, with an overall mean of 0.070. The correlation was statistically significant ($r = 0.137$, $p = 0.010$), confirming that psychological distress intensifies with increasing severity.

Importantly, the EQ-5D-5L index Indian value set showed a declining trend as severity increased: mild (0.447 ± 0.231), moderate (0.329 ± 0.204), and severe (0.314 ± 0.258), with an overall mean of 0.382 ± 0.237. A moderate and statistically significant negative correlation was observed ($r = -0.284$, $p < 0.001$), indicating that increasing severity is strongly associated with poorer overall health-related quality of life. These findings demonstrate that increasing severity is significantly associated with worsening outcomes across all EQ-5D-5L domains. While the correlations are generally weak to moderate, they are consistently significant, reinforcing that greater severity is associated with greater functional impairment and reduced quality of life, with the most pronounced impact on overall EQ-5D-5L index values.

Table 3: EQ-5D-5L Index Variation by HAM-D–Based Depression Severity: ANOVA EQ5D5L-Based Utility-Based

Depression Severity	Mean SD	Min	Max	F	p Value
Mild (n=171)	0.447±0.231	0.001	0.786	3.93	0.21
Moderate (n=107)	0.329±0.204	-0.28	0.786		
Severe (n=79)	0.314±0.258	-0.484	0.743		
PHQ9 Total (n=357)	0.382±0.237	-0.484	0.786		

In comparison of the mean EQ-5D-5L index value of depression by ANOVA across different levels of severity. The mean EQ-5D-5L index value was highest among participants with mild depression (0.447 ± 0.231), followed by those with moderate depression, and was lowest among participants with severe

depression. This demonstrates a clear declining trend in health-related quality of life as depression severity increases.

The EQ-5D-5L index values ranged from −0.484 to 0.786, indicating that some participants reported health states perceived as worse than death, particularly within the severe depression group.

However, the one-way ANOVA showed that the difference in mean EQ-5D-5L index values across severity groups was not statistically significant ($F = 3.93$, $p = 0.21$). This suggests that although a decreasing trend is evident, the variation in EQ-5D-5L index scores between groups was not strong enough to reach statistical significance in this sample.

These findings indicate a clinically meaningful decline in quality of life with increasing depression severity; however, the lack of statistical significance suggests that variability within groups or sample distribution may have reduced the ability to detect significant between-group differences. Larger sample sizes or stratified analyses may provide clearer differentiation.

Table 4: Correlation between QoL and depression severity with cost metric n=357 EQ5D5L

Cost of illness	Mean ± SD	Quality of life (EQ5D5LUtility)		Depression severity (HAM-D)	
		R	p Value	r	p Value
Cost of Illness (Direct Medical Cost)	1941.97±1560.63	0.041	0.438	-0.216**	0.000
Cost of Illness (Direct Non-Medical Cost)	947.77±488.80	-0.022	0.672	-0.132*	0.013
Cost of Illness (Indirect cost)	5662.61±4162.39	0.096	0.070	-0.555**	0.000
Cost of Illness (Total)	8552.35±4539.63	0.100	0.059	-0.597**	0.000

**Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

The associations between different components of cost of illness and both health-related quality of life (EQ-5D-5L utility) and depression severity (HAM-D) were examined using correlation analysis. Indirect costs represented the highest economic burden. These costs showed a weak, non-significant association with quality of life ($r = 0.096$, $p = 0.070$). In contrast, a strong and statistically significant negative correlation was observed between indirect costs and depression severity ($r = −0.555$, $p < 0.001$), demonstrating that productivity losses and work impairment rise substantially as depression severity increases. Total mean cost of illness followed a similar pattern ($r = 0.100$, $p = 0.059$) but showed a strong and significant negative correlation with depression severity ($r = −0.597$, $p < 0.001$). This highlights that the overall economic burden increases considerably with worsening depressive symptoms.

The findings indicate that cost components are not significantly associated with EQ-5D-5L utility scores; they are significantly associated with depression severity, particularly indirect and total costs. This suggests that productivity loss and functional impairment constitute the largest contributors to the economic burden of depression.

Discussion:

The analysis shows that occupation is the only statistically significant determinant of QoL ($p = 0.008$), while other sociodemographic variables remain non-significant. When contextualised with Indian and developed-country literature, this pattern suggests that functional socioeconomic engagement (occupation) often outweighs static demographic characteristics in determining QoL, although cross-cultural differences exist.

The present study identified occupation as the only sociodemographic factor significantly associated with quality of life, whereas gender, age, marital status, education, and comorbidities were not significantly related. These findings highlight the central role of occupational engagement in shaping individual well-being.

The findings are consistent with several Indian studies, where in table 1 occupation and employment conditions have been shown to significantly influence QoL. For instance, Babu et al reported that job stress and occupational demands significantly affected QoL among Indian software professionals, emphasising the role of workplace environment and stressors. [21] Similarly, Gupta et al found that older adults engaged in occupational activities demonstrated better QoL compared to those who were unemployed or dependent, indicating that economic productivity and social participation are key contributors to well-being. [22]

In another Indian context, Wig et al demonstrated that occupation, along with income and education, significantly influenced QoL among patients with chronic illness. [23] Furthermore, Zabeer et al reported poorer QoL among migrant construction workers, highlighting how precarious and labour-intensive occupations are linked to reduced QoL. These findings support the current study's observation that occupational status may reflect broader socioeconomic and psychosocial conditions affecting quality of life. [24] However, some Indian studies present contrasting findings. For example, Kasaudhan et al reported that occupation was not always directly associated with QoL in rural populations, suggesting that contextual factors such as community support, rural lifestyle, and cultural norms may moderate this relationship. This variability may explain why, although occupation is significant in the present study, other sociodemographic variables were not. [25]

Evidence from developed countries also supports the significant role of occupation in QoL, although the influence of other sociodemographic variables is often more pronounced. La Torre et al demonstrated that occupational stress significantly reduces health-related QoL, particularly in high-demand work environments. [26] Similarly, Vinnikov et al found that occupational categories are strong predictors of both physical and mental QoL domains in general populations. [27]

Studies such as Uchmanowicz and Panaszek further indicate that individuals in lower occupational strata (e.g., manual or blue-collar jobs) tend to have poorer QoL compared to professionals, reinforcing the importance of job type and working conditions. Additionally, [28] Maciel et al and Serinolli & Novaretti reported that while occupation plays a key role, factors such as education and marital status may also significantly influence QoL in developed settings. [29,30] The discrepancy between the present findings and some developed-country studies—where multiple sociodemographic factors are significant—may be attributed to differences in social welfare systems, healthcare access, and economic inequality. In developed countries, broader social support structures may reduce disparities linked to occupation, allowing other variables (e.g., education, marital status) to emerge as significant predictors.

The absence of significant associations between QoL and variables such as age, gender, education, and marital status in the present study contrasts with several international findings. For example, Goyal & Mohanty reported lower QoL among elderly individuals and females in India, while Maciel et al. found education to be a significant determinant in Brazil. [31]

Overall, the findings suggest that occupation is a robust and consistent determinant of QoL across both Indian and global contexts, although its relative importance may vary. In developing settings like India, occupation may act as a proxy for multiple dimensions—income, social status, and access to resources—thereby exerting a stronger influence.

Impact of depression severity on EQ5D5L quality of life domains, as represented in Table 2, has a significantly negative association between depression severity and quality of life across all domains, including Mobility, Self-care, Usual Activities, Pain/Discomfort, and Anxiety/Depression. All these conditions are significantly associated ($P \geq 0.05$) Greenberg et al., estimated that the annual economic burden reached to USD326 billion, primarily driven by indirect costs such as workplace absenteeism and reduced productivity. [32] Similarly, Luppa et al. demonstrated that the higher depression severity was associated with a decline in quality of life (EQ5D5L utility score). In this study, the mean EQ5D5L score for severe depression (0.314) is marked lower than that observed for mild depression (0.447), which confirms that deterioration in functional status parallels symptom intensification. [33] The results of Ekman et al showed that HRQOL scores in depressed patients were significantly lower than those observed in other chronic conditions, such as diabetes and arthritis, demonstrating the previous and holistic burden of depression. [13] The negative correlation between HRQOL and depression severity occurs ($r = -0.284$, P

< 0.001), reflecting similar trends observed in multi-country assessments using the EQ5D instruments. [34,35] Though the EQ-5D-5L analysis in Table 3 yielded a lower F-value (3.93, p = 0.21), the directional trend remained consistent, indicating that greater depression severity predicts lower HRQoL even when variation is moderate. These results confirm that depression exerts a graded effect on quality of life, substantiating the hypothesis of a dose–response relationship between psychological burden and functional decrease. [36]

This study also finds a significant negative correlation in Table 4 between depression severity and cost component, especially in indirect cost (r=0.555, P <0.001), highlighting that depression severity sharply declines economic productivity. Findings were recorded in the Indian context by Grover et al, who observed that the indirect cost component nearly contributed 70% of the total cost of illness. This pattern suggests an employment disruption and loss of income. [3]

This study examined the association between severity, health-related quality of life (HRQOL) and cost component among patients using the EQ5D5L utility score and HAM-D severity score. These findings demonstrate that increasing depression severity is strongly linked to a substantial decrease in quality of life and is marked by higher indirect costs. These results show depression not only as a clinical condition but also as an important public health and economic concern. [37]

Limitations and Implications: Despite providing a valuable data set, this study was limited by its methodology – a cross-sectional study design, which provides causal interference. Moreover, cost estimates were derived from patient-reported data, introducing potential recall bias. Future longitudinal studies should assess potential results in depression severity, treatment adherence, and HRQOL recovery. Although this study integrates EQ5D5L and HAM-D scales proven effective in quantifying both subjective and objective dimensions of depression.

Study findings advocate for policy-level integration focusing on early detection, proper treatment, policy to protect indirect cost expenditure, and workplace-based mental health programs to allocate both clinical and economic burden.

Conclusion: This study considered that depression imposes a dual burden by a decrease in quality of life and economic strain on affected individuals and their families. EQ-5D-5L utility value decreases sharply with the increase in severity of depression, indicating progressive impairment across mobility, self-care, usual activities, pain/discomfort, and anxiety/depression domains. Simultaneously, economic burden on individuals and on families is rising due to many factors, including wage loss, reduced work capacity, and medical bills.

The findings underscore the importance of early detection and intervention for depressive disorder, as even mild to moderate depression carries measurable humanistic and economic consequences. Integrating validated tools like EQ5D5L support better patient monitoring and more informed resource allocation. Policy makers should prioritise mental health as the primary objective to support workplace health programs, community-based services to reduce long-term disability and economic losses. Overall, the study highlights the need for comprehensive and equipped mental health services and strategies to reduce the burden of depression in India.

Patient's consent

Written consent was acquired from the patient as well as the caregiver before initiation of the interview.

Ethical approval-Ethical approval was obtained from the institutional Ethical Committee of Teerthankar Mahaveer Medical College, TMU University, Moradabad. (Ref. No. TMU/ICE/2024-25/PG/141).

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Conflicts of interest

The authors declare that there are no conflicts of interest related to this study.

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