International Journal of Medical and Pharmaceutical Research

Online ISSN-2958-3683 | Print ISSN-2958-3675
Frequency: Bi-Monthly
Available online on: https://ijmpr.in/

Original Article

Functional Impairment and Suicidal Ideation in Major Depressive Disorder with and Without Comorbid Anxiety Symptoms: A Cross-Sectional Comparative Study

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Received: 11-04-2026
Accepted: 06-06-2026
Available online: 15-06-2026

ABSTRACT

Background: Major depressive disorder (MDD) is frequently accompanied by clinically meaningful anxiety symptoms. While symptom severity is routinely measured, functional impairment often reflects the patient's day-to-day illness burden more directly, especially in outpatient and inpatient psychiatric practice.
Objectives: To compare functional impairment between patients with moderate MDD with and without comorbid anxiety symptoms, and to assess the relationship of anxiety severity with functional impairment and suicidal ideation.
Methods: This cross-sectional comparative study included 60 adults aged 18-60 years with moderate MDD, divided into two equal groups: MDD with anxiety symptoms (n=30) and MDD without anxiety symptoms (n=30). Depression severity was assessed using the Hamilton Depression Rating Scale (HAM-D), anxiety severity using the Hamilton Anxiety Rating Scale (HAM-A), functional impairment using the Work and Social Adjustment Scale (WSAS), and suicidal ideation using the Beck Scale for Suicide Ideation (BSS). Group comparisons used independent-samples t-test or chi-square test, as appropriate. Correlation and multiple regression analyses examined the association of anxiety severity with functional impairment and suicidal ideation.
Results: The anxious and non-anxious groups were comparable for age (38.27 ± 8.83 vs 39.90 ± 8.53 years, p=0.469) and HAM-D score (19.27 ± 1.64 vs 19.17 ± 1.68, p=0.816). Functional impairment was markedly higher in the anxious group (WSAS: 29.90 ± 4.60) than in the non-anxious group (14.27 ± 2.52; mean difference 15.63, 95% CI 13.70 to 17.56; p<0.001). BSS scores were also higher in the anxious group (22.80 ± 6.41 vs 6.77 ± 1.98; p<0.001). HAM-A score showed very strong positive correlations with WSAS total (rho=0.992, p<0.001) and BSS total (rho=0.988, p<0.001). In regression analysis adjusted for HAM-D score, HAM-A remained independently associated with WSAS total (beta=1.416, p<0.001).
Conclusion: Among adults with moderate MDD, comorbid anxiety symptoms were associated with substantially greater functional impairment and higher suicidal ideation despite comparable depressive severity. Routine assessment of anxiety and functioning may improve clinical risk stratification and treatment planning in psychiatric OPD/IPD settings.

Keywords: Major Depressive Disorder, Anxious Distress, Functional Impairment, Work and Social Adjustment Scale, Suicidal Ideation, HAM-A, India.

INTRODUCTION

Major depressive disorder (MDD) is not simply an episodic disorder of mood. In clinical practice, it disturbs occupational performance, family roles, interpersonal connectedness, sleep-wake rhythm, and the ability to carry ordinary social responsibilities. Globally, depression remains a major contributor to disability, and the public health relevance becomes sharper in low- and middle-income settings where help-seeking is delayed and the treatment gap is wide.[1] In India, mental disorders contribute substantially to years lived with disability, with depressive and anxiety disorders forming a large proportion of the adult mental-health burden.[2] The National Mental Health Survey further highlighted that mental morbidity in India is shaped not only by prevalence but by access, recognition, stigma, and the uneven availability of mental-health services across regions.[3]

The overlap between depression and anxiety is a familiar reality in psychiatry OPDs. Patients with MDD often present with worry, bodily tension, restlessness, fearfulness, sleep disturbance, and anticipatory distress, even when the primary syndrome remains depressive. The DSM-5 anxious distress specifier was introduced because these symptoms are clinically meaningful rather than incidental.[4] International data suggest that anxious distress in MDD is common and associated with a heavier illness profile, including greater depressive severity, workplace impairment, poorer quality of life, cognitive complaints, and higher suicidal ideation.[5] The STAR*D experience similarly showed that anxious depression is not a benign variant; patients with clinically meaningful anxiety symptoms had poorer treatment outcomes than those without prominent anxiety.[6]

Functional impairment deserves separate attention because symptom reduction does not always translate into functional recovery. A patient may report modest improvement in sadness yet continue to avoid work, withdraw from social interactions, or remain unable to participate in family responsibilities. This distinction is particularly important in the Indian context, where functional failure may be interpreted by families as poor motivation, interpersonal conflict, spiritual distress, or weakness of character before it is recognized as a psychiatric outcome. Measuring function, therefore, makes the clinical burden more visible. The Work and Social Adjustment Scale (WSAS) is a brief and validated measure of impairment across work, home management, social leisure, private leisure, and close relationships.[7,8] Clinician-rated instruments such as the Hamilton Depression Rating Scale and Hamilton Anxiety Rating Scale remain widely used to quantify depressive and anxiety severity in clinical research, allowing symptom severity to be examined alongside patient-level functioning.[9,10]

Anxiety also has a practical bearing on suicide-risk formulation. Suicidal ideation in MDD is rarely explained by depressed mood alone. Inner tension, agitation, fear that symptoms will not improve, and perceived loss of control may intensify hopelessness and make risk assessment more complex. Instruments such as the Beck Scale for Suicide Ideation (BSS) support structured quantification of suicidal thinking, but the clinical meaning depends on how scores are interpreted alongside depression severity, anxiety burden, psychosocial stressors, and current functioning.[11,12]

Indian clinical studies often focus on symptom severity, diagnostic categories, or treatment response, while functional impairment receives less emphasis. This is a gap because work, home responsibility, and social participation are the outcomes that patients and families experience most directly. The present study was therefore designed to compare functional impairment between adults with moderate MDD with and without comorbid anxiety symptoms. It also examined whether anxiety severity correlated with functional impairment and suicidal ideation after accounting for depressive severity.

MATERIALS AND METHODS

This cross-sectional comparative study was conducted in psychiatry outpatient and inpatient clinical settings. The study included 60 adults with moderate major depressive disorder, divided into two equal groups of 30 patients each: MDD with comorbid anxiety symptoms and MDD without comorbid anxiety symptoms.

Adults aged 18-60 years diagnosed with MDD and currently in a moderate depressive episode were included. Moderate depression was operationalized using HAM-D scores in the 17-23 range. Patients were grouped according to anxiety severity using HAM-A scores. Those with HAM-A scores between 18 and 30 were classified as the anxious MDD group, while those below the anxiety cut-off formed the non-anxious MDD group. For the purpose of this study, HAM-A score >=18 was used as an operational proxy for clinically significant anxiety symptoms consistent with the DSM-5 anxious distress construct; a separate DSM-5 anxious-distress interview was not documented and therefore has not been assumed. Patients outside the defined age band or not meeting the diagnostic and severity criteria were not included.

Depression severity was assessed using the Hamilton Depression Rating Scale. Anxiety severity was assessed using the Hamilton Anxiety Rating Scale. Functional impairment was measured using the Work and Social Adjustment Scale, which assesses impairment in work, home management, social leisure, private leisure, and close relationships. Suicidal ideation was assessed using the Beck Scale for Suicide Ideation. The primary outcome was total WSAS score. Secondary outcomes included individual WSAS domain scores, WSAS impairment category, and BSS score.

Categorical variables are presented as frequencies and percentages. Continuous variables are presented as mean with standard deviation. Between-group comparisons for continuous variables were performed using independent-samples t-test, with Welch correction where group variances were unequal. Categorical variables were compared using chi-square test. Correlation between anxiety severity and functional impairment, and between anxiety severity and suicidal ideation, was assessed using Spearman correlation. Multiple linear regression was used to assess whether anxiety severity remained associated with functional impairment and suicidal ideation after adjustment for depression severity. Collinearity diagnostics were examined before interpretation of adjusted models. Variance inflation factors were low for the HAM-A plus HAM-D model (VIF=1.15 for both predictors) and for the anxious-group status plus HAM-D model (VIF=1.00 for both predictors); HAM-A score and anxious-group status were not entered together in the same principal adjusted model because group allocation was itself derived from HAM-A severity. A p-value <0.05 was considered statistically significant.

Treatment status, including medication-naive state, antidepressant dose stability or washout period, was not available and was therefore not used for grouping or adjustment.

RESULTS

A total of 60 patients with moderate MDD were analysed, with 30 patients in the anxious MDD group and 30 in the non-anxious MDD group. The mean age of the anxious group was 38.27 ± 8.83 years, while the non-anxious group had a mean age of 39.90 ± 8.53 years. The age difference was not statistically significant (p=0.469). Both groups had an identical gender distribution, with 15 males and 15 females in each group. Marital status, education, and occupation were also comparable between the two groups (Table 1).

Depressive severity was closely matched between groups. The mean HAM-D score was 19.27 ± 1.64 in the anxious group and 19.17 ± 1.68 in the non-anxious group (p=0.816). In contrast, HAM-A scores differed substantially, as expected from the group classification: 22.90 ± 3.45 in the anxious group and 12.20 ± 2.11 in the non-anxious group (p<0.001). Functional impairment and suicidal ideation scores were significantly higher among patients with anxiety symptoms (Table 2 and Figure 1).

The mean WSAS total score was 29.90 ± 4.60 in the anxious group compared with 14.27 ± 2.52 in the non-anxious group. The mean difference was 15.63 points (95% CI 13.70 to 17.56), indicating a large and clinically conspicuous separation in functional impairment despite comparable depressive severity. BSS total score was also markedly higher in the anxious group (22.80 ± 6.41) than in the non-anxious group (6.77 ± 1.98), p<0.001.

Domain-wise WSAS analysis showed significantly greater impairment in every assessed domain among patients with anxiety symptoms. The anxious group had higher scores in work, home management, social leisure, private leisure, and close relationships, with all domain-level comparisons reaching p<0.001 (Table 3 and Figure 2).

WSAS category distribution further demonstrated the functional gradient between groups. In the anxious group, 13 patients had severe impairment and 11 had very severe impairment; none were classified as mild. In the non-anxious group, 24 patients were classified as mild and 6 as moderate; none had severe or very severe impairment. The category distribution differed significantly between groups (chi-square=48.00, p<0.001) (Table 4 and Figure 3).

Anxiety severity showed a very strong positive correlation with functional impairment (HAM-A vs WSAS total: Spearman rho=0.992, p<0.001) and suicidal ideation (HAM-A vs BSS total: Spearman rho=0.988, p<0.001). Scatter plots show the clear upward score gradient across the full anxiety range (Figures 4 and 5). In multiple regression, HAM-A score remained independently associated with WSAS total after adjustment for HAM-D score (beta=1.416, 95% CI 1.355 to 1.477; p<0.001). In a separate adjusted model, anxious-group status was associated with a 15.46-point higher WSAS score after controlling for HAM-D score (95% CI 14.23 to 16.69; p<0.001). HAM-A score also independently predicted BSS total after adjustment for HAM-D score (beta=1.484, 95% CI 1.400 to 1.568; p<0.001) (Table 5).

Variable	MDD with Anxiety (n=30)	MDD without Anxiety (n=30)	p-value
Age, years	38.27 ± 8.83	39.90 ± 8.53	0.469
Gender: Female	15 (50.0)	15 (50.0)	1.000
Male	15 (50.0)	15 (50.0)	
Marital status: Divorced	3 (10.0)	3 (10.0)	0.958
Married	18 (60.0)	19 (63.3)	
Unmarried	9 (30.0)	8 (26.7)	
Education: Graduate	15 (50.0)	16 (53.3)	0.947
High School	8 (26.7)	8 (26.7)	
Postgraduate	7 (23.3)	6 (20.0)	
Occupation: Employed	19 (63.3)	17 (56.7)	0.820
Student	5 (16.7)	5 (16.7)	

Unemployed	6 (20.0)	8 (26.7)	

Table 1. Baseline sociodemographic characteristics of the study groups (n=60)

Values are mean ± SD or n (%). Categorical variables were compared using chi-square test.

Measure	MDD with Anxiety	MDD without Anxiety	Mean Difference	t-value	p-value
HAM-D total	19.27 ± 1.64	19.17 ± 1.68	0.10	0.23	0.816
HAM-A total	22.90 ± 3.45	12.20 ± 2.11	10.70	14.50	<0.001
WSAS total	29.90 ± 4.60	14.27 ± 2.52	15.63	16.32	<0.001
BSS total	22.80 ± 6.41	6.77 ± 1.98	16.03	13.09	<0.001

Table 2. Clinical symptom scores and principal outcomes by group

Values are mean ± SD. Mean difference is anxious group minus non-anxious group.

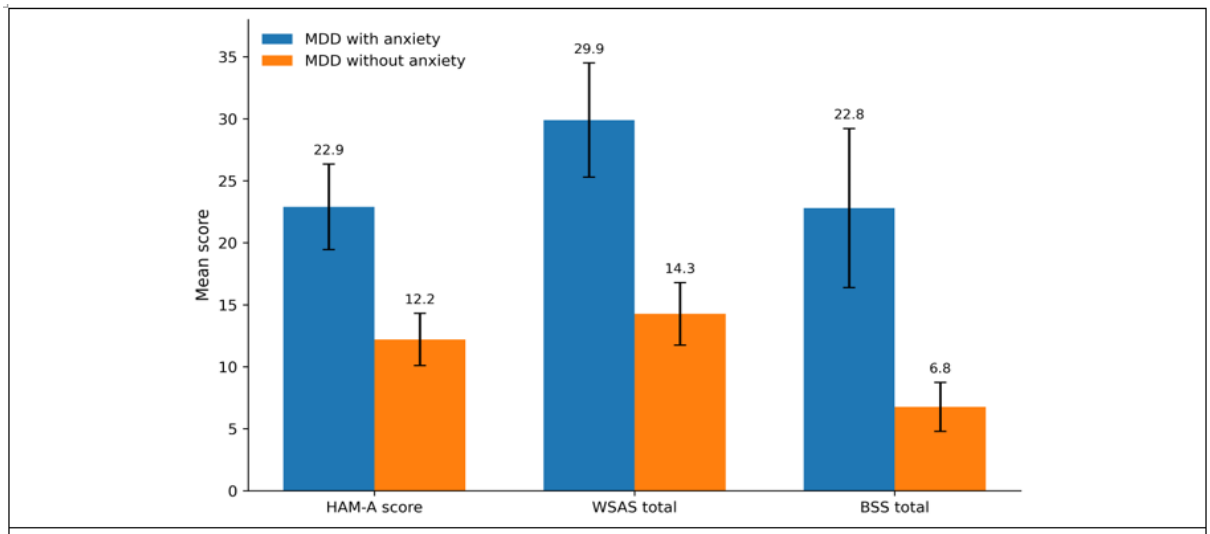

Figure 1. Group-wise comparison of anxiety severity, functional impairment, and suicidal ideation

Bars show mean scores; error bars represent standard deviation.

WSAS Domain	MDD with Anxiety	MDD without Anxiety	Mean Difference	t-value	p-value
Work	6.33 ± 1.03	2.93 ± 0.69	3.40	15.03	<0.001
Home management	5.87 ± 0.94	2.67 ± 0.61	3.20	15.70	<0.001
Social leisure	6.27 ± 0.87	3.17 ± 0.65	3.10	15.67	<0.001
Private leisure	5.53 ± 0.97	2.43 ± 0.50	3.10	15.49	<0.001
Close relationships	5.90 ± 1.03	3.07 ± 0.45	2.83	13.82	<0.001

Table 3. Work and Social Adjustment Scale domain scores by group

All WSAS domains were scored so that higher values indicate greater impairment.

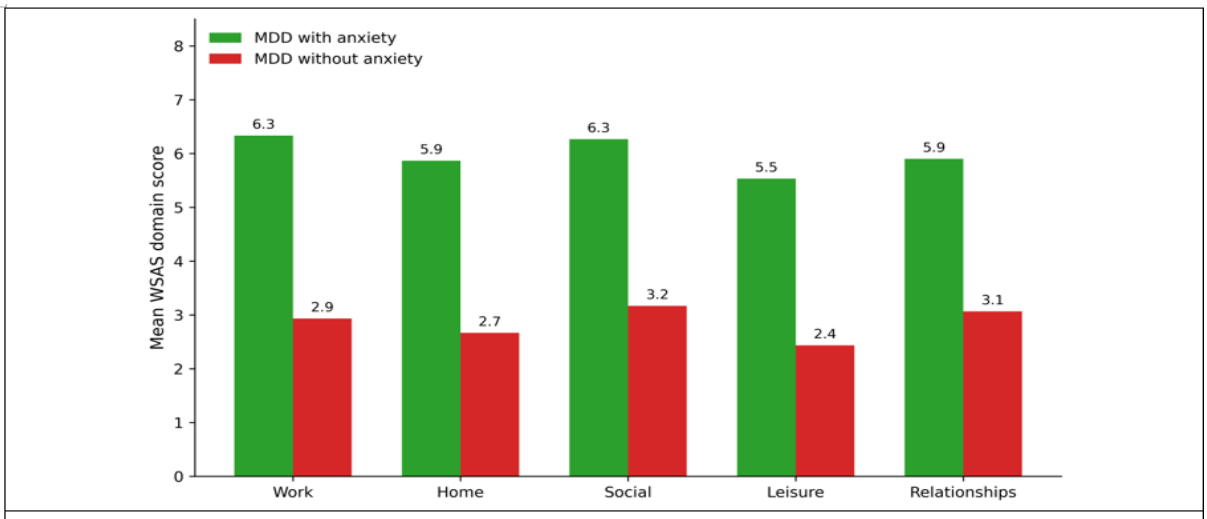

Figure 2. Domain-wise functional impairment on the Work and Social Adjustment Scale

Grouped bars display mean domain scores in the two study groups.

WSAS Category	MDD with Anxiety (n=30)	MDD without Anxiety (n=30)
Mild	0 (0.0)	24 (80.0)
Moderate	6 (20.0)	6 (20.0)
Severe	13 (43.3)	0 (0.0)
Very Severe	11 (36.7)	0 (0.0)

Table 4. Distribution of WSAS impairment categories by study group

Chi-square test: chi-square=48.00; p<0.001.

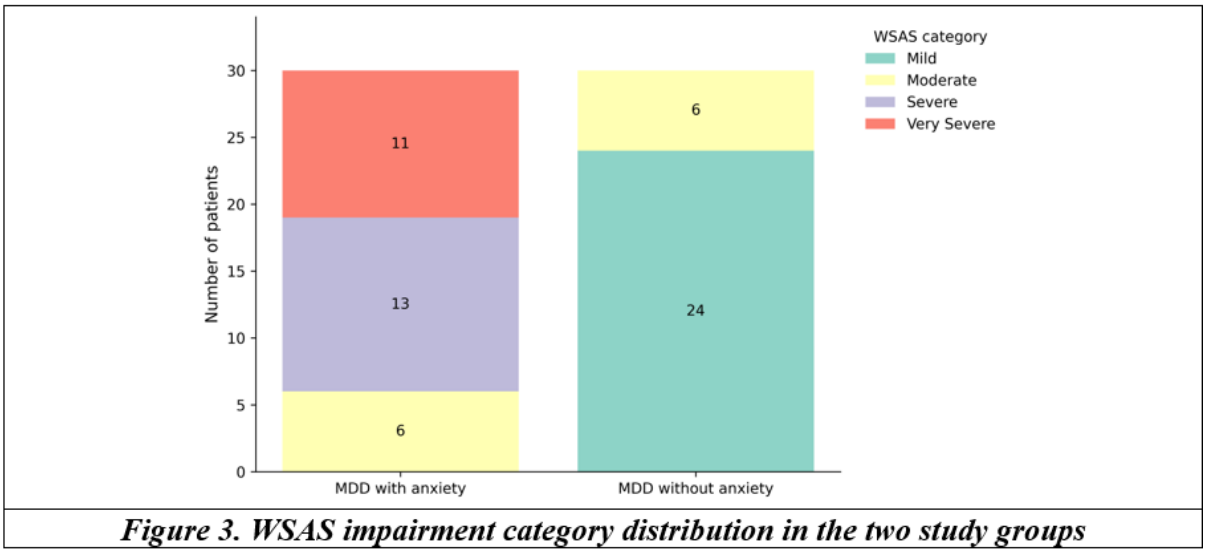

Figure 3. WSAS impairment category distribution in the two study groups

Stacked bars show the number of patients in each functional impairment category.

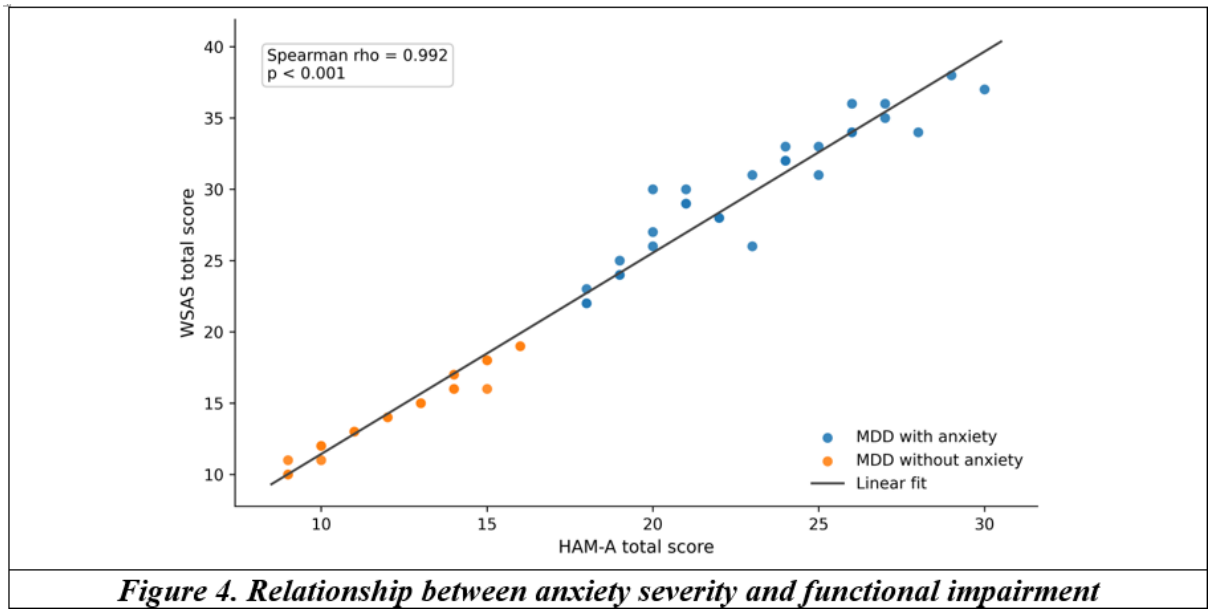

Figure 4. Relationship between anxiety severity and functional impairment

Scatter plot shows HAM-A total score against WSAS total score with a fitted linear trend line.

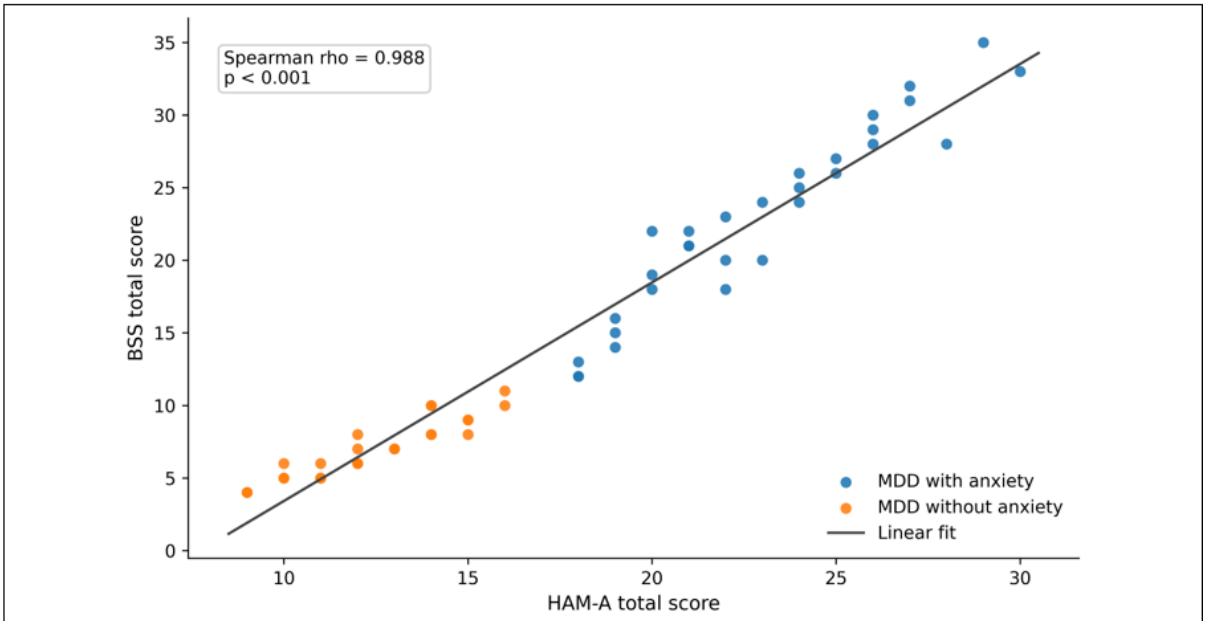

Figure 5. Relationship between anxiety severity and suicidal ideation

Scatter plot shows HAM-A total score against BSS total score with a fitted linear trend line.

Analysis	Association tested	Estimate	p-value
Spearman correlation	HAM-A vs WSAS total	rho=0.992	<0.001
Spearman correlation	HAM-A vs BSS total	rho=0.988	<0.001
Linear regression adjusted for HAM-D	HAM-A predicting WSAS total	beta=1.416 (95% CI 1.355 to 1.477)	<0.001
Linear regression adjusted for HAM-D	Anxious-group status predicting WSAS total	beta=15.46 (95% CI 14.23 to 16.69)	<0.001
Linear regression adjusted for HAM-D	HAM-A predicting BSS total	beta=1.484 (95% CI 1.400 to 1.568)	<0.001

Table 5. Correlation and adjusted regression analyses for anxiety severity and functional outcomes

Regression coefficients are unstandardized beta values. Collinearity diagnostics: VIF=1.15 for HAM-A and HAM-D in adjusted continuous-score models; VIF=1.00 for anxious-group status and HAM-D in the group-status model.

DISCUSSION

The present study shows a distinct functional burden among patients with moderate MDD who also had clinically meaningful anxiety symptoms. The two groups were comparable for age, gender distribution, and depressive severity, which strengthens the clinical interpretation of the primary outcome. Despite similar HAM-D scores, the anxious MDD group had more than double the WSAS total score observed in the non-anxious group. This pattern suggests that anxiety symptoms add a functional load that is not adequately captured when depression severity alone is used to describe illness burden.

This finding is aligned with the broader literature on anxious distress in MDD, while adding a more focused functional estimate. McIntyre and colleagues reported that DSM-5-defined anxious distress was associated with greater workplace impairment, poorer quality of life, more severe depressive illness, cognitive complaints, and higher suicidal ideation.[5] Fava and colleagues, using STAR*D data, found more specifically that remission was significantly less likely and took longer to occur in anxious depression than in non-anxious depression.[6] The present study extends this clinical logic by quantifying the relationship between anxiety severity, functioning, and suicidal ideation within a moderate-depression cohort, rather than attributing the HAM-A-WSAS or HAM-A-BSS correlations to earlier studies.

The domain-level WSAS findings are clinically useful. Work, home management, social leisure, private leisure, and close relationships were all substantially more impaired in the anxious group. This broad spread matters. Rapaport and colleagues reported clinically severe quality-of-life impairment in 63% of patients with major depressive disorder, supporting the view that depressive and anxiety syndromes carry functional consequences beyond symptom counts.[13] Anxiety in depression may not merely increase subjective distress; it can reduce initiative, create avoidance, interfere with decision-making, and make ordinary social tasks feel threatening. In Indian family settings, this may be seen as withdrawal, irritability, non-participation in household duties, or inability to resume work. Such patterns often shape treatment adherence and family response as much as the depressive symptoms themselves. Prior work on patient-reported functioning in MDD has similarly

emphasized that functional recovery is not identical to symptomatic improvement; in the STAR*D-based analysis by IsHak and colleagues, only 7% of patients with MDD reported within-normal functioning before treatment.[7]

The WSAS category distribution was striking. Most patients in the anxious group fell into severe or very severe impairment categories, whereas most patients in the non-anxious group were classified as mild. This difference was not a minor statistical shift; it represents a change in the lived phenotype of illness. The WSAS was originally described as a short, reliable, and valid instrument for impaired functioning across disorders, and its practical value lies in making these functional differences visible in a way clinicians can discuss with patients and caregivers.[8]

The association between anxiety severity and suicidal ideation also deserves attention. The anxious group had substantially higher BSS scores, and HAM-A correlated strongly with BSS total score. This is consistent with clinical observations that agitation, apprehension, fear of deterioration, and mental tension may intensify suicidal thinking in depressed patients. The Scale for Suicide Ideation was developed to quantify suicidal intention, and later psychometric work supported its use in psychiatric outpatient populations.[11,12] Nevertheless, suicidal ideation is never reducible to a scale score. It requires live clinical judgement, especially where family stress, stigma, financial strain, substance use, or access to means may alter risk rapidly.

A point of caution is required while interpreting the very high correlations observed in this cohort. Part of the strength of association is likely influenced by the group structure itself: patients were separated by HAM-A severity, and WSAS/BSS scores also clustered strongly by group. Thus, the near-perfect rho values should be read as evidence of a strong within-sample gradient rather than as an estimate expected in unselected naturalistic MDD populations. Measurement work on anxious distress in depressed patients has also cautioned that narrow specifier-based assessment may not fully represent the broader severity of anxiety.[14] The adjusted regression model helps address depressive severity, and collinearity diagnostics did not suggest problematic HAM-A/HAM-D overlap in the principal continuous-score model. Still, cross-sectional data cannot establish causal direction. Anxiety may worsen functioning; impaired functioning may also increase anxiety through loss of confidence, interpersonal criticism, or perceived failure. Most likely, both processes operate together in clinical settings.

The findings have practical implications. Routine MDD assessment in psychiatry OPD and IPD services should not stop with depressive symptom severity. A brief functional scale such as WSAS can help identify patients whose social, occupational, and family roles are disproportionately affected. Similarly, structured attention to anxiety symptoms may identify a subgroup requiring closer follow-up, psychoeducation for family members, targeted anxiety management, sleep intervention, cognitive-behavioural strategies, and careful suicide-risk monitoring. In resource-constrained Indian psychiatric services, such brief measures may be particularly useful because they translate clinical severity into functional language that patients and families readily understand.

The study has limitations. The sample size was modest and drawn from a clinical OPD/IPD setting, which may limit generalizability to community populations. The cross-sectional design prevents inference about whether anxiety preceded functional decline or emerged secondary to it. The groups were defined using HAM-A score thresholds, which may not fully distinguish anxious distress within depression from independent anxiety disorders, and this grouping strategy probably inflated the correlation coefficients between HAM-A and both WSAS and BSS. Treatment status, duration of illness, socioeconomic class, family support, substance use, and medical comorbidity were not included, although each may influence functioning and suicidal ideation. Even with these constraints, the clear separation between groups supports the need to assess anxious symptoms and functional impairment routinely in moderate MDD.

CONCLUSION

Patients with moderate MDD and comorbid anxiety symptoms demonstrated substantially greater functional impairment and higher suicidal ideation than patients with moderate MDD without anxiety symptoms, despite comparable depressive severity. Anxiety severity was strongly associated with WSAS and BSS scores, and remained independently associated with functional impairment after adjustment for HAM-D score. These findings support routine assessment of anxiety, functioning, and suicidal ideation in patients with MDD, particularly in busy Indian psychiatry OPD/IPD settings where functional decline often drives family concern and clinical urgency.

Source of Funding
Nil.

Conflict of Interest
None declared.

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