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# Role of DSM5 anxious distress specifier interview in acute manic episode: sociodemographic characteristics, clinical presentation and quality of life

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## Abstract

**Background** DSM 5 anxious distress specifier is one of the newly added specifiers for bipolar and related disorders. It may have impacts on the symptoms severity, insight, impulsivity, and different domains of quality of life of acute manic episodes of bipolar disorders. The current study aimed to study the effects of DSM 5 anxious distress specifier in acute manic episodes and its relation to sociodemographic data, clinical characteristics, and quality of life. 380 patients with the diagnosis of acute manic episode were recruited in the study, sociodemographic data, clinical features, DSM 5 anxious distress specifier interview, attitude and insight of the disorder, impulsivity and different aspects of quality of life were also evaluated in those patients.

**Results** The studied patients were divided into 2 subgroups according to the presence of high DSM5 anxious distress specifier interview score. The duration of a manic episode ( $P < 0.001$ ), the severity of the manic episode ( $P < 0.001$ ), and the presence of psychotic features ( $P = 0.002$ ) were more common in the subgroup with high DSM 5 anxious distress. DSM 5 anxious distress specifier was severe ( $P < 0.001$ ) and more frequent ( $P < 0.001$ ) in the 1st subgroup than the 2nd one. There was a statistically significant difference regarding the attentional facet of the Barratt impulsiveness scale between the studied groups ( $P = 0.002$ ). In addition, there was a statistically significant difference regarding the mean score ( $P < 0.001$ ) and severe impairment ( $P < 0.001$ ) domains of work and social adjustment scale between the 2 subgroups.

**Conclusions** DSM 5 anxious distress specifier interview is a very crucial parameter of evaluation the patients with acute manic episodes which may have implications on the clinical presentations, symptoms severity, impulsivity, and variable aspects of quality of life in those patients. All these implications might change the course, prognosis, and outcomes of an acute manic episode of bipolar disorder.

**Keywords** Anxious distress interview, Impulsivity, Manic, Quality of life

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## Background

Bipolar disorder (BD) is one of the devastating psychiatric disorders that have a prevalence of around 0.6% for type I and 0.4% for type II [1]. It is one of the commonest psychiatric disorders causing socio-occupational dysfunctioning all over the world [2]. World Health Organization (WHO) declared bipolar disorders as the sixth leading cause of years lost in young adults [3].

Bipolar disorders are manifested by alteration in mood between mania and hypomania or between depression and mixed episodes [4], depressive symptoms usually present in individuals with BD, the clinical operational criteria is the presence of manic or hypo-manic episodes [5]. During episodes of mania or hypomania, the patient may have elevated mood, including euphoria, grandiosity, psychomotor hyperactivity, increased sexual activity, decreased need for sleep, risk-taking behaviors, irritability, and aggression.

On the contrary depressive episode are manifested by anhedonia, depressed mood, vegetative symptoms, and psychomotor retardation. Mixed episodes characterize by concomitant states of mania and depression [6]. Life expectancy is decreased by 9 years on average in individuals with BD as compared with the general population [7].

Anxiety symptoms and anxiety disorders are commonly found in patients with major depressive disorder (MDD) [8], leading to suicidal ideations and attempts [9], drastic deterioration in functioning [10], impaired quality of life [11], worse prognosis [12], frequent depressive episodes [13], and poor adherence to treatment [14].

In addition, Anxiety disorders (AD) are the most frequent psychiatric disorders and are more frequently found in patients with BD than in the general population [15, 16]. Spoorthy et al. [17] noted that more than half of patients with BD will develop AD during their life and about a third of them are likely to be affected by AD throughout the course [18].

For all the previous rationalizations, the anxious distress (ANXD) specifier has been added in the *Diagnosics and Statistical Manual of Mental Disorders-5 (DSM-5)* in both sections of depressive and related disorders and bipolar disorders, also psychomotor agitation has been used for the detection of the severity of ANXD. Psychomotor agitation in MDD is related to bipolarity [15] and the ANXD specifier could be a screening tool for psychomotor agitation, which was excluded as a manic/hypomanic symptom from the operational criteria of the mixed features specifier in a major depressive episode (MDE).

DSM-5 illustrated criteria for an anxious distress specifier for major depressive disorder (MDD) and bipolar depression [6]. A measure of the severity of anxiety

based on the DSM-5 anxious distress criteria offers several advantages over the Hamilton rating scale of anxiety (HAMA) including simplicity, composed of only 5 items versus the 14 items of the HAMA, so it is easily applied and less time-consuming.

Zimmerman et al. [19] developed and validated a semi-structured interview to assess the criteria of the DSM-5 anxious distress specifier, the DSM-5 Anxious Distress Interview (DADSI)—in depressed patients. The DSM-5 Anxious Distress Specifier Interview (DADSI) evaluated the five symptoms of the anxious distress specifier.

To our knowledge, there is not enough research studying the DADSI as a semi-structured interview for evaluation of ANXD in bipolar disorders, particularly in an acute manic episode, and the impacts of this newly added ANXD on the clinical characteristics, symptoms rating, and quality of life including social and work domains of those patients.

Aim of the work: the current study aimed to study DADSI as a tool for assessment of ANXD in the acute manic episode of bipolar disorder, to find out the effects ANXD which was evaluated by DADSI on symptoms profile and impulsiveness in those patients, and to illustrate the burden of DADSI on the work and social domains of Quality of Life (QOL) in those patients.

## Methods

This is a cross-sectional study with an analytical component 380 patients with acute manic episodes of bipolar disorder were recruited in the current study from June 2020 to March 2022, the studied participants were divided into 2 groups according to the presence or absence of high scores of DADSI regarding the severity and frequency of its items.

The study included patients of both sexes, aged from 18 to 60 years, and diagnosis of a manic episode of bipolar disorders by 2 experts Psychiatrists, while the current study excluded any patient with major depressive disorders, schizophrenia, schizoaffective disorders, and other anxiety disorders, Patients with general medical conditions (renal, cardiac, hepatic, epileptic), Patients under psychotropics, Previous admission in Psychiatric units or Electroconvulsive therapy (ECT).

The study consisted of the sociodemographic data of 380 patients with acute manic episodes of bipolar disorder including age, sex, education, residence smoking, marital status, employment, and socioeconomic status. Diagnosis of acute manic episode according to the operational criteria of DSM 5 by 2 expert Psychiatrists.

The study evaluated the clinical characteristics of the patients including a family history of bipolar disorder,

Presence of psychotic features, Presence of precipitating event for 1st episode, Duration of a manic episode.

The DSM-5 Anxious Distress Specifier Interview (DADSI) assesses the 5 symptoms of the anxious distress specifier which is mentioned in DSM 5. The DADSI assess symptom presence and severity for the past week, and they also if the symptom was present for the majority of the manic episode. The severity of the items is rated on Lickert from 0 to 4, with the rating level for each item accompanied by a brief description. The total score on the measure ranges from 0 to 20. The joint-interview inter-rater reliability of the DADSI was rated reliably (mean ICC=0.93; mean kappa=0.98). The test–retest reliability of the total scale dimensional score was excellent (ICC=0.80), and the reliability of anxious distress sub typing was good (kappa=0.60). The DADSI and HAMA were significantly correlated ( $r=0.52$ ,  $P<0.001$ ). Both the DADSI and HAMA were more highly correlated with measures of anxiety than with measures of the other symptom domains [19].

Young Mania Rating scale: assess the severity of manic episodes which is an 11-item clinician-applied scale to evaluate the severity of manic symptoms [21]. A score of < 13 is considered normal, a score of 13–19 is considered minimal severity, a score of 20–26 is considered mild, a score of 27–38 is considered moderate and that of > 38 is considered severe. The reliability of the instrument was evaluated by comparing each individual item with the total YMRS score. Correlations ranged from 0.41 (appearance) to 0.85 (language and thought disorder), the joint reliability for total scores was 0.93, and the correlation between raters for individual items ranged from 0.66 (disruptive–aggressive behavior) to 0.95 (sleep). The validity of the YMRS was evaluated by comparing its performance with that of the Petterson Mania Scale, the Beigel's Mania Rating Scale (BMRS), and a global measure of mania. The correlation was 0.88 between the YMRS and a global mania rating scale, 0.71 between the YMRS and the BMRS, and 0.89 between the YMRS and the Petterson Rating Scale [20].

Barratt Impulsiveness Scale (BIS) to assess self-reported impulsivity of both healthy individuals and psychiatric populations. The instrument includes 30 items, scored on a four-point scale: (1) rarely/never, (2) occasionally, (3) often, (4) almost always/always. The three main impulsivity factors are the Attentional domain (poor attention and cognitive instability), Motor domain (motor activity and poor perseverance), and non-planning domain (poor self-control and cognitive complexity). Before adding up your scores in each section, reverse the scores of reverse questions; for example, if your score on a reverse score question was 4, then reverse it to 1. The total score is the sum of all the items [21]. The BIS

scores were positively moderately correlated with the short Impulsive behaviour scale UPPS-P-G ( $r=0.379$ ,  $P<0.001$ ), indicating good convergent validity in the Greek population for both of the scales [22].

Insight and treatment attitude questionnaire (ITAQ) to measure the awareness of having a psychiatric disorder and awareness of indication for management either by hospitalization or medications. It is a validated 11-item semi-structured interview that has a score from 0 (no insight) to 22 (maximum insight). The total score is categorized into three groups: good insight (15–22), fair insight (8–14), and poor insight (0–7). The assessment of patients' opinions via two different methodologies (totals ITAQ score and open interview) showed a high and significant correlation ( $r=0.85$ ,  $P<0.001$ ) which supported that ITAQ as a valid measure of insight [23].

Work and social adjustment scale (WSAS) which consisted of 5 questions assessing the work and social domains of QOL, the answer ranged on a Likert scale from 0=Not at all to 8=very severely. The maximum score is 40, the lower scores are better. A score of WSAS above 20 is considered a severe impairment of QOL, scores between 10 and 20 are associated with significant functional impairment and below 10 is related to subthreshold impairment. The correlations between the WSAS and both the PHQ-9 ( $r=0.58$ ,  $P<0.001$ ) and GAD-7 ( $r=0.51$ ,  $P<0.001$ ) were significant with a large effect which evidenced that WSAS is a valid tool for assessment of functional impairment related to definite disorder [24].

Statistical analysis consisted of data that were fed to the computer and analyzed using IBM Corp. Released 2013. IBM SPSS Statistics for Windows, Version 22.0. Armonk (2013, IBM Corp, NY, USA). Qualitative data were described using numbers and percentages. Quantitative data were described using median (minimum and maximum) and mean, and standard deviation for parametric data after testing normality using the Kolmogorov–Smirnov test. The significance of the obtained results was judged at the (0.05) level. Data analysis includes Qualitative data: by Chi-Square test and Monte Carlo test for comparison of 2 or more groups. Quantitative data between groups: includes Parametric tests: by Student *t* test was used to compare 2 independent groups. Spearman's correlation: is used to determine the strength and direction of a linear relationship between two non-normally distributed continuous variables and/or ordinal variables. Point–biserial correlation is used to determine the strength of a linear relationship between one continuous variable and one nominal variable with two categories including a dichotomous variable. Binary stepwise logistic regression analysis was used for the prediction of independent variables of a binary outcome. Significant

predictors in the Univariate analysis were entered into the regression model using the forward Wald method/Enter. Adjusted odds ratios and their 95% confidence interval were calculated.

**Results**

Table 1 shows the sociodemographic characteristics of the studied group: the studied group was classified into 2 subgroups according to the presence or absence of a high score of DADSI:

The 1st subgroup with high DADSI: the number of cases 200 cases including 135 (67.5) males and 65 (32.5) females, the age was  $35.74 \pm 9.61$ , regarding the employment status, 109 (54.5) were employed and 91 (45.5) were non-employed. In regard to socioeconomic status; 135 (67.5) with satisfactory income and 65 (32.5) with unsatisfactory income.

The 2nd subgroup without high DADSI: the number of cases was 180 including 118 males (65.6) and

62 females (34.4) with an age was  $35.60 \pm 9.29$ , regarding socioeconomic status; 112 (62.2) with satisfactory income and 68 (37.8) with unsatisfactory income. There was a statistically significant difference between the 2 subgroups regarding the educational level and smoking status ( $P < 0.001$ ).

Figure 1 illustrates anxious distress specifier as measured by DADSI between the 2 groups: in which there was a statistically significant difference between the studied groups regarding the severity of DADSI.

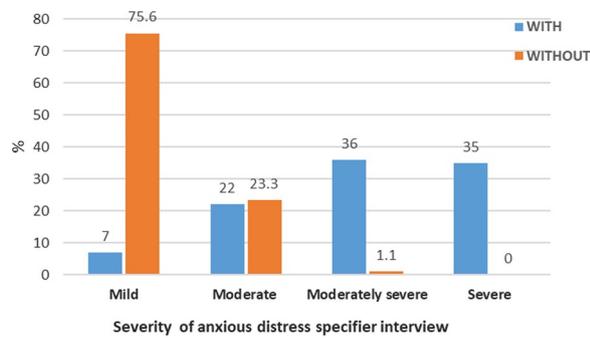
Table 2 illustrates the clinical characteristics between study groups in which there was a statistically significant difference between the studied groups regarding the presence of psychotic features ( $P = 0.002$ ), Duration of a manic episode ( $P < 0.001$ ) and Young mania rating scale ( $P < 0.001$ ). At the same time, there was no statistically significant difference between the studied groups regarding the Family history of bipolar disorder

**Table 1** Comparison of socio-demographic characteristics between studied groups

Sociodemographic characteristics	With high DADSI	Without high DADSI	Test of significance
Age/years	$35.74 \pm 9.61$	$35.60 \pm 9.29$	$t = 0.144$ $P = 0.886$
Gender			
Male	135 (67.5)	118 (65.6)	$\chi^2 = 0.161$
Female	65 (32.5)	62 (34.4)	$P = 0.688$
Education			
Elementary	46 (23)	43 (23.9)	$\chi^2_{MC} = 25.52$ $P < 0.001^*$
Secondary	72 (36)	99 (55)	
University	61 (30.5)	36 (20)	
Higher education	21 (10.5)	2 (1.1)	
Residence			
Urban	121 (60.5)	123 (68.3)	$\chi^2 = 2.53$ $P = 0.112$
Rural	79 (39.5)	57 (31.7)	
Marital status			
Single	69 (34.5)	71 (39.4)	$\chi^2_{MC} = 8.86$ $P = 0.03^*$
Married	93 (46.5)	93 (51.7)	
Divorced	29 (14.5)	10 (5.6)	
Widowed	9 (4.5)	6 (3.3)	
Smoking			
No	80 (40)	102 (56.7)	$\chi^2 = 10.55$ $P = 0.001^*$
Yes	120 (60)	78 (43.3)	
Employment			
Employed	109 (54.5)	102 (56.7)	$\chi^2 = 0.180$ $P = 0.671$
Non employed	91 (45.5)	78 (43.3)	
Socio-economic status			
Satisfactory	135 (67.5)	112 (62.2)	$\chi^2 = 1.16$ $P = 0.281$
Unsatisfactory	65 (32.5)	68 (37.8)	

*t* Student *t* test,  $\chi^2$  Chi-Square test, *MC* Monte Carlo test, *DADSI* DSM5 anxious distress specifier interview

\*Statistically significant



**Fig. 1** Illustrates the DADSI severity between the 2 groups. DADSI: DSM5 Anxious Distress Specifier Interview

( $P=0.627$ ), Presence of precipitating stressor for 1st episode ( $P=0.073$ ), and Insight and treatment attitude questionnaire ( $P=0.676$ ).

Figure 2 illustrates the Barratt impulsiveness scale between the 2 groups: in which there was a statistically significant difference regarding the attentional facet of BIS between the 2 subgroups.

Table 3 illustrates the DSM5 anxious distress specifier interview between studied groups in which there was a

statistically significant difference between the studied groups regarding the frequency and severity of items of DADSI ( $P<0.001$ ).

Figure 3 illustrates the Work and Social Adjustment Scale among the studied groups: in which there was a statistically significant difference regarding the mean score of WSAS between the studied groups.

Table 4 shows the comparison of the Barratt impulsiveness scale between studied groups in which there was a statistically significant difference between the studied groups regarding the attentional facet of the Barratt impulsiveness scale ( $P=0.002$ ), also there was no statistically significant difference between the studied groups regarding the attentional facet of Barratt impulsiveness scale regarding the motor facet ( $P=0.855$ ) and planning facet of the scale ( $P=0.728$ ).

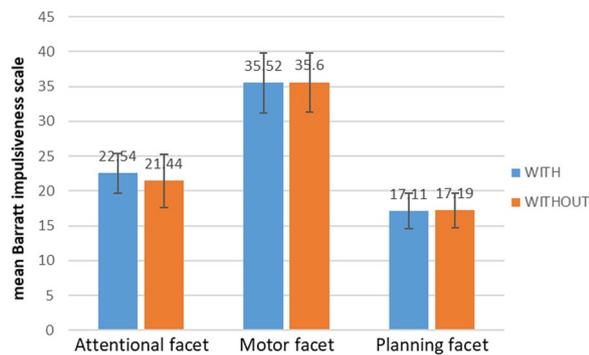
Table 5 illuminates the comparison of the Work and Social Adjustment Scale among the 2 groups in which there was a statistically significant between the studied groups regarding the mean total score of the Work social adjustment scale ( $P<0.001$ ), also in the domains of Significant impairment and Severe, worse impairment and psychopathology ( $P<0.001$ ).

**Table 2** Comparison of clinical characteristics between studied groups

Clinical characteristics	With high DADSI	Without high DADSI	Test of significance
Family history of bipolar disorder			
Yes	138 (69.0)	120 (66.7)	$\chi^2=0.237$
No	62 (31.0)	60 (33.3)	$P=0.627$
Presence of psychotic features			
Yes	121 (60.5)	136 (75.6)	$\chi^2=9.81$
No	79 (39.5)	44 (24.4)	$P=0.002^*$
Presence of precipitating stressor for 1st episode			
Yes	126 (63)	129 (71.7)	$\chi^2=3.22$
No	74 (37)	51 (28.3)	$P=0.073$
Duration of manic episode			
7–14 days	75 (37.5)	86 (47.8)	$\chi^2=28.85$
15–30 days	77 (38.5)	86 (47.8)	$P<0.001^*$
> 30 days	48 (24)	8 (4.4)	
Insight and treatment attitude questionnaire			
Good	49 (24.5)	135 (75)	$\chi^2_{MC}=0.782$
Fair	8 (4.0)	5 (2.8)	$P=0.676$
Poor	143 (71.5)	40 (22.2)	
Young mania rating scale			
Minimal	12 (6)	106 (58.9)	$\chi^2_{MC}=220.44$
Mild	36 (18)	68 (37.8)	$P<0.001^*$
Moderate	61 (30.5)	6 (3.3)	
Severe	91 (45.5)	0	

$\chi^2$  Chi-Square test, MC Monte Carlo test, DADSI the DSM-5 Anxious Distress Specifier Interview

\*Statistically significant



**Fig. 2** Illustrates the Barratt impulsiveness scale between the 2 groups

Table 6 shows the Univariate regression analysis for predictors of an acute manic episode of bipolar disorder with DADSI in which the educational level including university ( $P$  value = 0.028\*), higher education ( $P$  value = 0.003\*) frequency of DADSI present past week ( $P$  value  $\leq$  0.001\*), present majority of days of episodes ( $P$  value  $\leq$  0.001\*), 2 and 3 met ( $P$  value  $\leq$  0.001\*). Regarding the severity of DADSI in which moderate: ( $P$  value = 0.002\*), moderately severe ( $P$  value  $\leq$  0.001\*), presence of psychotic features ( $P$  value = 0.002\*), duration of manic episode > 30 days ( $P$  value = 0.004\*), moderately to severe impairment or worse psychopathology of work and social adjustment scale ( $P$  value  $\leq$  0.001\*) and Young mania rating scale in which mild ( $P$  value = 0.001\*) and moderate domain ( $P$  value  $\leq$  0.001\*).

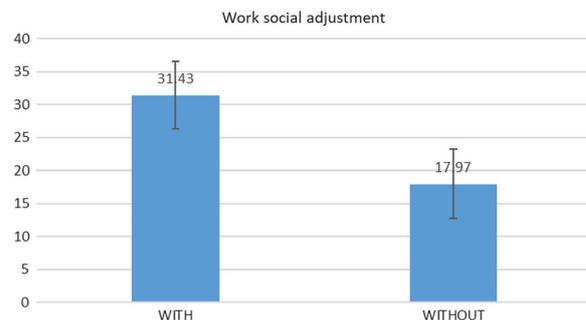
**Discussion**

The current study aimed to investigate the role of a new modality of assessment of anxious distress specifier called DADSI in cases of an acute manic episode in the symptoms profile, severity, relation to impulsiveness,

disease insight and attitude, and impacts on social and work domains of the patients’ Quality of Life (QOL). To our knowledge this is one leading study to use DADSI in an acute manic episode and its relation as a tool of evaluation of anxious distress specifier to different variables in those patients, also the studies that examined these variables were scarce.

The score of DADSI as a measurement of anxious distress specifier was high in the lower level of education, in divorced and widowed patients and smokers which is in agreement with previous studies conducted in depressed patients with high anxious distress specifier [8, 25, 26]. On the contrary, other studies found there was no significant difference in sociodemographic characteristics between the patients with and without anxious distress [27].

This study revealed that the psychotic features were more common in the subgroup without a high level of ANXD by the new semi-structured DADSI which was not consistent with the studies [25, 28] in which was noted that patients of Major Depressive Disorder (MDD) with high DADSI have more evident psychotic features



**Fig. 3** Illustrates the work and social adjustment scale among the studied groups

**Table 3** Comparison of DSM5 anxious distress specifier interview between studied groups

DSM5 anxious distress specifier interview	With high DADSI	Without high DADSI	Test of significance
<b>Frequency</b>			
1—absent	9 (4.6)	103 (86.6)	$X^2$ MC = 225.84 $P < 0.001^*$
2—present past week	42 (21.5)	14 (11.8)	
3—present majority of days of episodes	65 (33.3)	1 (0.8)	
4—2 and 3 met	79 (40.5)	1 (0.8)	
<b>Severity</b>			
1—Mild	14 (7)	136 (75.6)	$X^2$ MC = 235.09 $P < 0.001^*$
2—Moderate	44 (22)	42 (23.3)	
3—Moderately severe	72 (36)	2 (1.1)	
4—Severe	70 (35)	0	

† Student t test,  $X^2$  Chi-Square test, MC Monte Carlo test, DADSI the DSM-5 Anxious Distress Specifier Interview

\*Statistically significant

**Table 4** Comparison of Barratt impulsiveness scale between studied groups

Barratt impulsiveness scale	With DADSI	Without DADSI	Test of significance
Attentional facet	22.54 ± 2.87	21.44 ± 3.87	$t = 3.14$ $P = 0.002^*$
Motor facet	35.52 ± 4.28	35.60 ± 4.26	$t = 0.182$ $P = 0.855$
Planning facet	17.11 ± 2.53	17.19 ± 2.47	$t = 0.348$ $P = 0.728$

$t$  Student  $t$  test, DADSI the DSM-5 Anxious Distress Specifier Interview

\*Statistically significant

**Table 5** Illustrates the work and social adjustment scale among the two groups

Clinical characteristics	With high DADSI	Without high DADSI	Test of significance
Mean work social adjustment scale	31.43 ± 5.09	17.97 ± 5.24	$t = 25.37$ $P < 0.001^*$
Significant impairment	5 (2.5)	133 (73.9)	$\chi^2 = 208.76$
Severe or worse impairment	195 (97.5)	47 (26.1)	$P < 0.001^*$

$\chi^2$  Chi-Square test, MC Monte Carlo test, DADSI the DSM-5 Anxious Distress Specifier Interview

\*Statistically significant

and indicated for antipsychotic medications after getting resistance to ordinary antidepressants.

In addition, the current study found that patients of an acute manic episode of bipolar disorder with a high level of ANXD evaluated by the new modality of assessment of DADSI have a longer duration of the manic manifestations than the subgroup with a low level of DADSI, this is in line with studies conducted on MDD patients in which longer duration of depressive episode and longer time for remission [28, 29]. In addition, another study found that patients with MDD after 2 years of adequate antidepressants; 43.2% with a high score of ANXD examined by DADSI failed to get remission in comparison with 21.3% without this specifier [30]. On the other hand, another study concluded that no difference in the duration of depressive episodes and time of remission in patients of MDD with or without anxious distress features [31, 32].

Regarding the Young mania rating scale, the current study revealed a more severe score in the patients with the acute manic episode with high ANXD score assessed by DADSI than those without, this is in harmony with a study mentioned that patients with MDD with high anxious distress features have higher manic scores on rating scales than those without [27]. In the same vein, some studies suggested a debate that the anxious distress specifier utilized for the detection of anxiety manifestations in bipolar disorders might be a separate entity or within the continuum of bipolarity per-se [18, 33].

The current study found the attentional domain of the Barratt Impulsiveness scale (BIS) is statistically significant between the 2 subgroups ( $P = 0.002$ ), this is in line with previous studies that concluded attentional and response inhibition domains of impulsivity were more affected by the presence of high anxious distress features in bipolar disorders [34, 35]. Some researchers found that acute mania was associated with impairment of both attentional and motor facets of BIS, while in depression, non-planning impulsivity was much impaired. Therefore, variable domains of impulsivity may be related to different mood states in bipolar disorders [36].

On the contrary, there was a study that noted that there was no significant difference regarding the domains of (BIS) between the bipolar patients and the healthy control group [37].

In addition, the current study found that the mean score of work and social adjustment scale (WSAS) was higher in the subgroup with high ANXD evaluated by DADSI than the subgroup without, also there was a statistically significant difference regarding the severe or worse impairment of WSAS between the studied 2 subgroups, these results are consistent with previous studies noted that patients of bipolar disorders with anxious distress features were more likely to have poor work, social and functional domains of QOL, also they were of the lower level of life and health enjoyment [38, 39]. On the contrary, another study found that QOL was not correlated to the severity of manic manifestations in general

**Table 6** Univariate regression analysis for predictors of acute manic episode of bipolar disorder with DADSI

	$\beta$	P value	Odds ratio (95% CI)
Education			
Elementary r			1
Secondary	0.872	0.347	2.39 (0.389–14.70)
University	2.72	0.028*	15.21 (1.35–171.59)
Higher education	5.06	0.003*	58.37 (5.70–67.8)
Marital status			
Single r	1		1
Married	−0.556	0.481	0.574 (0.122–2.69)
Divorced	−0.695	0.667	0.499 (0.021–11.82)
Widow	1.64	0.310	5.16 (0.218–122.02)
Smoking			
No r	−0.023	0.975	0.977 (0.226–4.22)
Yes			
Frequency			
Absent r	1		1
Present past week	4.46	<0.001*	86.65 (10.79–96.34)
Present majority of days of episodes	7.25	<0.001*	50.24 (40.69–58.35)
2 and 3 met	8.05	<0.001*	31.17 (13.45–72.17)
Severity			
Mild r		1	
Moderate	2.51	0.002*	12.31 (2.51–60.37)
Moderately severe	5.04	<0.001*	155.16 (13.83–160.58)
Severe	22.9	0.996	Undefined
Attentional facet	0.058	0.588	1.059 (0.860–1.31)
Presence of psychotic features			
Yes	0.702	0.002*	2.02 (1.29–3.14)
No r			
Duration of manic episode			
7–14 days r		1	
15–30 days	0.228	0.619	1.26 (0.51–3.09)
>30 days	2.07	0.004*	7.96 (1.97–32.22)
Work social adjustment scale			
Significant impairment r			
Moderately to severe or worse impairment	4.74	<b>&lt;0.001*</b>	113.90 (23.04–150.28)
Young mania rating scale			
Minimal r	1		
Mild	1.58	0.001*	4.84 (1.89–12.39)
Moderate	5.09	<0.001*	160.02 (28.69–190.33)
Severe	23.46	0.995	Undefined

overall % predicted = 91.3%

$\beta$  beta weight; reference group, CI confidence interval, DADSI DSM5 anxious distress specifier interview

\*Statistical significance

The significance of entries in boldface are significant

[40] but this domain is not well-studied in the presence of anxious distress specifier.

The current study revealed that the following risk factors were predictors of the acute manic episode with the presence of a high score of DADSI as a newly developed

semi-structured interview for ANXD: educational level including university, higher education, frequency of DADSI, the severity of DADSI, presence of psychotic features, duration of manic episode >30 days, moderately to severe impairment or worse psychopathology of

work and social adjustment scale, and Young mania rating scale including the mild and moderate domains. All these results are in agreement with the previous studies [41–43].

**Limitations of the study:** this is a cross-sectional study, conducted in a single centre, also the evaluation was during the acute manic episode not in the follow-up period, so the results cannot be generalized, and more studies are needed for consolidations of the results. Also some patients had psychotic symptoms which accompanied by anxiety manifestations.

**Strength of the study:** this is one of the leading studies worldwide which investigated the role of DADSI as a recent modality of interview for evaluation of ANXD in the acute manic episode of bipolar disorders, also the role of high ANXD in symptoms severity, attitude, and insight of illness. In addition, its high score reflected a high ANXD that has impacts on the domains of QOL of those patients.

**Recommendations:** the current study recommended more studies on the newly added DADSI as an assessment tool of DSM-5 new specifier ANXD in the context of manic episodes of bipolar disorders in the follow-up periods, medicated patients, and with other psychiatric co-morbidities.

## Conclusions

DADSI is one of the newly added semi-structured interviews for evaluation of ANXD in bipolar and related disorders; also high ANXD evaluated by DADSI influenced the clinical characteristics, symptoms severity, insight of the illness, and different domains of QOL in patients of an acute manic episode.

## Abbreviations

AD	Anxiety disorder
ANXD	Anxious distress
BD	Bipolar disorder
BIS	Barratt impulsiveness scale
DADSI	The DSM-5 Anxious Distress Specifier Interview
DSM 5	A diagnostic and statistical manual of mental disorders 5
ECT	Electroconvulsive therapy
HAMA	Hamilton rating scale of anxiety
ITAQ	Insight and treatment attitude questionnaire
MDD	Major depressive disorder
MDE	Major depressive episode
QOL	Quality of life
WHO	World Health Organization
WSAS	Work and social adjustment scale
YMRS	Young mania rating scale

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## Author contributions

SES: conceptualization, interview the patients, evaluation, conceptualization, prepare the manuscript, also he is the corresponding author. SG: share in writing the manuscript, revise the manuscript, conceptualization, AAH:

share in interviewing the patients. HS: conceptualization, share in the writing the manuscript. IE: revise the manuscript, data analysis. All authors read and approved the final manuscript.

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## Availability of data and materials

The data sets generated during and/or analyzed during the current study are available from the corresponding author on reasonable request.

## Declarations

### Ethics approval and consent to participate

Ethical approval from local ethical committee of Hayat National Hospital, Riyadh, KSA was obtained before conducting the study (IRB, HNH: R.20.07.354). All the steps of the study were in agreement with Declaration of Helsinki and its later amendments (2013). Informed consent obtained from all participants after explanation of the aim of the study. Participants were confirmed about the confidentiality of the information gathered and that they have the right to withdraw or refuse at any time without giving reasons.

### Consent for publication

Not applicable.

### Competing interests

The authors declare that they have no competing interests.

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