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Psychopathological characteristics and adverse childhood events are differentially associated with suicidal ideation and suicidal acts in mood disorders

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ABSTRACT

Background: Depression is an important risk factor for suicide. However, other dimensions may contribute to the suicidal risk and to the transition from ideas to acts. We aimed to test the relative involvement of hopelessness, temperament, childhood trauma, and aggression in suicide risk in a large sample of patients with mood disorders.
Methods: We assessed 306 patients with major depressive and bipolar disorders for clinical characteristics including hopelessness, temperament, childhood trauma, and aggression. We tested their associations with suicidal ideation and acts using standard univariate/bivariate methods, followed by multivariate logistic regression models.
Results: In multivariate analyses, the loss of expectations subscore of the hopelessness scale was associated with lifetime suicidal ideation but not suicide attempt. Childhood emotional abuse, severity of current depression, and female gender were associated with lifetime suicide attempts, whereas hyperthymic temperament was protective. Only hyperthymic temperament differentiated patients with a history of suicidal ideas *vs*. those with a history of suicide attempt.
Conclusions: Findings support the association of hopelessness with suicidal ideation and point to considering in suicidal acts not only depression, but also childhood emotional abuse, hyperthymic temperament, and gender.

1. Introduction

More than 800 000 people die of suicide every year, representing one death every 40 s, and 20 times more people attempt suicide (WHO data, accessed on December 23, 2017 at http://www.who.int/gho/mental_health/suicide_rates/en/). Rates of suicide are 5–20 times greater among patients with a major mood disorder than in the general population [1–4] for both major depressive disorders (MDD) [4,5] and bipolar disorders (BD) [1,6]. However, not all patients with a mood disorder are equal toward suicidal risk as 90% of them will not die from suicide and more than 50% will not attempt suicide [7–9]. Hence, improving our ability to assess suicide risk among patients with a mood disorder is an important focus point.

To tackle this issue, one approach has been to consider not only the clinical course [10–12] but also particular psychopathological

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characteristics of patients at risk [2]. Indeed, several variables could modulate suicidal risk in patients with BD, and their interplay should be carefully evaluated in clinical practice. In this context, the importance to separately consider patients who have attempted suicide from those with only suicidal ideation has been extensively recognised [2]. Depressive episodes have been associated with a high risk of both suicidal ideation and suicide risk [13]. Hopelessness instead was found to be associated with suicidal thoughts, but not always with attempts [14], as recently confirmed by a longitudinal study in patients with mood disorders [15]. Hopelessness leads people with depression to view suicide as the only way out from suffering and is an important cognitive risk factor for suicide [16]. Various studies indicated putative predictors of suicide attempts in patients with mood disorders [17–29]. Among these factors, temperament [2,12,21–24], aggressive tendencies [25–27] and childhood trauma [19,20,28,29] have been particularly implicated. Temperament refers to stable, early-appearing individual differences in behavioural tendencies that have a constitutional and biological basis [30]. Aggressiveness is multidimensional and largely influenced by genetic factors [31]. Childhood trauma occurs in early life and could influence individual biological responses to stress [32]. Hence we hypothesised that in mood disorders, hopelessness could modulate some cognitive aspects of depression, leading patients to manifest suicidal ideation, whereas suicidal acts might be related to characteristics more embedded in an individual's background, such as affective temperaments, aggression, and early adverse events. Our study aimed at verifying this hypothesis, considering the above-mentioned variables conjointly in a sample of MDD or BD patients.

2. Materials and methods

2.1. Participants

We assessed 306 consecutive outpatients who had been diagnosed with a DSM-IV-TR™ [33] mood disorder, including 57 MDD, 149 BD type I (BD I) and 100 BD type II (BD II). All patients were initially recruited at two sites in Rome (Italy), i.e., Sant'Andrea Hospital and Centro Lucio Bini. Patients were screened by trained staff for DSM-IV-TR Axis I disorders and clinical diagnoses were confirmed using the Structured Clinical Interview for DSM-IV-TR axis I Disorders, patient edition (SCID-I/P) [34].

In addition to a diagnosis of mood disorder, inclusion criteria were: (i) age between 18 and 75 years and (ii) at least five years of school education. Exclusion criteria were: (i) additional axis I disorder emerging through the SCID I/P structured interview [34]; (ii) a history of alcohol or drug use disorder in the two years preceding the assessment or lifetime drug use disorder; (iii) traumatic head injury with loss of consciousness; (iv) lifetime history of major medical or neurological disorders; (v) suspected cognitive impairment based on a Mini-Mental State Examination (MMSE) [35] score lower than 24; and (vi) poor fluency in Italian. All patients had been under stable drug treatment for at least six months.

All investigators involved in assessing patients had completed an intensive training programme (for using the SCID-I/P and for assessing manic, depressive and anxiety symptoms, and suicidal risk) lasting 3–6 months until all investigators were able to reach a good agreement (interrater reliability, Cohen's $\kappa = 0.83$).

The study adhered to the Principles of Human Rights, as adopted by the World Medical Association at the 18th WMA General Assembly, Helsinki, Finland, June 1964 and subsequently amended at the 64th WMA General Assembly, Fortaleza, Brazil, October 2013. All participants provided written informed consent to participate in the study after having received a complete explanation of study procedures and aims. Patients did not receive monetary compensation for this study. The study obtained approval from the local ethical committees.

2.2. Clinical and psychopathological assessment

Clinical data were collected through a semi-structured clinical interview. Family history of psychiatric disorders and of suicidal acts (e.g., no family history of suicidal attempts/complete suicide among first degree relatives) were also recorded.

Specific psychopathological symptoms were assessed using the Young Mania Rating Scale (YMRS) for manic symptoms [36], the 17-item Hamilton Rating Scale for Depression (HDRS) for depressive [37], and the Hamilton Rating Scale for Anxiety (HARS) for anxiety symptoms [38]. Hypomania was rated using the Hypomania CheckList-32 (HCL-32) [39]. Attention and hyperactivity were assessed using the DSM-IV-TR™-based [33] ADHD Self-Report Scale (ASRS) [40].

Temperaments (cyclothymic, dysthymic, irritable, hyperthymic, and anxious) were assessed through the Temperament Evaluation of Memphis, Pisa, Paris and San Diego-autoquestionnaire, short version (TEMPS-A-39) [41]. Items were drawn from the validated Italian version of the instrument [42].

We used the Beck Hopelessness Scale (BHS) to assess hopelessness. BHS is a 20-item self-report inventory developed to measure three major aspects of hopelessness, i.e., feelings about the future, loss of motivation and expectations. We investigated these dimensions of the instrument due to their specific relevance for our study's aims. The tool proved to possess face validity and reliability [43]. The version we used has been validated in the Italian population [44].

We used the Aggression Questionnaire (AQ) to evaluate aggression [45]. AQ consists of 29 items and identifies 4 dimensions of aggression, i.e., physical aggression, verbal aggression, anger, and hostility.

We rated adverse childhood events through the Italian short form of the Childhood Trauma Questionnaire (CTQ) [46], a 28-item, retrospective, self-report questionnaire [47] that investigates traumatic experiences during childhood. Each item is rated on a 5-point Likert scale, ranging from 1 = "never true" to 5 = "very often true", depending on the frequency of the events. The questionnaire assesses five types of trauma, i.e., emotional abuse, emotional neglect, physical abuse, physical neglect, and sexual abuse. Scores are calculated for the total scale (range 25–125) and for each type of trauma (range 5–25). The CTQ has been used in mood disorder [19,20] and suicidal patients [48].

Suicidal ideation and suicidal attempts were assessed with a semi-structured questionnaire consisting of two parts, one related to the past 6 months, the other lifetime. Each part included three questions: 1) "Have you ever seriously thought about committing suicide?" 2) "Have you ever made a plan for committing suicide?" and 3) "Have you ever attempted suicide?". Respondents had to answer only "Yes" or "No". Attempters then had to answer questions about their attempts: "How many times did you attempt suicide?" and "Can you briefly describe how you attempted suicide?" From their response to the last question we classified attempts as violent (defenestration, hanging, use of knives or firearms) or non-violent (medication overdose, superficial cutting) suicide attempts, and as sufficiently serious to require medical attention or not requiring medical attention. Suicide attempt was defined as a non-fatal, self-directed, potentially injurious behaviour with intent to die as a result of this behaviour, that also might not result in injury [49–51]. The semi-structured questionnaire has not been yet validated, but it has been already used in a previous study by our group [19].

2.3. Statistical analyses

To fit our aims we subdivided our sample into three groups: 1) patients without a history of suicide risk (e.g. no prior suicide ideation or attempt) ($n = 102$); 2) patients with lifetime suicidal ideation but no history of suicidal act ($n = 116$), and 3) patients with lifetime history of one or more suicide attempts ($n = 88$). Analyses used standard univariate/bivariate comparisons of continuous measures (ANOVA) and categorical measures (contingency table/ χ^2) to compare factors of interest (including sociodemographic, clinical, and psychopathological characteristics) in the three groups. The level of significance was set at $p < 0.05$.

In addition, factors significantly associated with suicidal attempts or ideation in bivariate analyses, were subjected to a multiple multivariate logistic regression to generate Odds Ratios (ORs) and their 95% confidence intervals (CIs), with No suicide risk/ suicidal acts/suicidal ideation as dependent outcome measures. We examined possible multicollinearity between variables of interest using variance inflation factor (VIF) indicator obtained from a linear regression analysis. Regarding psychopathological characteristics, significance regarded the scores of the subscales rather than those of the total scales.

We used the statistical routines of SPSS Statistics 24.0 for Windows (IBM Co., Armonk, New York, USA).

3. Results

In the total group of patients, 88 (28.8%) reported lifetime suicide attempts and 116 (37.9%) suicidal ideation only. In the total group of patients who committed a suicide attempt, 71 (80.7%) reported a serious suicide attempt and 28 a violent one (31.8%). The mean number of suicide attempts in the group of patients who committed suicide was 1.67 (standard deviation (SD) = 1.03).

Sociodemographic and clinical characteristics of the sample are shown in Table 1. Results of the univariate/bivariate analysis of psychopathological characteristics are shown in Table 2. Multinomial logistic regression identified the subscore "loss of expectations" of the BHS as a risk factor for suicidal ideation compared to no suicide risk. Childhood emotional abuse, severity of depression, and female gender were risk factors for lifetime suicide attempts compared to no suicide risk, whereas hyperthymic temperament was protective. Hyperthymic temperament was a protective factor for suicide attempts compared to suicidal ideation (Table 3).

There was no significance of multicollinearity, as indicated by the fact that VIF of all variables of interest was < 4.

4. Discussion

In this study we sought and found differences in the two major dimensions of suicide risk (i.e., suicidal ideation and suicidal acts) regarding their psychopathological characteristics in patients with mood disorders. Specifically, results confirmed our hypothesis.

We found the risk of suicidal ideation to be associated only with loss of expectations on the BHS, an aspect of hopelessness and a measure of how past life events enter in the anticipation of future. On the other hand, risk for suicidal acts was linked to severity of depression and appeared to be more embedded in the individual's background and characteristics, as moulded by early events, thus involving specifically temperament, gender, and childhood trauma. Hence, our study confirmed that risk factors for suicidal ideations and suicidal acts should be considered separately and expanded knowledge of such factors.

Starting with the risk for suicidal acts, severity of depression is primarily involved [13]. Severity of depression should not prompt to believe that MDD bears more suicide attempt risk than BD. In fact, patients with BD spend more time in mixed, major depressive episodes and subthreshold depression than those with MDD and in fact attempt at taking their lives significantly more than the latter [4]. Nevertheless, here we indicated the importance of other putative predictors.

First, in patients with mood disorders, our results showed the importance of childhood trauma in suicidal acts, in particular emotional abuse. Emotional abuse was already shown to predict lifetime suicide attempts in BD, both BD I and BD II [19]. Interestingly, emotional abuse *per se* is strongly linked to mood disorders and has been recently indicated as the most important childhood trauma subtype in BD [52]. Furthermore, it has been specifically associated with hypersensitivity to emotional stimuli

Table 1
Sociodemographic and clinical characteristics of the sample ($N = 306$).

	No suicide risk* ($n = 102$)	Suicidal ideation ($n = 116$)	Suicidal Acts ($n = 88$)	F or χ^2	df	P
Age (years): mean ± (SD)	45.31 (14.73)	46.94 (12.45)	44.32 (10.60)	1.10	2	0.33
Gender, males: n (%)	60 (58.8)	49 (42.2)	25 (28.4)	17.93	2	< **0.001**
Educational Level (years): mean ± (SD)	14.21 (3.33)	14.06 (3.91)	13.58 (3.41)	0.77	2	0.46
Diagnosis: MDD: n (%)	17 (16.7)	22 (19.0)	18 (20.5)	5.16	4	0.27
BD I: n (%)	50 (49.0)	50 (43.1)	49 (55.7)			
BDII: n (%)	35 (34.3)	44 (37.9)	21 (23.8)			
Age at onset: mean ± (SD)	29.33 (11.86)	29.26 (11.79)	26.17 (10.16)	2.36	2	0.09
Duration of illness (years): mean ± (SD)	16.00 (12.38)	17.54 (12.26)	17.88 (10.05)	0.72	2	0.48
Number of past depressive episodes: mean ± (SD)	5.15 (4.77)	5.01 (4.98)	6.08 (5.54)	1.23	2	0.29
Family history of psychiatric disorders: n (%)	75 (73.5)	83 (71.6)	56 (63.6)	2.41	2	0.29
Family History of suicidal acts (first degree): n (%)	16 (15.7)	21 (18.1)	14 (15.9)	0.27	2	0.87
Current HDRS score: mean ± (SD)	7.13 (5.98)	10.90 (7.00)	11.92 (7.65)	13.27	2	< **0.001**
Current YMRS score: mean ± (SD)	5.24 (6.57)	4.42 (5.31)	4.94 (4.67)	0.59	2	0.55
Current HARS score: mean ± (SD)	8.00 (6.06)	11.24 (7.52)	12.15 (8.02)	8.98	2	< **0.001**
Drugs:						
Antidepressants: n (%)	37 (36.3)	51 (44.0)	41 (46.6)	2.31	2	0.31
Lithium: n (%)	51 (50.00)	50 (43.1)	46 (52.3)	1.92	2	0.38
Antipsychotics: n (%)	58 (56.9)	67 (57.8)	61 (69.3)	3.79	2	0.15
Antiepileptics: n (%)	45 (44.1)	54 (46.6)	46 (52.3)	1.31	2	0.51

Significant results in **bold** characters.
Abbreviations;: BD I, bipolar disorder, type I; df, degrees of freedom; *F*, value of variance of the group means; HARS, Hamilton Anxiety Rating Scale; HDRS, Hamilton Depression Rating Scale; MDD, major depressive disorder; HCL32, Hypomania Checklist-32; *n,N,* number of cases; OR, odds-ratio; *p, P,* statistical significance; SD, standard deviation; YMRS, Young Mania Rating Scale.

Table 2
Psychopathological characteristics of the sample ($N = 306$).

	No suicide risk* mean ± (SD)	Suicidal ideation mean ± (SD)	Suicidal Acts mean ± (SD)	*F*	df	*P*
BHS future	1.20 (1.25)	2.18 (1.73)	2.03 (1.67)	11.78	2	< **0.001**
BHS loss of motivation	1.69 (1.99)	2.92 (2.56)	2.82 (2.72)	9.08	2	< **0.001**
BHS loss of expectations	2.25 (1.53)	3.42 (1.42)	3.39 (1.39)	21.42	2	< **0.001**
BHS Total	5.14 (3.89)	8.52 (5.14)	8.24 (4.62)	17.07	2	< **0.001**
AQ Physical	16.42 (6.32)	17.10 (6.22)	17.80 (7.18)	1.05	2	0.34
AQ verbal	13.59 (4.00)	14.14 (4.05)	14.52 (4.25)	1.26	2	0.28
AQ anger	15.90 (5.17)	17.45 (5.52)	18.06 (5.42)	4.17	2	**0.01**
AQ hostility	18.64 (5.96)	21.80 (6.35)	22.32 (6.77)	9.78	2	< **0.001**
AQ total	64.60 (16.95)	70.52 (17.09)	73.08 (17.87)	6.18	2	**0.002**
CTQ emotional abuse	6.77 (2.64)	8.41 (4.50)	10.44 (4.93)	18.66	2	< **0.001**
CTQ physical abuse	5.62 (1.92)	6.04 (1.84)	7.01 (3.41)	7.98	2	< **0.001**
CTQ sexual abuse	5.48 (1.21)	5.96 (2.30)	7.19 (3.86)	10.70	2	< **0.001**
CTQ emotional neglect	11.18 (4.80)	12.38 (4.86)	11.84 (5.87)	1.47	2	0.23
CTQ physical neglect	7.10 (2.52)	7.38 (2.53)	7.44 (2.92)	0.45	2	0.63
CTQ total	36.92 (9.00)	40.11 (11.04)	43.98 (14.53)	8.78	2	< **0.001**
HCL32	18.33 (7.36)	18.84 (7.38)	18.05 (8.13)	0.28	2	0.75
ASRS	25.04 (12.42)	29.95 (11.96)	31.36 (12.74)	7.10	2	**0.001**
TEMPS cyclothymic	4.40 (3.47)	5.69 (3.39)	6.57 (3.44)	9.62	2	< **0.001**
TEMPS depressive	2.59 (2.31)	3.80 (2.44)	3.92 (2.56)	9.20	2	< **0.001**
TEMPS irritable	1.39 (1.72)	1.76 (1.83)	2.02 (1.78)	3.02	2	0.05
TEMPS hyperthymic	3.89 (2.17)	3.21 (2.28)	2.83 (1.97)	5.98	2	**0.003**
TEMPS anxious	1.22 (1.19)	1.39 (1.55)	1.65 (1.17)	3.22	2	**0.04**

*$p < 0.05$; **$p < 0.01$; *** 0.001p < .001; Significant results in **bold** characters.
Abbreviations;: AQAggression Questionnaire; ASRSAttention Deficit/Hyperactivity Disorder Self-Report Scale; BHSBeck Hopelessness Scale; CIconfidence interval; CTQChildhood Trauma Questionnaire; dfdegrees of freedom; *F*value of variance of the group means; HCL32Hypomania Checklist-32; *n*N, number of cases; ORodds-ratio; *p*P, statistical significance; SDstandard deviation; TEMPSTemperament Evaluation of Memphis, Pisa, Paris and San Diego-autoquestionnaire, short, 39-item version.

[53], probably indicating an inadequate emotional regulation in these patients. Thus, we may speculate that the high risk of suicide attempts that we found in patients reporting emotional abuse might be mediated by this relationship. Emotional regulation, in fact, seems to be specifically implicated in the neurobiology of suicide risk [54], mediating not only inhibition of negative emotions but also positive cognitive and behavioural responses that take advantage of the adaptive role of emotions. A recent study in patients with BD indicated that childhood trauma could modulate grey matter volumes of amygdala and hippocampus [55], which are key areas for emotional regulation in mood disorders [56] and which also seem to be involved in suicidal attempts [57,58].

In agreement with the literature, we found female gender to be a risk factor for suicide attempt. This is line with the "The gender paradox in suicidal behaviour" which shows an overrepresentation of females in non-fatal suicidal behaviour (and a preponderance of males in completed suicide, which we did not assess here for obvious reasons) [59]. Interestingly, previous studies found that not only do women and men differ in their rate of suicidal acts, but also that psychopathological variables are gender-related in their relationship to suicide risk [60,61]. This indicates the importance of considering gender and its interaction with the others risk factors for suicidal acts.

Table 3
Multiple logistic regression.

	OR [95% CI]	Wald	*P*
*Suicidal ideation vs. No suicide risk**			
BHS loss of expectations	1.39 [1.04-1.86]	5.15	**0.02***
*Suicidal acts vs. No suicide risk**			
CTQ emotional abuse	1.83 [1.06-1.31]	10.20	**0.001****
TEMPS hyperthymic	0.82 [0.68-0.97]	4.82	**0.02***
HDRS	1.10 [1.01-1.20]	5.13	**0.02***
Gender (males)	0.40 [0.19-0.84]	5.82	**0.01***
Suicidal acts vs. Suicidal ideation			
TEMPS hyperthymic	0.84 [0.72-0.99]	4.31	**0.03***

*$p < 0.05$; **$p < 0.01$; Significant results in **bold** characters.
Abbreviations: BHS, Beck Hopelessness Scale; CI, confidence interval; CTQ, Childhood Trauma Questionnaire; HDRS, Hamilton Depression Rating Scale; OR, odds-ratio; *p, P,* statistical significance; TEMPS, Temperament Evaluation of Memphis, Pisa, Paris and San Diego-autoquestionnaire, short, 39-item version.

Furthermore, our results indicated hyperthymic temperament to protect from suicidal attempts. Previous studies highlighted that hyperthymic temperament was less associated with suicide risk than other affective temperaments in patients with mood disorders [2,21–24]. It has been hypothesised that a sustained positive outlook in hyperthymic temperament might well be protective for suicidal acts. In particular, patients with hyperthymic temperament, being characterised by highly positive mood and high energy levels, could cope with life events more efficiently [2,21]. Moreover, they might be less exposed than other patients to mood changes, which were found to be a major contributor to increased suicide risk [62], and less likely to perceive psychache, which is the most important factor in suicide risk [63]. Accordingly biological differences have found between hyperthymic and other temperaments and they have been also related to suicide risk [64]. Nevertheless, among those studies exploring the association between hyperthymic temperament and suicide risk, only one study indicated it as a specific risk factor for suicidal acts, but not suicide in general [2]. Here we confirmed this. However, Baldessarini et al. [2,22] found also that hyperthymic temperament is protective from suicidal ideation. We found it as a protective factor only in the comparison between the groups of suicidal ideation *vs*. suicidal acts. Summarising, results indicated that, in our sample, hyperthymic temperament is the factor discriminating between only presenting a suicidal ideation rather than attempting suicide.

Finally, we found loss of expectations, which is one of the three aspects of hopelessness, as a risk factor for suicidal ideation. Hopelessness has been traditionally related to suicide risk [14–16]. Previous cross-sectional studies [14] and a recent longitudinal study [15] found that hopelessness was associated with suicidal thoughts but not suicide attempts. Here we confirmed it, but also found that, specifically, the loss of expectations, rather than the loss of motivation and feeling about the future, is specifically

involved. The fact that loss of expectations was a risk factor for suicidal thought, but not acts, could appear as counterintuitive if one considers patients with suicidal acts as a subgroup of those with only suicidal ideation. Our data show that the two groups should be distinguished on the basis of their different psychopathological characteristics. Specifically regarding hopelessness, it is possible that the two samples differ on what they perceive as loss of expectations from the outset. People who keep thinking about suicide might be more hopeless than people who took their decision to commit it, in that the latter hope to pass from an unpleasant state of existence to one in which they lack this unpleasantness. On the other hand, the suicidal act could have rearranged the way they look at this specific dimension of hopelessness. It is possible, in fact, that suicide attempt influenced the perception of the loss of expectations, which could be different before committing suicide. Further longitudinal studies could clarify this point.

We have to acknowledge some issues that might limit the generalisability of our results. First, the cross-sectional nature of our study limits our ability to confirm our predictions. Second, history of lifetime suicide risk was assessed using a not validated, semi-structured questionnaire. Therefore, it is possible the instrument we used might not be sufficiently sensitive in detecting suicidality. In particular, it did not provide a quantitative measure of suicidal risk. Moreover, it did not provide specific information on family history of suicide, which was only investigated among first-degree relatives during the clinical interview. This could indirectly explain why we did not find in our sample family history of suicide as a risk factor for suicidal ideation/acts, although it has been extensively reported in previous studies [65]. Third, the reliability of the retrospective assessment of childhood trauma experiences, as assessed with the CTQ during adulthood, may be influenced by uncontrolled recall bias. Nevertheless, the CTQ is currently indicated as one of the best tools for evaluating childhood trauma in patients with BD [20]. Fourth, assessment was conducted also on other than euthymic patients with BD, a fact that increased the heterogeneity of our sample. In fact, we found a significant positive correlation between HDRS scores and loss of expectations scores ($r = 0.5$; $p < 0.005$) and a negative correlation between HDRS scores and Hyperthymic temperament ($r = -0.2$; $p < 0.005$). Therefore, it is possible that depression could have influenced the assessment of psychopathology in our sample. Nevertheless, for the aim of the study we were interested in evaluating the impact of severity of depression on suicide risk and its interaction with others risk factors, particularly hopelessness. Another possible limitation of our study is the fact that, by excluding comorbidity (e.g., substance use), our sample is not completely generalisable to a real-world sample, given the high comorbidity rates of patients with mood disorders [66] and their association with suicidality [67]. However, by limiting our samples to specific mood disorders, we also limited the influence of possible confounders [67]. Finally, despite the relatively large number of recruited patients, due to splitting of our samples into smaller samples according to diagnostic group, the final samples might not have had an adequate statistical power to detect effect sizes of small to moderate magnitude.

Hence, our basic question “is psychopathology different between people who attempt suicide with respect to those who only think about it?” found a positive response in our study’s data.

Specifically, our study points at considering in patients with mood disorders hopelessness, in particular loss of expectations, in risk of suicidal ideation and severity of depression, gender, temperament, and emotional childhood abuse in risk of suicide attempts. Our results show that the assessment of the above psychopathological characteristics should be always included in the clinical evaluation of patients with mood disorders.

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