Middle East Current Psychiatry

RESEARCH

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Personality disorders among a sample of Egyptian patients with major depressive disorder and their association with suicide

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Abstract

Background Depression is a prevalent psychiatric disorder that can arise at any age and is often present as a co-occurring illness in different illnesses. There is a high comorbidity rate between major depressive disorder and personality disorders (PDs). The current study aimed to investigate the significant impact of personality disorders on depression severity, functional impairment, and suicidal tendencies in individuals with depression.

Methods The researchers conducted a cross-sectional observational study involving 120 patients, with an age range from 18 to 56 years of both genders, recruited from Okasha's Institute of Psychiatry in Cairo, Egypt. Their major depressive disorder diagnosis was verified through the use of the Structured Clinical Interview for DSM-IV Axis I Disorders (SCID-I). Participants underwent evaluations using the SCID-II to evaluate personality disorders, the Hamilton Depression-Rating Scale (HAM-D) to assess the severity of depression, the Columbia Suicide Severity Rating Scale (C-SSRS) to investigate suicidal ideation, and the Global Assessment of Functioning Scale (GAF) to determine functional level.

Results Borderline personality disorder and narcissistic personality disorder were the predominant personality disorders in the sample, with prevalence rates of 55.8% and 40.8%, respectively. Sixty-six percent of the participants reported experiencing suicidal thoughts at some point in their lifetime, whereas only 17.5% had actually attempted suicide. Borderline personality disorder showed a strong correlation with more severe depression (*P* value 0.043), a decline in functioning (*P* value 0.001), the existence of suicidal thoughts (*P* value 0.001), and a past of suicide attempts (*P* value 0.038).

Conclusions Personality disorders are highly prevalent in patients with depression, borderline PD, and narcissistic PD were the most common PDs. Borderline PD showed a significant effect on depression severity. PDs, mainly borderline, avoidant, depressive, and narcissistic PDs contribute to more impairment of functioning of the MDD patients. There is a significant effect of the presence of co-morbid personality disorder on suicidal thoughts and suicidal attempts, mainly depressive and borderline PDs.

Keywords Personality disorders, Major depressive disorder, Suicide, Functional impairment

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Introduction

Depression is a prevalent psychiatric problem that could arise at any stage of life and is frequently present alongside other medical illnesses. As per the Egyptian Mental Health National survey, the main problems were mood disorders (6.43%) and the most prevalent disorders in mood disorder was major depressive disorder (MDD)

(43.7%), which reflects the size of the problem of MDD in Egypt as the most prevalent disorder [1]. Wongpakaran et al. [2] focused on the question "Does the presence of co-morbidity affect the responsiveness to depression treatment in patients primarily diagnosed with major depression?" At least three co-morbidities, including medical, anxiety, and personality disorders, are thought to impact treatment response. Research indicates that 77% of patients with depression had at least one personality disorder (PD), with 60% having two or more PDs (mixed cluster). Studies have extensively examined the association between PDs and depression, and it is generally recognized that PDs influence the results of treatment of depression. The distribution of personality disorders among depressive disorders varies based on the kind of depression, the personality pathology diagnosis system used, or the study context [3].

This study aimed to evaluate the substantial contribution of PD to depression severity, functional impairment, and suicidality in patients with depression.

Patients and methods

The researchers conducted a cross-sectional observational study involving 120 participants aged 18 to 56 years, of both sexes, who met the clinical criteria for MDD. An expert statistician determined this sample size using the PASS program, sitting alpha error at 5% and marginal error at 7.5% result from a previous study showed that comorbid PD was present in 77% of patients with MDD [2]. The study was conducted at Okasha Institute of Psychiatry, Ain Shams University Hospitals, over 2 years duration, 2021 and 2022.

Before starting the study, an approval was obtained from the Ain Shams University Ethical Committee (approval code: MS-427). Written informed permission was acquired from the subjects. Exclusion criteria were the presence of mental retardation, developmental disability, neurological disorder, or any other medical disease, receiving any medical treatment or the presence of comorbid Axis-I psychiatric disorders.

All participants underwent the following:

1- Full psychiatric history and examination with special emphasis on depression history.
2- Arabic version of the Structured Clinical Interview for DSM IV (SCID I) is used to diagnose MDD and rule out other mental diseases. SCID I is utilized to diagnose Axis I illnesses. This is a semi-structured diagnostic interview designed for DSM-IV. The document begins with a section detailing demographic information and clinical background, then proceeds with seven diagnostic modules that concentrate on various diagnostic groups. It is regarded as the standard interview for diagnosis in mental research. It contains a worldwide assessment of functioning scale [4, 5].
3- Global Assessment of Functioning Scale (GAF): It is a system used to measure the intensity of sickness in psychiatry and is referred to as Axis V in the Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition Text Revision (DSM-IV-TR). The rating scale evaluates an individual's psychological, social, and occupational functioning on a continuum of mental health-illness, ranging from 1 (sickest) to 100 (healthiest). The scale is segmented into 10 equal portions, each with different characteristics for every 10-point interval. The distinctive characteristics encompass both symptoms and social functioning [6].
4- Arabic version of The Structured Clinical Interview for DSM-IV Axis II Disorders (SCID-II) which is a semi-structured clinical interview designed to assess DSM-IV PDs using both categorical and dimensional approaches. It consists of 119 sets of questions presented in yes/no and open-ended formats. Each criterion is rated on a scale where 1 represents absent or false, 2 indicates sub-threshold, 3 signifies threshold, or ? denotes inadequate information [7, 8].
5- An Arabic version of the Hamilton Depression Rating Scale (HAM-D) is used to assess the level of depression. The HAM-D form contains 21 items. The interview typically requires 15–20 min to finish and evaluate the outcomes. The HAM-D scale is commonly utilized in clinical settings and serves as the standard in pharmaceutical studies, demonstrating 86.4% sensitivity and 92.2% specificity [9, 10].
6- Arabic version of the Columbia-Suicide Severity Rating Scale (C-SSRS): The tool is created to assess the severity of suicidal thoughts and behaviors using two different sets of questions. The initial segment gauges the intensity of suicidal thoughts experienced within the last month, termed the "ideation severity scale." This scale employs a five-point ordinal scale: 1 = mere wish to be dead, 2 = non-specific active suicidal thoughts, 3 = suicidal thoughts involving methods, 4 = suicidal intent, and 5 = suicidal intent with a specific plan. The subsequent segment evaluates the frequency of actual and unsuccessful suicide attempts within the past 3 months using a single item on a nominal scale, known as the "behavior scale" [11, 12].

Statistical analysis was conducted using SPSS v26 (IBM Inc., Chicago, IL, USA). Quantitative variables were displayed as mean and standard deviation (SD). Qualitative variables were displayed using frequency and percentage (%).

Results

Sociodemographic data, family history of psychiatric disorders, duration of both present and untreated illness, treatment with antidepressant medications, and assessment of depression severity by the Arabic version of HAM-D of the studied sample are presented in Table 1. Global Assessment of Functioning Scale of studied patients revealed that the mean score was 34.5 ± 21.8 which means major impairment in various areas, including work or school, familial interactions, mood, thinking, and judgment. For example, a depressed individual might avoid social interactions with friends, neglect familial responsibilities, and struggle to maintain employment.

Assessment of the severity of suicide by the Columbia Suicide Severity-Rating Scale (C-SSRS) revealed that 80 patients (66% of the sample) had a history of suicide ideation throughout their lifetime period, yet only 13 patients (10.8% of the sample) had a history of severe suicide ideation and only 21 patients (17.5% of the sample) had a history of actual attempts. Regarding physical harm associated with suicidal attempts, most of the participants with a history of previous suicidal attempts through a lifetime period had either no physical damage at all or very minor physical damage (e.g., superficial marks or scratches).

Assessment of personality disorders using SCID-II revealed that the most diagnosed PDs were borderline PD, narcissistic PD, depressive PD, and avoidant PD (55.8%, 40.8%, 30%, and 29.2% respectively), while the least diagnosed PD was histrionic PD (1.7%) as presented in Table 2.

Assessment of the association between depression severity and comorbid PDs showed that there is a statistically significant association between the presence of comorbid borderline PD and the severity of depression in the studied sample as shown in Table 3.

Regarding the effect of PDs on functioning in patients with depression, GAF scores revealed that avoidant, depressive, paranoid, narcissistic, and borderline PDs significantly decrease the functioning of the patients. Patients with these PDs had significantly lower GAF scores compared to patients without these PDs (*P* value 0.001, 0.003, 0.005, 0.044, and 0.001, respectively) as shown in Table 4.

Assessment of the association between a history of actual suicidal attempts and comorbid PDs showed an association of statistical significance between the presence of comorbid depressive PD, paranoid PD, and borderline PD with a positive history of actual attempts of suicide in the studied sample (*P* value 0.014, 0.023, and 0.038, respectively) (Table 5).

Assessment of the association between a history of suicide ideation and comorbid PDs in the studied sample revealed significant associations between suicidal ideation with avoidant PD (*P* value 0.016), depressive PD (*P* value 0.001), and borderline PD (*P* value 0.001) as shown in Table 6.

Discussion

Exploring the link between depression and personality disorders is crucial for understanding clinical presentation, severity, comorbidity, and prognosis, as well as for identifying individuals who are at risk. Therefore, the current study was tailored to investigate the substantial

Table 1 Sociodemographics and clinical characteristics of the sample

Gender	Female	95 (79.2%)
	Male	25 (20.8%)
Marital status	Single	65 (54.16%)
	Married	46 (38.33%)
	Divorced	9 (7.5%)
Employment	Employed	64 (53.33%)
	Unemployed	56 (46.66)
Age (years)		28 ± 8
Family history of psychiatric illness	Positive	39 (32.5%)
	Negative	81 (67.5%)
Duration of present illness (months)		19.6 ± 21.8
Duration of untreated illness (months)		8 ± 17.4
Antidepressant medications	Positive	41 (34.1%)
	Negative	79 (65.8%)
Severity of illness as measured by Hamilton Depression Rating Scale	Mild	19 (15.8%)
	Moderate	33 (27.5%)
	Severe	47 (39.2%)
	Very severe	21 (17.5%)

Table 2 Comorbid PDs in the studied sample using SCID-II

Avoidant PD	35 (29.2%)
Dependent PD	13 (10.8%)
Obsessive–compulsive PD	19 (15.8%)
Passive-aggressive PD	23 (19.1%)
Depressive PD	36 (30%)
Paranoid PD	33 (27.5%)
Schizotypal PD	10 (8.3%)
Schizoid PD	8 (6.7%)
Histrionic PD	2 (1.7%)
Narcissistic PD	49 (40.8%)
Borderline PD	67 (55.8%)
Antisocial PD	7 (5.8%)
Not otherwise specified	5 (4.1%)

Data are presented as numbers or percentages

Table 3 Association between severity of depression and comorbid PDs in the studied sample

Personality disorders	Number of patients	Severity of depression				*P* value
		Mild	Moderate	Severe	Very severe	
Avoidant PD	+ ve (35 pt)	4	6	16	9	0.173
	− ve (85 pt)	15	27	31	12	
Dependent PD	+ ve (13 pt)	1	6	4	2	0.431
	− ve (107 pt)	18	27	43	19	
Obsessive–compulsive PD	+ ve (19 pt)	1	4	8	6	0.209
	− ve (101 pt)	18	29	39	15	
Passive-aggressive PD	+ ve (23 pt)	4	3	10	6	0.316
	− ve (97 pt)	15	30	37	15	
Depressive PD	+ ve (36 pt)	5	8	12	11	0.107
	− ve (84 pt)	14	25	35	10	
Paranoid PD	+ ve (33 pt)	3	7	14	9	0.206
	− ve (87 pt)	16	26	33	12	
Schizotypal PD	+ ve (10 pt)	0	1	5	4	0.093
	− ve (110 pt)	19	32	42	17	
Schizoid PD	+ ve (8 pt)	2	3	3	0	0.518
	− ve (112 pt)	17	30	44	21	
Histrionic PD	+ ve (2 pt)	0	2	0	0	0.147
	− ve (118 pt)	19	31	47	21	
Narcissistic PD	+ ve (49 pt)	3	14	20	12	0.062
	− ve (71 pt)	16	19	27	9	
Borderline PD	+ ve (67 pt)	6	18	27	16	**0.043 significant**
	− ve (53 pt)	13	15	20	5	
Antisocial PD	+ ve (7 pt)	0	2	2	3	0.248
	− ve (113 pt)	19	31	45	18	
Not otherwise specified	+ ve (5 pt)	0	3	0	2	0.094
	− ve (115 pt)	19	30	47	19	

P value ≤ 0.05 is significant

+ *ve* positive, − *ve* negative, *pt* patients

contribution of PD to depression severity, functional impairment, and suicidality in depressed patients. In the current study, borderline PD was the most common PD diagnosed in the study group (55.8% of patients). This can be explained through the overlapping liability factors for MDD and borderline PD, either the genetic risk factors or the environmental risk factors such as adverse life events and familial conflicts.

Gutiérrez-Rojas et al. [13] reported similar findings as a significant association of borderline PD with MDD was detected. Also, Wongpakaran et al. [2] reported that the most common PD found among depression patients was borderline PD (20%). Reichborn-Kjennerud et al. [14] reported fairly similar results as they studied the relationship between MDD and the occurrence of PDs in 2801 young adults. They reported that borderline and avoidant PDs were independently and significantly associated with the prevalence of MDD.

The current study revealed that more than half of patients 56% (68 patients) had severe to very severe depression, as per the HAM-D (47–21 patients). It also showed a significant association between depression severity and the presence of narcissistic PD and borderline PD. An individual with narcissistic PD usually experiences frustration because of how others perceive and treat him/her versus how he/she views himself/herself. Moreover, because narcissistic traits are often the result of attachment disorders and a history of neglect and/or abuse, individuals with narcissistic PD may be more vulnerable to depression.

Similar to our results, Skodol et al. [15] studied the effect of PD comorbidity on the course of depression. Multivariate analyses revealed that borderline PD exerted a robust effect on the severity of depression in affected patients.

Table 4 Effect of personality disorders on global functioning in the sample

Personality disorders	Number of patients	GAF	*P* value
Avoidant PD	+ ve (35 pt)	29.7 ± 16.2	**0.001 significant**
	− ve (85 pt)	43.5 ± 22.6	
Dependent PD	+ ve (13 pt)	41.9 ± 26.1	0.672
	− ve (107 pt)	39.2 ± 21.3	
Obsessive–compulsive PD	+ ve (19 pt)	35.2 ± 16.3	0.347
	− ve (101 pt)	40.3 ± 22.6	
Passive-aggressive PD	+ ve (23 pt)	35.6 ± 20.6	0.344
	− ve (97 pt)	40.4 ± 22.1	
Depressive PD	+ ve (36 pt)	30.6 ± 16.5	**0.003 significant**
	− ve (84 pt)	43.3 ± 22.7	
Paranoid PD	+ ve (33 pt)	30.4 ± 15.4	**0.005 significant**
	− ve (87 pt)	42.9 ± 22.9	
Schizotypal PD	+ ve (10 pt)	28.3 ± 13.5	0.090
	− ve (110 pt)	40.5 ± 22.4	
Schizoid PD	+ ve (8 pt)	36.1 ± 12.3	0.653
	− ve (112 pt)	39.7 ± 22.2	
Histrionic PD	+ ve (2 pt)	52.5 ± 3.5	0.397
	− ve (118 pt)	39.3 ± 21.9	
Narcissistic PD	+ ve (49 pt)	34.7 ± 20.2	**0.044 significant**
	− ve (71 pt)	42.8 ± 22.3	
Borderline PD	+ ve (67 pt)	33.5 ± 18.2	**0.001 significant**
	− ve (53 pt)	47.1 ± 23.6	
Antisocial PD	+ ve (7 pt)	26.1 ± 15.7	0.095
	− ve (113 pt)	40.3 ± 21.9	
Not otherwise specified	+ ve (5 pt)	28.8 ± 16.9	0.264
	− ve (115 pt)	39.9 ± 21.9	

Data are presented as mean ± SD

P value ≤ 0.05 is significant

+ *ve* positive, − *ve* negative, *pt* patients

Fjermestad-Noll et al. [16] reported that narcissistic PD showed a significant relationship with depression and had an impact on depression severity as narcissistic patients showed significantly elevated levels of self-oriented and socially mandated perfectionism, shame, and anger, rendering them more vulnerable to depression.

Ronningstam [17] found that depressive periods can be very shameful for a patient with narcissistic PD, as they may feel overwhelmed and confined by feelings of depression that contradict their customary grandiose self-image and expectations of how they should be.

The present study revealed that participants with avoidant, depressive, narcissistic, and borderline PDs had significantly lower GAF scores, which was expected as depressed individuals usually experience limitations in physical and emotional functioning, while personality disorders are recognized for their association with functional impairment. These current findings reflect the effects of comorbidity between MDD and PDs on the functioning of the patients.

Skodol et al. [18] reached very similar results. They found that a co-occurring PD made a significant contribution to the functional impairment and decreased sense of well-being commonly associated with MDD. They emphasized that among those impairments often associated with PDs, social functioning, and emotional role limitations were the most affected aspects in patients with MDD.

Similarly, Massaal-van der Ree et al. [19] compared cluster B and C PD patients regarding global functioning. Both patients in cluster B and C PDs showed non-significantly higher rates of functional impairment. In agreement with our results, Nakash et al. [20] reported significantly lower GAF scores with avoidant PD. While Bezerra et al. [21] reported significantly lower GAF scores with borderline PD.

Table 5 Association between actual suicidal attempts and comorbid PDs in the studied sample

Personality disorders	Number of patients	History of actual attempts		*P* value
		Present	Absent	
Avoidant PD	+ ve (35 pt)	9	26	0.129
	− ve (85 pt)	12	73	
Dependent PD	+ ve (13 pt)	2	11	0.832
	− ve (107 pt)	19	88	
Obsessive–compulsive PD	+ ve (19 pt)	4	15	0.657
	− ve (101 pt)	17	84	
Passive-aggressive PD	+ ve (23 pt)	5	18	0.552
	− ve (97 pt)	16	81	
Depressive PD	+ ve (36 pt)	11	25	**0.014 significant**
	− ve (84 pt)	10	74	
Paranoid PD	+ ve (33 pt)	10	23	**0.023 significant**
	− ve (87 pt)	11	76	
Schizotypal PD	+ ve (10 pt)	3	7	0.277
	− ve (110 pt)	18	92	
Schizoid PD	+ ve (8 pt)	1	7	0.7
	− ve (112 pt)	20	92	
Histrionic PD	+ ve (2 pt)	0	2	0.511
	− ve (118 pt)	21	97	
Narcissistic PD	+ ve (49 pt)	12	37	0.094
	− ve (71 pt)	9	62	
Borderline PD	+ ve (67 pt)	16	51	**0.038 significant**
	− ve (53 pt)	5	48	
Antisocial PD	+ ve (7 pt)	3	4	0.069
	− ve (113 pt)	18	95	
Not otherwise specified	+ ve (5 pt)	2	3	0.176
	− ve (115 pt)	19	96	

P value ≤ 0.05 is significant

+ *ve* positive, − *ve* negative, *pt* patients

Regarding suicidality, 66% of patients in the current study had a history of suicidal ideation, while only 17.5% had a history of actual suicidal attempts. This could be explained in light of religious beliefs about suicide in our culture and the fear of the impact of suicide on families. Regarding the severity of suicidal thoughts and attempts, the current study found that only 10.8% (13 patients) had severe suicidal ideation. Unexpectedly, the current study revealed that the majority of patients who had a history of suicidal attempts had no or very minor physical damage. This might be understood considering that in their suicide attempts made with non-lethal methods (like trying to cut their wrists and take medication in non-fatal doses), these patients tried to end their psychological pain by a calm way of death, and most of them avoided painful ways, and some of them sought attention from others through those trials in order to solve some of their own problems.

In the current study, borderline and depressive PDs had a significant association with a history of suicidal ideation and actual suicide attempts. These results are understood taking into account the fact that about 80% of individuals with borderline PD engage in suicidal behaviors, 70% attempt suicide, and about 5–10% die by suicide [22].

Shorub et al. [23] investigated the potential risks of suicidality in borderline PD, and to correlate it to impulsivity, there was a significant difference in suicidality between the healthy controls and borderline PDs; healthy controls showed lower suicidality than borderline PD, and healthy controls showed mild degree of impulsivity while borderline PD showed moderate-to-severe degree of impulsivity.

Several reports mention the significant association between depressive disorders and borderline PD and suicidal ideation and attempts. Sarhan et al. [24] and Söderholm et al. [25] similarly reported that borderline PD had

Table 6 Association between history of suicidal ideation and comorbid PDs in the studied sample

Personality disorders	Number of patients	History of suicide ideation		*P* value
		Present	Absent	
Avoidant PD	+ ve (35 pt)	29	6	**0.016 significant**
	− ve (85 pt)	51	34	
Dependent PD	+ ve (13 pt)	9	4	0.835
	− ve (107 pt)	71	36	
Obsessive–compulsive PD	+ ve (19 pt)	14	5	0.479
	− ve (101 pt)	66	35	
Passive-aggressive PD	+ ve (23 pt)	17	6	0.412
	− ve (97 pt)	63	34	
Depressive PD	+ ve (36 pt)	33	3	**0.001 significant**
	− ve (84 pt)	47	37	
Paranoid PD	+ ve (33 pt)	26	7	0.083
	− ve (87 pt)	54	33	
Schizotypal PD	+ ve (10 pt)	7	3	0.815
	− ve (110 pt)	73	37	
Schizoid PD	+ ve (8 pt)	7	1	0.196
	− ve (112 pt)	73	39	
Histrionic PD	+ ve (2 pt)	1	1	0.614
	− ve (118 pt)	79	39	
Narcissistic PD	+ ve (49 pt)	36	13	0.189
	− ve (71 pt)	44	27	
Borderline PD	+ ve (67 pt)	53	14	**0.001 significant**
	− ve (53 pt)	27	26	
Antisocial PD	+ ve (7 pt)	7	0	0.054
	− ve (113 pt)	73	40	
Not otherwise specified	+ ve (5 pt)	4	1	0.518
	− ve (115 pt)	76	39	

P value ≤ 0.05 is significant

+ *ve* positive, − *ve* negative, *pt* patients

a risk of comorbid depressive disorders. Moreover, borderline PD showed a significantly higher risk of suicidality. Breet et al. [26] reported that borderline and avoidant PDs were significant predictors of suicidal ideation.

Contradicting our results, Jylhä et al. [27] reported that having any PD diagnosis increased the suicidality rate; however, the authors reported that only cluster C PDs increased the suicidality in a significant rate compared to other clusters, which differs from our result due to cultural variation, as religious beliefs and more fear of God.

Given the strong association found, clinicians should consider screening individuals with MDD for PDs. Moreover, treatment approaches should be integrated and address both disorders simultaneously. This might involve combining psychotherapy for PDs, with pharmacotherapy for MDD. Developing a safety plan is crucial for individuals with these comorbid disorders. This plan should include strategies for coping with suicidal thoughts and identifying support systems and resources in times of crisis. Individuals with MDD and PDs especially borderline PD should receive regular and long-term monitoring for suicide risk, even after symptoms have improved. This is important due to the chronic and recurrent nature of these disorders. Providing education to patients and their families about the increased risk of suicide associated with these disorders can help in the early recognition of warning signs and prompt intervention. Encouraging collaboration and communication among different healthcare providers involved in the care of these individuals, such as psychiatrists, psychologists, and social workers, can help ensure a comprehensive approach to managing suicide risk. All these implications can help guide clinicians in effectively managing and reducing the risk of suicide in individuals with comorbid MDD and PDs.

Limitations

The sample size was relatively small. Being a hospital-based, not a community-based, sample may affect the generalization of results. Lack of follow-up of the patients to determine the exact relation between PDs and MDD and the risk of suicidality. The recruitment of patients was from a single, not multiple, center.

Conclusions

Comorbid PD was detected in 67.5% of the studied MDD patients. Borderline PD and narcissistic PD were the most common PDs (55.8% and 40.8%, respectively). Borderline PD showed a significant effect on depression severity. PDs, mainly avoidant, depressive, narcissistic, and borderline PDs had a significant negative effect on the level of functioning of the MDD patients. The presence of comorbid PD had a significant effect on suicidal thoughts and suicidal attempts, mainly depressive and borderline PDs. Mild depression alone seems to be insufficient for the patients to actually commit suicide and more severe degrees of depression plus the presence of co-morbid personality disorders must be present to force the patients to suicide. PDs showed a significant impact on mental health status, particularly depressive manifestations. Moreover, PDs and MDD exert marked effects on patients' functionality and increase the chance of suicidality.

Abbreviations

+ve	Positive
−ve	Negative
C-SSRS	Columbia Suicide Severity Rating Scale
DSM-IV-TR	Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition Text Revision
GAF	Global Assessment of Functioning Scale
HAM-D	Hamilton Depression Rating Scale
MDD	Major depressive disorder
PD	Personality disorder
pt	Patients
SCID-I	Structured Clinical Interview for DSM-IV Axis I Disorders
SCID II	Structured Clinical Interview for DSM-IV Axis II Disorders
SD	Standard deviation

Acknowledgements

Not applicable.

Authors' contributions

HH performed the data analysis and wrote the manuscript. ER collected the data and applied the tools used in the study. AO conceptualized the research's idea and supervised the whole research process. MO participated in the concept and design of the study and supervised the practical part of the study. RH contributed to the interpretation of collected data and supervised the practical part of the study. MM shared in the data analysis and in writing the manuscript. All authors read and approved the final manuscript.

Funding

This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

Availability of data and materials

The datasets used and/or analyzed during the current study are available from the corresponding author on reasonable request.

Declarations

Ethics approval and consent to participate

The ethical committee at Ain Shams University, Egypt, evaluated and authorized this study (approval code: MS-427). After explaining the process and the purpose of the study, the participants were asked for their written informed consent.

Consent for publication

Not applicable.

Competing interests

The authors declare that they have no competing interests.

Received: 7 April 2024 Accepted: 21 May 2024
Published online: 21 June 2024

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