Profile of egyptian patients with borderline personality disorder with and without comorbidity

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Background
Borderline personality disorder (BPD) is a complex psychiatric disorder associated with a wide range of psychopathology, including unstable mood, impulsive behavior, and suicidality, which is a defining feature of borderline, as well as high rates of axis I comorbidity.

Aim
To identify the profile of psychiatric comorbidity among patients with BPD and to compare them with a group of patients with BPD without comorbidity regarding some demographic variables, suicidal behavior, impulsivity, and functioning.

Methods
Structural Clinical Interviewing was done for DSM-IV axis I and axis II diagnoses. We recruited 30 patients with BPD, without axis I comorbidity (group I) and other 31 patients with BPD with comorbidity (group II). We compared both groups regarding different demographic variables, family circumstances impulsivity, suicidality, and functioning using suicide behavior questionnaire – revised, Barratt impulsiveness scale II, and global assessment of function.

Results
Patients with BPD in group II had one additional diagnosis, mainly major depression (35.5%), substance-related disorder (35.5%), anxiety disorder (16.1%), whereas bipolar disorder and eating disorders were equally rated (6.5% each). Group II patients scored significantly higher in the total suicidality scores using suicide behavior questionnaire – revised than group I, yet the two groups did not differ significantly in impulsivity scores. Meanwhile, the former group was significantly younger (P=0.05), and they started their illness and sought treatment at a younger age with more history of previous hospitalization than did group I. In addition, their global assessment of function is significantly impaired (P=0.002).

Conclusion
Comorbidities in patients with BPD are high, mainly major depression and substance-related disorders, which are associated with increased suicidality behavior, hospital admission, and impaired functioning. Data obtained conveys the need to give high priority to recognize the comorbidities that pose risk on the lives of patients with BPD.

Keywords:
borderline personality disorder, comorbidity, impulsivity, suicidality

Introduction

Borderline personality disorder (BPD) is a complex psychiatric disorder characterized by persistent instability in emotion regulation, identity and self-image, relationship problems, impulsivity, and repeated self-injurious behavior (Shah and Zanarini, 2018). Moreover, it is associated with high psychosocial and socioeconomic costs (Soeteman et al., 2008).

BPD is characterized by polymorphic symptoms and numerous co-existing psychiatric disorders (Shen et al., 2017), such as mood disorder, anxiety disorder, substance use disorder (SUD), and other personality disorders (Tomko et al., 2014).

Comorbidities in BPD reflect a connection with both internalizing and externalizing disorders and symptoms. This indicates that unlike many other disorders that are more strongly associated with either internalizing or externalizing symptoms, BPD is associated with domains of symptoms and categories of disorders. Studies have found a mean of 4.1 lifetime axis I comorbidities for patients with BPD (Biskin, 2013).

Although patients with BPD experienced declining rates of many axis I disorders over time, the rates of these disorders remained high, particularly the rates of mood and anxiety disorders. Patients whose BPD remitted over time experienced substantial decline in all comorbid disorders assessed, but those whose BPD did not remit over time reported stable rates of comorbid disorders (Zanarini *et al.*, 2004a).

One of the enduring challenges in treating patients with BPD is that only a minority have straightforward clinical presentations with no comorbidity. BPD typically coexists with depression, anxiety, and substance abuse. Symptoms of these conditions may lead the clinician to miss the diagnosis of personality disorder entirely (Gunderson, 2015).

This study aims to identify the profile of psychiatric comorbidity among patients with BPD and to compare them with a group of patients with BPD without comorbidity regarding some demographic variables, suicidal behavior, impulsivity, and functioning.

Methods

To fulfill this aim, we designed a cross-sectional study. We estimated the sample size using the Epi info program to be about 30 participants without comorbidity, who comprised group I, and other 31 patients with comorbidity, who formed group II.

Recruited patients were selected from two psychiatric hospitals located in Cairo. Patients were diagnosed according to the DSM-IV criteria, using Structured Clinical Interview for DSM-IV Axis I Disorders axis I an II (SCID) I and SCID II (First *et al.*, 1997, 1996).

All participants were adults with no medical or neurological disorders and who signed an informed written consent.

Recruited patients were subjected to the following:

(1) Reassessment by senior researchers to confirm the diagnosis using SCID I (First *et al.*, 1997).
   (a) The SCID I) is a clinician-administered, semistructured interview for use with psychiatric patients. The SCID I was developed to provide broad coverage of psychiatric diagnosis according to DSM-IV. We used the Arabic Version (El Missiry *et al.*, 2004).

(b) SCID II (First *et al.*, 1996). It is administered to evaluate an axis II diagnosis. It is a semistructured clinical interview that was developed to categorically and/or dimensionally assess the DSM-IV personality disorders. We used the Arabic Version (Hatata *et al.*, 2004).

(2) Assessment of suicidality:

We used suicide behaviors questionnaire – revised (SBQ-R) (Osman *et al.*, 2001). It is a self-administered questionnaire assessing suicide behaviors. It is composed of four items, each tapping a different dimension of suicidality.

Item 1 focuses on lifetime suicide ideation and/or suicide attempts. Item 2 assesses the frequency of suicidal ideation over the past 2 months. Item 3 assesses the threat of suicide attempt. Item 4 evaluates self-reported likelihood of suicidal behavior in the future.

Scoring cutoff scores in the adult generation population are equal to or more than 7. The test has a sensitivity of 93% and specificity of 95%. The reliability value of the Arabic version was found to be high as well (Cronbach's alpha=0.88).

(1) Assessment of impulsivity:

We used Barratt impulsiveness scale, version 11 (BIS-11) (Patton *et al.*, 1995), the Arabic version by Ellouze *et al.* (2013), to assess impulsivity.

It is a self-administered questionnaire designed to assess the personality/behavioral construct of impulsiveness. The BIS is the most widely used self-report measure of impulsive personality traits. It includes 30 items that yield six first-order factors (attention, motor, self-control, cognitive complexity, perseverance, and cognitive instability impulsiveness) and three second-order factors (attentional, motor, and nonplanning impulsiveness).

We used the Arabic version (El Rafie *et al.*, 2009). The reliability of this version was found to be high as well (Cronbach's alpha=0.88).

(1) Global assessment of function (GAF) (Hall, 1995).

It is a numeric scale (0 through 100) used by mental health clinicians and physicians to rate subjectively the social, occupational, and psychological functioning of adults. The GAF had been used

extensively in Egyptian patients (Awad *et al.*, 2008).

Ethical consideration

This study was approved by the Ain Shams Research Ethical Committee and was performed according to the ethical standards of the Helsinki Declaration. All included participants signed an informed consent after explaining to them the details of the research goals, ensuring the confidentiality of the obtained data, and acknowledging their voluntary participation.

Statistical analysis

Data analysis was done using statistical package for the social sciences (Statistical Package for Social Sciences SPSS, 2013). To analyze quantitative variables, we used the Student t test, which serves for comparison between two means, whereas Pearson χ^2 test was used for comparing quantitative variables. P value was used to indicate the level of significance, where P value of 0.05 is considered significant.

Results

Profile of comorbidity in patients with borderline personality disorder

Overall, 35.5% of group II patients with BPD met the criteria of major depression, and most of them were females (Fig. 1). However, another equal percentage (35.5%) was labeled with the diagnosis of substance-related disorders, and the majority of them were males. Anxiety disorders, bipolar disorder, and eating disorders were exclusively encountered in female patients (16.1, 6.5, and 6.5%, respectively) (Table 1).

Sociodemographic and clinical characteristics

Comparison between the two studied groups revealed that borderline patients with axis I comorbidity were significantly younger ($P=0.05$), and they started their illness significantly at an earlier age ($P=0.004$). They seek treatment also at a younger age than did borderline patients without comorbidity (Table 2). In addition, 45.2% of them were previously hospitalized compared with only 6.7% in group II.

Figure 1
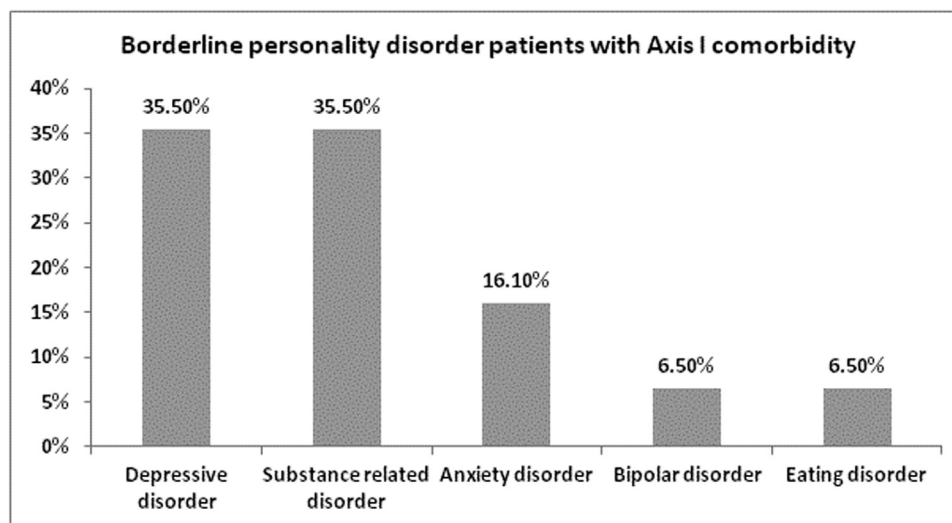
Borderline personality disorder patients with Axis I co-morbidity.

Table 1 Borderline personality disorder patients with axis I comorbidity

BPD with comorbidities (group II) ($N=31$)	n (%)	Male	Female
Depressive disorder	11 (35.3)	1	10
Axis I disorders according to DSM-IV using SCID I			
Substance related disorder	11 (35.5)	7	4
Anxiety disorder	5 (16.1)	0	5
Bipolar disorder	2 (6.5)	0	2
Eating disorder	2 (6.5)	0	2
Total	31	8	23
		26%	74%

BPD, borderline personality disorder; SCID I, Structured Clinical Interview for DSM-IV Axis I Disorders.

Male patients were nonsignificantly more prevalent in group II (25.8%), whereas female patients outnumbered males in group I (90%) (P=0.203). Moreover, no statistical difference was elicited when we compared both groups regarding the history of child abuse and family role.

Borderline patients with axis I comorbidity scored significantly higher in the total suicidality scores using SBQ-R (Table 2). However, no differences in impulsivity scores could be detected between the two groups. Moreover, they showed poorer functioning in the GAT compared with their counterpart patients (Table 2).

Profile of suicidality in patients group with axis I comorbidity

Patients with Borderline Personality Disorder (BDP) with comorbidity were classified according to their scores on 'SBQ-R' to patients with or without suicidality, and then they were compared according to some demographic variables and family circumstances.

Data revealed nonsignificant differences between the studied groups regarding sex, marital status, occupation, education, and social class. However, patients with suicidality were significantly older, have rigid families, and were exposed more extensively to physical and sexual abuse than those with no suicidality (Table 3).

Correlation between impulsivity and suicidality in patients with borderline personality disorder with axis I comorbidity

Data displayed in Table 4 revealed a negative correlation (P=0.028) between total suicidality score and item PII in impulsivity scale (PII), which indicated impaired cognitive abilities to control impulse. Moreover, a negative correlation was found between both items 2 in SBQ-R, which reflected the frequency of suicidal ideation over the past 12 months, and item 4, which denotes self-reported likelihood of suicidal behavior in the future and ability to control impulses.

NB

SBQ-R1	=	Lifetime suicide ideation
SBQ-R2	=	Suicide ideation over the past 12 months
SBQ-R3	=	Threat of suicide attempted
SBQ-R4	=	Likely hood of suicide behavior in the future
T	=	Total

BIS

Low scores on both Barratt AI and AII show a good attention span, cognitive stability, and the qualities of nonimpulsivity.

Low scores on both MI and MII show good control of motor actions and persevere in holding off on impulsive actions.

Low scores on both PI and PII show good self-control in planning for future and possessing of good cognitive ability for complexity.

Table 2 Sociodemographic and clinical characteristic: comparison between patients with borderline personality disorder with and without axis I comorbidity

	Group I BPD without comorbidity (N=30) Mean±SD	Group II BPD with axis I comorbidity (N=31) Mean±SD	t test P value
Age (years)	28.9±5.5	26±6.8	0.07
Age of onset	20.7±3.6	18.2±2.9	0.004
Duration of illness	8.1±4.1	7.8±6	0.805
Age of seeking treatment	26.8±4.9	22.2±5.7	0.001
Education (years)	16.5±4.4	16.2±2.1	0.734
Total suicidality scores	7.1±4.3	9.2±4.0	0.053
Total impulsivity scores	79.4±12	80.3±12.5	0.775
Global assessment of functioning	79.7±13.3	66±19	0.002
	n (%)	n (%)	χ^2
Sex			
Male	3 (10)	8 (26)	0.203
Female	27 (90)	23 (74)	
Past history of abuse child abuse			
No	12 (40)	17 (54)	0.366
Yes	18 (60)	14 (45)	
Family role			
Family rigid	4 (13.3)	9 (29)	0.295
Role structure	5 (16.7)	3 (9.7)	
Flexible	9 (30)	5 (16.1)	
Diffused	12 (40)	14 (45.2)	
Previous hospitalization			
Yes	2 (6.7)	14 (45.2)	P=0.001
No	28 (93.3)	17 (54.8)	

BPD, borderline personality patients; GAF, global assessment of functioning.

Table 3 Profile of suicidality in borderline patients with axis I comorbidities

Sociodemographic data	Suicidality (SBQ-R) [n (%)]		Test used	P value
BPD with comorbidities (group II)	No (N=14)	Yes (N=17)		
Sex				
Male	5 (35.7)	3 (17.6)	Fischer exact test	0.412
Female	9 (64.3)	14 (82.4)		
Occupation				
Professional	2 (14.3)	6 (35.3)		0.464
Skilled	2 (14.3)	1 (5.9)		
Unemployed	10 (71.4)	10 (58.8)		
Marital status				
Single	12 (85.7)	10 (58.8)	Fischer exact test	0.261
Married	1 (7.1)	5 (29.4)		
Separated	0	1 (5.9)		
Divorced	1 (7.1)	1 (5.9)		
social class				
High	9 (64.3)	5 (29.4)	Fisher exact test	0.118
Middle	3 (21.4)	9 (52.9)		
Low	2 (14.3)	3 (17.6)		
	Mean	SD	Mean	SD		P value
Age	22.93	4.41	28.59	7.48	t test	0.015
Education	15.79	1.12	16.53	2.45	t test	0.304
Family circumstances				
BPD with comorbidities	SBQ-R		Fisher exact test	
	No [n (%)]	Yes [n (%)]	P value	
Family role				
Rigid	2 (14.3)	7 (41.2)	0.035	
Structured	3 (21.4)	0		
Flexible	4 (28.6)	1 (5.9)		
Diffused	5 (35.7)	9 (52.9)		
History of abuse				
No	10 (71.4)	7 (41.2)	0.025	
Emotional	4 (28.6)	2 (11.8)		
Physical	0	2 (11.8)		
Sexual	0	6 (35.3)		

BPD, borderline personality disorder; SBQ-R, suicide behavior questionnaire – revised.

Table 4 Spearman correlation between suicidality (suicide behavior questionnaire – revised) and impulsivity (Barratt impulsiveness scale 11) in patients with borderline personality disorder who have axis I comorbidities

BLP comorbidities	Barratt (AI)	Barratt (AII)	Barratt (MI)	Barratt (MII)	Barratt (PI)	Barratt (PII)
SBQ-R (T)						
r_s	0.010	0.116	0.172	0.104	−0.098	−0.394
P	0.958	0.534	0.356	0.577	0.601	−0.028
SBQ-R (1)						
r_s	0.044	0.177	0.182	0.100	0.003	0.289
P	0.813	0.342	0.327	0.594	0.989	0.114
SBQ-R (2)						
r_s	0.018	0.020	0.154	0.019	−0.222	−0.483
P	0.923	0.915	0.407	0.919	0.229	0.006
SBQ-R(3)						
r_s	0.217	0.200	0.307	0.156	0.093	−0.209
P	0.240	0.281	0.093	0.402	0.617	0.260
SBQ-R(4)						
r_s	−0.136	−0.006	0.083	0.096	−0.157	−0.382
P	0.467	0.976	0.658	0.609	0.399	0.034

SBQ-R, suicide behavior questionnaire – revised.

Discussion

BPD is a prevalent, chronic, and debilitating syndrome associated with high rates of substantial medical and psychiatric comorbidity (Soloff, 2000; Sansone and Sansone, 2011; Trull et al., 2011; Wang et al., 2019).

Comorbid disorders are more easily recognized and more regularly treated. Thus, they hide the symptoms of personality disorder, which go untreated underchecked with delayed diagnosis (Saletrs-Pedneault, 2000; Shen et al., 2017).

The economic burden of BPD with a comorbid psychiatric disorder is associated with functional impairment and high rates of mortality by suicide (Shen et al., 2017).

Few studies about BPD were conducted in Egypt and Arab countries (Abdel-Latif et al., 1996; Asaad and Okasha, 2002; El-Adl and Hassan, 2009; Magd et al., 2019).

Our study could be the first step toward a better understanding of borderline personality and its relevance to psychiatric comorbidities, impulsivity, and suicidality.

This work aimed to identify psychiatric comorbidities among patients with BPD and to compare a group of patients with BPD with axis I comorbidity versus the other group with no comorbidity regarding sociodemographic variable, family background, clinical profile, and their scores on impulsivity and suicidality scales.

Profile of axis I comorbidity in patients with borderline personality disorder

Our study revealed that 35.5% of the studied population met the DSM-IV criteria of a depressive episode. It seems that this finding coincides with other data in cross-sectional studies which report that comorbid major depression ranged from 32 to 83% (Zanarini et al., 2004b; Biskin, 2013; Shen et al., 2017). Moreover, 6.5% have bipolar disorder, and this result is in contrast to the finding of Lenzenweger et al. (2007), who estimated that the bipolar disorder was 14.8%. This difference may be owing to sampling differences.

Features of BPD such as affective instability, interpersonal difficulties, and emptiness may be related to the high rates of comorbidity between mood and anxiety disorder with BPD (Eaton et al., 2010).

Among patients with BPD having axis I comorbid psychiatric disorders, we estimated that 35.5% had substance-related problems either abuse or dependence syndrome. It is worth telling that previous studies on BPD patients have frequently documented range from 23 to 84% presence of comorbid alcohol and SUD (Zanarini et al., 2004a; Tomko et al., 2014; Trull et al., 2018). The differences in those studies may reflect different study samples.

The cooccurrence of BPD and substance abuse may be explained by the negative emotionality (Sher and Trull, 2002). Moreover, substance abuse increases patients' risk for impulsive suicidal behavior and impaired judgment (Links and Kolla, 2005).

A plethora of documents by numerous cross-sectional studies estimated the prevalence of comorbid anxiety disorder ranged from 35 to 88% (Shah and Zanarini, 2018). However, the rate of anxiety disorders in our study was only 16.1%. A cross-cultural study should be addressed to explain these differences.

The cooccurrence of BPD with eating disorder is commonly reported and was found to range from 3 to 26% (Shah and Zanarini, 2018).

With a percentage of 6.5% in our patients, we assumed that cultural factors or sample selection may contribute to such low percentage.

Characteristics of BDP with axis I comorbidity

BPD is a major health problem, particularly among women. Although research findings on the prevalence of BPD in men and women are inconsistent (Johnson et al., 2003), it is generally estimated that two-thirds of those diagnosed with BPD are women. Consequently, most of the literature and the majority of the empirical studies focus on BPD in women. Additionally, different research studies concluded that a higher proportion of women than men experience BPD between the ages of 30 and 44 years (Tomko et al., 2014).

There are notable sex differences in BPD concerning axis I comorbidity, as men with BPD are more likely to have SUDs whereas women with BPD are more likely to experience eating, mood, anxiety, and posttraumatic stress disorders (Sansone and Sansone, 2011). These findings are in concordance with our results that comorbidity with SUDs are found to be more in males, whereas mood and anxiety disorders are predominant among females.

Our study revealed that patients with BPD with psychiatric comorbidity developed symptoms at an earlier age and also sought treatment at a younger age than those with no comorbidities. It seems that their clinical symptoms were much more severe which necessitated hospitalization more frequently than their counterparts.

Moreover, their scores on GAF are much worse than the noncomorbid group. Our finding is concordant with different authors who reported that individuals with BPD showed impaired functioning in social relationships, occupation leisure activities, legal problems, and financial difficulties (Skodol *et al.*, 2005; Ansell *et al.*, 2007; Tomko *et al.*, 2014).

Impulsivity in BPD is considered by Linhartová *et al.* (2019a, 2019b) to be either a consequence of some personality traits or dysfunction of a neurobiological or cognitive function. Naoum *et al.* (2017) stated that impulsivity is a core feature of BPD, and they found their patients with BDP scored significantly higher in BIS than healthy control, especially in choice or reward-related impulsivity than motor impulsivity. However, our patients with BPD with comorbidity did not show any significant differences in impulsivity scores than their noncomorbid counterparts.

Numerous data emphasized that comorbidity in patients with BDP is a contributor to a heightened risk for aggression and suicidal behavior; this is clear from our study that the total suicidality scores obtained by BDP with comorbidity are significantly higher than their comparison group.

Many authors explained that the high comorbidity of BPD with major depression increases the hopelessness, mood instability, and hence increases the number and seriousness of suicide attempts (Torgersen *et al.*, 2001; Skodol *et al.*, 2005).

Unlike patients with mood disorders who reported suicidal ideation only when depressed, patients with BPD have chronic suicidal ideation and numerous self-harm behaviors (Paris, 2019). He added that patients with BPD have a mean of three-lifetime suicide attempts, and up to 10% of them will die by suicide. Meanwhile, the comorbidity of BPD with substance abuse increases patients' risk for impulsive suicidal behavior and impaired judgment (Links and Kolla, 2005).

Patients with comorbidity were further compared according to suicidality scores obtained using SBQ-4. We revealed that patients with BPD with comorbidity and high scores of suicidality were significantly older, had more disturbed family relations, and were exposed more frequently to physical and sexual abuse during childhood.

Using Spearman correlation between suicidality and impulsivity among patients with BDP with comorbidity revealed a negative correlation between total suicidality scores with cognitive abilities to control impulsive and frequency of suicidal ideation over the last year. Our findings go with reports which indicated that adults with BPD have cognitive inflexibility and poor self-monitoring which may reflect frontal lobe dysfunction (Kunert *et al.*, 2003).

Strength and limitation

The strength of this study is that it is one of few studies conducted in Egypt to compare BPD with and without comorbidity, yet the study was limited by the small sample size, and also, we did not examine the comorbidity with other axis II disorder. There is also a need for evaluation of these participants over a longitudinal period of time to determine the effect of these comorbidities upon their prognosis. Additional studies should be conducted for further validation of our findings.

Conclusion and recommendations

BPD is a complex clinical problem with polymorphic symptoms owing to high psychiatric comorbidity.

We revealed that the most frequent axis I comorbidity is major depression among females and SUD among males. Other comorbid axis I disorders include anxiety, eating disorder, and bipolar disorder. Patients with comorbidity were significantly younger, more hospitalized, with higher suicidality scores.

Hopefully, patients with BPD with axis I comorbidity will be diagnosed early and the management plan for them would be individualized according to the existing comorbidity aiming to minimize the burden of the emotional pain experienced by those miserable individuals.

Conflicts of interest

There are no conflicts of interest.

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