The co-occurrence of autistic traits and borderline personality disorder traits is associated to increased suicidal ideation in nonclinical young adults

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Abstract

Background: The co-occurrence of Autism Spectrum Disorder (ASD) and Borderline Personality Disorder (BPD) is not rare and has been linked to increased suicidality. Despite this significant comorbidity between ASD and BPD, no study had examined the co-occurrence of autistic traits and borderline personality disorder traits in the general population. The aim of the present study was to examine the co-occurrence of autistic and borderline traits in a non-clinical sample of young adults and its influence on the levels of suicidal ideation and depressive symptomatology.

Procedures: Participants were 474 college students who completed self-report questionnaires. Data were analysed using correlation and cluster analyses.

Main findings: Borderline personality traits and autistic traits were weakly correlated. However, cluster analysis yielded four groups: a low traits group, a borderline traits group, an autistic traits group, and a group characterized by high levels of both traits. Cluster analysis revealed that autistic and borderline traits can co-occur in a significant proportion of young adults. The high autistic and borderline traits group constituted 17% of the total sample and had higher level of suicidal ideation than the borderline traits group, despite similar levels of depressive symptoms.

Conclusion: This result suggests that the higher suicidality observed in patients with comorbid ASD and BPD may extent to non-clinical individuals with high levels of co-occurrent autistic and borderline traits.

Keywords: Autistic traits; borderline personality traits; cluster analysis.

1. Introduction

The co-occurrence of Autism Spectrum Disorder (ASD) and Borderline Personality Disorder (BPD) is not rare. Rydén et al. found that 15% of 41 female patients with BPD fulfilled criteria for ASD [1]. Patients with comorbid BPD and ASD had significantly more frequent suicide attempts, more negative self-image, and lower global functioning. They did not differ in number of comorbid Axis I and II disorders with the exception of less common substance abuse. Nanchen et al. reported that almost half of 38 women with BPD scored beyond the ASD cut-off of the Autism Spectrum Quotient. The subgroup with high autistic traits had lower scores for cognitive empathy and higher alexithymia scores [2].

Conversely, Anckarsater et al. reported a 12.2 % prevalence of BPD among 74 ASD patients [3] and Hofvander et al. found that, among 122 referred adults with normal intelligence ASD, 15% of females and 5% of males had comorbid BPD[4].

Despite this significant comorbidity between ASD and BPD, no study had examined the co-occurrence of autistic traits and borderline personality disorder traits in the general population. The aim of the present study was to examine the co-occurrence of autistic and borderline traits in a non-clinical sample of young adults and its influence on the levels of suicidal ideation, depressive symptomatology and substance use.

2. Material and Methods

2.1. Participants

Participants were recruited through social networks and official website of several French universities. The sample is composed of 474 individuals (95 males; 379 females) aged between 18 and 25 (mean age of males = 21 ± 2.3 ; mean age of females = 20.7 ± 1.9 ; $p = .32$). The study followed the ethical guidelines of the Helsinki Declaration. Participants provided their willingness to participate through a consent form and no compensation was offered. The questionnaires were anonymous.

2.2. Measures

2.2.1. Borderline personality traits

Borderline traits were assessed using the nine relevant items of the *Personality Diagnostic Questionnaire-4* [5, 6]. Items (e.g., "I often question my personal identity and frequently change my opinion of who I am") were scored from 1 (totally false) to 7 (totally true).

2.2.2. Autistic traits

Autistic traits were measured using the Autism spectrum Quotient (AQ) [7] under its 10-item version (e.g., "When I am reading a story, I find it difficult to work out the characters intentions"). Items were scored 0 (no) or 1 (yes), except for items 2-6 and 9 that were scored inversely [8].

2.2.3. Depression symptoms and suicidal ideation

Depression was evaluated using The *Centre for Epidemiological Studies-Depression* scale (CES-D) [9] under its 10-item version (e.g., "My sleep has not been good"). Responses were made on a 4-point Likert scale, ranging from 0 to 3

Suicidal ideation was assessed using the 3-item scale proposed by Garrison et al. (1991) ("I felt life was not worth living"; "I felt like hurting myself"; "I felt like killing myself"). Responses to these items were made on the same scale as the CES-D items.

Statistical analysis was performed using Statistica 10.

3. Results

Borderline personality traits and autistic traits were weakly correlated ($r = .20$).

A cluster analysis was conducted in two steps to generate profiles based on autistic and borderline traits. In the first step, a hierarchical cluster analysis was conducted (Ward's method with Euclidean distance). Based on the dendrogram and the aggregation curve, a four-

cluster solution was identified. In the second step, K-means clustering was used to assign individuals to one of the identified clusters. A discriminant analysis showed clear differences between clusters (Wilks' $\lambda = 0.101$, $p < 0.001$) with 96.0% of cases correctly classified. Each cluster was named according to the dimension (autistic or borderline traits) that scored above the sample mean with respect to this cluster (Figure 1 and Table 1). This led to the four following clusters: High traits (H); Autistic (A); Borderline (B); Low traits (L). Using ANOVA, the clusters were compared on several dimensions. Firstly, important intercluster differences were observed regarding the autistic and borderline traits, which validated the classification. In addition the clusters displayed contrasted levels when considering depressive symptoms and suicidal ideation. The high-trait cluster displayed the highest scores of depressivity and suicidality, followed by the borderline cluster, then the autistic and the low-trait cluster.

4. Discussion

Cluster analysis based on autistic and borderline traits yielded four groups in a non-clinical sample of young adults: a low traits group, a borderline traits group, an autistic traits group, and a group characterized by high levels of both traits. Although autistic and borderline traits were weakly related in the total sample, cluster analysis revealed that autistic and borderline traits can co-occur in a significant proportion of young adults.

Despite similar levels of depressive symptoms, the high autistic and borderline traits group had higher level of suicidal ideation than the borderline traits group. This result suggests that the higher suicidality observed in patients with comorbid ASD and BPD by Rydén et al. may extend to non-clinical individuals with high levels of co-occurrent autistic and borderline traits.

Contrary to Ryden et al. who found that patients with comorbid BPD and ASD had less common substance use than BPD patients [1], cannabis use were similar in our borderline

group and high autistic and borderline traits group. So, difference in cannabis use, which is a risk factor for suicidal ideations and behaviors in adolescents and young adults (e.g., Chabrol et al.) [10], does not account for the higher level of suicidal ideation in the high autistic and borderline traits group.

The autistic traits group had low levels of suicidal ideation and depressive symptoms which were similar to those observed in the low traits group. So, the association between ASD and suicidal ideation (e.g., Cassidy et al.) [11] might not be extended to subclinical ASD. This suggests that autistic traits per se do not account for the higher level of suicidal ideation in the comorbid group. It may be that the interaction between autistic and borderline traits may facilitate suicidal ideation. For example, the ASD trait of hypersensitivity to life stress easily inducing feelings of helplessness, hopelessness [12, 13] may interact with the BPD trait of heightened negative emotional reactivity [14] to trigger repeated episodes of unbearable intense negative affects provoking suicidal ideation. Moreover the ASD trait of difficulties in interpersonal relationships leading to frequent social isolation and lack of social support [15] may contribute to the development of suicidal ideation.

Another possibility is the role of alexithymia. Observing that more adults with Asperger' syndrome reported lifetime experience of suicidal ideation (66%) than were depressed (31%), Cassidy et al. postulated that this finding might result from under-reporting of depression, perhaps because of alexithymia [11]. In our sample, it may be that the alexithymia possibly linked to autistic traits may result in under-reporting of depressive symptoms in both the autistic group and comorbid autistic and borderline group. The comorbid group may experience intense episodes of undifferentiated negative affects provoking suicidal ideation without reporting more depressive symptoms than the borderline group.

This study should be considered as exploratory and descriptive. Further studies should control for more risk factors of suicidality – such as helplessness/hopelessness, alexythymia, or social support- to explore the associations between suicidal ideations and comorbid autistic and borderline traits.

5. Conclusions

This study suggests that there is a significant minority of non-clinical adolescents characterized by the presence of both autistic and borderline traits, and higher levels of suicidal ideations. Taking this group into account may have implications in the understanding and prevention of suicidal behaviors.

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Figure 1. Four-cluster solution based on scores of autistic and borderline dimensions.

Table 1

Typology of individuals on autistic and borderline traits. Cluster comparison using ANOVA and post-hoc test.

	Sample	Range	Cluster <i>M (SD)</i>				<i>F</i>	Significant comparisons
	N=474 <i>M (SD)</i>		High traits <i>n</i> =79 (17%)	Autistic <i>n</i> =108 (23%)	Borderline <i>n</i> =118 (25%)	Low traits <i>n</i> =169 (35%)		
Autistic traits	3.11 (1.62)	0-8	4.47 (1.09)	4.86 (1.01)	2.16 (0.9)	2.01 (0.97)	271*	A>H>B,L
Borderline traits	31.54 (11.42)	9-60	48.83 (6.9)	26.16 (6.78)	37.92 (6.08)	22.42 (4.38)	441.2*	H>B>A>L
Depressive sympt.	12.8 (4.07)	1-25	16.97 (3.84)	12.32 (3.56)	13.63 (3.4)	10.53 (3.12)	66.3*	H>B>A>L
Suicidal ideation	0.88 (1.7)	0-9	2.63 (2.5)	0.46 (1.23)	1.09 (1.66)	0.18 (0.5)	53.9*	H>B>A,L

* $p < 0.05$; A: Autistic cluster; B: Borderline cluster; H: High trait cluster; L: Low trait cluster