ORIGINAL CONTRIBUTION

First evidence of a prospective relation between avoidance of internal states and borderline personality disorder features in adolescents

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Abstract At least two leading developmental models of borderline personality disorder (BPD) emphasize the role of accurate reflection and understanding of internal states as significant to the development of BPD features (Fonagy, Int J Psycho-Anal 72:639–656, 1991; Linehan, Cognitive-behavioral treatment of borderline personality disorder, 1993). The current study used the construct of experiential avoidance (EA) to operationalize avoidance of internal states and sought to examine (1) the concurrent relations between EA and borderline features in a large and diverse community sample; and (2) the prospective relation between EA and borderline features over a 1-year follow-up, controlling for baseline levels of borderline features. $N = 881$ adolescents recruited from public schools in a large metropolitan area participated in baseline assessments and $N = 730$ completed follow-up assessments. Two main findings were reported. First, EA was associated with borderline features, depressive, and anxiety symptoms at the bivariate level, but when all variables were considered together, depression and anxiety no longer remained significantly associated with borderline features, suggesting that the relations among these symptom clusters may be accounted for by EA as a cross-cutting underlying psychological process. Second, EA predicted levels of borderline symptoms at 1-year follow-up, controlling for baseline levels of borderline symptoms, and symptoms of anxiety and depression. Results are interpreted against the background of developmental theories of borderline personality disorder.

Introduction

Borderline personality disorder (BPD) is a serious psychiatric condition associated with instability in affect and identity, significantly impaired interpersonal relationships, and self-injurious behaviors [1–3]. Though initially considered a disorder limited to adults, recent longitudinal and genetic findings establish BPD in adolescents as a valid diagnostic entity, warranting empirical attention [4–6]. Much like the adult counterpart, BPD in adolescence is a severe disorder associated with functional impairment [7], low life satisfaction [8], and a disproportionately large percentage of admissions to inpatient psychiatric facilities [9].

There has been a recent effort to study borderline personality traits (rather than diagnostic status) among community and at-risk adolescents [10–12]. Indeed, a debate about dimensional versus categorical representations of personality pathology is ongoing, representing an issue of particular relevance given the recent release of the newest Diagnostic and Statistical Manual in 2013 [2]. A categorical approach assumes that BPD is a discrete syndrome, clearly delineated from other psychiatric disorders as well as normal personality functioning [1, 13, 14]. A dimensional, trait-based perspective suggests instead that BPD traits may be distributed continuously within the normal population and may denote psychopathology only at the severe end [15–17]. Thus, a dimensional perspective allows for the examination of borderline personality traits and their relation to other constructs across the full latent trait of borderline pathology and across varying levels of severity.

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Several influential theories explain the developmental trajectory of BPD as a complex transaction between environmental and biological risk factors [17, 18]. For example, Linehan's biosocial theory of BPD emphasizes the centrality of emotional vulnerability in the development of the disorder. She posits that children with a genetically based, emotionally sensitive, and reactive temperament are at an elevated risk of developing BPD when reared in an invalidating (e.g., neglectful, abusive, and/or dismissive) early environment. These environments fail to impart adequate emotion management skills, so the individual often resorts to short-term avoidance strategies (e.g., self-harm, impulsive behavior) when experiencing unpleasant internal states. This process of avoidance of internal thinking and feeling states is also identified as a risk process for the development of BPD in Fonagy's [19, 20] mentalization-based account of BPD. In this account, an insecure attachment relationship between primary caregiver and child results in avoidance of internal thinking and feeling states in the child because acknowledging such internal states would further threaten an already vulnerable relationship with the caregiver. In turn, the child is at increased risk of developing BPD.

A construct that accurately captures the tendency to avoid internal thinking and feeling states (highlighted in both of the aforementioned developmental models) is experiential avoidance (EA)—a construct that was developed within the context of acceptance and commitment therapy (ACT; [21]). EA refers to an "unwillingness to remain in contact with uncomfortable private events (e.g., thoughts, emotions, sensations, memories, urges)" that often manifests in behaviors that serve to avoid unpleasant experiences [p. 1154, 21]. Typical EA behaviors include thought suppression, denial, self-distraction, substance abuse, and self-injury [22]. While these behaviors alleviate distress in the short term, avoidance of unpleasant thoughts and sensations actually increases the likelihood of experiencing them again in the future, elevating physiological arousal and distress [23]. This sets into motion a vicious cycle of using more avoidance-based strategies, thereby thwarting healthy and effective problem solving. Repeated long-term engagement in EA is posited to have damaging effects such as high rates of psychopathology, high negative affect and low positive affect, high emotional reactivity, as well as a number of problem behaviors [e.g., substance abuse, self-injury, and eating disorders; 22, 23].

As suggested by Fonagy's mentalization-based account of BPD [19, 20] and Linehan's biosocial theory of BPD [18], research has already identified a reliable link between EA and BPD features [22]. For example, Iverson et al. [24] found that EA uniquely predicted BPD features when controlling for depressive symptoms and emotion dysregulation, signifying that EA may uniquely underlie BPD symptom severity. Similarly, Gratz et al. [25] found that, compared with individuals with no personality disorder, BPD outpatients were less willing to allow the experience of emotional distress in the pursuit of goals. Additionally, Bijttebier and Vertommen [26] reported that individuals with BPD engaged in more avoidant coping strategies compared to controls. Taken together, this evidence suggests that EA is an important correlate of BPD.

Recently, an interest in extending research on EA to youth samples has emerged, likely because EA is implicated in developmental models of BPD like Fonagy's [19] and Linehan's [18]. The only existing measure of EA in youth is the Avoidance and Fusion Questionnaire for Youth [AFQ-Y; 27], a self-report measure that assesses EA in children and adolescents. The AFQ-Y was adapted from the Acceptance and Action Questionnaire [28], an extensively researched and widely accepted adult EA measure. Greco et al. [27] developed and validated the AFQ-Y through a comprehensive, multiphasic, statistic-, and theory-based approach in a large community sample. The results of this evaluative process yielded support for the construct and convergent validity of the AFQ-Y in youth as well as adequate internal consistency ($\alpha = 0.90$).

To our knowledge, only one empirical study has investigated EA in relation to borderline pathology in youth. In adolescent inpatients with BPD, Schramm et al. [29] found that EA made a significant and independent contribution to the variance in borderline features, while partially mediating the relation between difficulties in emotion regulation and borderline features. This study is important in providing evidence that EA may be an important feature in adolescent BPD—as has been documented in the aforementioned adult studies. However, given that this study utilized an inpatient sample, the relation between EA and BPD across the full latent trait of borderline pathology was not examined, suggesting the need for studying these relations in a community sample. Additionally, the sample was not demographically diverse, and thus, additional research is needed. Furthermore, potential confounding variables were not considered. For example, depression, anxiety, and sex are associated with BPD and EA [23, 30], but these constructs have not been investigated simultaneously in the same sample, precluding a thorough understanding of the relations between BPD and EA. Most importantly, no longitudinal work has ever been conducted to examine the predictive role of EA for borderline features over time.

Against this background, the current study had two aims. First, we sought to examine the concurrent relations between EA and borderline features in adolescents in a

large and diverse community sample. When examining this relation, we also aimed to control for known correlates of EA (depression, anxiety, and sex) that may confound the relation between EA and borderline features. Second, we examined the prospective relation between EA and borderline features over a 1-year follow-up period, controlling for the baseline level of borderline features. Positive findings would support the notion that the presence of EA in adolescence may predict increases in borderline features over time, thus identifying EA as an important factor for targeted preventative intervention efforts.

Methods

Participants

Adolescents were recruited from seven schools in a large metropolitan school district, resulting in a sample of 881 adolescents who completed the AFQ-Y as well as measures of borderline features, depression, and anxiety at baseline; 55.9 % of participants were female and 44.1 % were male. The age breakdown for the sample was as follows: 0.4 % were 14 years, 23 % were 15 years, 50 % were 16 years, 23 % 17 years olds, and 3.5 % were 18 years and older. Racial identification was as follows: 31.7 % Hispanic, 30.3 % White, 26.6 % African American, 3.4 % Asian or Pacific Islander, and 8 % Other. Out of the 881 who completed baseline measures, 730 (82.8 %) adolescents completed a follow-up assessment of borderline features exactly 1 year later.

Measures

Avoidance and Fusion Questionnaire for Youth (AFQ-Y)

The AFQ-Y [27] is a 17-item self-report questionnaire that measures EA in youth. It was modeled after the Acceptance and Action Questionnaire, a measure that assesses the same construct in adults [28]. Sample items include "If I feel sad or afraid, then something must be wrong with me," and "I am afraid of my feelings." Item responses are rated on a 5-point Likert Scale ranging from 0 (*not at all true*) to 4 (*very true*). A total score is obtained by summing item responses, with higher scores indicating a higher degree of EA. Previous studies provide evidence that the AFQ-Y has adequate internal consistency and construct, convergent, and concurrent validity [31]. In the present sample, this measure was administered only at baseline and internal consistency of this measure, as measured by Cronbach's alpha, was 0.82.

Borderline Personality Disorder Features Scale for Children (BPFS-C)

The BPFS-C [32] was developed from the BPD scale (BOR) of the Personality Assessment Inventory [PAI; 3] and consists of 24-items measuring borderline personality features in childhood (for ages 9 and older). These items assess how participants feel about themselves and other people and are rated on a 5-point Likert Scale ranging from 1 (*not at all true*) to 5 (*always true*). Items reflect four domains of core borderline personality disorder features: affective instability, identity problems, negative relationships, and self-harm. Sample items include "I want to let some people know how much they've hurt me," and "When I'm mad, I can't control what I do." Construct validity has been established [32, 33], and borderline personality features detected by the BPFS-C have been shown to be moderately stable across time. Specifically, BPD features were found to be moderately stable over the course of 1 year across three time points: fall of year 1, spring of year 1, and fall of year 2. In the present sample, this measure was administered at baseline and 1-year follow-up and internal consistency, as measured by Cronbach's alpha, was 0.88 at both time points.

The Center for Epidemiologic Studies Depression Scale (CES-D Scale)

The CES-D scale [34] was developed to study depressive symptomology in the general population and is routinely used in adolescent samples from the community [35]. This self-report measure includes 20-items, selected from previously validated depression scales, and targets the major components of depression (i.e., depressed mood, loss of appetite, and feelings of hopelessness). Participants report frequency of depressive symptoms as they occurred during the past week and rate them on a 4-point Likert scale ranging from 0 (*rarely or none of the time*) to 3 (*most or all of the time*). Sample items include "I thought my life had been a failure," "I felt sad," and "I felt hopeful about the future." Reliability, validity, and factor structure have been found to be similar across a range of demographic characteristics within the general population. This measure was administered at baseline only, and internal consistency, as measured by Cronbach's alpha, was 0.75 in the present sample.

Screen for Child Anxiety Related Emotional Disorders (SCARED)

The SCARED [36] is a 66-item self-report questionnaire that measures symptoms of DSM-IV anxiety disorders in

children using five subscales. For the current study, only the generalized anxiety disorder subscale, consisting of 9-items, was used to measure anxiety symptoms. Items such as "I worry about things working out for me" and "People tell me I worry too much" were rated by participants on a 3-point Likert scale indicating symptom frequency (i.e., *almost never*, *sometimes*, or *often*). Discriminant validity [37] and concurrent validity [36, 38] have been established in prior studies. Previous research supports the five-factor structure of the SCARED and demonstrates good internal consistency of the GAD subscale [$\alpha = 0.86$; 39]. In the present study, this measure was administered at baseline only and internal consistency, as measured by Cronbach's alpha, was 0.85.

Procedures

This study was approved by the appropriate institutional review board, and recruitment was conducted within seven schools, representing five school districts, in a diverse major metropolitan area. On two separate occasions, research staff presented the study to potential student participants and answered any questions that arose. A take-home packet was then sent home with general information about the study and parental consents for signed approval. Students whose parents completed the forms were assented and completed the measures in a private classroom during school hours.

Results

Attrition analyses

Attrition analyses compared adolescents for whom baseline data were collected but did not participate at 1-year follow-up to adolescents who participated at both time points. There were no significant differences between adolescents who did and did not complete the follow-up assessments with regard to sex ($\chi^2 = 0.07$, $p = 0.80$) or racial identification ($\chi^2 = 5.13$, $p = 0.27$). There were no significant differences with regard to EA (AFQ-Y total score, $t = 1.51$, $p = 0.13$), depression symptoms (CES-D total score, $t = -1.16$, $p = 0.25$), or anxiety symptoms (SCARED total score, $t = -1.34$, $p = 0.18$) at baseline. There was a significant difference between adolescents who did and did not complete the follow-up assessments with regard to borderline features (BPFS-C total score, $t = 1.96$, $p = 0.05$). Adolescents who did not complete assessments at follow-up had significantly higher mean borderline features at baseline ($M = 59.94$, SD $= 14.97$) than those who did complete assessments at follow-up ($M = 57.15$, SD $= 14.29$).
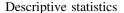
Descriptive statistics

Table 1 summarizes the descriptive statistics for all main study variables. Isolated items on the BPFS-C and AFQ-Y were missing at random and therefore affected the calculation of total scores, bringing the final sample size for these two measures to $n = 881$ (BPFS-C) and $n = 869$ (AFQ-Y).

EA relates to concurrent borderline features

Table 2 summarizes the bivariate correlations between main study variables. As is evident in Table 2, significant correlations were found for EA and the total score on the BPFS-C. As expected, EA also showed significant relations with depression and anxiety. Sex significantly correlated with both EA and borderline features, such that higher levels of both were evident for female adolescents.

To examine the concurrent multivariate relations between EA and borderline features while controlling for known correlates of these constructs, sex, anxiety and

Table 1 Descriptive statistics for main study variables

	M	SD	Min	Max
BPFS-C T1 total	57.62	14.33	24	104
Avoidance of internal states (AFQ-Y)	37.93	10.48	17	70
Anxiety (SCARED)	8.27	4.38	0	18
Depression (CES-D)	10.42	4.77	0	28
BPFS-C T2 Total	56.06	13.95	25	104

BPFS-C T1 Borderline Personality Disorders Features Scale for Children at baseline, *AFQ-Y* Acceptance and Fusion Questionnaire for Youth, *SCARED* Screen for Child Anxiety Related Emotional Disorders (measured dimensionally and therefore denoting severity), *CES-D* The Center for Epidemiologic Studies Depression Scale (measured dimensionally and therefore denoting severity), *BPFS-C T2* Borderline Personality Disorders Features Scale for Children at 1-year follow-up

Table 2 Bivariate correlations between main study variables

	AFQ-Y	BPFS-C T1 Total	Anxiety	Depression
AFQ-Y	–	–	–	–
BPFS-C T1 total	0.411*	–	–	–
Anxiety (SCARED)	0.490*	0.193*	–	–
Depression (CES-D)	0.499*	0.231*	0.470*	–
Sex	−0.181*	−0.102	−0.226*	−0.172*

BPFS-C T1 Borderline Personality Disorders Features Scale for Children at baseline, *AFQ-Y* Acceptance and Fusion Questionnaire for Youth, *SCARED* Screen for Child Anxiety Related Emotional Disorders (measured dimensionally and therefore denoting severity), *CES-D* The Center for Epidemiologic Studies Depression Scale (measured dimensionally and therefore denoting severity)

* Correlation significant at the $p < 0.001$ level (2-tailed)

depression were entered in a linear regression alongside EA as independent variables. The BPFS-C total score served as the dependent variable. The only variable that retained significance in this regression was EA ($\beta = 0.42$; $p < 0.001$), suggesting that the bivariate relations between depression, anxiety, sex, age, and borderline features are explained by shared variance associated with EA.

EA predicts borderline features at 1-year follow-up

Next, we examined the prospective relation between EA and borderline symptoms 1 year after baseline, controlling for baseline borderline symptoms. To this end, we entered baseline borderline symptoms, depression, anxiety, age, and sex as independent variables in a linear regression. One-year follow-up borderline symptoms served as the outcome variable. All independent variables were entered together in one block using the "enter" method, given that we did not hypothesize incremental variance to be explained by any particular variable. The full model was significant ($F = 31.32$; $p < 0.001$) and explained 23 % of the variance in the dependent variable ($R^2 = 0.23$). AFQ-Y retained significance ($\beta = 0.24$; $p < 0.001$; $t = 0.34$), alongside BPFS-C baseline scores ($\beta = 0.09$; $p = 0.01$; $t = 2.47$), depression ($\beta = 0.17$; $p < 0.001$; $t = 4.58$), and anxiety ($\beta = 0.14$; $p = 0.001$; $t = 3.32$).

Discussion

This study had two aims. First, we sought to examine the concurrent relations between EA and borderline features in adolescents in a large and diverse community sample of adolescents, controlling for depression and anxiety (due to the known relations among depression, anxiety, borderline features, and EA). Second, we examined the prospective relation between EA and borderline features over a 1-year follow-up period, controlling for baseline level of borderline features and symptoms of depression and anxiety. Two main findings were reported. First, we found that EA associated with all three types of emotional disorders (e.g., depression, anxiety, and borderline features) at the bivariate level, but when all disorders were considered together, the effects of EA washed out the effects of depression and anxiety in the relation with BPD, suggesting that the relations between these disorders may be accounted for by EA as an underlying cross-cutting psychological process. Second, we found that EA predicted levels of borderline symptoms at 1-year follow-up, controlling for baseline levels of borderline symptoms and symptoms of depression and anxiety.

Our first finding may be interpreted in the context of the recent emphasis on underlying, cross-cutting constructs expressed in the NIMH Research Domain Criteria (RDoc) initiative. Indeed, rather than forcing comorbid disorders into discrete categories, this approach calls for examination of underlying mechanisms across disorders. That EA washed out the effects of depression and anxiety in the relation with BPD suggests that the relations between these disorders may be accounted for by EA as a cross-cutting underlying psychological process. This finding emphasizes the value of approaches such as the new NIMH RDoC initiative and speaks to the value of transdiagnostic approaches in the treatment of mood-related disorders. These approaches include ACT [40], dialectical behavior therapy [18], and mentalization-based treatment [41]. While the role of EA has been a central organizing principle of ACT [42], it is also implicated in Linehan's bio-social theory [18] and experimental investigations have demonstrated effects for DBT on EA in adults diagnosed with BPD. For instance, during a recent randomized controlled trial [43], it was demonstrated that in DBT treatment for BPD, a reduction in EA levels related to a reduction in depression levels. Conversely, failure to reduce EA levels impeded the reduction of depression scores. Avoidance of internal experiences is a core feature of the mentalization-based conceptualization of BPD developed by Fonagy and colleagues [20, 41, 44]. Mentalization, in this context, refers to the capacity to reflect on the mind's content without restriction or judgment. EA stands in clear contrast to the process of effective mentalization, which implies a compassionate and curious stance toward one's own mental states.

The finding of a prospective relation between EA and borderline features, controlling for baseline level of borderline features, tentatively suggests a causal role for EA. Developmental models certainly conceptualize EA in a causal role, although direct evidence for links with early development is lacking. For instance, in the mentalization-based account of BPD [19, 20], it is thought that the capacity to be open and curious about own mental states without becoming distressed by them or trying to control them (that is, EA) comes about in the context of secure attachment with primary caregivers. In this context, the parent is not overwhelmed with negative or distressing expressions of the infant or child's emotions and allows the child to express such emotions, while at the same time modulating these emotions using "marked mirroring." Marked mirroring involves a deliberate engagement of the infant or child using eye contact and a certain amount of exaggeration—referred to as ostensive communication. That is, the parent employs a cheerful, sing-song voice or holds the child particularly gently, acknowledging the distress but also communicating that it is the infant feeling distress and not the parent feeling distress over the child. The iterative occurrence of this process teaches the child

that she has a mind and that the mind has different states (e.g., happy, sad, frightened, angry) and that these states are allowed and can be owned. A disruption of this process may instead produce the sense that emotional states cannot or should not be experienced, but rather they should be avoided (as in EA), leading to psychopathology over time. Empirical evidence for these processes has been accumulating [45, 46]. While the findings of this study do not explicitly test this developmental model (given the adolescent age range studied in the current study), our findings speak to the possibility that variability in EA is an independent predictor of borderline features prospectively.

Recent approaches in psychopathology research [47, 48] have emphasized the value of studying psychopathology dimensionally across the full latent trait in an unselected sample, which requires community samples as used in the current study. Therefore, we consider the use of a community sample in the current study a strength. However, prospective relations between EA and borderline traits should also be established in clinical samples to justify an interventional focus on EA. While these links have been established cross-sectionally [29], longitudinal work in a clinical setting would be informative. A second limitation of the current study relates to the fact that all measures were self-report based. It is challenging to measure EA through more objective approaches. Even so, several laboratory-based studies have developed EA paradigms, including psychologically challenging [49] or distressing [50, 51] tasks, pain tolerance tests [52], and thought suppression experiments [53, 54]. These measures may assess EA more objectively and should be included in future studies alongside the AFQ-Y. Third, a significant difference in borderline features between adolescents who did and did not complete follow-up assessments indicates that an important subsection of our community sample was not included in the prospective analyses. Specifically, adolescents who did not complete follow-up assessments reported higher borderline features at baseline, perhaps suggesting that the absence of follow-up data is a function of increased pathology at baseline. The latter speaks to the importance of reducing attrition in longitudinal research [55]. Finally, although research supports the validity of the SCARED subscales [39], we are the first study to use only the generalized anxiety disorder subscale of the SCARED. Other anxiety disorders that may relate to EA and/or borderline features were not considered.

Notwithstanding these limitations, the current study makes an important contribution by providing the first evidence of a link between borderline features and EA in a community sample of adolescents. Additionally, this study provides the first evidence for a prospective relation between EA and borderline features. The suggestion that EA may be a cross-cutting psychological variable underlying several forms of psychopathology has important treatment implications. Our findings emphasize the importance of helping adolescents learn to validate and accept their internal states—not only as an important step in their recovery process (if they are struggling with borderline symptoms), but also as a potential preventative measure for the development or exacerbation of borderline symptoms.

Conflict of interest The authors declare that they have no conflict of interest.

Ethical standards This study has been approved by the appropriated ethics committee and was therefore performed in accordance with the ethical standards laid down in the 1964 Declaration of Helsinki and its later amendments. All persons gave their informed consent prior of their inclusion in the study. Details that might disclose the identity of study participants have been omitted.

References

1. American Psychiatric Association (2000) Diagnostic and statistical manual of mental disorder, 4th edn., text review. American Psychiatric Association, Washington, DC
2. American Psychiatric Association (2013) Diagnostic and statistical manual of mental disorder, 5th edn. American Psychiatric Association, Washington, DC
3. Morey LC (1991) Professional manual for the personality assessment inventory. Psychological Assessment Resources, Odessa, FL
4. Bornovalova MA, Hicks BM, Iacono WG, McGue M (2009) Stability, change, and heritability of borderline personality disorder traits from adolescence to adulthood: a longitudinal and twin study. Dev Psychopathol 21:1335–1353
5. Miller AL, Muehlenkamp JJ, Jacobson CM (2008) Fact or fiction: diagnosing borderline personality disorder in adolescents. Clin Psychol Rev 28:969–981
6. Sharp C, Romero C (2007) Borderline personality disorder: a comparison between children and adults. Bull Menninger Clin 71:85–114
7. Chanen AM, Jovev M, Jackson HJ (2007) Adaptive functioning and psychiatric symptoms in adolescents with borderline personality disorder. J Clin Psychiatry 68:297–306
8. Winograd G, Cohen P, Chen H (2008) Adolescent borderline symptoms in the community: prognosis for functioning over 20 years. J Child Psychol Psychiatry 49:933–941
9. Cailhol L, Jeannot M, Rodgers R, Guelfi JD, Perez-Diaz F, Pham-Scottez A, Corcos M, Speranza M (2013) Borderline personality disorder and mental healthcare service use among adolescents. J Pers Disord 27:252–259
10. Eaton NR, Krueger RF, Keyes KM, Skodol AE, Markon KE, Grant BF, Hasin DS (2011) Borderline personality disorder co-morbidity: relationship to the internalizing–externalizing structure of common mental disorders. Psychol Med 41:1041–1050
11. Korfine L, Hooley JM (2000) Directed forgetting of emotional stimuli in borderline personality disorder. J Abnorm Psychol 109:214–221

12. Stepp SD, Olino TM, Klein DN, Seeley JR, Lewinsohn PM (2013) Unique influences of adolescent antecedents on adult borderline personality disorder features. Pers Disord: Theory Res Treat 4:223–229

13. Paris J (2007) The nature of borderline personality disorder: multiple dimensions, multiple symptoms, but one category. J Pers Disord 21:457–473

14. Westen D, Shedler J (2000) A prototype approach to personality disorder diagnosis. J Pers Disord 14:109–126

15. Conway C, Hammen C, Brennan PA (2012) A comparison of latent class, latent trait, and factor mixture models of DSM-IV borderline personality disorder criteria in a community setting: implications for DSM-5. J Pers Disord 26:793–803

16. Widiger TA, Trull TJ (2007) Plate tectonics in the classification of personality disorder: shifting to a dimensional model. Am Psychol 62:71–83

17. Crowell SE, Beauchaine TP, Linehan MM (2009) A biosocial developmental model of borderline personality: elaborating and extending Linehan's theory. Psychol Bull 135:485–510

18. Linehan MM (1993) Cognitive-behavioral treatment of borderline personality disorder. The Guildford Press, New York

19. Fonagy P, Luyten P (2009) A developmental, mentalization-based approach to the understanding and treatment of borderline personality disorder. Dev Psychopathol 21:1355–1381

20. Sharp C, Fonagy P (2008) Social cognition and attachment-related disorders. In: Sharp C, Fonagy P, Goodyer I (eds) Social cognition and developmental psychopathology. Oxford University Press, Oxford, pp 269–302

21. Hayes SC, Wilson KG, Gifford EV, Follette VM, Strosahl K (1996) Experiential avoidance and behavioral disorders: a functional dimensional approach to diagnosis and treatment. J Consult Clin Psychol 64:1152–1168

22. Chapman AL, Dixon-Gordon KL, Walters KN (2011) Experiential avoidance and emotion regulation in borderline personality disorder. J Ration-Emot Therapy 29:35–52

23. Chawla N, Ostafin B (2007) Experiential avoidance as a functional dimensional approach to psychopathology: an empirical review. J Clin Psychol 63:871–890

24. Iverson KM, Follette VM, Pistorello J, Fruzzetti AE (2012) An investigation of experiential avoidance, emotion dysregulation, and distress tolerance in young adult outpatients with borderline personality disorder symptoms. Pers Disord: Theory Res Treat 3:415–422

25. Gratz KL, Rosenthal MZ, Tull MT, Lejuez CW, Gunderson JG (2009) An experimental investigation of emotion dysregulation in borderline personality disorder. Pers Disord: Theory Res Treat S:18–26

26. Bijttebier P, Vertommen H (1999) Coping strategies in relation to personality disorders. Pers Individ Differ 26:847–856

27. Greco LA, Lambert W, Baer RA (2008) Psychological inflexibility in childhood and adolescence: development and evaluation of the Avoidance and Fusion Questionnaire for Youth. Psychol Assess 20:93–102

28. Hayes SC, Strosahl K, Wilson KG, Bissett RT, Pistorello J, Toarmino D, McCurry SM (2004) Measuring experiential avoidance: a preliminary test of a working model. Psychological Record 54:553–578

29. Schramm AT, Venta A, Sharp C (2013) The incremental validity and mediating role of experiential avoidance in the association between borderline features and emotion regulation in adolescents. Pers Disord: Theory Res Treat 4:138–144

30. Chapman AL, Specht MW, Cellucci T (2005) Borderline personality disorder and deliberate self-harm: does experiential avoidance play a role? Suicide Life-Threat Behav 35:388–399

31. Venta A, Sharp C, Hart J (2012) The relation between anxiety disorder and experiential avoidance in inpatient adolescents. Psychol Assess 24:240–248

32. Crick NR, Murray-Close D, Woods K (2005) Borderline personality features in childhood: a short-term longitudinal study. Dev Psychopathol 17:1051–1070

33. Chang B, Sharp C, Ha C (2011) The criterion validity of the Borderline Personality Features Scale for Children in an adolescent inpatient setting. J Pers Disord 25:492–503

34. Radloff LS (1977) The CES-D scale a self-report depression scale for research in the general population. Appl Psychol Meas 1:385–401

35. Olino TM, Yu L, Klein DN, Rohde P, Steeley JR, Pilkonis PA, Lewinsohn PM (2012) Measuring depression using item response theory: an examination of three measures of depressive symptomatology. Int J Methods Psychiatr Res 21:76–85

36. Muris P, Merckelbach H, Schmidt H, Mayer B (1998) The revised version of the Screen for Child Anxiety Related Emotional Disorders (SCARED-R): factor structure in normal children. Pers Individ Differ 26:99–112

37. Muris P, Merckelbach H, Mayer B, Prins E (2000) How serious are common childhood fears? Behav Res Ther 38:217–228

38. Muris P, Merckelbach H, Mayer B, van Brakel A, Thissen S, Moulaert V, Gadet B (1998) The Screen for Child Anxiety Related Emotional Disorders (SCARED) and traditional childhood anxiety measures. J Behav Ther Exp Psychiatry 29:327–339

39. Hale WW, Raaijmakers Q, Muris P, Meeus WIM (2005) Psychometric properties of the Screen for Child Anxiety Related Emotional Disorders (SCARED) in the general adolescent population. J Am Acad Child Adolesc Psychiatry 44:283–290

40. Hayes SC, Strosahl KD, Wilson KG (1999) Acceptance and commitment therapy: an experiential approach to behavior change. Guilford Press, New York

41. Bateman A, Fonagy P (2004) Psychotherapy for borderline personality disorder. Oxford, London

42. Hayes S, Pierson H (2005) Acceptance and commitment therapy. In: Felgoise S, Nezu AM, Reinecke MA (eds) Encyclopedia of cognitive behavior therapy. Springer, New York, pp 1–4

43. Berking M, Neacsiu A, Comtois KA, Linehan MM (2009) The impact of experiential avoidance on the reduction of depression in treatment for borderline personality disorder. Behav Res Ther 47(8):663–670

44. Fonagy P (1991) Thinking about thinking: some clinical and theoretical considerations in the treatment of a borderline patient. Int J Psycho-Anal 72:639–656

45. Gergely G, Watson JS (1996) The social biofeedback theory of parental affect-mirroring: the development of emotional self-awareness and self-control. Int J Psycho-Anal 77:1181–1212

46. Strathearn L, Li J, Fonagy P, Montague PR (2008) What's in a smile? Maternal brain responses to infant facial cues. Pediatrics 122:40–51

47. Cicchetti D (2006) Development and psychopathology. Dev Psychopathol 1:1–23

48. Cicchetti D, Cohen DJ (2006) Developmental psychopathology, Volume 1, theory and method. Wiley, New York

49. Zettle RD, Petersen CL, Hocker TR, Provines JL (2010) Responding to a challenging perceptual-motor task as a function of level of experimental avoidance. Psychol Record 57:49–62

50. Gratz KL, Bornovalova MA, Delany-Brumsey A, Nick B, Lejuez CW (2007) A laboratory-based study of the relationship between childhood abuse and experiential avoidance among inner-city substance users: the role of emotional nonacceptance. Behav Ther 38:256–268

51. Cochrane A, Barnes-Holmes D, Barnes-Holmes Y, Stewart I, Luciano C (2007) Experiential avoidance and aversive visual images: response delays and event-related potentials on a simple matching task. Behav Res Ther 45:1379–1388

52. Feldner MT, Hekmat H, Zvolensky MJ, Vowles KE, Secrist Z, Leen-Feldner EW (2006) The role of experiential avoidance in

acute pain tolerance: a laboratory test. J Behav Ther Exp Psychiatry 37:146–158

53. Feldner MT, Zvolensky MJ, Eifert GH, Spira AP (2003) Emotional avoidance: an experimental test of individual differences and response suppression during biological challenge. Behav Res Ther 41:403–411

54. Levitt JT, Brown TA, Orsillo SM, Barlow DH (2004) The effects of acceptance versus suppression of emotion on subjective and psychophysiological response to carbon dioxide challenge in patients with panic disorder. Behav Ther 35:747–766

55. Cohen P, Crawford T, Johnson J, Kasen S (2005) The children in the community study of developmental course of personality disorder. J Pers Disord 19:466–486