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Attachment anxiety as mediator of the relationship between childhood trauma and personality dysfunction in borderline personality disorder

Leire Erkoreka[1,2,3] | Iker Zamalloa[2] | Santiago Rodriguez[4] | Pedro Muñoz[5] | Imanol Mendizabal[2] | M. Isabel Zamalloa[3,6] | Aurora Arrue[3,6] | Mercedes Zumarraga[3,6] | Miguel Angel Gonzalez-Torres[2,3,7]

[1]Department of Psychiatry, Galdakao-Usansolo Hospital, Osakidetza Basque Health Service, Galdakao, Spain

[2]Department of Neurosciences, University of the Basque Country UPV/EHU, Leioa, Spain

[3]Biocruces Bizkaia Health Research Institute, Barakaldo, Spain

[4]AVATI-TLP, Bilbao, Spain

[5]Eating Disorders Unit, Bizkaia Mental Health Network, Osakidetza Basque Health Service, Barakaldo, Spain

[6]Department of Neurochemical Research, Bizkaia Mental Health Network, Osakidetza Basque Health Service, Barakaldo, Spain

[7]Department of Psychiatry, Basurto University Hospital, Osakidetza Basque Health Service, Bilbao, Spain

Correspondence
Leire Erkoreka, Department of Psychiatry, Galdakao-Usansolo Hospital, Osakidetza Basque Health Service, Labeaga Auzoa 46A, Galdakao 48960, Spain.
Email: leire.erkoreka@ehu.eus

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Abstract

Insecure attachment has been described as mediating the relationship between childhood trauma and dysfunctional personality traits in different mental disorders. Despite the role insecure attachment and childhood trauma have independently demonstrated to play as determinants of borderline personality disorder, less is known about the mediating mechanisms explaining these associations. For the first time, we assessed adult attachment, childhood trauma and dimensional personality pathology in a sample of outpatients with borderline personality disorder and tested whether the association between childhood trauma and personality dysfunction was at least partially attributable to insecure attachment. The results showed that attachment anxiety fully mediated the relationship between specific types of trauma (emotional abuse and physical neglect) and emotional dysregulation. Further, emotional abuse was both directly associated with dissocial behaviour and indirectly via attachment anxiety (partial mediation). Emotional abuse has been described as an essential environmental factor for the development of borderline personality disorder and emotional dysregulation, on its part, as the core feature of the condition. Our results indicate that attachment anxiety explains the link between these central aspects of borderline personality disorder. Our findings are consistent with previous research and current etiological understanding of the condition and provide support for recommending a careful assessment of childhood traumatic experiences and adult attachment style to gain a more comprehensive insight into the symptoms and its heterogeneity. As a secondary aim, we assessed the effect parental mental illness may have in these mediation models, but no significant influence on childhood trauma, attachment or personality was found.

KEYWORDS
adult attachment, borderline personality disorder, childhood trauma, parental mental illness, personality dysfunction

1 | INTRODUCTION

Attachment has been defined as the tendency of human beings to create strong affective bonds towards specific figures and explains the various forms of emotional stress and personality pathology, including anxiety, anger, depression and emotional detachment, that result from unwanted separation or loss of such figures (Bowlby, 1979). During childhood, the relationship with the parent is the primary attachment, and this will be gradually replaced, during adolescence and adulthood, by social and romantic relationships.

Following Ainsworth's proposal (Ainsworth et al., 1978), the three described attachment categories (secure, avoidant and anxious) can be placed on two linear combinations or discriminant functions, namely, attachment anxiety and avoidance, for assessment purposes (Brennan et al., 1998). In this manner, secure attachment is characterized by low scores on both anxious and avoidant attachment scales, whereas insecure attachment is defined by high scores on anxiety and/or avoidance. Secure attachment is seen as an internal resource that allows for the management of negative emotions and the recovery of calm, as well as a source of resilience. In contrast, insecure attachment has been described as a risk factor for negative affectivity and psychopathology (Mikulincer & Shaver, 2018).

A disordered attachment system is a core feature of personality disorders (PDs) and is viewed as an etiopathogenic factor of some PDs such as borderline personality disorder (BPD) (Emmelkamp & Meyerbröker, 2020; Fonagy et al., 2000). In fact, a common central feature of all PDs is the persistent difficulty with interpersonal relations, which can be construed as constellations of insecure attachment strategies from an attachment perspective (Mikulincer & Shaver, 2018, p. 436). BPD is a highly prevalent psychiatric condition, present in 1–3% of the general population, 10% of psychiatric outpatients and 15–20% of inpatients of psychiatric wards (M. Lenzenweger et al., 2007; Trull et al., 2010), characterized by a pervasive pattern of emotion dysregulation, hyperintensity affect, unstable interpersonal relationships and impulsive behaviour (Gunderson et al., 2018). Numerous studies have demonstrated that it is related to attachment insecurity, specifically to an anxious attachment style (for a review, see Agrawal et al., 2004, and Smith & South, 2020). Indeed, BPD symptoms map closely on to core features of extreme attachment anxiety: affective lability, unstable relationships, feelings of emptiness and loneliness, chronic abandonment fears and identity diffusion (Meyer & Pilkonis, 2005). Avoidant attachment has been less consistently associated with PDs in general and is not considered a primary risk factor for BPD (Beeney et al., 2015).

A robust body of literature describes an association between childhood traumatic experiences and BPD pathology. Individuals with a BPD diagnosis report high incidences of both abuse and neglect, with 70–90% reporting some kind of maltreatment (Martín-Blanco et al., 2014; Zanarini et al., 1997). A recent meta-analysis confirms that exposure to early adverse life experiences is associated with BPD, pointing out that emotional abuse and neglect are the subtypes with the largest effects (Porter et al., 2020). The relationship between maltreating environments and attachment (dys)function has been explored principally in children (Cyr et al., 2010), but an increased risk for adult dysfunctional attachment linked to childhood trauma has also been reported (Raby et al., 2017; Thomson & Jaque, 2017). Research on the association between maltreatment and attachment has been mainly conducted with samples with homogeneous conditions (Jaworska-Andryszewska & Rybakowski, 2019; Stanton et al., 2020), including PD (Voestermans et al., 2020).

Interestingly, a growing number of studies have recently started to explore the association between childhood maltreatment and different psychopathological outcomes with the perspective of considering attachment as a mediator of the relationship (Chatziioannidis et al., 2019; Kong et al., 2018; Pearce et al., 2017; Tibi et al., 2020; Van Assche et al., 2020). With respect to the interrelation between childhood maltreatment, attachment and personality dysfunction, the few studies existing in the field have been conducted with the general population (Crow & Levy, 2019; Fossati et al., 2016), a clinical sample with mood disorders (Baryshnikov et al., 2017) and heterogeneous clinical samples (Cohen et al., 2017; Peng et al., 2020). In all cases, insecure attachment seemed to mediate the relationship between childhood trauma and personality dysfunctional traits and, in most cases, borderline personality traits. Despite the key role of both attachment and childhood trauma in BPD, there is only one previous study incorporating this mediation perspective that has been conducted with a PD sample (Frias et al., 2016); it reported that anxious attachment mediated the relationship between emotional abuse and the occurrence of BPD, compared to other PDs. Taking into account this knowledge gap, we aim to further explore these associations in patients with a BPD diagnosis.

Finally, since parental mental illness (PMI) is considered a major risk factor for childhood maltreatment (Sethi et al., 2013), and as a secondary objective, we planned to explore the role it may have in the

Key practitioner message

- Insecure attachment has been described to mediate the association between childhood trauma and different psychopathological outcomes.
- Insecure attachment has also been described to mediate the association between childhood trauma and borderline features but has not yet been studied in borderline personality disorder.
- We found that attachment anxiety fully or partially mediated the relationship between different types of childhood trauma and core aspects of the condition.
- Childhood traumatic experiences and adult attachment style should be addressed in the psychotherapeutic process of patients with borderline personality disorder.

relationship among the three mentioned constructs (childhood maltreatment, adult attachment and personality pathology). Longitudinal studies following mothers and infants have shown that maternal psychopathology is positively correlated with a higher risk of insecure attachment in their children (Apter et al., 2017; Davidsen et al., 2015; Eyden et al., 2016; Martins & Gaffan, 2000). A recent study of adult offspring of parents with any mental disorder also reported significantly higher values in the attachment anxiety dimension than in the general population, whereas lower values in the intimacy/trust dimension were found (Jungbauer et al., 2019). Furthermore, maternal psychopathology appeared to be one of the most robust risk indicators in a systematic review of risk factors prospectively associated with BPD (Stepp & Lazarus, 2017).

With this context in mind, the main objective of our study is to explore whether attachment style mediates the relationship between childhood maltreatment and specific personality dysfunction in patients with BPD. As a secondary aim, we intend to assess whether PMI has a role as a precursor of the aforementioned mediation model. Based on the literature, we hypothesize that (1) anxious attachment will mediate between certain types of trauma and dysfunctional personality features and (2) PMI will be associated with greater personality dysfunction through its effect on higher trauma scores and a more anxious attachment style.

2 | METHODS

2.1 | Participants and procedures

A total of 60 outpatients with a BPD diagnosis according to the DSM-IV-TR criteria were recruited for the study. A description of the sample, including sociodemographic and clinical data, is shown in Table 1. Clinical data included a history of suicide attempts, self-injury and psychiatric admissions, current medication intake and PMI. The sample was recruited from different outpatient settings (community mental health centres and a day hospital) in Biscay, Spain. The inclusion criteria were (i) 18 to 65 years of age and (ii) an ability to communicate in Spanish. The exclusion criteria were (i) current or past comorbid diagnosis of any neurological disorder that could interfere with performance in neuropsychological tasks, (ii) current severe medical conditions, (iii) current drug dependence and (vi) intellectual disability. Patients were informed about the ongoing research by their treating psychiatrists or psychologists during regular follow-up appointments or regular visits to the day hospital. Those who agreed to participate were provided with detailed information about the study before signing the informed consent form, and an appointment was made with a trained researcher. During the appointment, the diagnosis was confirmed for research purposes through the Structured Clinical Interview for DSM-IV Axis II Personality Disorders or the International Personality Disorders Examination, and questionnaires were administered along with an extensive interview to gather sociodemographic and clinical data. Information on PMI was requested of the participants during the interview (lifetime incidence and specific diagnoses). All study procedures were conducted in accordance with the Declaration of Helsinki and approved by the local ethics committee.

TABLE 1 Description of the sample ($N = 60$)

	N (%)
Age (mean ± SD)	34.80 ± 11.05
Sex	
Females	43 (71.7)
Marital status	
Single	30 (50.0)
Married/cohabiting	20 (33.3)
Divorced	15 (15.0)
Widowed	1 (1.7)
Education level	
Primary	13 (21.7)
Secondary	25 (41.7)
Tertiary or higher	22 (36.7)
Occupation	
Unemployed	12 (20.0)
Employee/student	40 (66.7)
Pensioner	8 (13.3)
Suicide attempts: yes	28 (46.6)
Self-injury history: yes	26 (43.3)
Psychiatric admissions: yes	27 (45.0)
Current medication: yes	54 (90.0)
Parental mental illness:	
No	30 (50.0)
Mother only	10 (16.7)
Father only	10 (16.7)
Both	10 (16.7)

Abbreviation: SD, standard deviation.

2.2 | Measures

Adult attachment style was explored by means of the Experiences in Close Relationships-Revised (ECR-R) (Fraley et al., 2000). It is a self-administered questionnaire of 36 items that are evaluated according to a 7-point Likert scale to assess attachment styles. Half of the items assess anxious attachment and the other half assess avoidant attachment. Scores in each dimension range from 1 to 7. Anxious attachment is characterized by a fear of abandonment and anger at separation. Avoidance, on the other hand, is defined by a lack of closeness and by emotional repression. The reliability of the scale is high, with alpha coefficients for the anxiety scale of .90 and for the avoidance scale of .91 (Graham & Unterschute, 2015), and a correlation between them of .41 (Cameron et al., 2012). The formulation of the items is made in a manner in which romantic attachment is preferably explored, providing the alternative of thinking of any other close

relationship in the case of not having a partner. We used the Spanish validation of the questionnaire, which proved to have acceptable internal consistency (alpha coefficients of .83 and .86 for attachment anxiety and avoidance, respectively) and an interscale correlation of .18 (Fernández-Fuertes et al., 2011). Alpha coefficients in our sample were .897 for attachment anxiety and .861 for attachment avoidance.

Childhood maltreatment experiences were assessed by the Childhood Trauma Questionnaire-Short Form (CTQ) (Bernstein et al., 2003), a 28-item self-administered questionnaire that explores childhood antecedents of abuse and neglect using a 5-point Likert scale. It can be used in individuals over 12 years old. The 28-item version is an adaptation of the original 70-item version. It provides a total score and scores on five scales: physical abuse, emotional abuse, sexual abuse, physical neglect and emotional neglect. Scores on each scale were from 5 to 25. Each scale is composed of five items, and there are three additional items for the detection of socially accepted responses. There was no cutoff point; higher scores indicated higher severity. In the initial adaptation, it proved to be valid in both a clinical and the general population, with alpha coefficients above .80 on all scales except the physical neglect scale, where values between .61 and .78 were obtained. We used the Spanish validation of the instrument, which presented alpha coefficients between .66 and .94 for the different scales and correlations between them ranging from .29 to .50 (Hernandez et al., 2013). Alpha coefficients in our sample were .808 for emotional abuse, .866 for physical abuse, .949 for sexual abuse, .842 for emotional negligence and .678 for physical negligence.

Personality pathology was explored using the Dimensional Assessment of Personality Pathology-Basic Questionnaire (DAPP-BQ) (W.J. Livesley & Jackson, 2009). It is a self-administered questionnaire consisting of 290 items. Each item is scored on a 5-point scale. It is designed for the evaluation of the 18 lower order traits that, according to Livesley's proposal (W.J. Livesley et al., 1992), make up the pathological aspects of personality. These 18 traits are grouped into four higher order clusters or dimensions: emotional dysregulation, dissocial behaviour, inhibitedness and compulsivity. It also provides a total score that reflects overall personality dysfunction. Standardized *t* scores, ranging from 0 to 100, were used in all cases. In the estimation of the reliability of the instrument, alpha coefficients higher than .80 were collected for all scales. In this work, we used the Spanish validation of the instrument, which showed alpha coefficients between .78 and .93 (mean: .87) in the clinical sample that participated in the validation process and between .75 and .92 (mean.86) in the nonclinical sample (Gutiérrez-Zotes et al., 2008). Alpha coefficients in our sample were .892 for emotional dysregulation, .731 for dissocial behaviour, .568 for inhibitedness and .708 for compulsivity.

2.3 | Statistical analyses

Descriptive analyses were first performed; frequencies were calculated for categorical variables and means and standard deviations for quantitative variables. Pearson's correlation between childhood trauma scales, attachment styles and personality dimensions was calculated to select the variables for the mediation models. We followed Baron and Kenny's condition for mediation models and only proceeded to conduct mediation analyses when a trauma variable, an attachment variable and a personality variable were significantly correlated among them (Baron & Kenny, 1986). We used simple mediation models, the independent variable in each model being trauma, the dependent variable personality and the mediator variable attachment. Simple mediation models have been described as any causal system in which at least one independent variable (*X*) is proposed as influencing a dependent variable (*Y*) through a single intervening mediating variable (*M*). One pathway leads from *X* to *Y* without passing through *M* and is called the direct effect of *X* on *Y*. The second pathway from *X* to *Y* is the indirect effect of *X* to *Y* through *M*, which in turn is decomposed into the effect of *X* on *M* and the effect of *M* on *Y*. Complete mediation is the case in which *X* no longer affects *Y* after *M* has been controlled, making the direct path nonsignificant. Partial mediation is the case in which the path from *X* to *Y* is reduced in absolute size but is still significant when *M* is introduced. The statistical significance of the indirect effects was tested using a bootstrapping procedure with 10,000 samples and a bias-corrected 95% confidence interval (CI). Such resampling methods provide the most accurate CIs for point estimates and are, therefore, a valid and reliable test of statistical significance (Hayes, 2013).

Afterward, *t* tests were used to explore differences between participants with and without PMI in relation to attachment, childhood trauma and personality dimensions. The objective was to build serial mediation models (in which the relationship between *X* and *Y* is explained by more than one *M*; see Figure S1) from the above models in those cases in which differences in attachment, personality or trauma scores according to PMI were detected.

Analyses were performed by using IBM SPSS 23.0, and the PROCESS macro to conduct the mediation analyses (Hayes, 2013).

3 | RESULTS

3.1 | Mediation models

Based on the correlations presented in Table 2, simple mediation models were built for (1) emotional abuse, attachment anxiety and emotional dysregulation; (2) physical neglect, attachment anxiety and emotional dysregulation and (3) emotional abuse, attachment anxiety and dissocial behaviour.

A significant mediating effect of attachment was proven in all of the models, since CIs of the indirect effect did not include the zero value in any of the three models (Table 3). The upper diagram in Figures 1–3 represents the total effect of trauma on personality before considering the indirect effect of attachment and includes the path coefficient of such a total effect. The diagram at the bottom, for

TABLE 2 Mean scores and bivariate Pearson correlation coefficient values for the ECR-R, CTQ and DAPP-BQ scales

	Mean ± SD	1	2	3	4	5	6	7	8	9	10	11
1. ECR-R anxiety	4.65 ± 1.25	-										
2. ECR-R avoidance	3.49 ± 1.07	−.135	-									
3. CTQ emotional abuse	13.88 ± 5.03	.288*	−.007	-								
4. CTQ physical abuse	7.73 ± 3.99	.106	.009	.579**	-							
5. CTQ sexual abuse	8.58 ± 6.01	.122	.071	.379**	.436**	-						
6. CTQ emotional negligence	14.82 ± 5.07	.056	.095	.586**	.367**	.225	-					
7. CTQ physical negligence	8.70 ± 3.39	.307*	.050	.613**	.605**	.406**	.480**	-				
8. DAPP-BQ emotional Dysregulation	71.37 ± 14.64	.764**	−.026	.365**	.173	.281*	.201	.323*	-			
9. DAPP-BQ dissocial behaviour	64.98 ± 14.85	.492**	−.121	.361**	.349**	.191	.086	.196	.524**	-		
10. DAPP-BQ Inhibitedness	59.31 ± 10.87	.041	.540*	.044	−.007	.210	.282*	.167	.349	−.013	-	
11. DAPP-BQ compulsivity	44.42 ± 10.12	−.060	−.008	−.069	.131	.097	−.250	.019	−.167	−.178*	.029	-

Abbreviations: ECR-R, Experiences in Close Relationships-Revised; CTQ, Childhood Trauma Questionnaire; DAPP-BQ, Dimensional Assessment of Personality Pathology-Basic Questionnaire; SD, standard deviation.
*$p < .05$.
**$p < .001$.

TABLE 3 Total, direct and indirect effects from mediation analyses

	Total effect Coeff (95%CI)	Direct effect Coeff (95%CI)	Indirect effect Coeff (95%bootCI)	R^2
1	**1.054 (.340, 1.768)**	.442 (−.066, .952)	**.611 (.130, 1.277)**	.604
2	**1.449 (.315, 2.583)**	.605 (−.168, 1.379)	**.844 (.182, 1.889)**	.617
3	**1.057 (.331, 1,782)**	**.692 (.001, 1.382)**	**.363 (.048, .887)**	.293

Note: (1) Emotional abuse (independent variable)-emotional dysregulation (dependent variable)-attachment anxiety (mediator). (2) Physical neglect (independent variable)-emotional dysregulation (dependent variable)-attachment anxiety (mediator). (3) Emotional abuse (independent variable)-dissocial behaviour (dependent variable)-attachment anxiety (mediator). Statistically significant results are shown in bold.
Abbreviations: BootCI, 10.000 bootstrapped confidence interval; CI, confidence interval; Coeff, unstandardized coefficient.

its part, represents the mediation effect of attachment in the model and includes the split path coefficients of the indirect effect (trauma on attachment and attachment on personality), and the resulting direct effect after the mediator is controlled.

In the first two cases, the inclusion of the mediator resulted in complete mediation so that the direct effect was no longer significant once the mediating effect was controlled (Figures 1 and 2). In the latter, it turned out to be a partial mediating effect, such that the direct effect of emotional abuse on dissocial behaviour remained significant after the inclusion of the mediator (Figures 3), although it must be noted that the lower value of the CI is close to 0. The mediation models explained respectively 60.4%, 61.7% and 29.3% of the variability in the personality dimension explored in each of the cases (Table 3).

3.2 | Association between PMI, trauma, attachment and personality

With regard to the role of PMI in the abovementioned models, no differences were found for any of the attachment, trauma or personality dimension scales (Table S1) according to the presence or absence of a history of psychiatric mental conditions of the parents, so no serial mediation models were built.

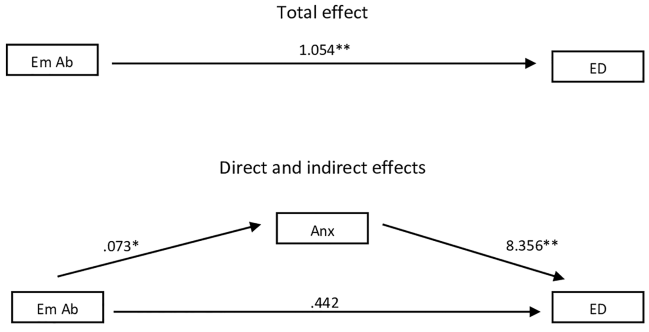

FIGURE 1 Path coefficients showing total effect (top) and mediated effect (bottom) of Emotional Abuse (Em Ab) on Emotional Dysregulation (ED). Anx, attachment anxiety. $^{*}p < .05$, $^{**}p < .01$

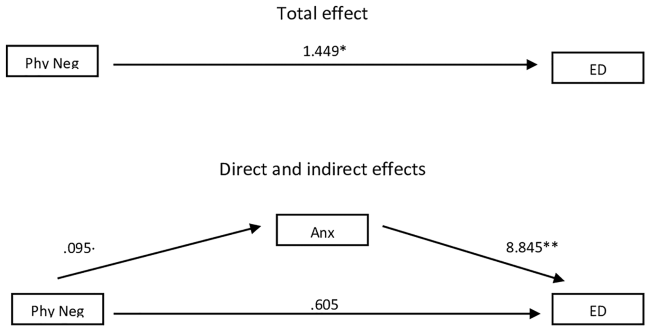

FIGURE 2 Path coefficients showing total effect (top) and mediated effect (bottom) of Physical Neglect (Phy Neg) on Emotional Dysregulation (ED). Anx, attachment anxiety. $p < .1$, $^{*}p < .05$, $^{**}p < .01$

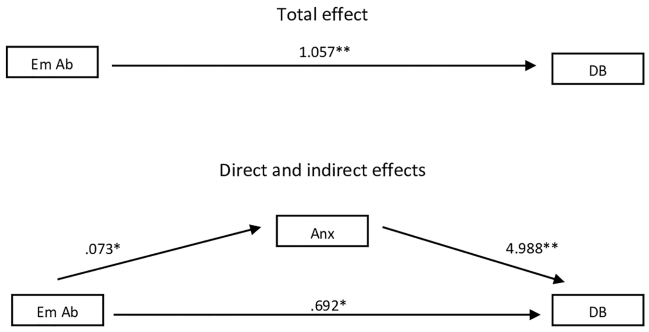

FIGURE 3 Path coefficients showing total effect (top) and mediated effect (bottom) of Emotional Abuse (Em Ab) on Dissocial Behaviour (DB). Anx, attachment anxiety. $^{*}p < .05$, $^{**}p < .01$

4 | DISCUSSION

4.1 | Emotional abuse, anxious attachment and emotional dysregulation

Attachment anxiety mediates the relationship between specific types of childhood trauma and characteristic features of BPD such as emotional dysregulation. This finding is consistent with a previous report on the mediating role of anxious attachment between emotional abuse and the occurrence of BPD (Frias et al., 2016). Our work is not an exact replication of Frias' work, insofar as it incorporates a dimensional instrument to assess the severity of different personality dimensions, which are the main outcomes, in a sample of BPD patients. However, our results show that one of the relationships mediated by attachment anxiety occurs precisely between emotional abuse and emotional dysregulation, which is the core feature of BPD and the DAPP-BQ dimension that corresponds more closely to the condition. The DAPP-BQ emotional dysregulation dimension refers to 'unstable emotions and relationships, increased intensity and reactivity of emotional expression, strong dependency needs and an unstable and fragmented sense of self' (W.J. Livesley & Jackson, 2009) that transcends the concept of emotional dysregulation as the inability to control and modulate one's affective state. It has been proposed that emotional dysregulation underlies the behavioural dyscontrol that is usually observed in this condition, to be the result of the interaction between biological vulnerabilities and a harsh environment (Linehan, 1993; Yeomans et al., 2015) and to derive from an attachment-related mentalization deficit (Bateman & Fonagy, 2004). With this in mind, we could state that anxious attachment mediates the relationship between emotional abuse and what is considered to be the core feature of BPD.

Interestingly, previous studies point to emotional abuse as the 'critical environmental ingredient' responsible for BPD pathology, explaining its etiopathological role through difficulties with emotion regulation, which is in line with our findings (Kuo et al., 2015). The importance of emotional abuse in BPD, greater than other types of maltreatment, has been highlighted in a recent meta-analysis that found that emotional abuse and neglect had the greatest effects on the association between childhood adversity and an eventual BPD diagnosis (Porter et al., 2020). As the authors discuss, the large effect sizes observed for emotional abuse and neglect (with ORs of 38.11 and 17.73, respectively) are consistent with previous theoretical and empirical research highlighting the role of invalidation in the pathogenesis of BPD (Linehan, 1993). Emotional abuse, according to the CTQ, is defined as 'verbal assaults on a child's sense of worth or well-being or any humiliating or demeaning behavior directed toward a child by an adult or older person' (Bernstein et al., 2003). Our work suggests that the influence of emotional abuse on emotional dysregulation occurs through the effect emotional abuse exerts on the development of anxious attachment.

From early interaction patterns with caregivers, infants are thought to develop internal working models of attachment, a set of mental representations of the self, the caregiver and the world, that will operate across the lifespan by guiding the individual's expectations and explorations of the social and physical environment (Doyle & Cicchetti, 2017). The formation of internal working models of attachment is influenced by temperamental characteristics and their interaction with the environment (Donnellan et al., 2008) and will determine social choices, experiences in relationships and eventually the construction of personality in the transition to adolescence. This approach is conceptualized by an ecological transactional model of development that suggests that the failure of the caregiving environment to support healthy development around stage-salient

attachment tasks may lead to deficits in social–emotional competence in early childhood that increase the likelihood of difficulties and deficits in subsequent tasks across the lifespan (Doyle & Cicchetti, 2017). Thus, an abusive environment may disrupt the process by forming predominantly anxious working models of attachment, interfering with the achievement of competence in certain areas such as emotional regulation, among others.

4.2 | Physical neglect, anxious attachment and emotional dysregulation: Mediation in other conditions

Our study also found a relationship between physical neglect, attachment and emotional dysregulation which, to our knowledge, is novel evidence. Physical neglect is defined as 'the failure of caretakers to provide for a child's basic physical needs, including food, shelter, clothing, safety, and health care, as well as poor parental supervision as long as it places children's safety in jeopardy' (Bernstein et al., 2003). Although the CTQ is a widely used scale designed to discriminate between different types of trauma, the different types of maltreatment usually co-occur (Jackson et al., 2015). Thus, it is not surprising that parents who emotionally abuse their children are also involved in neglecting behaviour. We have not found any previous research on the interrelationship between physical neglect, attachment and emotional dysregulation, but remarkably, its effect on emotional dysregulation in our sample is even larger than the effect of emotional abuse.

The mediating role of attachment anxiety in the relationship between childhood trauma and psychopathology that we found has also been described in other conditions. Attachment anxiety was found to be the sole mediator between childhood trauma and the occurrence of schizophrenia spectrum psychosis (Chatziioannidis et al., 2019), to fully mediate the relationship between specific types of trauma (emotional abuse, physical abuse and physical neglect) and dissociation in adults (Kong et al., 2018), and even to mediate the relationship between childhood trauma and migraines (Kascakova et al., 2020). The comorbidity of BPD with other psychiatric conditions, such as substance abuse, eating disorders or affective disorders, is well established (American Psychiatric Association, 2013), as is the weight that childhood trauma, attachment and emotional dysregulation have been described to have on them (Brustenghi et al., 2019; Dagan et al., 2018; Fairbairn et al., 2018; Kim et al., 2018; Tasca, 2019; Zaorska et al., 2020). As noted by Frias et al. (2016), the similarity in the relationships observed between childhood trauma, attachment, and emotional dysregulation in a wide range of psychiatric pathologies may represent different phenotypic expressions of processes with a similar etiopathology.

4.3 | Emotional abuse, anxious attachment and dissocial behaviour

Emotional abuse has a significant impact on another group of symptoms, such as dissocial symptoms, which, according to the model used, refers to 'a callous interpersonal style, a lack of empathy and disregard for the feelings and concerns of others, exploitativeness and an egocentric attitude' (W.J. Livesley & Jackson, 2009). In this case, we found that there were both significant direct and indirect effects. Although dissocial behaviour is not a core aspect of borderline pathology in terms of DSM diagnostic criteria, it would be characteristic of the BPD patients located, according to Kernberg's classification of PDs, in the low level of borderline personality organization, characterized by a higher level of aggressive affect (O. Kernberg, 1967; O.F. Kernberg, 1975). Kernberg's theoretical approach has been empirically supported by mixture modelling analyses that have demonstrated that phenotypically distinct groups or subtypes exist within the overall BPD spectrum (Hallquist & Pilkonis, 2012; M.F. Lenzenweger et al., 2008). In both studies, BPD subtypes defined by high levels of antisocial, paranoid and/or aggressive features were described. The dissocial behaviour dimension would therefore identify defining characteristics of patients located in these groups, and the current work helps us to understand possible etiopathological roots.

Interestingly, our research suggests that both emotional dysregulation and dissocial behaviour may share a similar etiopathogenic pathway, plausibly initiated in early emotionally abusing experiences and mediated by the development of an anxious attachment style. The cross-sectional nature of our work, however, prevents us from making a temporal causation statement. We must keep in mind that trauma and insecure attachment are closely linked since, particularly in the case of early trauma, it usually comes precisely from attachment figures (Jackson et al., 2015). The fact that similar pathways have different outcomes, at this level, could be explained by biologically defined temperamental aspects that shape the personality manifestations.

In the case of dissocial behaviour, however, the mediation is partial; emotional abuse impacts dissocial behaviour directly and through attachment anxiety. Relationships between childhood trauma and antisocial behaviours (although most consistent with physical abuse and neglect), and attachment dysfunction and antisocial behaviours, have been described elsewhere (reviewed in Schorr et al., 2020, and Viding & McCrory, 2019, respectively), but our work is the first, to our knowledge, to incorporate the perspective of mediation into the relationship between the three constructs.

4.4 | Effect of sexual abuse and PMI: Some thoughts on our findings

Sexual abuse has been described to be an important risk factor for BPD, with higher rates compared to other PDs, more severe symptoms, greater suicidality and a poorer prognosis (de Aquino Ferreira et al., 2018). Even in a similar BPD population, in our environment, the highest rates of maltreatment were sexual and emotional abuse. Specifically, sexual abuse was higher in BPD patients than in patients with a first-episode of psychosis and general population controls (Catalan et al., 2017). Sexual abuse has been related to insecure

attachment, both in the general population (Rumstein-McKean & Hunsley, 2001) and in BPD (Minzenberg et al., 2006), but contrary to what could be expected, research examining the relationship between sexual abuse and attachment styles in BPD is scarce. In our sample, sexual abuse did not significantly correlate with any of the attachment styles, and with regards to personality features, the only significant correlation was with emotional dysregulation. Despite the importance given to sexual abuse in BPD over the years, a recent meta-analysis highlighted that its impact is less than that of other types of maltreatment, and indeed, in the only identified prospective study, its effect was not statistically significant (Porter et al., 2020).

Finally, and with regard to the observed lack of significant impact of PMI on any of the aspects evaluated in the research, it should be noted that the results are contrary to what we expected. There is evidence that parents with a variety of psychiatric conditions may have difficulties in carrying out parental functions (Davidsen et al., 2015; Eyden et al., 2016; Iacono et al., 2018; Krumm et al., 2013; Lovejoy et al., 2000; Muzik et al., 2017). Maladaptive parental behaviours have been pointed out, in fact, as an important mediator between parental psychopathology and psychiatric symptoms in the offspring, emphasizing in this relationship the role of insecure attachment styles (Howard & Khalifeh, 2020). Nonetheless, we found no difference in relation to the presence or absence of PMI, either on trauma or attachment scores, or in the personality profiles.

4.5 | Strengths, limitations and clinical implications

The main limitation of the study is its cross-sectional nature, which does not allow us to establish the causal ordering of trauma, attachment and personality features and pathology. The interpretation of data is based on plausibility, confidence in the proper completion of the questionnaires (so that information about trauma is limited to childhood) and theoretical approaches about the development of attachment and personality. Another limitation is the sample size, mainly when attempting to create subgroups. Therefore, our findings should be replicated in different and larger samples. Although they are coherent with previous observations in other populations, due to the limited sample size, the results should be interpreted with caution and considered exploratory in nature. As a third limitation, it should be noted that relying on self-reports is always open to the biases of memory and interpretation of reality. Also, the use of self-reports may introduce mono-method bias, a type of bias that overestimates the association between constructs measured with the same method and informant.

The observed lack of differences in relation to PMI may be because we considered all psychiatric conditions as a single entity, when it has been observed that the effect of the different pathologies differs. Chronic conditions seem to have a more detrimental effect than diseases that occur in outbreaks (Reupert et al., 2015). Although the main diagnoses of the sick parent/s were gathered as part of the project, the sample is not large enough to make significant subgroups with the different diagnoses, and thus, any analysis in this sense would require that it be enlarged. Additionally, we considered the lifetime incidence of PMI, not only the first years of life of the patients, in which a greater sensitivity to attachment issues exists. Finally, information on PMI was gathered through the participants themselves, and thus, missing or incorrect data, as well as memory bias, cannot be ruled out. These limitations prevent us from drawing firm conclusions from the lack of a relationship between PMI and trauma, attachment style or personality observed in our work, which we think should be addressed in future research. Nonetheless, this is a novel approach to understanding the relationship between these concepts, and thus, we consider it worth reporting and discussing it.

At the same time, the characteristics of the sample (a well-defined and homogeneous sample of outpatients with a diagnosis of BPD) are one of the strengths of the research. Another strength is that all measures are based on dimensions, which capture more subtle interindividual differences than categorical classifications and thus are more useful in clinical research (Voestermans et al., 2020). Further, the sample was recruited in clinical outpatient devices, and therefore, the profile of the patients who participated in the project is representative of routine clinical practice, without the selection biases that are occasionally incurred in research settings. Results can thus be extrapolated to day-to-day practice and, as other authors have also noted, indicate that childhood experiences and attachment style of BPD patients, to the extent that they impact on the type and severity of symptoms, should be taken into account in the psychotherapeutic process (Bernheim et al., 2019).

5 | CONCLUSIONS AND FURTHER RESEARCH

Anxious attachment mediates the relationship between emotional abuse and emotional dysregulation in BPD. A similar mediating pattern has been observed for dissocial behaviour. Interestingly, although emotional abuse has been described as an essential environmental variable for the development of BPD, the effect that emotional neglect has on emotional dysregulation through attachment anxiety in our sample is even larger than the effect observed for emotional abuse. Our work is consistent with the only previous research that has used a mediating approach to explore the relationship between trauma, attachment and BPD, incorporating a dimensional assessment of pathological personality traits into the study. Contrary to what we expected, we did not find any effect of PMI on the abovementioned associations.

Based on the previous literature and our findings, we consider that future research should be focused on replicating this model with newer dimensional models of personality assessment, such as the Personality Inventory of DSM-5, the Structured Interview of Personality Organization or the assessment of personality functioning according to the upcoming 11th revision of the ICD. Also, further research on the attachment styles of adult offspring of individuals with mental disorders is needed, since it remains a poorly studied issue.

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CONFLICT OF INTEREST

The authors declare that there is no conflict of interest.

DATA AVAILABILITY STATEMENT

Data are available from the corresponding author on reasonable request.

ORCID

Leire Erkoreka https://orcid.org/0000-0002-9104-0694

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SUPPORTING INFORMATION

Additional supporting information may be found online in the Supporting Information section at the end of this article.

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