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PSYCHOSOCIAL PATHWAYS TO BORDERLINE PERSONALITY DISORDERS: TOWARDS AN INTEGRATIVE AND EMPIRICALLY BASED MODEL

By:

MARIANNE COTTIN ARREDONDO

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Sponsor: Prof. Adrian Mundt, Ph.D.

Co-Sponsor: Katja Bertsch, Ph.D.

Thesis Committee: Alex Behn, Ph.D., and Klaus Schmeck, Ph.D.

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1   Abstract.

The relationship between adverse childhood experiences (ACE) and borderline personality disorder (BPD) is undeniable, at least from the perspectives of traditional categorical models. In the transition to a hybrid dimensional diagnosis present in DSM-5 AMPD and ICD-11, this relationship needs more research. The general objective was to test and refine a comprehensive psychosocial model of BPD proposed by Leichsenring et al. (2011) based on the relationship between ACE (CTQ-SF), criterion A (levels of personality functioning; LPFS-SR 2.0), and B (personality traits; HEXACO; PID-5; PID-5BF +M) from the dimensional model, and the BPD symptom components (ZAN-BPD and ZAN-BPD: SRV). We conducted two different studies, one with secondary data collected in Germany with n=741 individuals from a clinical sample and a healthy control group, and the second one involved a parallel data collection in Chile and Germany n= 1313 with a clinical sample with a lifetime PD diagnosis, and a community-based sample. For the second study we validated three different scales of for assessing BPD. We used path analytics methods for analyzing the relationship between ACE and BPD symptom components data with three different mechanisms: FFM, maladaptive traits, and levels of personality functioning. Emotional trauma (abuse and neglect) was the subtype that most strongly predicted BPD. We found clear pathways from ACE towards specific BPD symptom components, being affective and relational components the most strongly predicted. Moreover, our three models worked as mechanisms in this relationship, especially low extraversion, high negative affect, high psychoticism, as well as the self-dysfunctions. Identifying mechanisms such as these mechanisms during childhood or early adolescence, particularly after ACE, might help us to better identify risk factors and timely provide specific personalized interventions for promoting healthier psychosocial pathways towards adulthood. These results are exploratory and need further studies for translation into clinical practice.

2   Introduction.

This dissertation aimed to test and refine an integrative psychosocial model of BPD proposed by Leichsenring et al. (2011), in The Lancet journal based on the relationship between adverse childhood experiences, psychosocial factors, and clinical components of Borderline Personality Disorders (BPD). We expected to accomplish this aim by answering the following research question: "What is the relationship between adverse childhood experiences, personality traits and functioning (psychosocial factors), and the main clinical components of BPD (affective dysregulation, behavioral dysregulation, disturbed relatedness, and cognitive distortions)?".

The main contribution of this dissertation is that it bridges new theories with previous knowledge on etiological pathways to BPD. This is an integrative theoretical model proposed to assess personality disorders by linking categorical traditions to more dimensional and clinically oriented assessments. The latest editions of the Diagnostic and statistical manual of mental disorders (DSM-5; APA, 2013) and the International Statistical Classification of Diseases and Related Health Problems (ICD-11; WHO, 2019) included the hybrid/categorical-dimensional model. We tested this model with a heterogeneous sample conformed by community and clinical participants from two different countries.

This dissertation is organized mirroring the DSM-5 AMPD (APA, 2013) and the ICD-11 (WHO, 2019), which disaggregate the assessment of personality disorders into two sequential steps, criterion A and criterion B. Thus, this dissertation is organized into two different and sequential studies. The first study is focused on personality traits (criterion B), and the second, on the levels of personality functioning (criterion A). As an important note regarding the title and the rest of the document, our definition of "pathways" is not as in longitudinal modelling (repeated measures in different time points), but as a hypothesized mechanism from one point (adverse childhood experiences) to other (personality traits and functioning), and from these to our outcomes (BPD symptom components).

The first study, with a focus on personality traits, had the specific objective of empirically testing the relationship between adverse childhood experiences, personality traits, and the main clinical components of BPD. For personality traits, we consider two perspectives, maladaptive traits

(Krueger et al., 2012), and the traditional Five-Factor Model (FFM) of personality traits (McCrae & John, 1992). In the second study, with a focus on personality functioning, we empirically tested the relationship between adverse childhood experiences, the self and interpersonal levels of personality disfunction, and the main clinical components of BPD.

In summary, our main findings were that a) adverse childhood experiences differentially predicted the four clinical BPD components (i.e., affective dysregulation, behavioral dysregulation/impulsivity, disturbed relatedness/relational/interpersonal, and cognitive distortions); b) the affective BPD component (i.e., emptiness, anger, emotion instability) was the most strongly predicted by adverse childhood experiences, while the impulsive was the less predicted component (i.e., self-destructive acts, other forms of impulsivity); c) adverse childhood experiences had an effect on maladaptive traits (particularly Negative Affect), and in FFM traits (particularly Extraversion, with a special effect in the social self-esteem facet, which we will unfold in further chapters), as well as the levels of personality functioning (particularly at the interpersonal level); d) personality traits (both maladaptive and FFM) and personality functioning (self and interpersonal) differentially predicted global BPD symptoms and clinical components; and, e) personality traits and functioning mediated the relationship between adverse childhood experiences and BPD clinical components.

Our study is based on three main considerations. First, we consider the complexity and multidimensionality of BPD, consisting of behavioral, cognitive, emotional, and interpersonal symptoms resulting from combinations of genetically transmitted vulnerabilities and environmental factors (e.g., Bornovalova et al., 2009; Distel et al., 2010, 2011; Kendler et al., 2011). This is certainly not specific to BPD but a defining characteristic of virtually all mental health problems. We underscore this since over the years each personality tradition has defined one specific component as the core feature when diagnosing BPD, which result in substantial differences in classification decisions among individuals with the same diagnosis. Moreover, while focusing in only one component, researchers (and even clinicians) lose the big picture of the syndrome, and the accompanying dynamic that may occur among symptoms. To highlight heterogeneity instead of obscure it, we decided to use an instrument that let us assess each component separately instead of assessing one global BPD score. This decision let us a more

precise understanding of the different relationships between the variables we included in the model. Second, we based our study in the widely accepted argument that BPD is strongly related to adverse childhood experiences, and that even though they are neither necessary or sufficient for its development, they constitute the most potent environmental risk factor (Porter et al., 2020; Zanarini, 2000). Third, we acknowledge that the categorical model of mental health disorders, including personality disorders, has been challenged untenable because of multiple difficulties regarding its validity and reliability (see theoretical framework). Human ways of suffering do not always fit into discrete categories such as "disorder" or "no disorder." They rather fall along a dimension of severity, which led clinicians and researchers come up with new paradigm of diagnosis. Thus, we decided to test the theoretical proposal with the most current version of the diagnosis modality.

Even though the relationship between adverse childhood experiences and BPD has been reported in the literature (e.g., Cattane et al., 2017; Ibrahim et al., 2018; Porter et al., 2020), most of the supporting theoretical and empirical background has been studied with the traditional categorical model of diagnosis for personality disorders. The categorical model, besides carrying the problems we presented before, treats BPD as a unidimensional construct, obscuring heterogeneity, and the different dynamics between symptoms. Consequently, this model does not capture the potentially differential effects that adverse childhood experiences might have over each component. This thesis contributes to solving the emerging research problem based on the three considerations we presented above.

This thesis is developed in the context of the introduced Section III appendix of the Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-5) (APA, 2013), published as a separate document of the manual describing the "Alternative DSM-5 Model for Personality Disorders (AMPD)" and the latest version of the World Health Organization's International Classification of Diseases, the International Classification of Diseases 11th Revision (WHO, 2019), which is now official and will be mandatory to use in some countries from January 2022. Both manuals agree on a hybrid dimensional/categorical diagnosis for personality disorders incorporating criterion A (Levels of Personality Functioning) and criterion B (Maladaptive Personality Traits) among other criteria. Additionally, the ICD-11 (WHO, 2019) also eliminated

all subtypes of personality disorders except for BPD, which was kept as an optional qualifier. A model as such was though to open pathways for strong theoretical proposals on biological and psychological developmental mechanisms.

The concept of personality disorders is now in a state of active research and can be considered as a "work in progress". Some of the work derived from this type of reorganization has been generating new theoretical ideas such as the one described in this thesis, on how etiological models for categorical BPD map onto this new modality of classification (Kerber et al., 2019). One good example is the biopsychosocial model published in The Lancet Journal by Leichsenring et al., (2011). This model is characterized by a tripartite categorization of biological, psychological, and social factors. This integrative model of BPD combines traditional etiological models, where adverse childhood experiences would be interrelated with biological factors constituting a risk factor, with recent dimensional theoretical perspectives of personality disorders based on the two main defining criteria: criterion A (personality functioning) and B (personality traits), and the heterogenous features we usually observe in individuals with a BPD diagnosis (affective dysregulation, behavioral dysregulation, disturbed relatedness, and cognitive distortions). Even though this proposal seems like an interesting unifying model for understanding interrelated variables associated with BPD from a more updated perspective, its contribution is still at a theoretical phase.

One important modification we did to the original model published by Leichsenring et al., (2011) in The Lancet Journal was to include one additional component to the other three (i.e., affective, behavioral/impulsive, relational/interpersonal), the cognitive distortions, which we will call the "cognitive component" from now on. While there are different approaches for understanding BPD in terms of groups of symptoms (for more information about this, we suggest reading studies on factor analysis for BPD such (e.g. Ferrer et al., 2018; Sanislow et al., 2000; Sharp et al., 2015), we believe this component -mainly characterized by derealization and identity diffusion- is also a core feature in some individuals with a BPD diagnosis. This is presented as one of the nine criteria of the previous categorical model, and on the recent proposals for assessing BPD the DSM 5(APA, 2013; WHO, 2019).

To test this model, we organized the empirical work into two studies, each with a specific objective.

The first study was focused on personality traits, and it had the specific objective of empirically testing the relationship between adverse childhood experiences, personality traits from the perspective of the maladaptive traits and the FFM perspective, and the main clinical components of BPD (affective dysregulation, behavioral dysregulation, disturbed relatedness, and cognitive distortions). In this study we wanted to understand to what extent experiencing early adversities during childhood would impact personality traits -from the maladaptive trait perspective derived from DSM-5 AMPD (APA, 2013) and ICD-11 (WHO, 2019), and from the perspective of traditional FFM traits- so that individuals might end up developing BPD symptoms. While several authors (e.g., Few et al., 2013; Krueger et al., 2018; Widiger et al., 2019) consider the maladaptive trait perspective as sufficient for addressing profiles when assessing personality disorders in research or clinical contexts, it was important for us to include the FFM perspective into our work because of the different resolutions that individuals may have in response to traumatic experiences, including resilience and growth (i.e., developing or strengthening adaptive personality traits and not presenting BPD symptoms later in life). Some individuals might develop further resources or cope through adaptive personality traits, and the FFM might open possibilities for precisely capturing this. For this study, we analyzed secondary data from a German study with community participants, but also clinical outpatients, and inpatients with a diagnosis of BPD which started in 2011 and finished in 2018 (https://gepris.dfg.de/gepris/projekt/190034061?language=en).

The second study was focused on the levels of personality functioning. In this study, we empirically tested the relationship between adverse childhood experiences, the levels of personality functioning, and the main clinical components of BPD (affective dysregulation, behavioral dysregulation, disturbed relatedness, and cognitive distortions). This study was conducted after the first one and we were able to refine our research design because we were responsible for the data collection. Because of the well-known argument that adverse childhood experiences are neither necessary or sufficient to present BPD symptoms, to understand the differential pathways towards BPD it was crucial to include participants with different levels of

reported exposure to adverse childhood experiences, and with different levels of BPD features (from no symptom in some participants from the community sample to very severe symptoms in some participants from the clinical sample).

This study is not comprehensive in that it does not capture any biological components or even look at the variables longitudinally -as they occur in nature-. Our intention is rather to make an empirical approximation to a theory that seems to be integrating in an interesting and parsimonious way how recent perspectives could be related to previous knowledge on etiology of BPD, and to BPD features per se. We acknowledge that many efforts have been developed to advance theoretically and empirically towards a more valid and reliable way to make diagnosis in the field of personality disorders. We still must develop clinical and research strategies for accurate and timely matches between individual personality patterns (traits and functioning) and evidence-based treatments. We believe these findings are initial steps to bridge on the existing gap of knowledge in BPD literature.

Despite the limitations of the studies included in this thesis, and the fact that some of our reflections still need to be directly tested in further studies, we believe our results are good steps for integrating decades of research built on previous approaches to personality disorders. By integrating psychodynamic theories initially proposed by Kernberg (1970/1987) which are represented in the levels of personality functioning, to the more recently developed proposals of personality traits represented in its maladaptive variants (PID-5) (Krueger et al., 2012), in etiological models based traumatic experiences (Lang et al., 2019; Mainali et al., 2020; Mainali & Sangroula, 2020; Radtke et al., 2015), this thesis will contribute to a better understanding on how the new models of personality disorders derived from the AMPD in DSM-5 (APA, 2013) and the ICD-11 (WHO, 2019) would map onto the existing body of knowledge on etiological theories for BPD symptoms. This integration would model to what extent adverse childhood experiences affect personality patterns such as traits and functioning, and consequently, how these developed mechanisms predict BPD features. We underscore that these three processes (traits, functioning and symptoms) are not necessarily parallel, but constitute a dynamic network of adjustment strategies that individuals are forced to develop -and afterwards rigidize- to adapt to these adverse circumstances during very sensitive period of their lives.

One strength of this dissertation is that it is aligned to the purpose behind the shift to dimensional models which was based on the idea that it would help to diagnose and intervene at early stages. Considering that personality traits and functioning might start to present earlier in life, we could consider them as more proximal consequences of adverse childhood experiences and thus, be intermediate points between adverse events during childhood and syndromic manifestations of the different components of BPD.

By identifying the levels of personality functioning and personality traits as psychosocial markers with etiological significance, we might advance on empirically based theories to better predict the course of the disorder and somehow compensate for the potentially changing trajectories in individuals who experienced different levels of adverse childhood experiences. Moreover, by detecting specific pathways from adverse childhood experiences to each BPD clinical dimension we might also orient professionals to decide on adequate and individualized interventions considering the most likely affected clinical dimension. This could be based on the tendencies we found from community and clinical samples from two different countries in this dissertation.

Heterogeneity is according to our belief another strength of this dissertation. For this second study, we included participants from two different countries, and we strategically designed our inclusion criteria for including community and clinical participants who fulfilled different numbers of criteria for a BPD diagnosis (vs. very healthy or very ill participants, which was the case in the first study). By including participants with different levels of exposure to adverse childhood experiences, traits, functioning and BPD features, we incremented our ecologic validity, and thus, make our results more generalizable to community and clinical population, which would in turn mirror a true dimensional approach. The decision of including participants from two different countries let us account for the sociocultural environment in this relationship, as it would impact normative patterns on how individuals might process adverse childhood experiences, and on what is considered adaptive, maladaptive or dysfunctions in personality during adulthood. However, because we didn't include variables to assess culture in this dissertation, it cannot be considered as a cross-cultural study and some of the results derived from this relationship can be partially explained by methodological reasons. In this study, we

also include different clinical components of BPD so that pathways were specific and differential across BPD symptoms.

We do not consider these results as definitive but as to shed lights into an integrative and empirically based approach. Researchers can build onto these results in further studies and eventually clinicians could apply some of these findings for making informed decisions considering the relationship between adverse childhood experiences and BPD symptoms from a developmental point of view (with the cross-sectional limitations of this study), while getting familiar with using the newer modalities of diagnosis. Since according to our results, personality traits, functioning and disorder (BPD specifically) are different levels of analyzing the interaction between biological dispositions and consequences of adverse experiences, they may work as a toolbox depending on how early we are able to intervene, in which part of the mechanism we should focus our efforts, how intensive we would like our intervention to be, and in which clinical dimension we will find more improvements. For example, a clinician might start early interventions with individuals who experienced emotional abuse, and developed certain patterns, as traits (e.g., low Extraversion), by trying different clinical strategies before a deep change in how they see themselves or others, or before they can present a symptomatic configuration. We expect that these empirical results might help others continue develop this line of research to build further evidence and ways on how this could be applied to the clinical context.

In this dissertation we propose new ways to understand the relationship between adverse childhood experiences and BPD, considering that little is known about how adverse childhood experiences may impact different clinical aspects of BPD, such as its affective dimension (e.g., affective instability), cognitive distortions (e.g., identity diffusion), behavioral dysregulation (e.g., impulsivity) and interpersonal patterns (e.g., poor empathy), how these are related to more recent modalities of understanding personality disorders found in DSM-5 AMPD (APA, 2013) and ICD-11 (WHO, 2019), and why some people develop different pathways in response to apparently similar experiences reported about their childhood.

To answer our main question about "What is the relationship between adverse childhood experiences, psychosocial factors (personality functioning and traits), and BPD symptom

components of BPD", we tested eight hypotheses, five for the first study and three for the second one.

The main variables that we used in our dissertation were adverse childhood experiences, maladaptive personality traits, FFM personality traits, the levels of personality functioning and BPD clinical components.

In this dissertation adverse childhood experiences are defined as synonyms of Childhood Maltreatment as assessed by Childhood Trauma Questionnaire (Bernstein et al., 1998). Adverse childhood experiences are defined as the extent to which an individual report having experienced "acts of commission or omission by a parent or other caregiver that results in harm, potential harm, or threat of harm" during their childhood (particularly emotional, physical, and sexual abuse, and emotional and physical neglect) (Gilbert et al., 2009).

The FFM personality traits, according to the HEXACO-60 (Ashton & Lee, 2009) are the six major dimensions of personality found in lexical studies of personality structure as proposed by Allport & Odbert (1936) and conducted in various languages. These personality traits are Honesty-Humility, Emotionality, Extraversion, Agreeableness, Conscientiousness and Openness to Experience. This instrument include one additional personality trait to the FFM proposals as a result of structural analysis (for more details regarding this topic refer to Lee et al., 2005). As a note about nomenclature on personality traits, we will refer to the model as FFM across the document, despite the HEXACO-60 (Ashton & Lee, 2009) consider six instead of five personality traits.

On the other hand, maladaptive personality traits are extreme variants of the FFM traits and involve five traits (Krueger et al., 2012; Suzuki et al., 2015; Widiger & Trull, 2007). The hypothesis is that since FFM traits work in a bipolar continuum style of "normal" traits (i.e., every individual present higher or lower values of each trait), individuals with a personality pathology might position very close to the poles (or sometimes the poles would act with a "ceiling effect" or a "floor effect" depending on the direction of the trait, and this would be represented by these maladaptive traits. According to this, some maladaptive traits would work

in continuity with FFM traits. According to the DSM-5 AMPD criterion B (APA, 2013)these are: Negative Affect (in the same direction as neuroticism or Emotionality), Detachment (as opposed to Extraversion), Antagonism (as opposed to Agreeableness) Disinhibition (as opposed to Conscientiousness) and Psychoticism (as opposed to some of the facets in Openness to Experience). In the first study, we use these maladaptive traits from the PID-5 (Krueger et al., 2012), while in the second we use a shorter and more recent version of the questionnaire with one additional trait, Anankastia, which is proposed by the ICD-11 and was included in the combined DSM and ICD-11 questionnaire we used, the Personality Inventory for DSM-5 and ICD-11 – Brief Form Modified (PID5BF+ M; APA, 2013; Kerber et al., 2020; WHO, 2019).

The levels of personality functioning represent the core capacities of an individual personality-related self and interpersonal functioning and it determines the severity of any impairment in these two areas (APA, 2013). On one hand, the self-functioning is defined by identify and self-direction, and on the other, the interpersonal functioning is defined by empathy and intimacy. These criteria have been defined by some authors (e.g., Sharp & Wall, 2021) as to capture a "psychodynamically informed intrapsychic construct" of maladaptive self and interpersonal functioning in a continuum from normal functioning to personality pathology. In the second study we used the Levels of Personality Functioning Scale Brief Form 2.0 (LPFS-BF 2.0) (Weekers et al., 2019a) which is a shorter version of the Levels of Personality Functioning Scale (LPFS) (Morey, 2017)

Lastly, the clinical components of BPD are the four core affected areas of a BPD diagnosis, this is, affective, relational/interpersonal, cognitive, and behavioral/impulsive symptoms (e.g., Becker et al., 2006; Gunderson et al., 2018). These group of symptoms are categories in which all nine criteria of the DSM-IV and Section II DSM-5 could be classified. As note regarding nomenclature for components, during this document we refer to (symptomatic) components or dimensions as synonyms. We acknowledge that different factorial structures has been found regarding latent BPD factors (for a review refer to Distel et al., 2010). We will consider the four-factor structure for the purpose of this dissertation (i.e., affective dysregulation, cognitive distortions, disturbed relatedness, and behavioral dysregulation) as assessed by the Zanarini Rating Scale for Borderline Personality Disorder: Self-report Version (ZAN-BPD: SRV;

Zanarini et al., 2015). Moreover, different nomenclature has been used for referring to these four components. We will refer to the affective dysregulation component as "affective", to the cognitive distortion component as "cognitive", to the behavioral dysregulation component as "impulsive" or "behavioral", and to the disturbed relatedness components as to "relational" or "interpersonal".

Regarding the methodology of this dissertation, we conducted a non-experimental, retrospective, and explanatory design. We used three different datasets for this dissertation. The first study involved the first dataset and was analyzed as secondary data composed of a clinical and a general population sample collected in Germany in 2014. The data for the second study was collected in two countries, Chile (second dataset), and Germany (third dataset) in 2020. For analyzing our data, we used path analytic methods, which is a subtype of Structural Equational Models (SEM) where we only test the structure between our constructs derived from a theory instead of the structure of the measures, which would be a complete SEM. Moreover, as part of the second study, we translated three scales for being able to use them with Spanish speaking Chilean population, the Personality Inventory for DSM-5 and ICD-11 – Brief Form Modified (PID5BF+ M) (Kerber et al., 2020), the Level of Personality Functioning Scale-Brief Form 2.0 (LPFS-BF 2.0; Weekers et al., 2019), and the Zanarini Rating Scale for Borderline Personality Disorder: Self-Report (ZAN-BPD: SRV) (Zanarini et al., 2015b).

Part of the aims of our second study was to validate a battery of questionnaires for assessing personality pathology in adults in a Chilean Spanish speaking population. We did so in the same community and clinical sample population as the other analyses. We evaluated the psychometric properties according to the theory behind each of them and tested the structure before conducting the analysis of our second study. For estimating the validity and reliability of the validated scales, the PID5BF+ M (Kerber et al., 2020) and the LPFS-BF 2.0 (Weekers et al., 2019a), we estimated the internal consistency with Cronbach Alpha, the convergent validity with questionnaires for depressive and anxiety symptoms, confirmatory factor analysis and ROC curves. The validation of the LPFS-BF 2.0 (Weekers et al., 2019a) was a necessary step for the aim of the second study, while the validation of the PID5BF+ M (Kerber et al., 2020) was conducted to be able to do further research with the alternative model in Chilean and Spanish

speaking population (i.e., it was not used for further analyses in this dissertation). We report these analyses briefly in the methods section.

As part of its objectives, this dissertation did not incorporate the validation reports of the ZAN-BPD: SRV. The main reason behind not including the validation of the ZAN-BPD: SRV (Zanarini et al., 2015b) lays on the fact that to use it, we needed to sign a license agreement which did not allowed to spread the questionnaire outside our laboratory. Including this thesis in an open repository of a university for academic purposes with the analysis of the ZAN-BPD: SRV (Zanarini et al., 2015b) would break this agreement. Moreover, even if we make an official validation, it would not be neither available or free for using for clinical or research purposes.

In terms of the role of personality traits (patterns of thinking, feeling and behaving) (Costa et al., 1995), our main findings were that a) four personality traits (i.e., Negative Affect, Psychoticism, Emotionality and Extraversion) were the best candidates in our sample to be included in the model considering them as good predictors of three different instruments for BPD, the "Zanarini Rating Scale for Borderline Personality Disorder (ZAN-BPD)", a clinician administered interview (Zanarini, 2003), the "International Personality Disorder Examination (IPDE)", a semi-structured interview (Loranger, 1999), and the Borderline Symptom List-23 (BSL-23), a self-report instrument (Bohus et al., 2009); b) Negative Affect and Psychoticism were the best candidates for predicting BPD symptoms among the DSM-5 maladaptive personality traits, c) the FFM (from the HEXACO-60; Ashton & Lee, 2009) was almost as good for predicting BPD symptoms as maladaptive trait models were, particularly Extraversion, and with lower impact, Emotionality; d) personality traits -neither maladaptive or FFM- were good predictors of behavioral dysregulation/impulsive symptoms (i.e., self- aggression and other impulsive behaviors); e) the best mechanisms from adverse childhood experiences to BPD symptoms considering maladaptive traits were the ones mediated by Negative Affect and Extraversion, which resulted in higher scores for affective and relational BPD symptoms f) low Extraversion (from FFM) had surprisingly a very important role in this relationship, particularly in its social self-esteem facet.

According to our results on personality traits, BPD as a final consequence of adverse childhood experiences would be built on a specific generalized exposure to social experiences of self and others in (probably repetitive) association to negative emotional responses. This could potentially imply that individuals who experience adverse childhood experiences (particularly emotional abuse and neglect), who as a consequence of that experiences develop patterns of either negative social self-esteem (evaluating themselves as inadequate and disliked by others), or direct unpleasant emotional reactions towards relating with others (i.e., anger, anxiety, hostility, passive, lability or restriction), might end up with a characteristic symptomatic affective and relational manifestations of BPD. This process might function with several dynamics and not necessarily be parallel processes when experienced by individuals (e.g., they could happen sequentially so that low social self-esteem could predict a higher tendency towards negative reactions). This is interesting, particularly in that the negative social self-esteem results may add up to the usual conceptualization of social negative reactions due to mistrust that usually researchers or clinicians define as features symptoms in BPD (e.g., Bach & Farrell, 2018; Bo et al., 2017; Hallquist & Pilkonis, 2012), and could maybe work as more proximal consequences to address when providing early-stage interventions for changing trajectories of individuals with adverse childhood experiences.

In terms of personality functioning, this is, the level of dysfunction in how individuals perceive themselves and others, we found expected but encouraging results. Our main findings were that self-dysfunction could be mediating the relationship from adverse childhood experiences to affective, cognitive, and behavioral symptoms, while interpersonal dysfunction could be mediating the relationship with interpersonal symptoms. Even though this seems like reasonable results considering the nature of disfunction and symptoms as self or interpersonal related, this could add up to current theories in that it could be captured at an early stage with additional instruments designed to address those constructs during infancy or adolescence (e.g., attachment scales). This is, self and interpersonal dysfunctions might not be necessarily overlapping constructs with BPD symptoms but represent internal motives of how people develop such symptoms. An example of this would be that because an individual "feel vulnerable when relationships turn out to be more personal" (an LPFS-BF 2.0 item that represent an interpersonal dysfunction; Weekers et al., 2019) they might involve in "efforts to avoid abandonment" or

"break relationship with someone who is important for them" (ZAN-BPD: SRV item that assess disturbed relatedness; Zanarini et al., 2015). Another example could be seen in self dysfunction in that because an individual might have "unrealistic expectations about themselves" they end up with "self-destructing acts" or "feelings of emptiness" when confronted with rejection or contradicting information. Even though these internal motives might sometimes be overlapping with BPD symptoms considering the traditional categorical way of diagnosing personality disorders, it is possible to capture less severe manifestations by identifying early signs of some of the motives (personality functioning) before an individual act on them later in life in a symptomatic mode (BPD symptoms). According to this model, symptoms configure when internal modes of being get "out of the skin". These modes (i.e., personality traits and functioning) are learned through the interactions between biological predispositions and early experiences.

We present this dissertation into the following structure:

We first present the "Theoretical and Empirical Framework" section where we define central concepts and present the theoretical background that sustains the hypothesis of our research problem.

The next section is "Aims and Objectives" where we present the general aim of the dissertation, enumerate objectives of each of the two studies with their own specific objectives and hypothesis.

Next, we present the "Methods" section, where we present the general research design, and argue o the type of methodology and design we used including participants, information about the instruments for data collection, procedures, our data analysis strategy, and ethical considerations.

The following is the "Results" section where we present the results according to the objectives and hypothesis of our two studies including table and graphs for a visual representation.

The "Discussion" section is where we present a synthesis of the obtained results according to our objectives and hypothesis, and in line with the presented theoretical and empirical background. This section will also contain practical implications for clinical and psychotherapy

contexts along with contributions, limitations, methodological considerations, and suggestions for future studies.

Next, we present the "Conclusions" section where we present a synthesis of our main findings, final comments on our hypothesis, recommendations, contributions to the field and a general conclusion of this dissertation.

As general final note, we decided to write this dissertation in active plural first person (i.e., we conducted this study and wrote this dissertation) instead of passive voice (i.e., this study and this dissertation was conducted by us). This is a personal effort that lays on the idea of humanizing science and broadening to general population by intentionally translating results into interesting and dynamic stories. Moreover, during this thesis we made an intentional effort -which is probably not enough- to avoid jargon-heavy phrasing, tangled phrases, and unnecessary acronyms that often make science impenetrable and distant. This effort is part of a larger initiative from that readers can further read in Ball, (2017) or Plavén-Sigray et al., (2017).

3   Theoretical and Empirical Framework

3.1   *Borderline Personality Disorder*

Borderline Personality Disorder (BPD) is a severe mental health disorder characterized by affective dysregulation, behavioral dysregulation, cognitive distortions, and disturbed relatedness (APA, 2013; Leichsenring et al., 2011; Paris & Black, 2015; Zimmerman & Balling, 2021). The term "borderline" was coined by Stern, (1938) and then worked by Kernberg, (1967) for a disorder between neurosis and psychosis. Considering the risk of psychiatric comorbidity, frequent suicide attempts, poor health outcomes, intense treatment consumption, and substantial functional impairment, BPD is a significant public health problem that have its own position as a serious mental illness (SMI) according to the National Institute of Mental Health (NIMH) (Paris & Black, 2015; Zimmerman & Gazarian, 2014). Serious mental illnesses are defined by the NIMH as a "mental, behavioral, or emotional disorder that causes significant functional impairment and significantly limits or interferes with one or more important life activities".

Even though we can be observe personality features related to BPD in children, however they do not crystallize into a coherent syndrome of BPD until 12 years old with the transition to adolescence, which has shown to be a vulnerable period for the onset of BPD (Belsky et al., 2019; Bohus et al., 2021; Sharp et al., 2018). It is the most prevalent personality disorder with estimated of 1-5.9%, in clinical practice, but it is still underdiagnosed and underrecognized (Comtois & Carmel, 2016; Magnavita et al., 2010; Zimmerman & Mattia, 1999a). Community point prevalence in adults has been estimated in .7-2.7% (APA, 2013; Bohus et al., 2021; Eaton & Greene, 2018; Ellison et al., 2018). This prevalence increases to 11.8-22.4% in adult clinical population (Bohus et al., 2021; Eaton & Greene, 2018; Ha et al., 2014).

Even though this disorder is not as prevalent as others (e.g., depression), it constitutes a considerable burden of psychiatric illnesses generating a significant demand of resources for individuals, their families, and health systems (Hastrup et al., 2019; Leichsenring et al., 2011; Salvador-Carulla et al., 2014; Wunsch et al., 2014). For example, according to Gentil et al., (2021) a PD diagnosis is the best predictor for consultations in emergency services due to suicidal behaviors, and BPD diagnoses in emergency services have been estimated between 9%

and 27%, numbers that are probably under-estimated according to some authors (Penfold et al., 2016; Shaikh et al., 2017). Bourke et al., (2021) estimated that the mean costs of individuals with BPD was around 10.844 euros annually, increasing up to 40.441 euros if considering productivity losses, which is 16 times higher in people without the diagnosis (Hastrup et al., 2019). Despite the suffering, the high costs and evidence about excess mortality in patients with BPD, research on this disorder has been less than in other major psychiatric disorders (Björkenstam et al., 2015; Gunderson, 2009).

Previously, the mainstream was that the prevalence for BPD was higher in women comparing to men, but the research suggests that there are no significant sex differences in the incidence of BPD in the community (Bohus et al., 2021). The rationale behind this idea was probably because female patients with BPD tend to seek more mental health treatment than male BPD patients (Coid et al., 2009).

Several treatment approaches have been created in recent decades to address the obstacles of BPD treatment (Bateman & Fonagy, 2016; Doering et al., 2010; Linehan, 1987; Young et al., 2003). These are usually structured and manualized These approaches have shown varying degrees of success, with mostly good prognosis among those who get to receive specialized treatment (Porter et al., 2020). Porter et al., (2020) found that remission rates were high, relapse rates low, and recovery was moderate but unstable, all of which is good news in terms of the prognosis. Moreover Álvarez Tomás, (2020) conducted a 10-year prospective study in a Spanish sample of BPD patients, followed by a systematic review and meta-analysis of prospective studies that followed BPD clinical samples for five years or more. The authors found favorable long-term prognosis of BPD with evidence of potential generalization and a mean remission rate of 60% among studies with improvements in depressive symptoms and social/global functioning at five years.

When revising literature on how and when individuals with a BPD diagnosis seek for help, the problem does not seem to be about how well treatments are working but about the amount of time occurring between seeking treatment and receiving a correct diagnosis for BPD patients. This number has been estimated in more than ten years, and one the reasons is because of

negative attitudes (Magnavita et al., 2010). BPD is among the most stigmatized disorder in the general population, police staff and even clinicians. The results of a self-report questionnaire given to 706 mental health providers (e.g., psychiatrists, psychiatry residents, social workers, nurses, and psychologists) revealed that while most clinicians believe BPD was a genuine diagnosis, nearly half preferred to avoid these patients (Black et al., 2011). As found in other studies, this negative attitude is higher among psychiatrists and nurses, and increase with years of experience working with these patients (Bodner et al., 2015). As we found in a local study with qualitative methods, there are several factors that influence this attitude, some because of relational difficulties pertaining to the patients, but others are related to the lack of general and specialized training on this topic in educational programs compared to other psychiatric illnesses (Fischer et al., 2019).

Given the severity of the effects that BPD has in people and their families, there is a pressing need to better understand its risk factors in order to develop timely preventive and therapeutic measures (Porter et al., 2020). These risk factors are generally unspecific, but decades of research have suggested that it is the interaction between biological predispositions and environmental factors that may account for the most explained variance when predicting BPD symptoms (Bohus et al., 2021; Leichsenring et al., 2011; Porter et al., 2020). Among the environmental factors, research has consistently shown that adverse childhood experiences constitute the most potent environmental risk factor for BPD features, not only on clinical, but also on community samples of adults and adolescents (e.g., Afifi et al., 2011; Callan & Howland, 2009).

3.1.1   *Adverse Childhood Experiences as a risk factor for BPD*

Since the 80s a group of researchers have been dedicated to study the relationship between the experiences of early adversity and the diagnosis of BPD in adulthood (Herman et al., 1989; McClelland et al., 1991). One of the first focused studies on this topic was conducted by Zanarini et al., (1989). Through stories of childhood abuse of 50 patients with a BPD diagnosis, the authors found that these group of patients presented increased probabilities of reporting histories of abuse and neglect comparing to patients with other psychiatric diagnosis.

For comparing BPD to other personality disorders, (Yen et al., 2002) conducted a study with patients classified into four groups according to their type of personality disorder (schizotypal, borderline disorder, avoidant, and obsessive), and a control group diagnosed with depression. They found that participants with BPD reported the highest rates of traumatic exposure. These results coincide with other studies which found high proportions of these individuals reporting at least one childhood abuse experience (Battle et al., 2004). In turn, a large number of studies has found a more specific relationship, showing that an important group of patients with BPD diagnosis reported early experiences of sexual abuse (Katerndahl et al., 2005; McLean & Gallop, 2003; Skodol et al., 2005; Soloff et al., 2002; Yen et al., 2002; Zanarini et al., 2002). For some decades, the specific relationship between sexual abuse and BPD was the most frequently studied. For example, Zanarini et al., (2002) found that 92.1% of 290 hospitalized patients with BPD reported some form of maltreatment during infancy; and from this group, 62.4% indicated having been victim of sexual abuse. The authors examined more than 2000 individuals with BPD and compared them with a control group who did not have the diagnosis. Those who had been exposed to severe childhood adversity were more likely to develop the diagnosis of BPD when assessed six years later. In a study conducted the same year Katerndahl et al., (2005) found that 29.3% fulfilled criteria for a BPD diagnosis in a sample of 100 women who were victim of sexual abuse. Another group of authors have proposed that sexual abuse could be another type of childhood maltreatment related to BPD, but not necessarily the strongest predictor. Early studies found that other types of adverse childhood experiences such as violence within the family (Sansone & Sansone, 2012), substance abuse by a family member (Widom et al., 2009), physical abuse(Goldman et al., 1992), emotional abuse (Igarashi et al., 2010), and even the sum of different types of abuse could be equivalent or stronger predictors of BPD comparing to sexual abuse (Sansone et al., 2004).

Summing up, it seems like the relationship between adverse childhood experiences and BPD must be studied considering that the co-occurrence of different types of maltreatment is usually the norm and not the exception (Edwards et al., 2003; Mullen et al., 1996; Shevlin & Elklit, 2008). Because of this, we believe it is essential to incorporate the accumulated effect of different types of abuse within the same person, where the participant is the unit of analysis instead of the specific type of experienced trauma (Shevlin & Elklit, 2008).

As such, the research on this topic has evolved with more broad ideas about how the exposure to traumatic events during infancy can relate to BPD. Moreover, some further specific parameters have been studied (e.g., whether the caregivers where actively involved in the traumatic experience, the age of onset, the severity), and more rigorous methodologies have been used (e.g., such as systematic reviews).

One recent metanalysis conducted by (Porter et al., 2020) studied the relationship between adverse childhood experiences in 97 studies with 11.366 participants with BPD, 3.732 non-clinical participants, and 13.128 psychiatric participants. The authors found that patients with BPD were nearly 13 times more likely than non-clinical controls to report childhood adversity and 3 times more likely than psychiatric controls. The scores of these participants were particularly high in emotional abuse and neglect. One of the limitations reported by the authors was that most of the studies were retrospective studies.

Koster et al., (2019) recently carried a review synthetizing the primary findings from four of the largest and most methodologically rigorous prospective studies of BPD in childhood and adulthood. The aim of this review was to present a scientifically informed understanding of its antecedents, structure, progression, interactions with other mental disorders, and impact on treatment use and functional outcomes. One of the key aspects of this review was that over time, the underlying diathesis combine to raise psychiatric susceptibility and developmental divergence from peers in early life, resulting in increased levels of disability and adversity in adulthood.

Although this relationship has been described in several studies during the last decades, most of these studies has been conducted with traditional binary categorical models. Little is known about how these experiences impact different aspects of BPD, such as its affective, cognitive, interpersonal, and behavioral components. Moreover, we still do not know how the more recent models assessing personality disorders map into what we already know about this relationship.

3.2   Limitations of Traditional Categorical Models of Personality Disorders

From its inclusion in DSM III in 1980 the nosology of BPD has been involved in substantial changes. From the DSM III (APA, 1980) to DSM-IV (APA, 1994) to receive a BPD diagnosis patients needed to fulfill five from nine of the further criteria: Fear of abandonment (1), Difficult interpersonal relationships (2), Uncertainty about self-image or identity (3), Impulsive behavior (4), Self-injurious behavior (5), Emotional changeability or hyperactivity (6), Feelings of emptiness (7), Difficulty controlling intense anger (8), and Transient suspiciousness or "disconnectedness" (9).

These criteria are denominated a categorical model of personality disorders and has been widely accepted and used for more than 50 years. It is based on the idea that personality disorders are qualitatively different from normal personality functioning. Several challenges to the categorical model of personality disorders made this construct controversial among researchers and clinicians during the workforce meetings involved in developing the DSM-5 (and later the ICD-11;WHO, 2019).

Among others, some of the problems that were in discussion according to the "oral story" of the DSM-5 developed by Zachar et al., (2016) were that:

a) In general, the categorical model for psychiatric disorders -including personality disorders-lacked an empirically based foundation.
b) there was no clear distinction or relation between personality disorders and normal personality traits, because each were part of completely different research and theoretical traditions,
c) it was unable to explain comorbidity (i.e., multiple diagnoses -including multiple personality disorders- in individual patients),
d) there was disagreement as to what constitutes a personality disorder, even among professionals who work with them, such as specialist psychiatrists and psychologists,
e) clinicians did not use it in clinical practice because they saw that most people's personalities did not fit into such a rigid classification system, so one of the most used categories were the non-specified personality disorder (PDNOS),

f) it was unable to explain heterogeneity (i.e., many individuals with the same diagnosis could have such different profiles that it was hard to believe that they would all benefit from the same interventions).

All these issues were problematic in that made personality disorders less valid or useful for clinicians, especially to select proper treatments (Gunderson et al., 2013). In 2008, the National Institute of Mental Health (NIMH) announced that in the next few decades, it will be essential to study the various biological, psychological, and social "signatures" of mental disorders (Lupien et al., 2017). In the same line, some authors such as argued needs for revision of classification manuals and current approaches to make them more efficient and consistent with this paradigm (Gunderson et al., 2013). Because of this and due to the reported dissatisfaction among clinicians, there was a large debate around change possibilities in further editions of classification manuals, namely DSM-5 and ICD-11 (APA, 2013; Tyrer et al., 2007; WHO, 2019) The main discussion in the field of personality disorders was about the validity of personality disorders as a categorical diagnosis. These critiques, therefore, were focused on the search for a new paradigm of diagnosis – one that would be based on empirical research, that could build upon what clinicians did as routine in their clinical practice, and that would integrate valuable research that has been conducted from the different traditions when studying personality (Leichsenring et al., 2011).

There are currently four classification systems for BPD: The traditional categorical criteria for found in Section II of the DSM-5, an alternative model found in Section III of the DSM-5, and the models presented in the ICD-10 and ICD-11 (APA, 2013; Bohus et al., 2021; WHO, 2019).

3.3   *The Alternative Model for Personality Disorders and the ICD-11 as a potential solution.*

Contrary to what was expected, the DSM-5 maintained the same model as the previous DSM edition (DSM-IV) (APA, 1994). However, the Work Group considered the need for revision and as a counterpart of the categorical model, in Section III they published as a separate document the "Alternative DSM-5 Model for Personality Disorders (AMPD)", which is currently under review, and may be subject to further modification. The greatest change in the

AMPD of DSM-5 Section III was the incorporation of a hybrid (dimensional/categorical) approach to personality disorders based on two sets of criteria: Criterion A, which is a description of the average level of personality functioning, and Criterion B which describes the maladaptive personality features (Krueger et al., 2012). Section III of DSM-5 (APA, 2013) allows for a diagnosis of BPD and requires a three-step process. First, one should identify the level of personality functioning (moderate or greater impairment in personality functioning, expressed by difficulties in two or more areas of identity, self-direction, empathy, and intimacy). Second, one must identify the severity of five broad maladaptive traits. Additionally, one can make a BPD diagnosis just in case the patient shows high scores in at least four of the following domains (at least one being impulsivity, risk-taking, or hostility): emotional lability, anxiousness, separation insecurity, depressivity, impulsivity, risk-taking, and hostility.

These changes were similarly incorporated into the latest version of the World Health Organization's International Classification of Diseases, ICD-11 (WHO, 2019), but besides incorporating A and B criteria, the ICD-11 was more radical on this matter and made wider changes, including this new model as part of the official diagnosis modality. In the ICD-11 (WHO, 2019) it is required that the clinician first identify the level of severity of the personality functioning to further determine personality dysfunction in the five maladaptive traits (Negative Affectivity, Detachment, Dissociality, Disinhibition, Anankastia). Additionally, they also eliminated all subtypes of personality disorders except for BPD, which was kept as an optional qualifier or pattern descriptor which is similar to the DSM-5 criteria in Section II (Bohus et al., 2021; Tyrer et al., 2011). This responded to empirical research which stated that most categories of personality disorders are usually ignored, with 97% of the diagnoses being BPD, Antisocial or PDNOS (Personality disorder not otherwise specified) (Verheul, 2006). Large datasets suggest the existence of a general factor of personality disorder or dysfunction (A. G. Wright & Zimmermann, 2015), and that this general factor -namely BPD- is common to all PDs and reflects the severity of personality psychopathology (Sharp et al., 2015).

This new approach not only changes the way we make diagnosis in personality but constitute an entire new way to view them. Combining definitions of the DSM-5 Section III and ICD-11 (APA, 2013; WHO, 2019), personality disorders can be currently defined as:

"(…) an enduring pattern of inner experience and behavior that deviates markedly from the expectation of the individual's culture, is pervasive and inflexible, has an onset in adolescence or early adulthood, is stable over time, and leads to distress or impairment. (…) The pattern is seen in two or more of the following areas: cognition; affect; interpersonal functioning; or impulse control. The enduring pattern is not better explained as a manifestation or consequence of another mental disorder, such as schizophrenia, schizoaffective disorder, bipolar disorder, severe depressive disorder, obsessive-compulsive disorder, panic disorder, posttraumatic stress disorder, drug dependence, alcohol dependence, or another psychotic disorder (…)".

On the levels of personality functioning, the AMPD model in DSM-5 Section III (APA, 2013) encourages the user to choose one of five levels of impairment: (1) some, (2) moderate, (3) severe, and (4) extreme, (0) none/little, (1) some, (2) moderate, (3) severe, and (4) extreme, in conjunction with the classification of 25 style trait aspects into five categories (Negative Affectivity, Detachment, Antagonism, Disinhibition, and Psychoticism). Regarding the difference between these two criteria we found that on one hand, personality functioning might help clinicians understand the core of an individual's vulnerability from the inside (i.e., the person's mental self-representation and representations of others), while on the other, personality traits might help clinicians understand personality problems from the outside (Pincus et al., 2020; A. L. Pincus, 2018; Sharp & Wall, 2021; Weekers et al., 2019). According to authors such as Bach & Simonsen (2021) or Wright et al., (2016), clinicians should be focused on changing personality functioning while understanding traits. This is, functioning should give the level and intensity of treatment while traits the style and focus of treatment (Bach & Presnall-Shvorin, 2020; Bach & Simonsen, 2021; Bender et al., 2011).

3.3.1 BPD as a qualifier

Both classifications, the DSM-5 and ICD-11 preserved BPD in some manner. While the DSM-5 left BPD among other 5 subtypes of personality disorders, the ICD-11 offers the option to add BPD as a pattern qualifier that mirrors the categorical diagnosis in previous classifications (APA, 2013; WHO, 2019).

The fact that BPD is a large and varied cluster of disorders makes it difficult to conceptualize (Bondurant et al., 2004; Koster et al., 2019; Paris, 2007; Tackett et al., 2014). However, there have been specific criteria developed ¡to give a better idea of what a patient with BPD may be going through. Due to heterogeneity and comorbidity of this disorder, the last decades have been dedicated to understanding if it represents either a unitary construct or distinct subgroups of people who simultaneously share certain clinical symptoms. In order to do this, authors have used both exploratory and confirmatory factor analysis (Clarkin et al., 1993; Ferrer et al., 2018; Fossati et al., 1999; Johansen et al., 2004; Sanislow et al., 2000, 2002).

Factor analytic studies have shed further light to empirically derived factors of BPD pathology in order to define more homogeneous subgroups (Clarkin et al., 1993). One of the most relevant is a study by (Sanislow et al., 2002), which used confirmatory factor analysis to present that a three factor solution had a statistically better fit in relation to the nine DSM criteria for BPD (APA, 2013). The authors identified the factors as disturbed relatedness (unstable relationships, identity disturbance, chronic emptiness, and paranoid ideation), behavioral dysregulation (impulsivity, and self-destructive behaviors), and affective dysregulation (affective instability, anger, and abandonment fears) (Carr, 2016). This factor structure has been supported with other studies such as (Blais et al., 1997). According to some studies (e.g., Andión et al., 2013; Ferrer et al., 2018; Sanislow et al., 2002), the study of BPD as components seems to be more useful than its study as a unitary construct to help further our understanding on its complexity. Moreover, these components might be understood as phenotypes of BPD. This method could be regarded a novel approach to clarifying the genesis, diagnosis, and treatment efficacy of BPD.

3.4   *The relationship between adverse childhood experiences and personality functioning*

In response to criticisms of the categorical model, the levels of personality functioning (criterion A of DSM-5 AMPD) (APA, 2013) have been defined as the core and common feature of personality disorders and have been included in the most recent editions of psychiatric classification manuals, namely the DSM-5 and the ICD-11 (APA, 2013; Sharp & Wall, 2021; WHO, 2019). The shortcoming of the category model is addressed by a dimensional model with

a severity continuum ranging from normal functioning to severe functional difficulties. As a result, criterion A reintroduces the concept of a common core among all personality disorders, which, according to Sharp & Wall, (2021) this comes down to the subjective intrapsychic experience of being human. The authors reintroduce the concepts of self, identity, and personhood as central to an individual's functioning, and with it, to the subjective experience of being (i.e., what it feels like to be "me" or, an individual's dynamic and subjective experience of herself as coherent and integrated across time and space). In terms of the levels of personality functioning, both theoretical and empirical evidence suggests that, while normative development begins in childhood as internal intrapsychic impulses, it continues developing until adolescence as individual differences in subjective meaning-making of oneself and others. This corresponds to the onset of personality problems in adolescence (Ha et al., 2014; Sharp et al., 2018; A. G. Wright et al., 2016).

McAdams, (2015, 2020) theorizes that personality is divided into three levels. The person-as-actor is the first, the person-as-agent is the second, and the person-as-author is the third. Individuals are born with a temperament, which begins to interact with the environment and develops into a personality trait (first layer). Then, during the very first years of life, the individual begins to recognize a "I" and a "me" (second layer), being mentalization the most prominent feature of the second layer (i.e., intention behind behaviors). Adolescence (third layer) would converge with the normative integration of mental representation of self and others. The individual is now an author who construct a cohesive, abstract, and integrated life story with a specific meaning of their existence and a purpose of their own (Sharp & Wall, 2021).

Considering this theoretical proposal, one question that arises is how this process unfold when an individual's first years of life were characterized by adverse childhood experiences. As we know, childhood trauma is strongly related to BPD. However, we need to better understand what the relationship between adverse childhood experiences and impairments in personality functioning is.

Regarding this, Back et al., (2020, 2021) have found that the levels of personality functioning, and maladaptive traits are associated with retrospective recollections of adverse childhood

experiences, highlighting the importance of dimensional models of personality disorders for a better understanding of the link between adverse childhood experiences and personality disorders. However, according to the author, there is a lack of studies on the relationship between adverse childhood experiences and dimensional measures of personality disorders with clinical samples. Moreover, there are no studies in the relationship between adverse childhood experiences, the dimensional model, and the BPD qualifier.

We hypothesized that the level of personality functioning is influenced by how we see ourselves and others when after experiencing adverse childhood experiences. Regarding this, Gander et al., (2020) investigated the role of attachment in mediating the relationship between childhood trauma and personality functioning levels comparing adolescents from a clinical inpatient unit and adolescents from the general population. The authors found strong correlations between the adverse childhood experiences and the levels of personality functioning throughout the entire sample. Moreover, they found that emotional subtype of traumatic experiences (either abuse or neglect) was twice as strongly associated to the levels of personality disorder comparing to other subtypes of traumatic experiences.

In the same year, Back et al., (2020) conducted a study with adults models to evaluate the association between self-reported types of adverse childhood experiences, personality functioning (criterion A), and maladaptive traits (criterion B). The authors found that the level of personality functioning (criterion A) was more significantly associated with traumatic experiences than specific maladaptive traits (criterion B). The effect size found in the relationship between adverse childhood experiences and the levels of personality functioning was very similar to the one found by Gander et al., (2020) (Back et al., 2021).

According to Back et al., (2020, 2021), despite the differences between samples (i.e., one was a clinical sample composed by adolescents and the other one was a community sample composed by adults), both studies show strong associations between adverse childhood experiences and personality disorders throughout a spectrum of severity, including sub-threshold and milder forms of personality disfunction. Moreover, regarding subtypes of traumatic experiences, both studies agree in that having experienced emotional maltreatment (either abuse or neglect) may

have a stronger effect in the levels of personality functioning than experiencing others subtypes of trauma. Additionally, adverse childhood experiences were more strongly related to Childhood trauma, on the other hand, appeared to have a similar strong association to the self-domain of dysfunction than to the interpersonal one in both studies (Back et al., 2020, 2021; Gander et al., 2020).

3.5 The relationship between adverse childhood experiences and personality traits

Thus, personality traits are dispositions to feel, perceive, behave, and think in a somewhat consistent manner across time and contexts, according to the DSM-5 (Bach & Fjeldsted, 2017).The way we think, feel, and behave results from interactions between our biological dispositions and the world around us (Costa et al., 1995) . Every individual is born with innate capacities to feel, think and behave in response to experiences. This pattern of responses is what we call temperament, and the combination of these unique characteristics makes individuals unique (e.g., Braquehais et al., 2010; Evren et al., 2013). On the other hand, early relationships build upon those patterns and shape how we respond to those experiences. How caregivers respond to their children's feelings, thoughts, and actions shapes how individuals respond to similar situations while growing up (Bateman & Fonagy, 2016). These experiences shape their cognitive, emotional, interpersonal, and behavioral personal "styles" (e.g., their sense of what is a problem and what is a solution, or their implicit theories about how the world works) (J. G. Johnson et al., 2006). This unique interaction between environmental pressures and innate dispositions for each individual would later shape the stable characteristics we usually refer to as traits (Leichsenring et al., 2011). If neglect or abuse experiences characterize their early world, then learning to behave in specific ways would be adaptive for dealing with reality and helping them survive (Porter et al., 2020).

Even though those traits were functional when they developed and enabled an infant to do something they would not be able to do otherwise, they turn out to have no long-term benefit (Crowell et al., 2009). For example, in the context of maltreatment, being in a state of alert,

being sensitive to danger and loud sounds, easily startled, fearful, and crying when uncomfortable, is adaptable to help the child survive real danger (e.g., Linehan, 1987, 2018; Linehan & Schmidt III, 1995). There is no choice for the child in terms of its context, but as an adult, these traits could become maladaptive such as Negative Affect is (M. C. Ashton et al., 2012a).

Other traits that were initially functional in a particular context could be problematic in others, such as making a child successful in one type of situation but not in another. In the context of maltreatment at home, fantasy could work as a coping style for dealing with reality. Moreover, trying to predict the world and behaviors of the caregivers would make an infant create connections between unconnected things (Veith et al., 2017). It might be adaptive in the short term in its family context, but over it could become a maladaptive trait such as Psychoticism in the context of peers at school. Lastly, it could happen when an adaptive response becomes less and less relevant (for instance, because the world has changed) and individuals hang on to it because they still benefit from it earlier. An example of this type could be Detachment (APA, 2013). During a context of early trauma derived from living in war, Detachment could keep an infant from being overwhelmed by feelings (e.g., the anger at being abandoned by the mother, the fear of the incomprehensible world they find themselves in). A child who uses Detachment as a coping style would still love her caregivers, but there is no need for Detachment as an adult; indeed, it would be maladaptive for an adult to do so. It seems we are animals that build our lives based on habits: tendencies about what to expect, how to behave, and how to feel in certain situations that are hard to change as they are implicit.

Regarding the relationship between adverse childhood experiences and maladaptive personality traits, there is also scarce research but not as scarce as for the levels of personality functioning. The studies we found show strong associations between adverse childhood experiences and adult maladaptive personality traits in various groups. For example, in a clinical sample Bach & Fjeldsted, (2017) examined the general relationship between adverse childhood experiences in a clinical sample of 124 non-psychotic adult outpatients. The findings were consistent with the findings from the forensic sample (Borroni et al., 2019; Granieri et al., 2018) Correlations ranged from small to medium. The strongest was between adverse childhood experiences and

two Psychoticism facets (suspiciousness and perceptual dysregulation). In addition, the authors found that these two facets mediated the relationship between adverse childhood experiences and later suicidality.

In the same year, with a community sample of 526 participants, Veith et al., (2017) studied the effect of physical and sexual abuse on Criterion B and the relationship between traits and internalizing and externalizing symptoms. Internalizing and externalizing symptoms as a result of childhood physical abuse were mediated by four of five trait domains (Antagonism, Negative Affect, Detachment, and Disinhibition). Regarding the subtypes of childhood maltreatment, the association between physical and sexual abuse and personality traits ranged from small to medium. The correlation between sexual abuse and traits was consistently the strongest among all five trait domains, while physical trauma had the most significant single effect on Detachment.

During the following years, Granieri et al., (2018) and (Borroni et al., 2019) investigated the relationship between adverse childhood experiences and maladaptive traits in an Italian adult community sample, with correlations ranging from small to medium. In Germany, Back et al., (2020) studied the relationship between dimensional model criteria in a community sample. Both studied showed that the relationship between the general score of childhood trauma and Detachment was the strongest one in a community sample. In the latter study, Negative Affect, Detachment, and Psychoticism were primarily associated with emotional subtypes of trauma (abuse and neglect). Antagonism and Disinhibition were mainly associated with physical and sexual abuse. Moreover, with jail convicts, Boland et al., (2020) studied the relationship between childhood abuse, maladaptive personality traits, and adult criminal behavior. The authors found small to medium correlations between childhood trauma and maladaptive traits, being the highest for the emotional subtype of trauma. These authors also showed a mediation pathway from childhood trauma to criminal behavior through personality traits, being again the emotional subtype the best predictor among all.

Overall, the literature shows strong relationships between adverse childhood experiences and maladaptive personality traits (for a more profound revision on this topic refer to Back et al.,

2020, 2021). Those studies where the authors included specific types of maltreatment reported that emotionally traumatic experiences, either abuse or neglect, were the strongest predictors of maladaptive traits. Regarding specific maladaptive traits, most studies emphasize the relative importance of Psychoticism, as a relevant trait resulting from this experiences (Back et al., 2021).

3.1 The relationship between the dimensional and the traditional categorical models of personality disorders in The Leichsenring Model

The categorical model of personality disorders—the idea that people with BPD are fundamentally different from those without it, and that they have all the same symptoms—was relatively accepted in psychology before the group discussions that lead to AMPD in DSM-5 (APA, 2013) and ICD-11 (WHO, 2019). The dimensional model of personality disorders – where the boundaries between being healthy and presenting a personality disorder are not clear-cut- gained popularity, and it suggests a different way to understand those with BPD. But even though the new proposal is now very well accepted, not much has been developed around the relationship between the traditional and the newer model. Is it just how we assess BPD what is changing, or are we considering a different perspective for understanding this pathology?

During the years of group discussions that lead to the DSM-5 (APA, 2013), Leichsenring et al., (2011) published a review paper in The Lancet with a schematic model of the strong relationship between biology and environment (especially adverse childhood experiences) in the development of a BPD diagnosis. This relationship, of course, is not novel. What is different in relation to other proposals is that according to the author there is an intermediate mechanism by which individuals might develop certain personality patterns (traits and functioning) in response to the mentioned relationship.

Even though this is not explicitly stated in the paper, the biopsychosocial schematic model proposes that when biologically at-risk individuals (i.e., temperament) are exposed to adverse childhood experiences (i.e., trauma and neglect), they could develop a range of personality

patterns (i.e., traits and functioning) that might afterwards lead to three BPD symptoms, in the affective, behavioral, and interpersonal domains.

In this model, and according to the authors, the symptomatic presentations of BPD might be attempts to cope with, defend against, or compensate for these developed personality traits and functioning. The authors end up underscoring the need of further research on the relationship between personality traits, functioning and BPD symptoms.

Traits, functioning, and symptoms have a common ground in personality, which makes them difficult to separate from each other if they are not very well explained or situated in different timeframes. We can hypothesize though that while personality traits and functioning are relatively stable and consistent across lifespan, symptoms can fluctuate presenting more variable changes over shorter periods of time (Choi-Kain et al., 2020). Some changes in both traits and functioning are generic and occur due to maturing. For example, adolescents are generally more impulsive than adults (trait impulsivity) and children will only develop an integrate vision of themselves when reaching adolescence (self-functioning). Other changes are specific to a person's life experiences, which according to Leichsenring et al., (2011), and in regard to what we are interested in this study, may impact each of the three mentioned constructs, traits, functioning and symptoms.

3.2   A note about theory building in this dissertation

Many clinicians still consider research as artifacts without links to clinical practice. Clinicians often ignore research whenever they favor clinical judgment over evidence for making decisions with a client.

The response of the community of researchers in psychology has usually been to try to fill this gap by translating knowledge from complex scientific papers and trying to apply it to the routine practices of the community of clinicians. Those who pertain to both communities confront so many frameworks, approaches, and theories from each side that claim to be the most valid theory. This problem results in several individuals who consistently communicate the same ideas without confronting each other or even testing their arguments.

Oberauer and Lewandowsky (2019), Borsboom (2013), and Borsboom (2020) refer to these groups as the tiny theory-rich bubbles in psychology, which give us a glimpse into how our minds work when we encounter new information. The authors develop a substantial argument on how psychologists lack an overarching theory creation program like those seen in other fields (e.g., theoretical physics, theoretical biology, and theoretical economics). Participants (primarily researchers but hopefully clinicians) collaborate to generate and test theories (Borsboom, 2013). The authors argue that the problem in psychology is probably not due to scarce theories but scarce of well-coordinated theory-building efforts (which involve testing and modifying our theories based on observations). Mischel (2018) refers to this often-seen problem as the toothbrush problem: "psychologists see other people's ideas like toothbrushes — no self-respecting person wants to use anybody else's."

Following these ideas, it seems like education in psychology is about understanding other people's theories, and it is the best case -which is not the most frequent- on testing models. As Bordboom (2013) presented, the lack of explanatory theories is an obstacle for advances in psychology in at least three ways. First, it puts us in danger of reinventing the wheel again and again because we do not understand how distinct occurrences interact with one another or whether they come from the same basic principles (Kruglanski, 2001; Vallacher & Nowak, 1997).

Second, we cannot conceive without robust theories. Without strong theories, we cannot find the most effective actions to transform a system in the desired way. A well-defined theory for personality disorders, for example, would substantially aid in the development of more effective clinical interventions (Borsboom, 2017; Cramer et al., 2016).

Third, we often do not know "where to look" when designing new studies without hypotheses. In this dissertation, we will use the five sequential steps proposed by Borsboom (2020) for building theory as follows:

Because of this, our aim on this dissertation is not to design a new attractive theory that could captivate clinicians or researchers, but to follow these further steps developed by (Borsboom et al., 2021): First, we identify relevant phenomena, 2) we formulate a proto-theory, 3) we develop

a formal model, 4) we check the adequacy of the formal model, and 5) we evaluate the overall worth of the constructed theory.

We first searched for previously formulated theories to capture our phenomena (BPD clinically observable symptoms). We selected a proto theory (potential theory, initial theory, or starting point) that seems to unify traditional and new approaches to PD to establish an integrative framework that could inform clinicians at different treatment stages. We translated it into a model to empirically test. We checked the adequacy of the model with observations from different countries. Finally, we evaluated the overall theory.

4 Objectives and Hypothesis

4.1 *General Objective.*

The general objective was to test and refine an integrative psychosocial model of BPD proposed by Leichsenring et al. (2011) based on the relationship between adverse childhood experiences, psychosocial factors (personality traits and levels of personality functioning), and the main clinical components of BPD (affective dysregulation, behavioral dysregulation, and disturbed relatedness).

To address the general objective of this thesis, we carried out two studies.

4.1.1   Study I

4.1.1.1.1   Research Question: What is the relationship between adverse childhood experiences, personality traits, and the main clinical components of BPD (affective dysregulation, behavioral dysregulation, and disturbed relatedness)?

4.1.1.1.2   Objective: To empirically test the relationship between adverse childhood experiences, personality traits, and the main clinical components of BPD (affective dysregulation, behavioral dysregulation, and disturbed relatedness).

4.1.1.2   Specific Objectives

4.1.1.2.1   Objective 1: To empirically test the relationship between adverse childhood experiences, maladaptive personality traits, and the main clinical components of BPD (affective dysregulation, behavioral dysregulation, and disturbed relatedness) in a German adult sample.

4.1.1.2.2   Objective 2: To empirically test the relationship between adverse childhood experiences, FFM personality traits, and the main clinical components of BPD (affective dysregulation, behavioral dysregulation, and disturbed relatedness) in an adult German sample.

4.1.1.2.3   Objective 3: To propose refinements on the model based on empirically collected data in an adult German sample.

4.1.1.3 Hypotheses

H1	Hypothesis 1: Higher scores in the report of adverse childhood experiences are associated with higher levels of the BPD symptom components (affective, impulsive, cognitive, and relational)
H2	*Hypothesis 2: The association between the scores in adverse childhood experiences and the levels of BPD symptom components (affective, impulsive, cognitive, and relational) is mediated by maladaptive personality traits.*
H3	*Hypothesis 3: The association between adverse childhood experiences and the BPD symptom components (affective, impulsive, cognitive, and relational) is mediated by FFM personality traits.*
H4	Hypothesis 4: There is a positive association between maladaptive personality traits and BPD symptom components (affective, impulsive, cognitive, and relational).
H5	Hypothesis 5: There is a positive association between the FFM personality traits and the BPD symptom components (affective, impulsive, cognitive, and relational).

These objectives were directly addressed with the first dataset.

4.1.2   Study II

4.1.2.1.1   Research Question: What is the relationship between adverse childhood experiences, the levels of personality functioning, and the main clinical components of BPD (affective, impulsive, cognitive, and relational)?

4.1.2.1.2   Objective: To empirically test the relationship between adverse childhood experiences, the levels of personality functioning, and the main clinical components of BPD (affective, impulsive, cognitive, and relational).

4.1.2.2   Specific Objectives

4.1.2.2.1   Objective 4: To adapt and validate a scale for measuring the levels of personality functioning for using it in the Chilean population.

4.1.2.2.2   Objective 5: To adapt and validate a scale for measuring maladaptive traits for using it in the Chilean population.

4.1.2.2.3   Objective 6: To empirically test the relationship between adverse childhood experiences, the levels of personality functioning, and the main clinical components of BPD (affective, impulsive, cognitive, and relational) in a combined Chilean and German adult sample.

4.1.2.2.4   Objective 7: To propose refinements on the model based on empirically collected data in an adult German sample.

4.1.2.3   Hypotheses

H6	Hypothesis 6: Higher scores in the report of adverse childhood experiences are associated with higher levels of the BPD symptom components (affective, impulsive, cognitive, and relational).
H7	Hypothesis 7: The association between the scores in the report of adverse childhood experiences and the BPD symptom components (affective, impulsive, cognitive, and relational) is mediated by the levels of personality functioning.
H8	*Hypothesis 8: There is a positive association between the levels of personality functioning and* BPD symptom components *(affective, impulsive, cognitive, and relational).*

These objectives were directly addressed with the second and third dataset.

5   Methods.

5.1   General aspects of the design.

This research study has a non-experimental, retrospective, and explanatory design, according to Johnson (2001) and Kerlinger (1986). We based this classification on the research objective and the time dimension. Our study tests a theory about the BPD construct to explain "how" and "why" it operates. It includes retrospective questions to locate the independent variable (report of adverse childhood experiences) and explain current differences in the dependent variables (present personality traits, levels of personality functioning, and BPD clinical symptoms).

5.2   General sample considerations.

We used three different datasets for this dissertation. The first dataset was used for the first study and was secondary data. This sample was composed of a clinical sample and a healthy control group. The clinical sample consisted of adults with a current diagnosis of BPD. The healthy control group consisted of participants from the community with no psychiatric diagnoses. We utilized this sample for testing the relationship between adverse childhood experiences, maladaptive and FFM personality traits, and the main clinical components of BPD.

We used the second and third datasets for the second study of this dissertation. We collected these in parallel in two countries, Chile, and Germany to test the hypotheses regarding the relationship between adverse childhood experiences, the levels of personality functioning, and the main clinical components of BPD.

We will describe the sampling procedure for the three-dataset included in this dissertation.

5.2.1   Sample for Study I

The sample for the first dataset consists of n = 741 individuals. One group was a clinical group consisting of men and women with a current BPD diagnosis, while the other group consisted of men and women from a healthy control group. The data was collected between 2011 and 2018 in Heidelberg and Mannheim (Germany) by members of a clinical research unit funded by the German Research Foundation (Die Klinische Forschergruppe DFK; KFO 256) dedicated to investigating mechanisms of disturbed emotion processing in BPD.

German researchers recruited the general population group and the clinical group of participants as a convenience sample through online announcements, advertisements, and clinical referral from in- and out-patient units of the Department of General Psychiatry at the University of Heidelberg and the Department of Psychosomatic Medicine and Psychotherapy at the Central Institute of Mental Health in Mannheim. The interviewers had a psychological or medical background. Senior clinicians trained the interviewers to use the diagnostic instruments in multi-day courses within the study framework. Self-report-based measurements were delivered as paper-and-pencil versions to each participant individually. Participants filled all the questionnaire measures during their stay in an inpatient unit or during a scheduled appointment. Interviewers instructed participants to answer the questions as honestly as possible. Interviewers guaranteed participants that all data was anonymized and treated confidentially. A research team member was always reachable to answer participants' questions. In addition, interviewers offered participants support if they experienced problems with the questionnaires. All participants provided written informed consent. The Ethics Committee of the Medical Faculty of the University of Heidelberg approved this first study, and researchers conducted it following the Declaration of Helsinki.

5.2.2   Sample for Study II

We simultaneously collected two dataset n = 1313 for the second study. We collected the second dataset of n = 599 in Chile and the third one in Germany n=714. We translated and validated two instruments for assessing personality disorders from the dimensional model (functioning and maladaptive traits) in the Chilean population with the second dataset. We used the second and third dataset combined to test the relationship between adverse childhood experiences, personality functioning, and BPD symptoms.

5.2.2.1   Second dataset

We collected the Chilean sample (second dataset) (N=599) in Santiago, Chile, during November 2020 and February 2021. This dataset was composed of a general population sample and a clinical sample.

Inclusion criteria for the clinical sample were a minimum age of 18 years, having been diagnosed with a personality disorder at any moment of their lives, and being in current psychological or psychiatric treatment. The exclusion criteria were not reading or writing, which was needed to fulfill the questionnaires. Inclusion criteria for the general population sample was a minimum age of 18 years. We did not have any exclusion criteria for this sample because we needed participants to be as heterogeneous as possible to observe variability in the data regarding the levels of impairment in personality functioning.

Because we wanted participants to be as heterogeneous as possible to observe variability in the data, we diversified our methods for data collection. The general population was partially recruited through online announcements and advertisements in social media and partially from a university student population. We collected the clinical sample mainly through referrals from clinical sites. Both samples signed online informed consent letters and completed the questionnaires online. We included participants from both samples in a raffle for a chance to win 30 gift cards to use online as an incentive for their participation. For the clinical sample, we included a question regarding the possibility of giving their clinician a report with their results to inform the treatment. Whenever they reported their consent, we sent a clinical report directly to their clinicians containing clinical information informing the treatment. A total of 599 participants volunteered to be part of the study.

Lastly, we recruited the third dataset sample (n = 800) via PsyWeb https://psyweb.uni-muenster.de/), a scientific survey panel of four German universities with almost 13,000 registered members.

5.3   *Ethical Considerations within the sample collection*

Personality disorders are often associated with suicidality and self-harm. The procedure involved an announcement with a handout at the end of the survey clarifying that those who responded positively to the suicidality or self-harm items (we specified in the questionnaire which were the items and what was considered "positively") were probably at risk. We suggested a specific and sequential plan that individuals could follow in case they thought they could act on their thoughts. The clinical centers who collaborated with us in the study collaborated in developing this handout, so the final document fitted to the different clinical

approaches of those centers. This document was also approved by the ethical committees who approved the conduction of the study. This dissertation study was reviewed and approved by the ethics committee for human research of Universidad de Chile. Additionally, this project also went to the ethics committee from Universidad Finis Terrae, and from Complejo Asistencial Dr. Sótero del Río. Since the first ethics committee we went through was certified, the others' approval involved subtle modifications and considerations particular to their population.

5.4   Instruments and measures

Before the sampling procedure, we translated and adapted instruments not available in Spanish to the Chilean context following Guillemin et al., (1993) guidelines for transcultural adaptation of measures. We applied this procedure for two scales, The Levels of Personality Functioning Scale Brief Form 2.0 and the Personality Inventory for DSM-5 and ICD-11 – Brief Form Modified (PID5BF+ M) (Kerber et al., 2020). First, two bilingual individuals translated the instruments into Spanish. Then, both translations were backtranslated to English by two other bilingual individuals. An expert committee used the original, the four translations, and all back translations in personality disorders to assembly the final version of every instrument.

We present general information of the original scales for each instrument, and from the translation and validation, we used according to each dataset. We report internal consistency estimates for the scales we included in the model, CTQ-SF (Bernstein et al., 2003), HEXACO-60 (Ashton & Lee, 2009), ZAN-BPD (Zanarini, 2003), ZAN-BPD-SRV (Zanarini et al., 2015b), PID5BF+ M (Kerber et al., 2020), and LPFS-BF 2.0; Weekers et al., 2019) and compare them to those reported in the original instrument. Moreover, we present missing data patterns for each scale for the first and second studies. We used the first dataset for the first study, while we used the second and third dataset combined for the second.

5.4.1   Instruments used in the first and second study

- *The Childhood Trauma Questionnaire-Short Form (CTQ-SF; Bernstein et al., 2003).* This is a 28-item-short-version of the original 70-item-original-version (Bernstein et al., 1998) consisting of a self-report questionnaire that evaluates retrospectively traumatic childhood experiences on five subscales, each with five items: emotional abuse (e.g., "When I was growing up, I felt that someone in my family hated me."), physical abuse

(e.g., "When I was growing up, I was punished with a belt, a board, a cord or some other hard object."), sexual abuse (e.g., "When I was growing up, someone molested me."), emotional neglect (e.g., "When I was growing up, I felt loved.") and physical neglect (e.g., "When I was growing up, I did not have enough to eat."). In addition, the CTQ-SF has a three-item validation scale that captures minimization or denial of traumatic experiences (e.g., "I had the best family in the world when I was growing up."). Items are rated on a 5-point Likert scale, ranging from 1 (never true) to 5 (always true). The original CTQ-SF has good to excellent validity and reliability in clinical, and community samples (Bernstein et al., 2003; Scher et al., 2001), and literature reports measurement invariance studies across diverse populations (Bernstein et al., 2003). The Chilean version of the CTQ-SF validated by Behn et al., (2020) demonstrated similar properties to the original version in its general factor structure, reliability, and validity oscillated between a Cronbach's α = .65 for physical negligence to Cronbach's α = .94 in sexual abuse. The German version of the CTQ-SF also demonstrated properties like the original, confirming its general factor structure, reliability, and validity (Klinitzke et al., 2012; Wingenfeld et al., 2010). In this study, the CTQ-SF showed an excellent internal consistency of Cronbach's α = .932 for the total scale in the first dataset, and good for the second dataset Cronbach's α = .883 in, and third dataset Cronbach's α = .876. Regarding the subscales in the first dataset, Cronbach's α was good to excellent (ranging from .972 for sexual abuse to .894 for physical abuse), with the only exception of the physical neglect scale showing acceptable internal consistency (Cronbach's α = .719). Regarding the subscales in the second dataset, Cronbach's α was good (ranging from Cronbach's α =.887 for emotional neglect to Cronbach's α =.848 for sexual abuse), again, except for the physical neglect subscale, which was acceptable (Cronbach's α = .704). Lastly, for the subscales of the third dataset, we found good to excellent Cronbach's α (ranging from Cronbach's α =.907 in emotional neglect to Cronbach's α =.865 in physical abuse). Two exceptions were sexual abuse Cronbach's α =.684 and physical neglect Cronbach's α =.654 with questionable internal consistency. The unsatisfactory internal consistency of the physical abuse subscale has been reported before in line with the findings from previous studies (Klinitzke et al., 2012; Wingenfeld et al., 2010). We found 0,007% of missing questions among those participants who completed this

questionnaire in the second and third dataset. Participants in these two bases had to respond to these questions to continue answering the rest of the instruments. 527 participants responded to this questionnaire in the second dataset, while 784 responded in the third dataset. We found .787% missing values for the first dataset among those who responded to this scale. The total number of participants who answered these questions for the first dataset was 527.

5.4.1.1 Instruments used in the first study

- *Sociodemographic Data and Clinical History Form.* The KFO research team in Germany created this questionnaire for the broader study and included detailed questions about different topics such as sociodemographic characteristics and clinical features. The sociodemographic questions we considered for this study were age, sex, relationship status, living conditions, number of children, last educational level, and occupation. Regarding the clinical history, the questionnaire involved several questions, from which we reported psychiatric and psychological history diagnoses of patient and family members (parents, children, and other direct family members), current and previous treatment, medical illness, hospital stays, previous suicide attempts, substance use during the last year and frequency of use over the last three months, if they or a direct family member have received any psychiatric/psychological diagnoses (with an open question for specifying which diagnosis), age of diagnosis, if they have received a diagnosis of a personality disorder (defining which one in cases they answered positively to this question), and current and previous psychopharmacological/psychological/psychiatric treatment in the last six months.

- *HEXACO Personality Inventory Revised (HEXACO-60) (Ashton & Lee, 2009).* This is a 60-item inventory based on the HEXACO model of personality structure which measures six major dimensions of personality derived from the Five-Factor Model (FFM) lexical studies of personality structure. It consists of 24 facet-level personality trait scales that define six personality factors, including Honesty-Humility (H) (i.e., sincerity, fairness, greed-avoidance, modesty), Emotionality (E) (i.e., fearfulness, anxiety, dependence, sentimentality), Extraversion (X) (i.e., social self-esteem, social boldness, sociability, liveliness), Agreeableness (A) (i.e., forgiveness, gentleness,

flexibility, patience), Conscientiousness (C) (i.e., organization, diligence, perfectionism, prudence), and Openness to Experience (O) (i.e., aesthetic appreciation, inquisitiveness, creativity, unconventionality). Participants rate each item on a 5-point Likert scale (1 = completely disagree to 5 = completely agree). It has been adapted and validated in Germany by Moshagen et al., (2014). In this study, the HEXACO-60 (Ashton & Lee, 2009) showed good to acceptable internal consistency (ranging from Cronbach's α = .884 on Extraversion subscale to Cronbach's α = .711 on Emotionality subscale). This internal consistency is comparable the ones found on the original scale with a community sample (ranging from Cronbach's α = .80 on Extraversion subscale to Cronbach's α = .77 on both Agreeableness and Emotionality subscales), and a college sample (ranging from Cronbach's α = .80 on Openness to Experience subscale to Cronbach's α = .73 on both Emotionality and Extraversion subscales). Missing data for this questionnaire was .11% among those who answered the scale.

- *Personality Inventory for DSM-5 (PID-5) (Krueger et al., 2012)*. This is a 220-item self-rated personality trait assessment scale for adults aged 18 and older. It assesses five maladaptive personality trait domains based on the dimensional model of DSM-5 including Negative Affect (i.e., emotional lability, anxiousness, separation insecurity), Detachment (i.e., withdrawal, anhedonia, intimacy avoidance), Antagonism (i.e., manipulatiness, deceitfulness, grandiosity), Disinhibition (i.e., irresponsibility, impulsivity, distractibility), and Psychoticism (i.e., unusual beliefs & experiences, eccentricity, perceptual dysregulation). Each trait domain consists of five items. It is available in German (Zimmermann et al., 2014). In this study, the PID-5 showed excellent internal consistency in all the subscales (ranging from Cronbach's α = .967 on Psychoticism subscale to Cronbach's α = .923 on Antagonism subscale). This internal consistency is comparable to the ones found on the original scale with a community sample of treatment-seeking participants (ranging from Cronbach's α = .96 on Detachment subscale to Cronbach's α = .89 on Disinhibition subscale). We found .96% of missing values among those participants who answered this scale.

- *International Personality Disorder Examination (IPDE) (Loranger, 1999)*. It is a 157 semi-structured clinical interview with open-ended questions that allow individuals to expand their answers with examples and anecdotes. We used this instrument to assess

personality disorders in ICD-10 and DSM-5 classification systems (APA, 2013; WHO, 2019). The IPDE group items according to 6 broad topical sections: work, self, interpersonal relationships, affects, reality testing, and impulse control. We used the items of the Borderline Personality Disorder subscale Loranger, (1999), the author of the original scale, validated the German version. We found 1.049 % of missing data in the borderline personality disorder subscale among those participants who were part of this interview.

- *Borderline Personality Disorder Symptom List 23 (BSL-23) (Bohus et al., 2009)*. It is a 23- item self-report questionnaire for specific assessment of borderline-typical symptomatology. This instrument is a shorter version of the BSL-95, based on the criteria of the DSM-IV for BPD. The original author recently published a severity classification of borderline symptoms using the borderline symptom list (BSL-23) (Kleindienst et al., 2020). We used the validated German version (Bohus et al., 2009). We found .68% of missing data among those participants who answered this scale.

- *Zanarini Rating Scale for Borderline Personality Disorder (ZAN-BPD) (Zanarini, 2003)*. It is a nine-item clinician-based diagnostic interview. It assesses the severity of DSM-IV-based borderline personality disorder symptoms. This scale also measures meaningful changes in symptoms over time. The 0-4 points rating ranges from No Symptoms (0) to Severe Symptoms (4) for the following categories: a) Affective (Inappropriate anger / frequent angry acts; chronic feelings of emptiness; mood instability), b) Cognitive (Stress-related paranoia/dissociation; severe identity disturbance based on false personal beliefs, c) Impulsivity (Self-mutilation or suicidal efforts; two other forms of impulsivity) and d) Interpersonal (Unstable interpersonal relationships; frantic efforts to avoid abandonment). It is a nine-item clinician-based diagnostic interview. It assesses the severity of DSM-IV-based borderline personality disorder symptoms. This scale also measures meaningful changes in symptoms over time. The 0-4 points rating ranges from No Symptoms (0) to Severe Symptoms (4) for the following categories: a) Affective (Inappropriate anger / frequent angry acts; chronic feelings of emptiness; mood instability), b) Cognitive (Stress-related paranoia/dissociation; severe identity disturbance based on false personal beliefs, c) Impulsivity (Self-mutilation or suicidal efforts; two other forms of impulsivity) and d)

Interpersonal (Unstable interpersonal relationships; frantic efforts to avoid abandonment). In the first dataset, the ZAN-BPD showed an excellent internal consistency in the total scale Cronbach's α = .907. The subscales presented questionable to acceptable internal consistency (ranging from Cronbach's α = .790 on affective symptom subscale to Cronbach's α = .664 on impulsive symptom subscale). We must then interpret with caution the results from the subscales of this instrument, particularly with the impulsive subscale. However, we expected these results considering that each subscale consists of two (cognitive, impulsive, and interpersonal subscale) or three (affective subscale) items. We found that the internal consistency of the total items was like the original instrument (Cronbach's α = .85). We found .012% of missing values among those participants who were part of this interview.

Additionally, in the first study, the German research team used additional questionnaires to evaluate states and traits as part of the broader study. Still, these were not part of the cope of this thesis. Among others, for state measures, they used the State-Trait Anger Expression Inventory (STAXI) (Spielberg, 1988), the Beck-Depression Inventory (BDI-II)(Beck et al., 1996), the Symptom checklist for mental health disorders (SCL-90-R) (Derogatis, 1992), Buss-Perry Aggression Questionnaire (BPAQ) (Buss & Perry, 1992), The Barratt Impulsiveness Scale-11 (BIS-11) (Patton et al., 1995), Dissociative Experience Scale (DES) (Bernstein et al., 1986), State-Trait-Anxiety Inventory (STAI) (Spielberger, 1983), Difficulties in Emotion Regulation Scale (DERS) (Gratz & Roemer, 2004).

5.4.1.2 Instruments used in the second study

- *Sociodemographic Data and Clinical History Form.* We adapted the scale from the first study and included sociodemographic and clinical questions. Our questions in the second dataset were age, sex, nationality, region where they lived, relationship status, number of children, last educational level, living conditions, occupation, lifetime psychiatric diagnosis with age on onset, current psychopharmacological treatment, lifetime personality disorder diagnosis, current psychological and psychiatric treatment, psychiatric and psychological history diagnoses of direct family members, medical

diagnosis, current substance use. For the second dataset, patients reported their names and data from their clinicians to send them the clinical reports to inform their treatment. For the third dataset, we included fewer questions than for the second one. These questions were gender, age, occupation, medical or chronic illness, mental illness, current psychiatric treatment, current psychopharmacological treatment.

- *Level of Personality Functioning Scale-Brief Form 2.0 (LPFS-BF 2.0; Weekers et al., 2019).* This is a 12 items self-report questionnaire based on a 4-point Likert scale. This scale generally captures theoretically and expected self–other features of personality dysfunction as defined in the new general diagnostic guidelines for Personality Disorder in DSM-5 Section III and ICD-11 (APA, 2013; WHO, 2019). This scale was translated and validated as part of the second study. The LPFS-BF 2.0 (Weekers et al., 2019) showed an excellent internal consistency in the total score for the second dataset, Cronbach's α = .913, and a good internal consistency for the third dataset, Cronbach's α = .879. The self-functioning subscale presented good internal consistency in the second (Cronbach's α = .888) and third dataset (Cronbach's α = .869). For the interpersonal-functioning subscale, the internal consistency was good for the second dataset (Cronbach's α = .824) and acceptable for the third one (Cronbach's α = .754). The internal consistency estimates found in the original instrument were high (Cronbach's α = .82) for the total scale, the self-functioning subscale (Cronbach's α = .79) and the interpersonal functioning subscale (Cronbach's α = .71). The missing values for this questionnaire were 3.9% considering both the second and third dataset.

- *Zanarini Rating Scale for Borderline Personality Disorder: Self-report Version (ZAN-BPD-SRV) (Zanarini, 2015).* It is a nine-item self-report scale. It assesses the severity of DSM-IV based on borderline personality disorder symptoms. This scale also measures meaningful changes in symptoms over time. The 0-4 points rating ranges from No Symptoms (0) to Severe Symptoms (4) for the following categories: a) Affective (Inappropriate anger / frequent angry acts; chronic feelings of emptiness; mood instability), b) Cognitive (Stress-related paranoia/dissociation; severe identity disturbance based on false personal beliefs, c) Impulsivity (Self-mutilation and/or suicidal efforts; two other forms of impulsivity) and d) Interpersonal (Unstable interpersonal relationships; frantic efforts to avoid abandonment). We translated this

scale as part of the study. The ZAN-BPD: SRV showed good internal consistency in the second database's total scale (Cronbach's α = .880). The subscales presented questionable to acceptable internal consistency (ranging from Cronbach's α = .737 on affective symptom subscale to Cronbach's α = .610 on cognitive symptom subscale). We must then interpret the results from the subscales with caution, particularly the cognitive subscale. However, we expected these results considering that each subscale consists of two (cognitive, impulsive, and interpersonal subscale) or three (affective subscale) items. The internal consistency of the total score was like the one found in the original instrument (Cronbach's α = .84). There were 0% missing values among those participants who completed the questionnaires. Participants were not able to skip these items if they wanted to continue with the rest of the battery of questionnaires. 468 participants completed the scale on the second dataset and 800 on the third dataset.

Additionally, in the second study, we used Spanish and German versions of additional instruments intended to analyze them as part of a broader study, which is out of the scope of this thesis. We used the 8-item version of The Penn State Worry Questionnaire (PSWQ-8) (Weekers et al., 2019), the Scale of Body Connection (SBC) (Price & Adams, 2007), the International Trauma Questionnaire (ITQ) (Cloitre et al., 2018), the 9-item version of The Patient Health Questionnaire (PHQ-9) (Kroenke et al., 2001), and the Personality Inventory for DSM-5 and ICD-11 – Brief Form Modified (PID5BF+ M) (Kerber et al., 2020). In the second dataset, we used two individual questions to assess the subjective emotional impact of covid-19 pandemics derived from the recently validated version of the Fear of Illness and Virus Evaluation (FIVE) in the Chilean population by our research group (Cottin et al., 2021). In the third dataset, we also assessed the levels of personality functioning using the Standardized Assessment of Severity of Personality Disorder (SASPD) (Olajide et al., 2018).

5.5   Data analytic plan

We first needed to detect which traits were the best predictors of BPD symptoms. With a stepwise selection method, we predicted the four BPD clinical components (cognitive, affective,

impulsive, and relational) by all maladaptive and FFM traits via Ordinary Least Squares (OLS) regressions. As such, we calculated three models, each predicting BPD symptoms assessed through a different scale (ZAN-BPD; Zanarini, 2003), BSL-23; Bohus et al., 2009), and IPDE-BPD; Loranger, 1999). We conducted this analysis to ensure that our calculations were not instrument specific but related to the construct itself. Our next step was to visually inspect the residuals to evaluate assumptions of normality and heteroskedasticity. In those cases where we found a positive asymmetry of the residuals -which applied in most of the cases when we found violations- we transformed the criterion variable to its natural logarithm to approximate it to normality, as this transformation tends to fix both normality and heteroskedasticity (Jarque & Bera, 1980). Not all participants responded to all the scales on the first dataset, so we mostly found missing values when participants did not respond to any instrument's items. We configured the survey software for the second and third dataset only to receive complete responses. Thus, we found missing values only when people decided not to continue responding. Considering this, we considered data in both studies was as missing not at random. We decided to handle missing data via a listwise deletion method (Allison, 2014; Allison, 2003; MacDonald, 2002). This method is the default method in the packages we used in R analysis (and virtually in all statistic packages) for our analyses. Listwise, case deletion, or complete-cases analysis is the complete removal of objects with variables with missing values from an analysis. This approach is simple and effective: we removed from the sample instances with missing data on any variables in the analysis. While this method reduces sample size and sometimes affects an analysis's power, our sample was large enough, and statistical power was not a problem (Allison, 2014; Allison, 2003). We selected the predictors that accounted for most of the variance of BPD symptoms across all the instruments by taking this approach. We used the traits that were consistent predictors in the four models for further analyses.

After we selected the traits that reliably predicted BPD symptoms in our sample, we conducted path analyses models (Kline, 2016) to test whether they mediated the relationship between adverse childhood experiences and each group of BPD symptoms. Path analysis is a specific type of Structural Equation Modelling (SEM). While SEM involves both measurement and structural relationship models, path analysis focuses on the structure to test theoretically specific patterns of relationships among a set of variables. Since the focus of this dissertation was on testing the causal relations among the constructs in the model, we decided not to establish

previous measurement hypotheses for building latent variables. This analysis allowed us to test how well the empirically derived correlational patterns support the model proposed by Leichsenring et al. (2011) and further determine whether and to what extent this formulated causal model is consistent with the observed data.

We included the variables involved in the psychosocial part of the model proposed by Leichsenring et al. (2011). The model consisted of six variables: *Adverse Childhood Experiences* (a), *Psychosocial Factors* (b), and the main components of psychopathology, which are *Affective dysregulation* (d), *Behavioral Dysregulation* (e) and *Disturbed relatedness* (f). We visually display the model in Figure 1.

Figure 1

Basic mediation model from adverse childhood experiences to BPD symptom components (affective, cognitive, impulsive, and relational) through psychosocial factors (personality traits and personality functioning)
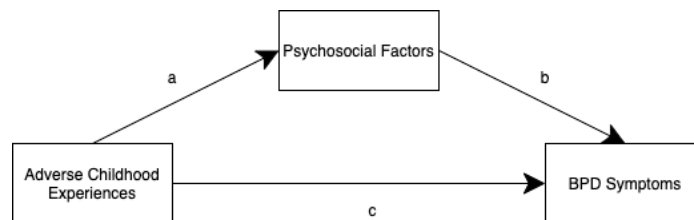
We used a robust maximum likelihood estimator (MLR) for calculating ordinary least squares regression. It is robust and provides unbiased estimates whenever we find normality violations within the study variables (Kline, 2016). We tested indirect effects via a multiplicative method to test whether adverse childhood experiences predicted BPD symptoms via our selected traits (Hayes & Scharkow, 2013; Valente et al., 2016). This method implies multiplicating the path from the independent variable to the mediator (path "a" in the diagram), with the path from the mediator to the dependent variable (path "b" in the diagram; Rockwood & Hayes, 2020). As this multiplication is usually skewed and not normally distributed, we calculated a percentile bootstrap with 20.000 draws to account for violations of normality (Hayes & Scharkow, 2013;

Preacher, 2015; Valente et al., 2016). If the 90% interval did not cross zero, then we considered the indirect effect as statistically significant and, as such, the mediation mechanism.

6 Results

6.1 Study 1

6.1.1 Descriptive analyses

We first explored the dataset to compare the participants from the clinical sample with a current BPD diagnosis, with participants on a healthy control group. We first compared them in terms of demographic variables, and afterwards we compared them in terms of our main predictors (adverse childhood experiences and personality traits).

In Table 1 we present a comparison of demographic characteristics of participants from a German population (first dataset) consisting of a clinical sample with a current BPD diagnosis, and participants from a healthy control group. As we can see, the number of women in the study was around four time the number of men in both the clinical (83.7%) and the healthy control groups (79.3%), which is expected considering typical patterns in studies conducted online. In general individuals did not differ by group in terms of their likelihood to be single. However, individuals from the healthy control group were around two times more likely to be married (15.9%) than individuals from the clinical sample (9.9%). The clinical group was four times more likely to be divorce (4.6%) than the healthy control group (.9%). Regarding their living situation, individuals from the clinical sample were two times more likely to be living alone (42.1%), while individuals from the healthy control group tend to live with their family or partners (38.3%). The proportion of individuals who lived with their parents or family of original was similar, while individuals from the healthy control group were two times more likely to share an apartment with others (21.8%) comparing to the clinical group (11%).

Table 1

Sociodemographic characteristics of the German population consisting of individuals with a BPD diagnosis and a healthy control group

	Participants with BPD		Healthy Controls	
	n	%	n	%
Gender				
Female	263	83.7	339	79.3
Male	51	16.24	88	20.6
Current family situation				
Single	113	74.8	159	74.3
Married	15	9.9	34	15.9
Cohabiting	13	8.6	16	7.5
Divorced	7	4.6	2	.9
Partnered living separately	3	2	3	1.4
Current living situation				
Private/alone	61	42.1	54	26.2
Private, in family/partnership	39	26.9	79	38.3
Private, with parents (family of origin)	24	16.6	28	13.6
In shared apartment	16	11	45	21.8
In therapeutic shared living or psychiatric family care	2	1.4	0	0
No regular housing situation	3	2.1	0	0

Note. N = 544. We included data from those who answered to these questions. Participants were on average 28.2 years old (SD = 7.36), and participant age not differed by condition in (SD = 1.4).

[a] Reflects the number and percentage of participants answering "yes" to this question.

After examining differences in demographic variables between these two groups, we were interested in visually exploring the prevalence of reported childhood maltreatment experiences in the same two groups based on the severity ratings of the scoring manual for the Childhood

Trauma Questionnaire-Short Form (CTQ-SF) provided by Bernstein et al., (2003). This questionnaire assesses five subtypes of childhood maltreatment: Emotional Abuse, Emotional Neglect, Physical abuse, Physical Neglect, and Sexual Abuse. The questionnaire involves scoring questions from each subtype of childhood maltreatment according to severity ratings considering a 5-point Likert scale (from "never" to "almost always").

In figure 2 we present a radar plot of the severity of the subtypes of childhood maltreatment reported by German participants from two groups, one a clinical sample consisting of male and female participants with a current BPD diagnosis, and the other one, consisting of male and female participants from a healthy control group. Both groups were part of the first dataset.

As we can observe in figure 2, participants with a current BPD diagnosis tend to report higher mean severity scores on each type of childhood maltreatment, while participants from the healthy control group tend to report minimal to low scores in all subtypes of childhood maltreatment. It is important to consider that in this study we compared individuals with very severe presentations of a current BPD diagnosis, while the control group consisted of very healthy individuals, who were likely to not present any psychiatric conditions. This can be inferred from the figure in that individuals from the clinical sample with a current BPD diagnosis presented visually marked differences in the severity of the five subtypes of childhood maltreatment from individuals from the healthy control group. As we can see in figure 2, in this study we found that Emotional Abuse (M=2.35 SD=.95 vs. M=.18 SD=.48), and Emotional Neglect (M=2.21 SD=.96 vs. M=.25 SD=.56) were the subtypes presenting the highest differences between both groups, followed by Physical Neglect (M=1.49 SD=1.11 vs. M=.24 SD=.62). According to this result, in our first study, the emotional subtype of trauma (either abuse or neglect) was the subtype in which individuals from both groups differed the most.

Figure 2

Radar plot of the severity of the subtypes of childhood maltreatment reported by German

participants from two groups, one a clinical sample consisting of participants with a current

BPD diagnosis, and the other consisting of participants from a healthy control group
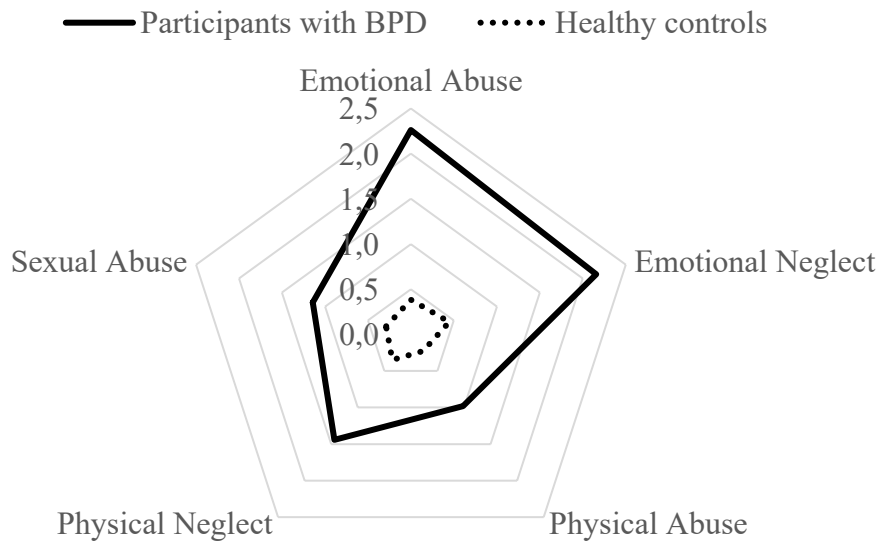
Note. Participants with BPD represent individuals that by the moment of the study had a diagnosis of BPD. Severity ratings were calculated based on the Childhood Trauma Questionnaire-Short Form (CTQ-SF) scoring manual presented by (Bernstein et al., 2003) . The higher the score is, the greater the severity of maltreatment is for that subscale. There are four categories of severity for each type of trauma type: 0= None; 1=Minimal; 2=Low; 3=Moderate, and 4=Severe.

After looking at differences between adverse childhood experiences in individuals from the clinical and the community sample, we compared these same groups, but this time in terms of their maladaptive personality traits. In the figure 3 we present a radar plot of the maladaptive personality traits from the *PID-5* (Krueger et al., 2012) of the German participants from a clinical sample consisting of individuals with a current BPD diagnosis, and a healthy control group. These two groups correspond to the first dataset. As we can observe visually, individuals from the clinical sample with a BPD diagnosis highly differed from individuals in the healthy control group in all the maladaptive personality traits. The highest differences were found in the Negative Affect personality trait (M=1.9 SD=.40 vs. M=.52 SD=.35), which was higher for individuals in the clinical sample, followed by Detachment (M=1.52 SD=.50 vs. M=.38

SD=.34), again with higher scores in individuals from the clinical sample. Psychoticism (M=1.25 SD=.52 vs. M=.22 SD=.23) was other trait in which individuals with BPD scored high compared to participants in the healthy control group. Individuals from both groups reported a relatively low score in the Antagonism trait.

Figure 3

Radar plot of the PID-5 (Krueger et al., 2012) *maladaptive personality traits of German*

participants from two groups, one being a clinical sample consisting of participants with a

current BPD diagnosis, and the other, consisting of participants from a healthy control group
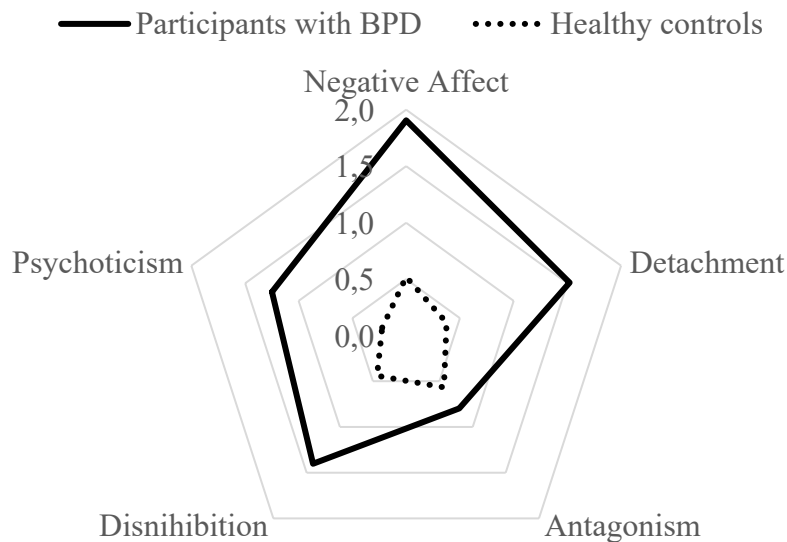
Note: Participants with BPD represent individuals that by the moment of the study had a diagnosis of BPD. Maladaptive personality traits scores were calculated based on the scoring instructions of The Personality Inventory for DSM-5 (PID-5) presented by (Krueger et al., 2012). The higher the score is, the greater the maladaptive personality trait is present.

In the figure 4 we present a radar plot of the HEXACO-60 (Ashton & Lee, 2009) personality traits of the German participants from a clinical sample consisting of individuals with a current BPD diagnosis, and a healthy control group. These two groups correspond to the first dataset as

well. As we can visually observe, the largest difference between individuals from the clinical sample and individuals with a BPD diagnosis was in the Extraversion trait (M=2.41 SD=.58 vs. M=3.8 SD=.47), which was lower for individuals with a BPD diagnosis. This was followed by the Agreeableness (M=2.76 SD=.62 vs. M=3.43 SD=.39) personality trait, where individuals with BPD scored lower. Emotionality (M=3.4 SD=.59 vs. M=3 SD=.49) on the other hand, was higher for participants in the clinical sample.

Figure 4

Radar plot of the HEXACO-60 (Ashton & Lee, 2009) *personality traits of German participants from two groups, one being a clinical sample consisting of participants with a current BPD diagnosis, and the other, consisting of participants from a healthy control group*
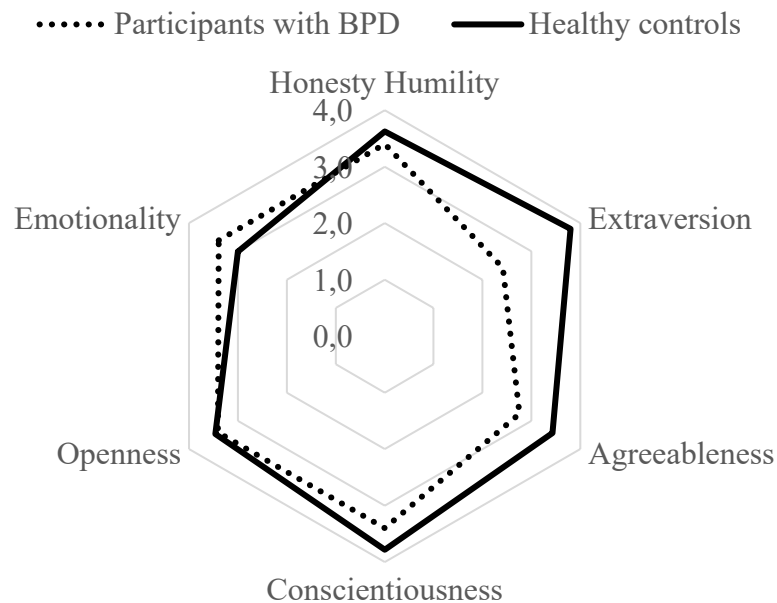
Note: Participants with BPD represent individuals that by the moment of the study had a diagnosis of BPD. Personality traits scores were calculated based on the scoring instructions of presented in the HEXACO-60 by Ashton & Lee, (2009). The higher the score is, the higher the personality trait is present.

Our next step was to explore the associations between each subtype of childhood maltreatment (Bernstein et al., 2003), maladaptive personality traits from the PID-5 (Krueger et al., 2012) and the four BPD symptom components from the ZAN-BPD (Zanarini, 2003).

In Table 2, we present the correlation matrix of the associations between these variables. As we can observe, the associations between childhood maltreatment and maladaptive personality traits are all statistically significant. The Pearson correlation coefficients between childhood maltreatment and maladaptive personality traits range from .145 with Antagonsim to .724 with Negative Affect. Moreover, the relationships between childhood maltreatment and BPD symptom components were also statistically significant, ranging from .225 with the impulsive component to .697 with the affective one. Lastly maladaptive personality traits presented statistically significant associations with all BPD symptom components, except for impulsivity and Antagonism with which they did not present significant associations. The strongest coefficient was found between Negative Affect and affective symptom components, while the weakest was found for Antagonism and impulsive symptoms with a Pearson correlation coefficient of .070. Impulsive BPD symptom components were the ones with the weakest associations among all.

Table 2

Correlation Matrix of the adverse childhood experiences, PID-5 (Krueger et al., 2012) maladaptive personality traits and each BPD symptom component from German participants from a combined sample consisting of individuals with a BPD diagnosis and a healthy control group

		Childhood_Maltreatment	PID5_Negative_Affect	PID5_Detachment	PID5_Antagonism	PID5_Dishinibition	PID5_Psychoticism	BPD_Affective_Component	BPD_Cognitive_Component	BPD_Impulsive_Component	BPD_Relational_Component
Childhood_Maltreatment	Pearson Correlation	--									
	N	385									
PID5_Negative_Affect	Pearson Correlation	.724**	--								
	Sig. (2-tailed)	<.001									
	N	264	266								
PID5_Detachment	Pearson Correlation	.685**	.778**	--							
	Sig. (2-tailed)	<.001	<.001								
	N	264	266	266							
PID5_Antagonism	Pearson Correlation	.145*	.267**	.190**	--						
	Sig. (2-tailed)	.019	<.001	.002							
	N	263	265	265	265						
PID5_Dishinibition	Pearson Correlation	.671**	.816**	.730**	.396**	--					
	Sig. (2-tailed)	<.001	<.001	<.001	<.001						
	N	264	266	266	265	266					
PID5_Psychoticism	Pearson Correlation	.694**	.797**	.780**	.343**	.839**	--				
	Sig. (2-tailed)	<.001	<.001	<.001	<.001	<.001					
	N	264	266	266	265	266	266				
BPD_Affective_Component	Pearson Correlation	.697**	.816**	.766**	.192**	.735**	.770**	--			
	Sig. (2-tailed)	<.001	<.001	<.001	.002	<.001	<.001				
	N	372	258	258	257	258	258	712			
BPD_Cognitive_Component	Pearson Correlation	.636**	.743**	.718**	.192**	.668**	.734**	.815**	--		
	Sig. (2-tailed)	<.001	<.001	<.001	.002	<.001	<.001	<.001			
	N	372	258	258	257	258	258	712	715		
BPD_Impulsive_Component	Pearson Correlation	.225**	.164**	.170**	.070	.171**	.238**	.306**	.336**	--	
	Sig. (2-tailed)	<.001	.008	.006	.263	.006	<.001	<.001	<.001		
	N	371	257	257	256	257	257	710	713	713	
BPD_Relational_Component	Pearson Correlation	.584**	.727**	.634**	.289**	.662**	.658**	.737**	.697**	.220**	--
	Sig. (2-tailed)	<.001	<.001	<.001	<.001	<.001	<.001	<.001	<.001	<.001	
	N	372	258	258	257	258	258	711	714	712	714

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

We continued examining associations between each subtype of childhood maltreatment with the CTQ-SF (Bernstein et al., 2003), personality traits from the HEXACO-60 (Ashton & Lee, 2009), and the four BPD symptom components (Zanarini et al., 2015b). In Table 3, we present the correlation matrix of the associations between these variables. As we can observe, the associations between childhood maltreatment and personality traits are all statistically significant with Pearson correlation coefficients ranging from -.104 with the Honesty-Humility personality trait to -.670 with Extraversion. The personality traits presented statistically significant associations with most BPD symptom components. The exception were the associations with the personality trait Openness to Experience in which we did not find any statistically significant association, and the impulsive BPD component which only presented statistically significant associations with Extraversion and Agreeableness. The strongest coefficient between personality traits and BPD symptom component was found between Extraversion and the affective symptom component, while the weakest was found for Openness to Experience and the affective symptom component with -.004.

Table 3

Correlation Matrix of the adverse childhood experiences, HEXACO-60 (Ashton & Lee, 2009) *personality traits and each BPD symptom component from German participants from a combined sample consisting of individuals with a current BPD diagnosis and a healthy control group*

		Childhood_Maltreatment	Hexaco_Honesty_Humility	Hexaco_Extraversion	Hexaco_Agreeableness	Hexaco_Conscientiousness	Hexaco_Openness_to_Experience	Hexaco_Emotionality	BPD_Affective_Component	BPD_Cognitive_Component	BPD_Impulsive_Component	BPD_Relational_Component
Childhood_Maltreatment	Pearson Correlation	--										
	N	385										
Hexaco_Honesty_Humility	Pearson Correlation	-.104*	--									
	Sig. (2-tailed)	.045										
	N	372	374									
Hexaco_Extraversion	Pearson Correlation	-.670**	.082	--								
	Sig. (2-tailed)	<.001	.114									
	N	374	371	376								
Hexaco_Agreeableness	Pearson Correlation	-.452**	.329**	.441**	--							
	Sig. (2-tailed)	<.001	<.001	<.001								
	N	372	369	373	374							
Hexaco_Conscientiousness	Pearson Correlation	-.273**	.202**	.279**	.149**	--						
	Sig. (2-tailed)	<.001	<.001	<.001	.004							
	N	372	369	371	369	374						
Hexaco_Openness_to_Experience	Pearson Correlation	-.109*	.025	.196**	.078	.007	--					
	Sig. (2-tailed)	.035	.628	<.001	.133	.897						
	N	371	369	371	368	371	373					
Hexaco_Emotionality	Pearson Correlation	.271**	-.092	-.338**	-.255**	-.128*	-.018	--				
	Sig. (2-tailed)	<.001	.075	<.001	<.001	.014	.732					
	N	374	371	374	373	371	370	376				
BPD_Affective_Component	Pearson Correlation	.697**	-.145**	-.732**	-.542**	-.313**	-.004	.293**	--			
	Sig. (2-tailed)	<.001	.006	<.001	<.001	<.001	.937	<.001				
	N	372	361	363	361	361	360	363	712			
BPD_Cognitive_Component	Pearson Correlation	.636**	-.161**	-.663**	-.453**	-.279**	.038	.289**	.815**	--		
	Sig. (2-tailed)	<.001	.002	<.001	<.001	<.001	.469	<.001	<.001			
	N	372	361	363	361	361	360	363	712	715		
BPD_Impulsive_Component	Pearson Correlation	.225**	.012	-.176**	-.216**	-.038	-.012	.025	.306**	.336**	--	
	Sig. (2-tailed)	<.001	.822	<.001	<.001	.471	.821	.640	<.001	<.001		
	N	371	360	362	360	360	359	362	710	713	713	
BPD_Relational_Component	Pearson Correlation	.584**	-.197**	-.614**	-.450**	-.244**	.018	.286**	.737**	.697**	.220**	--
	Sig. (2-tailed)	<.001	<.001	<.001	<.001	<.001	.738	<.001	<.001	<.001	<.001	
	N	372	361	363	361	361	360	363	711	714	712	714

*. Correlation is significant at the 0.05 level (2-tailed).

**. Correlation is significant at the 0.01 level (2-tailed).

6.1.2 Relationship between adverse childhood experiences, personality traits, and the main symptom components of BPD (affective, cognitive, impulsive, and relational).

6.1.2.1 Which traits to include?

Personality traits are numerous from the traditional FFM perspective or from the maladaptive traits approach. There are six maladaptive traits if we consider those from the DSM-5 and ICD-11 (APA, 2013; WHO, 2019), and six FFM traits when assessed through the HEXACO-60 (Ashton & Lee, 2009).

Including all personality traits in one model was virtually impossible since it would hinder one important principle when specifying a model in SEM: parsimony. In SEM, the total number of estimated parameters determines the complexity of the model, which in this case would be adding paths between adverse childhood experiences, each maladaptive and FFM trait, and each group of BPD symptoms (Lei & Wu, 2007).

The parsimony principle states that whenever two models present a similar fit to the data, a more straightforward (but still theoretically possible) model will always be preferred (Kline, 2016). A strict interpretation of this concept would imply comparing two models with the same variables in different organization patterns. This concept would not apply if we simultaneously considered models with maladaptive and FFM traits. However, we believe the same principle would apply if we included all FFM and maladaptive traits within one model. This model would not be parsimonious (Asparouhov & Muthén, 2009; Hoyle, 2012; Kline, 2016; Rosseel, 2014).

Kline, (2016) suggests evaluating the simplest model possible first as an initial model, including the highest priority variables. According to this principle, we decided to simplify the models by selecting which personality traits were the best candidates for being included. Moreover, during this step, we needed to decide whether traditional traits would be a competing model in the relationship between childhood trauma and BPD symptoms or if maladaptive traits were enough to predict BPD symptoms. To make this decision, we first evaluated how personality traits, in general, were related to BPD symptoms.

We conducted multiple ordinary least squares (OLS) linear regression models, specifically a stepwise multiple regression to explore relationships between traits as predictors (both the

traditional FFM personality traits and the maladaptive traits) and BPD symptoms (measured with the ZAN-BPD (Zanarini, 2003) as outcomes. FFM traits included Honesty-Humility, Emotionality, Extraversion, Agreeableness, Conscientiousness, and Openness to Experience, while maladaptive personality traits included Antagonism, Detachment, Psychoticism, Negative Affect, and Disinhibition. After conducting the four models with different trait combinations, we found that the best model for predicting the BPD symptom components according to the ZAN-BPD (Zanarini, 2003) was the fourth model. This model contained statistically significant predictions of two traits from the FFM (Extraversion and Emotionality) and two maladaptive traits (Negative Affect and Psychoticism). These traits statistically significantly predicted BPD symptoms explaining 75% of variance in BPD symptoms $F_{(4, 242)} = 182.071$, $p < .0001$, $R^2 = .746$.

This step was the basis for further ones, and we wanted to check whether these traits were predicting BPD symptoms specifically when assessed with the ZAN BPD (Zanarini, 2003). Thus, we conducted two other stepwise multiple regressions to predict BPD symptoms with different measurement strategies. We conducted our first model with the Borderline Symptom List 23 (BSL-23) (Bohus et al., 2009), and our second model with the BPD criteria from the International Personality Disorder Examination dimensional score (IPDE-BPD) (Loranger, 1999).

We found similarities and differences when conducting the same stepwise multiple regression to predict BPD symptoms from all FFM and maladaptive traits combined using the BSL-23 (Bohus et al., 2009) with competing models. We included the four traits that previously predicted BPD symptoms using the ZAN-BPD (Zanarini, 2003) (Extraversion, Emotionality, Psychoticism, and Negative Affectivity), finding that they also predicted these symptoms when assessed through the BSL-23 (Bohus et al., 2009). However, we found one additional maladaptive trait that significantly predicted BPD symptoms, which was Detachment. We found that the model with these traits statistically significantly predicted BPD symptoms explaining 83% of the variance in BPD symptoms $F_{(5, 249)} = 240.975$, $p < .0001$, $R^2 = .825$ when assessed through the BSL-23 (Bohus et al., 2009).

Lastly, for making our final decision, we conducted the same stepwise multiple regression to predict BPD symptoms, but this time with a dimensional score of the BPD criteria of the IPDE

(Loranger, 1999). After running five models, the best model was again the one with the four initial traits (Extraversion, Emotionality, Psychoticism, and Negative Affectivity), plus an additional FFM trait (Agreeableness). This model statistically significantly predicted BPD symptoms explaining 84% of variance in BPD symptoms $F (5, 238) = 246.805$, $p < .0001$, $R^2 = .835$ when assessed with the IPDE-BPD (Loranger, 1999).

By this point, we made our decision. Based on the output algorithm, we selected four of the eleven traits that best predicted BPD symptoms according to three different instruments: Extraversion, Emotionality, Psychoticism, and Negative Affectivity. Since this was a first step to conduct the main analyses of this dissertation, we present all the relevant parameters of each of the multiple ordinary least squares (OLS) linear regression models as annexes of this dissertation.

6.1.2.2 Refinements on the model based on empirically collected data in a German sample.

For refining the theoretical model proposed by (Leichsenring et al., 2011), we specified two similar models to reduce the number of parameters, one with the selected maladaptive traits from the PID-5 perspective (Krueger et al., 2012) (model a, figure 5), and one with the selected personality traits from the HEXACO-60 (Ashton & Lee, 2009) (model b, figure 5).

Figure 5

Parallel mediation model from Adverse Childhood Experiences to BPD symptoms components mediated by Maladaptive and FFM Personality Traits
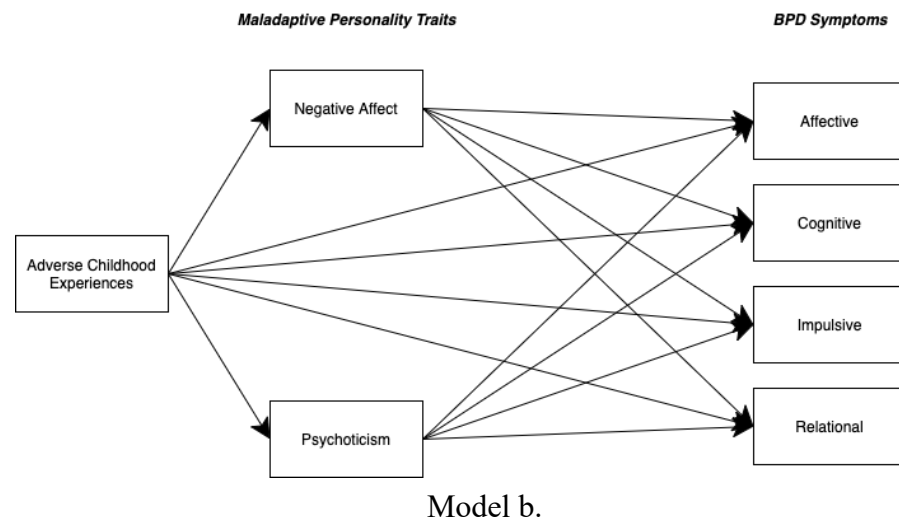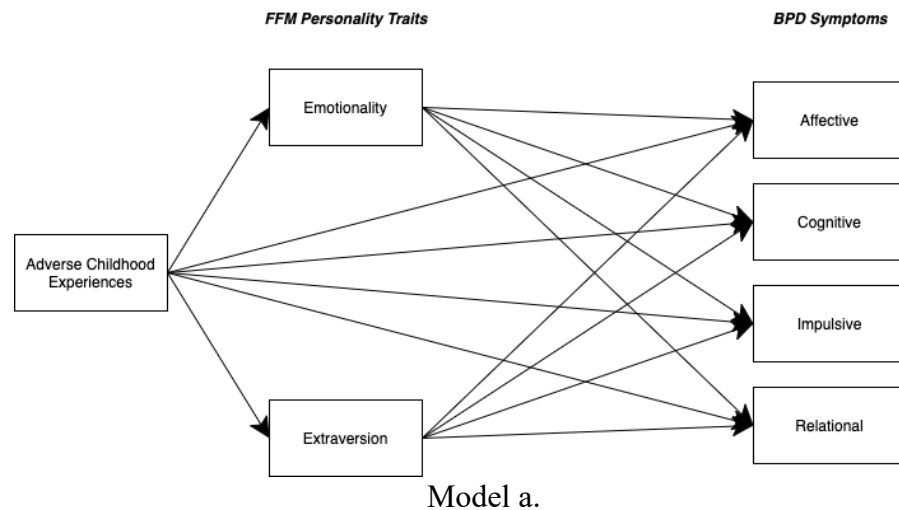
Model a.

Model b.

6.1.2.3 Model Specification with Maladaptive Personality Traits

For specifying the model with maladaptive traits, we calculated a parallel mediation model where adverse childhood experiences predicted each of the BPD symptom components, mediated by the selected PID-5 (Krueger et al., 2012) maladaptive personality traits, mainly Negative Affect and Psychoticism (model b, figure 5).

As we used all possible paths, the models were saturated, so they had a perfect fit to the data as they could reproduce the original variance-covariance matrix perfectly (Asparouhov & Muthén, 2009; Hoyle, 2012; Kline, 2016; Rosseel, 2014). Therefore, each model had four direct effects and eight mediation estimates, two for each BPD symptom component.

6.1.2.3.1 Total effects from Adverse Childhood Experiences to Maladaptive Traits

First, we looked at the total effect, which is the effect of the adverse childhood experiences on each BPD symptom component without the mediators included (Rockwood & Hayes, 2020). We searched for any change in the impact of adverse childhood experiences on BPD symptom components. As expected, the effect of adverse childhood experiences on BPD symptom components was positive and statistically significant without considering the mediators (maladaptive personality traits). This effect means that the adverse childhood experiences in our sample were associated with affective, cognitive, impulsive, and relational symptoms.

The effect of adverse childhood experiences on affective symptoms (Total effect; $b = .716$, z (0), p = .000), cognitive symptoms (Total effect; $b = .651$, z (0), p = .000), and relational symptoms (Total effect; $b = .593$, z (0), p = .000) were similar in their intensity, with the exception of impulsive symptoms (Total effect; $b = .221$, z (0), p = .002), that was around three times less strong.

6.1.2.3.2 Effects of Adverse Childhood Experiences to Maladaptive Traits

As expected, the effect of adverse childhood experiences on maladaptive traits were positive and statistically significative, for both Negative Affect (Path "a"; b=.732, z (0) = 17.962, p=.000), and Psychoticism (Path "d"; b= .706, z (0) = 14.998, p=.000). This effect size was similar for both maladaptive traits.

6.1.2.3.3 Effects of Adverse Childhood Experiences and Maladaptive Traits on BPD Symptoms

Third, we simultaneously tested the maladaptive personality traits and the adverse childhood experiences' effect on BPD symptoms. A decrease in the total effect of adverse childhood experiences on BPD symptoms when including the maladaptive personality traits in the equation would indicate a potential mediation effect. As we calculated the path analyses, we did this simultaneously for every mediator and dependent variable.

As expected, the total effect of adverse childhood experiences decreased when including both maladaptive traits into the equation.

The effect of adverse childhood experiences on affective symptoms decreased in 72.9% (Path "c1"; b= .194, z (0) = 2.644, p=.008), on cognitive symptoms in 77.6% (Path "c2"; b=.146, z (0) = 1.714, p= .086), on impulsive symptoms on 26.7% (Path "c3"; b= .162, z (0) = 1.954, p=.051), and on relational symptoms on 84.5% (Path "c4"; b= .092, z (0) = 1.216, p= .224). In decreased order, we can see that relational symptoms presented the highest decrease, followed by cognitive, affective, and finally, impulsive symptoms. For cognitive and relational symptoms, the decrease turned the effect of adverse childhood experiences to BPD symptom component to non-significant, which constitute a complete mediation effect, implying that the mediator completely explains the effect.

6.1.2.3.4 Proposed Mediational Models

Once we established a clear decrease in the direct effect, we needed a formal test of the proposed mediational mechanisms.

a) *The role of Negative Affect in the relationship between Adverse Childhood Experiences and the symptom components of BPD*

Affective Symptoms. The indirect (mediation) effect from adverse childhood experiences on affective BPD symptoms through Negative Affect was statistically significant (b= .333, 95% CI= .032 - .062, z (0) = 6.135, p= .000). This effect would imply that higher levels of adverse childhood experiences would be associated with a higher tendency to experience Negative Affect, which may in turn be associated with higher BPD affective symptoms.

Cognitive Symptoms. The indirect (mediation) effect from adverse childhood experiences on cognitive BPD symptoms through Negative Affect was also statistically significant (b=.260, 95% CI= .012- .039, z (0) = 3.630, p= .000). This effect would imply that higher levels of adverse childhood experiences would be associated with a higher tendency to experience Negative Affect, which may in turn be associated with higher BPD cognitive symptoms.

Impulsive Symptoms. The indirect (mediation) effect from adverse childhood experiences on impulsive BPD symptoms through Negative Affect was not statistically significant (b= -.123, 95% CI= -.091 - .026, z (0) = -1.093, p= .275), so the proposed mechanism here is not granted. We may explain this effect given that Negative Affect did not have a statistically significant effect on impulsive symptoms.

Relational Symptoms. The indirect (mediation) effect from adverse childhood experiences on relational BPD symptoms through Negative Affect was statistically significant (b=.367, 95% CI= .016 - .034, z (0) = 5.445 p= .000). This effect would imply that higher levels of adverse childhood experiences would be associated with a higher tendency to experience Negative Affect, which may in turn be associated with higher BPD relational symptoms.

6.1.2.3.4.1 The role of Psychoticism in the relationship between adverse childhood experiences and the clinical components of BPD

Affective Symptoms. The indirect (mediation) effect from adverse childhood experiences on affective BPD symptoms through Psychoticism was statistically significant (b=.188, 95% CI=. .009- .044, z (0) = 3.050, p= .002). This effect would imply that higher levels of adverse childhood experiences would be associated with a higher tendency to present Psychoticism traits, which may in turn be associated with higher BPD affective symptoms.

Cognitive Symptoms. The indirect (mediation) effect from adverse childhood experiences on cognitive BPD symptoms through Psychoticism was statistically significant (b=.245, 95% CI= .011- .036, z (0) = 3.658, p= .000). This effect would imply that higher levels of adverse childhood experiences would be associated with a higher tendency to present Psychoticism traits, which may in turn be associated with higher BPD cognitive symptoms.

Impulsive Symptoms. The indirect (mediation) effect from adverse childhood experiences on impulsive BPD symptoms through Psychoticism was not statistically significant (b=.182, 95% CI= -.005- .102, z (0) = 1.762, p= .078). The proposed mechanism was not supported here either. We may explain this effect given that Psychoticism did not have a statistically significant effect on impulsive symptoms.

Relational Symptoms. The indirect (mediation) effect from adverse childhood experiences on relational BPD symptoms through Psychoticism was statistically significant (b=.134, 95% CI= .000 - .018, z (0) = 2.013, p= .044). This effect would imply that higher levels of adverse childhood experiences would be associated with a higher tendency to present Psychoticism traits, which in turn may be associated with higher BPD relational symptoms.

In figure 6 we present the path analysis model of the relationship between adverse childhood experiences, maladaptive personality traits and BPD symptom components. In this model we can see that Negative Affect worked as a mechanism in the relationship between adverse childhood experiences and affective, cognitive, and relational components. However, this mechanism was not granted for the impulsive symptoms, possibly because from the beginning this symptom component was not predicted by Negative Affective. As we can see in the model of figure 6 a similar model replicates for Psychoticism, in that this trait worked as a mechanism from adverse childhood experiences to all BPD symptom components except for impulsivity. This, as well, might be explained by the fact that Psychoticism was not a predictor of this symptom component either.

Figure 6

Path analysis of the relation between adverse childhood experiences, maladaptive personality traits and BPD symptom components in a German sample consisting of individuals with a BPD diagnosis and a healthy control group
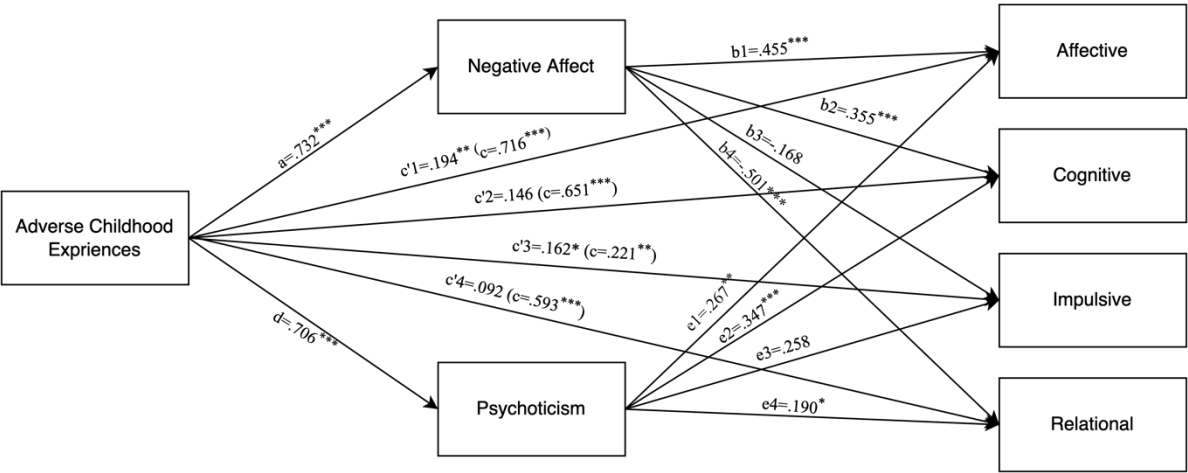
First, adverse childhood experiences were a predictor of all subgroups of BPD symptoms within our sample. Those who reported having experienced childhood maltreatment during their infancy had higher chances of presenting affective, cognitive, impulsive, and relational BPD symptoms. The group of symptoms that were most affected by adverse childhood experiences was the affective symptoms. However, adverse childhood experiences highly predicted cognitive symptoms as well. This association was statistically significant for impulsive symptoms but presented a lower impact than the others.

Second, adverse childhood experiences were also positively associated with both maladaptive traits. This effect was very similar for the two maladaptive traits we studied but slightly higher for Negative Affect than Psychoticism.

Third, when comparing the mediation models, we can observe that most were statistically significant except for two (the relationship between adverse childhood experiences and BPD impulsive symptoms is not mediated by either Negative Affect or Psychoticism). It seems like in our sample, and with the instruments we used, maladaptive personality traits are not good predictors of impulsive BPD symptoms.

We found that Negative Affect was the best overall mechanism regarding the six statistically significant mediation effects when considering effect sizes. The mechanism from childhood trauma to relational symptoms through Negative Affect was the bigger effect size ($b = .367$), quite like the mechanism predicting affective symptoms ($b = .333$). The mechanism via Negative Affect to cognitive symptoms was the smallest of the three ($b = .260$), without considering the mechanism to impulsive BPD symptoms which was not statistically significant. The mechanism from adverse childhood experiences to cognitive symptoms through Psychoticism showed similar strength to the previous one ($b = .245$). It was followed in intensity by the mediation effect of Psychoticism on affective symptoms ($b = .188$). The lowest of the three was in this case the mechanism on relational BPD symptoms, excluding the impulsive ones that were again not statistically significant.

6.1.2.4   Model Specification with FFM Personality Traits

We then calculated a parallel mediation model where adverse childhood experiences predicted each BPD symptom component, mediated by the selected FFM personality traits, mainly Emotionality and Extraversion (model b, figure 5). Again, as we used all possible paths, the models were saturated. The saturation means that they had a perfect fit to the data as they could perfectly reproduce the original variance-covariance matrix (Asparouhov & Muthén, 2009; Hoyle, 2012; Kline, 2016; Rosseel, 2014). The previous model also had four direct effects and eight mediation estimates, two for each BPD clinical component.

6.1.2.4.1   Total effects from Adverse Childhood Experiences to FFM Personality Traits

We then looked at the total effect (i.e., adverse childhood experiences on each BPD symptom component without the mediators included) (Baron & Kenny, 1986). We analyzed changes in the impact of adverse childhood experiences on BPD. As we expected, the effect of adverse childhood experiences on BPD symptom components was positive and statistically significant when we did not consider the mediators (i.e., FFM personality traits). This effect meant that the adverse childhood experiences in our sample were associated with affective, cognitive, impulsive, and relational symptoms.

In this model, the effect of adverse childhood experiences on affective symptoms (Total effect; b= .711, z (0), p = .000), cognitive symptoms (Total effect; b= .634, z (0), p = .000), and relational symptoms (Total effect; b= .580, z (0), p = .000) were similar in their intensity, with the exception of impulsive symptoms (Total effect; b= .228, z (0), p = .001), that were again statistically significant but weaker than the rest. It seems that impulsive symptoms are the ones less predicted by adverse childhood experiences within this sample.

6.1.2.4.2   Effects of Adverse Childhood Experiences to FFM Personality Traits

As in the first model, our second step was to test the effect of adverse childhood experiences on FFM personality traits, a prerequisite for the mediation to be possible (Baron & Kenny, 1986). As expected, the effect of adverse childhood experiences on Emotionality was positive and

statistically significative (Path "a"; b= .266, z (0) = 5.075, p=.000), and for Extraversion it was negative and statistically significative (Path "d"; b= -.678, z (0) = -17.683, p=.000). The effect size was three times stronger for Extraversion than for Emotionality, which was initially surprising.

6.1.2.4.3 Effects of Adverse Childhood Experiences and FFM Personality Traits on BPD symptom components

Third, we simultaneously tested the FFM personality traits and the adverse childhood experiences' effect on BPD symptoms. We would find a potential mediation effect if we observed a decrease in the total effect of adverse childhood experiences on BPD symptom components when including the personality traits into the equation. We did this simultaneously for every mediator and dependent variable as we calculated the path analyses.

As we expected, the total effect of adverse childhood experiences decreased when we included both personality traits into the equation.

The effect of adverse childhood experiences on affective symptoms decreased in 43.7% (Path "c1"; b = .400, z (0) = 6.566, p=.000), on cognitive symptoms in 46.7% (Path "c2"; b = .338, z (0) = 4.881, p=.000), on impulsive symptoms on 30.7% (Path "c3"; b = .204, z (0) = 1.888, p= .059), and on relational symptoms on 64.8% (Path "c4"; b = .298, z (0) = 4.773, p= .000). In decreased order, relational symptoms had the highest decrease, followed by cognitive and affective symptoms with very similar decrease percentages, and finally, impulsive symptoms. For impulsive symptoms this decrease turned the effect of adverse childhood experiences to symptoms non-significant constituting a complete mediation effect, implying that the mediator completely explains the effect. This could be also explained by the fact that this prediction was low in the first regression.

6.1.2.4.4   Proposed Mediational Models

Once we establish a clear decrease in the direct effect, we needed a formal test of the proposed mediational mechanisms.

6.1.2.4.4.1   The role of Emotionality in the relationship between Adverse Childhood Experiences and the BPD symptom components

Neither of the indirect (mediation) effect from adverse childhood experiences on affective (*b*=.011, 95% CI= -.002- .005, *z* (0) = .950, *p*= .342), cognitive (*b*=.018, 95% CI= -.001- .004, *z* (0) = 1.420, *p*= .155), impulsive (*b*=-.013, 95% CI= -.010- .004, *z* (0) = -.910, *p*= .507), or relational (*b*=.022, 95% CI= -.000- .003, *z* (0) = 1.629, *p*= .103) BPD symptoms through Emotionality were statistically significant, so the proposed mechanisms here are not granted. This may be explained given that Emotionality, as assessed through the HEXACO-60 (Ashton & Lee, 2009) did not have a statistically significant effect on neither of the BPD symptom components.

6.1.2.4.4.2   The role of Extraversion in the relationship between Adverse Childhood Experiences and the BPD symptom components

Affective Symptoms. The indirect (mediation) effect from adverse childhood experiences on affective BPD symptoms through Extraversion was statistically significant (*b*=.301, 95% CI= .032 - .052, *z* (0) = 8.075, *p*= .000). This effect would imply that higher levels of adverse childhood experiences would be associated with a lower tendency to present Extraversion traits, which may in turn be associated with higher BPD affective symptoms.

Cognitive Symptoms. The indirect (mediation) effect from adverse childhood experiences on cognitive BPD symptoms through Extraversion was statistically significant (*b*=.278, 95% CI= .019- .036, *z* (0) = 6.577, *p*= .000). This effect would imply that higher levels of adverse childhood experiences would be associated with a lower tendency to present Extraversion traits, which may in turn be associated with higher BPD cognitive symptoms.

Impulsive Symptoms. The indirect (mediation) effect from adverse childhood experiences on impulsive BPD symptoms through Extraversion was not statistically significant (*b*=.037, 95%

CI= -.022 - .040, z (0) = 0.559, p= .576). The proposed mechanism was not supported. We may also explain this, given that Extraversion did not have a statistically significant effect on impulsive symptoms.

Relational Symptoms. The indirect (mediation) effect from adverse childhood experiences on relational BPD symptoms through Extraversion was statistically significant (b=.260, 95% CI= .012 - .024, z (0) = 6.187, p= .000). This effect would imply that higher levels of adverse childhood experiences would be associated with a lower tendency to present Extraversion traits, which may in turn be associated with higher BPD relational symptoms.

In figure 7 we present the path analysis model of the relationship between adverse childhood experiences, personality traits from the FFM and BPD symptom components. In this model we can see that Extraversion worked as a mechanism in the relationship between adverse childhood experiences and affective, cognitive, and relational components. However, this mechanism was not granted for the impulsive symptoms, possibly because from the beginning this symptom component was not predicted by Extraversion. As we can see in the model of figure 7 a similar model replicates for Emotionality, in that this trait worked as a mechanism from adverse childhood experiences to all BPD symptom components except for impulsivity. This, as well, might be explained by the fact that Emotionality was not a predictor of this symptom component either.

Figure 2

Path analysis of the relation between adverse childhood experiences, personality traits and BPD symptom components in the combined German community and clinical sample belonging to the first dataset
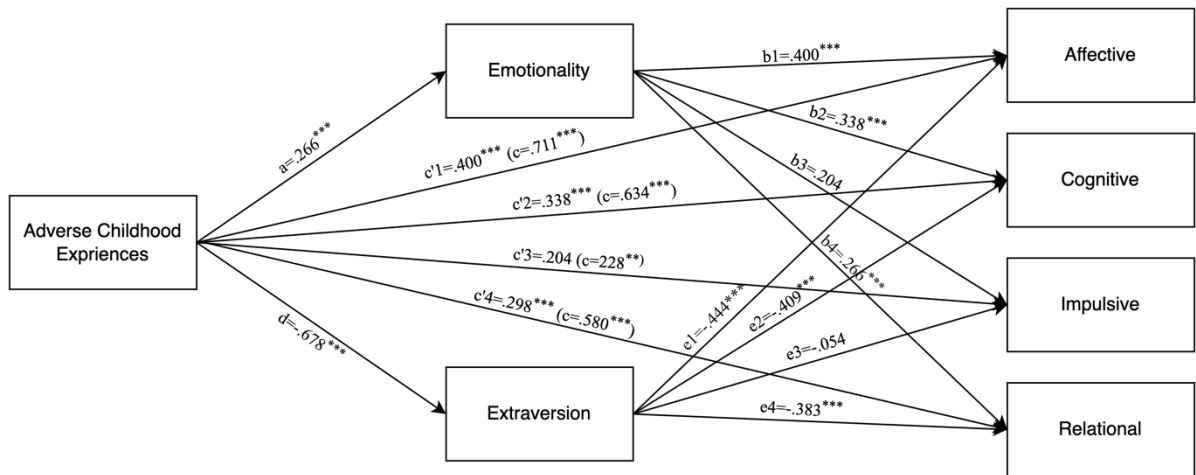
6.1.2.4.5 What can we learn from this model?

As in the previous model, adverse childhood experiences predicted all subgroups of BPD symptom components within our sample. Those who reported having experienced childhood maltreatment during their infancy had higher chances of presenting affective, cognitive, impulsive, and relational BPD symptoms. The group of symptoms that were most affected by childhood trauma was the affective one. However, similarly to the previous model, the cognitive and relational symptoms were also highly predicted by childhood trauma. This association was statistically significant for impulsive symptoms but once again presented a lower impact than the other symptoms.

Adverse childhood experiences were also associated with both FFM traits. This association was positive for Emotionality and negative for Extraversion, with much higher intensity for this last

personality trait. This finding means that individuals with adverse childhood experiences tend to present higher scores in Emotionality, and especially lower scores in Extraversion.

Third, when comparing the mediation models, we can observe that for Emotionality, none of the mediators were statistically significant (Emotionality did not mediate the relationship between adverse childhood experiences and BPD symptom components).

With Extraversion as a mediator, most were statistically significant except for one (the relationship between childhood trauma and impulsivity is not mediated by Extraversion either).

It seems like 1) Emotionality is not a good predictor of BPD symptoms and therefore do not act as a mechanism, and 2) personality traits, in general are not good predictors of impulsive BPD symptoms, and therefore, does not act as a mechanism either.

Regarding the four Extraversion mediation effects, we found that the mechanism from childhood trauma to affective symptoms was the one with the larger effect size (b= .301). Moreover, the mechanisms from childhood trauma to cognitive and relational BPD symptoms were similar, with a slightly higher effect for cognitive (b= .278) than for relational symptoms (b=.260).

6.1.2.5   Comparing FFM personality traits with maladaptive personality traits

Lastly, we compared the two specified models, the one with maladaptive traits as mediators and the one with FFM traits as mediators. When considering the effect size of traditional FFM and maladaptive personality traits, the best overall was the mechanism from childhood trauma to relational symptoms through Negative Affect (*b*= .367). The next two strongest mechanisms were from childhood trauma to affective symptoms through Negative Affect (*b*= .333) and through Extraversion (*b*= .325). In order of intensity of effect sizes, the following mechanism was childhood trauma to cognitive symptoms through Extraversion *(b*= .301). After that, we found two mechanisms with the same effect size: childhood trauma to relational symptoms through Extraversion (*b*=.260) and childhood trauma to cognitive symptoms through Negative Affect (*b*=.260). The smallest significant effect was found in the mechanism from childhood trauma to cognitive symptoms through Psychoticism (b=.245) and childhood trauma to affective symptoms through Psychoticism (*b*=.188). Considering all significant mechanisms for all personality traits, we found that the highest effect size mean was for Negative Affect (*b*=.332), followed by Extraversion (*b*=.280), and lastly Psychoticism (*b*=.189).

Lastly, we analyzed the best mechanism from childhood trauma for each BPD symptom group.

For the affective symptoms, the best mechanism was through Negative Affect (*b*= .333), followed by Extraversion (*b*= .301), and lastly, Psychoticism (*b*=.188). For cognitive symptoms, the best mechanism was through Extraversion (*b*= .278), followed by Negative Affect (*b*=.260), and lastly, again, Psychoticism (*b*= .245). Impulsive symptoms were not statistically significantly predicted by personality traits (neither traditional nor maladaptive). Finally, the best mechanisms for relational symptoms where through Negative Affect (*b*=.377), followed by Extraversion (*b*= .260), and lastly Psychoticism (*b*=.134).

6.2   Study 2

6.2.1   Descriptive Analyses

We present a comparison in demographic characteristics of the participants from the Chilean sample (second dataset) with about without a lifetime PD diagnosis in Table 5.

We first explored the dataset to compare the participants from the clinical sample with a lifetime PD diagnosis, with participants from the community sample without a lifetime PD diagnosis. We first compared the two groups in terms of demographic variables, and afterwards we compared them in terms of our main predictors (adverse childhood experiences and levels of personality functioning).

In Table 4 we present a comparison of demographic characteristics of participants from a Chilean population (second dataset) consisting of a clinical sample with a lifetime PD diagnosis, and participants from a community sample without a lifetime PD diagnosis. As we can see, most of participants in the clinical sample were women (89.4%), while in the community sample without a PD diagnosis there were three times more woman (76.6%) than men. The latter is expected considering typical patterns in studies conducted online. In terms of the proportion of men and women in the clinical sample, there could be several potential explanations (e.g., more women with a PD diagnosis tend to search for help comparing to men, but also women are more likely to participate in studies when invited). In general individuals did not differ by group in terms of their likelihood to be single, with 48.1% in the clinical group and 44.1% in the community sample. However, individuals from the community sample (19.1%) were around two times more likely to be married than individuals from the clinical sample (11.4%) coinciding with what we found in the first study regarding individuals with BPD and healthy controls. The clinical (12.7%) group was three times more likely to be divorce than the healthy control group (3.1%). Individuals from the community sample were more likely to report University or postgraduate degree as their highest educational level (63.3%) while most of the individuals from the clinical group reported it was High School/Some college for them (57.3%). The current living situation was relatively similar across groups with the only difference being

that 2.3% of individuals from the clinical sample reported having no current regular housing situation, comparing to a 0.2% of individuals in the community sample.

Table 4

Comparison of sociodemographic characteristics of Chilean participants with and without a PD diagnosis belonging to the second dataset

	PD		No PD	
	n	%	*n*	%
Gender				
Female	76	89.4	351	76.6
Male	9	10.6	107	23.4
Current family situation				
Single	38	48.1	212	44.1
Married	9	11.4	92	19.1
Cohabiting	2	2.5	78	16.2
Divorced/Separated	10	12.7	15	3.1
Partnered living separately	20	25.3	84	17.5
Highest educational level				
None	0	0	0	0
Middle school	2	2.7	6	1.4
High school/some college	43	57.3	156	35.3
University or postgraduate degree	30	40	280	63.3
Current living situation				
Private/alone	9	10.5	43	9.4
Private in family/partnership	71	82.6	396	86.5

		n	%
In shared apartment	4	4.7	18	3.9
No regular housing situation	2	2.3	1	0.2

Note. $N = 544$ ($n = 86$ individuals with BPD and $n = 458$ for community sample). Participants were on average 32.6 years old ($SD = 9.82$), and their ages not differed by condition.

In Table 5 we present a comparison of demographic characteristics of participants from a German population (third dataset) consisting of a community sample. It is interesting to notice, that 34.9% reported having received a previous psychiatric diagnosis, and 21.4% reported to currently be in a psychotherapeutic treatment. As in the rest of the studies, this sample presented a larger proportion of women (75.8%) compared to men (22.7%). The latter is expected considering typical patterns in studies conducted online, particularly in community samples. 12% reported to be diverse in terms of their gender. Most of participants were employed at the moment of filling the questionnaire (62.7%), while another large group were in school or vocational training (26.8%). The rest of individuals were either retired (2.5%), not currently employed (4.5%) or in a residual category we created for the rest of situations (3.5%).

Table 5

Sociodemographic characteristics of German participants from the community sample belonging to the third dataset

	n	%
Gender		
Female	602	75.8
Male	180	22.7
Diverse	12	1.5
Occupational status		
Employed	499	62.7

In school or vocational training	213	26.8
Retired	20	2.5
Not currently employed	36	4.5
Residual category (e.g., homemaker, gap year)	28	3.5
Previous psychiatric diagnosis [a]	278	34.9
Current psychotherapeutic treatment [a]	170	21.4

Note. N = 796. Participants were on average 33.8 years old (*SD* = 9.10), and participants' age not differed by condition.

[a] Reflects the number and percentage of participants answering "yes" to this question.

We then explored the second dataset of Chilean participants to compare the clinical group with a lifetime diagnosis of personality disorders with the community sample without a lifetime diagnosis of a personality disorder in the main predictors of this dissertation (adverse childhood experiences and the levels of personality functioning). We present this comparison for a visual exploration in figure 8.

As in the first study, we were interested in visually exploring the prevalence of reported childhood maltreatment experiences in the two groups of our sample and the difference between them based on the severity ratings of the scoring manual for the Childhood Trauma Questionnaire-Short Form (CTQ-SF) provided by Bernstein et al., (2003). This questionnaire assesses five subtypes of childhood maltreatment: emotional abuse, emotional neglect, physical abuse, physical neglect, and sexual abuse. We can score each subtype according to severity ratings considering a 5-point Likert scale (from "never" to "almost always").

In the figure 8 we present a radar plot of the severity of the subtypes of childhood maltreatment reported by Chilean participants from two groups, one being a clinical sample consisting of participants with a lifetime PD diagnosis, and the other one from participants from a community-based population without a lifetime PD diagnosis. These two groups were part of the second dataset.

As we can observe, participants with a lifetime diagnosis of a personality disorder tend to report higher mean severity scores on each type of childhood maltreatment while participants without this lifetime diagnosis tend to report lower scores in most subtypes. It was interesting to note, however, that these differences were not as high as in the first study. This is probably explained by the fact that the two groups compared in the first study were more extreme than these other groups. In the first study, one group consisted of German participants with very severe presentations of a BPD diagnosis, while the other one was composed of healthy controls. In this study, however, the comparison was between one clinical group with a lifetime PD diagnosis and another group form a community sample without a lifetime PD diagnosis. Individuals in the latter group reported not having received a PD diagnosis at any point of their lives, but this do not mean that they do not fulfil criteria for one or that they do not suffer from other mental health condition. This was important for us as an inclusion criterion to make this sample more naturalistic and thus increment the ecological validity. As in our first study, Emotional Abuse (M=3.18 SD=1.11 vs. M=2.07 SD=1.17) was the subtype presenting the highest difference between the two groups. However, in this study time this trait was followed by Sexual Abuse (M=2.79 SD=1.21 vs. M=1.99 SD=1.13) instead of Emotional Neglect (which was the second in the first study). As in the first study the third subtype of childhood maltreatment was Physical Neglect (M=2.19 SD=1.14 vs. M=1.65 SD=0.94). According to these results, the Emotional and the Sexual Abuse were the ones that best differentiate between the two groups.

Figure 3

Radar plot of the severity of the subtypes of childhood maltreatment reported by a Chilean sample consisting of a clinical group with individuals with a lifetime PD diagnosis and a community sample without a lifetime PD diagnosis
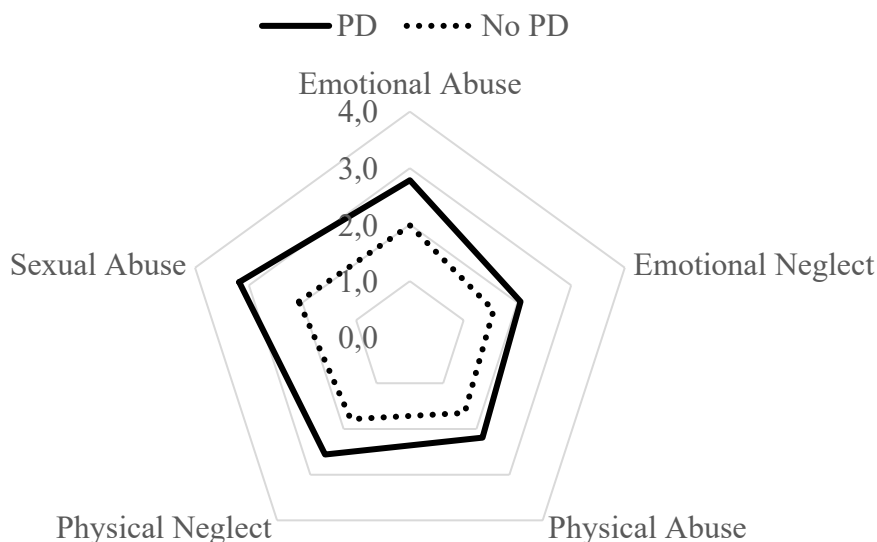
Note. Severity ratings were calculated based on the Childhood Trauma Questionnaire-Short Form (CTQ-SF) scoring manual presented by Bernstein et al., (2003). The higher the score is, the greater the severity of maltreatment is for that subscale. There are four categories of severity for each type of trauma type: 0= None; 1=Minimal; 2=Low; 3=Moderate, and 4=Severe.

Our next step was to explore the associations between adverse childhood experiences with the CTQ-BF (Bernstein et al., 2003), the self and interpersonal levels of personality functioning (Weekers et al., 2019a) and the four BPD symptom components from the ZAN-BPD:SRV (Zanarini et al., 2015b).

In Table 6, we present the correlation matrix of the associations between these variables. As we can observe, the associations between childhood maltreatment and the two levels of personality functioning are all statistically significant. The Pearson correlation coefficients between

childhood maltreatment and the levels of personality functioning are .404 for self-functioning, and .433 for interpersonal functioning. Moreover, the relationships between childhood maltreatment and BPD symptom components were also statistically significant in this study, being the four of them very similar in terms of the strongness of the relationship, ranging from .446 with the impulsive component to .489 in the relational component. Lastly the levels of personality functioning presented statistically significant associations with all BPD symptom components, being the strongest association between self-functioning and the affective symptom component, while being the smallest the relationship between the self-functioning and the relational component. In general, the self-functioning level was most strongly associated with the impulsive, the cognitive and the affective BPD symptom component, while the interpersonal one was associated with all of them but in less degree.

Table 6

Correlation Matrix of the adverse childhood experiences, the self and interpersonal levels of personality functioning, and each BPD symptom component from a combined Chilean and German sample consisting of participants from a clinical and a community-based sample

		Childhood_Maltreatment	Interpersonal_Functioning	Self_Functioning	BPD_Relational_Component	BPD_Impulsive_Component	BPD_Cognitive_Component	BPD_Affective_Component
Childhood_Maltreatment	Pearson Correlation	--						
	N	1312						
Interpersonal_Functioning	Pearson Correlation	.433**	--					
	Sig. (2-tailed)	<.001						
	N	1312	1327					
Self_Functioning	Pearson Correlation	.404**	.681**	--				
	Sig. (2-tailed)	<.001	<.001					
	N	1312	1327	1327				
BPD_Relational_Component	Pearson Correlation	.489**	.522**	.483**	--			
	Sig. (2-tailed)	<.001	<.001	<.001				
	N	489	489	489	489			
BPD_Impulsive_Component	Pearson Correlation	.446**	.498**	.537**	.599**	--		
	Sig. (2-tailed)	<.001	<.001	<.001	<.001			
	N	489	489	489	489	489		
BPD_Cognitive_Component	Pearson Correlation	.478**	.621**	.676**	.615**	.616**	--	
	Sig. (2-tailed)	<.001	<.001	<.001	<.001	<.001		
	N	489	489	489	489	489	489	
BPD_Affective_Component	Pearson Correlation	.479**	.602**	.713**	.640**	.604**	.636**	--
	Sig. (2-tailed)	<.001	<.001	<.001	<.001	<.001	<.001	
	N	489	489	489	489	489	489	489

**· Correlation is significant at the 0.01 level (2-tailed).

Note: The adverse childhood experiences were assessed with the CTQ-SF (Bernstein et al., 2003), the levels of personality functioning with the LPFS-BF 2.0 (Weekers et al., 2019a) and the ZAN-BPD SRV (Zanarini et al. 2015)

In the figure 9 we present a bar chart of the two levels of dysfunction in personality, the self-functioning of a Chilean sample consisting of a clinical group with individuals with a PD lifetime diagnosis, and a community sample that consisted of individuals from. Community-based population without a lifetime PD diagnosis. These two groups were part of the second dataset.

As we can observe, participants with a lifetime diagnosis of a personality disorder tend to report about one point higher mean scores on each the two dimensions of dysfunction in personality comparing to the community sample group. This difference was also seen on the score of the general level of personality dysfunction. The largest differences in the levels of personality dysfunction between these two groups were in the self-dysfunction where the clinical group with a lifetime PD diagnosis presented higher scores.

Figure 4

Severity of impairment in the level of personality functioning in both self and interpersonal dimensions reported by participants from the Chilean sample consisting of a clinical group with a lifetime PD diagnosis and a community-based sample

	Levels of Personality Dysfunction (Total)	Levels of Self-Dysfunction	Levels of Interpersonal-Dysfunction
▪ With PD	2,79	3,05	2,54
▪ Without PD	1,81	1,98	1,65

▪ Without PD   ▪ With PD
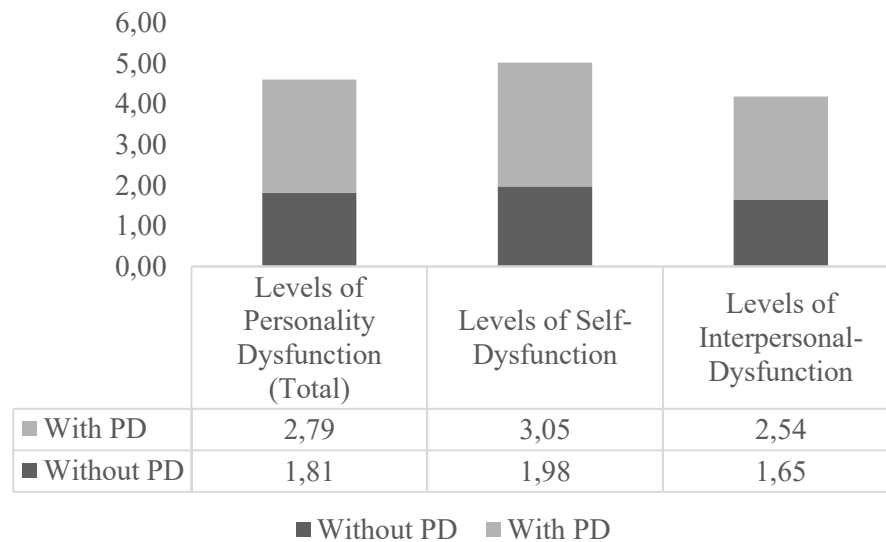
Note. The levels of personality dysfunction were assessed with the LPFS-SR 2.0 (Weekers et al., 2019b). The mean scores levels of personality functioning were calculated based on the

mean of the total scores in each of the three columns. The higher the mean is the greater the level of impairment.

6.2.2 *Translation and validation of scales for assessing personality disorders from the dimensional model in the Chilean population*

6.2.2.1 *Translation and validation of The Levels of Personality Functioning Scale Brief Version 2.0 (Weekers et al., 2019a) for assessing personality disorders from the dimensional model in the Chilean population*

The LPFS-BF 2.0 (Weekers et al., 2019) is a brief self-report for assessing the levels of personality functioning. It consists of two scales, one for assessing the level of impairment in self-functioning, and the other for assessing the level of impairment in the interpersonal functioning.

We first calculated the construct validity, which is the extent to which a group of measured items accurately reflects the latent theoretical constructs they are supposed to measure. As a result, construct validity is concerned with measurement precision. Evidence of construct validity ensures that item measures derived from a sample accurately reflect the actual score found in the population (Hair, 2019).

6.2.2.1.1 *Construct validity:*

In table 7, we present previous models that has been proposed by authors as results of their confirmatory factor analyses.

Table 7

Fit indexes of previously proposed models for Confirmatory Factor Analyses of the LPFS-BF 2.0 (Weekers et al., 2019a)

	x^2	CFI	TLI	RMSEA	RMSR
One Factor					
(Morey et al., 2015)	<.00	.986	.982	.035	.047
Two Factors					
(Berghuis et al., 2013)					
Zimmermann et al., 2015)					
(Weekers et al., 2019a)	<.00	.926	.939	.071	.029
Bi-Factor					
	<.00	.999	.998	.012	.018

Note: The Dutch version (Weekers et al., 2019) used a two factor approximation.

Two-Factor structure: The two-factor structure where items 1 to 6 loaded into the "Self-Functioning" Dimension, and items 7 to 12 loaded into the "Interpersonal functioning" dimension showed a good fit to the data (TLI = .986. CFI = .982. RMSEA = .035 (90% CI = .021 - .047). RMSR < .029). All factor loadings were above .4, and both latent factors were highly correlated (r = .847) which may indicate a potentially unifactor or bifactor structure. All relevant parameters can be seen in table 8.

One-Factor structure: The one-factor structure where items 1 to 12 loaded into a general "LPFS" score, didn't show a good fit to the data (TLI = .926. CFI = .939. RMSEA = .071 (90%CI = .061 - .082). RMSR < .047), so it was not further interpreted. All relevant parameters can be seen in table 8.

Bi-factor structure: The bi-factor structure with a general dimension where items 1 to 12 loaded and two orthogonal dimensions that captured the residual variability for the observed indicators into a "Self-Functioning" and "Interpersonal functioning" dimension showed a good fit to the data (TLI = .999. CFI = .998. RMSEA = .012 (90% CI = .000 - .032). RMSR < .018), where all factor loadings into the general factor were above .4. This structure showed a good fit to the

data, and it granted evidence to use the LPFS-BF 2.0 (Weekers et al, 2019) as the sum of all its 12 items and interpret both sub-dimensions separately when more fine-grained clinical information is needed. We present all relevant parameters in table 8 and a diagram of the proposed structure in figure 11.

Table 8

Factor loadings resulting from the three models we tested in the confirmatory factor analysis conducted with responses from the for the LPFS-BF 2.0 scale in a Chilean sample consisting of a clinical group of individuals with a PD lifetime diagnosis and a community-based group (Weekers et al, 2019)

Two Factor Model		One Factor Model		Bi-Factor Model	
	Estimates (S.E)		Estimates (S.E)		Estimates (S.E)
Self-Functioning		*Levels of Personality Functioning*		*Self-Functioning*	
Q1	.760	Q1	.744	Q1	.390
Q2	.795 (.052)	Q2	.774 (.052)	Q2	.472 (.178)
Q3	.784 (.052)	Q3	.765 (.052)	Q3	.353 (.141)
Q4	.688 (.049)	Q4	.673 (.050)	Q4	.325 (.148)
Q5	.851 (.051)	Q5	.830 (.050)	Q5	.467 (.159)
Q6	.653 (.056)	Q6	.639 (.057)	Q6	.353 (.153)
Interpersonal-Functioning		Q7	.594 (.058)	*Interpersonal-Functioning*	
Q7	.638	Q8	.506 (.053)	Q7	.386
Q8	.540 (.081)	Q9	.688 (.052)	Q8	.294 (.263)
Q9	.740 (.095)	Q10	.633 (.056)	Q9	.229 (.235)
Q10	.677 (.098)	Q11	.679 (.051)	Q10	-.080 (.221)
Q11	.720 (.114)	Q12	.630 (.054)	Q11	-.178 (.367)
Q12	.678 (.087)			Q12	.192 (.193)

	Levels of Personality Functioning
Q1	.650
Q2	.661 (.064)
Q3	.687 (.065)
Q4	.598 (.064)
Q5	.718 (.063)
Q6	.553 (.073)
Q7	.619 (.086)
Q8	.521 (.076)
Q9	.725 (.077)
Q10	.686 (.076)
Q11	.748 (.083)
Q12	.664 (.073)

In figure 10, we present a diagram of the proposed bi-factor structure of the LPFS-SR 2.0 (Weekers et al., 2019a) with a general dimension, where items 1 to 12 loaded, and two orthogonal dimensions that captured the residual variability for the observed indicators into a "Self-Functioning" and "Interpersonal functioning" dimension.

Figure 10

Diagram of the Levels of Personality Functioning Brief Version 2.0 Questionnaire
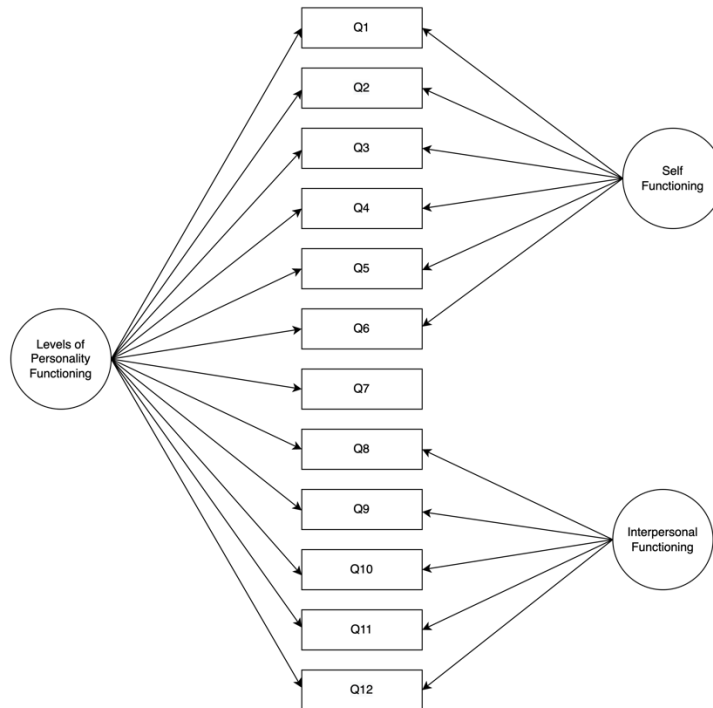
We then calculated the Cronbach's alpha to measure the internal consistency of our scale. Internal consistency refers to how all the items in a test measure the same concept or construct, referring to the test's inter-relatedness (Tavakol & Dennick, 2011).

6.2.2.1.2 Reliability

Cronbach's alpha for the overall score (all 12 items) was a = .91, and we did not find substantive changes if we dropped any of the items. For the subscale "Self-Functioning" it showed a Cronbach's alpha of a = .89, while "Interpersonal-Functioning" showed an a = .83. We did not find substantive changes if we dropped any of the items on any of these two subscales either. Overall, the whole scale and both subscales showed an adequate reliability based on their degree of internal consistency.

6.2.2.1.3 Convergent Validity:

In table 9, we present a correlation matrix with both the global score of the levels of personality dysfunction according to the LPFS-BF 2.0 (Weekers et al., 2019) and its subscales. This table shows positive and statistically significant correlations with depressive (r = .571 to .722) and anxious symptoms (r = .342 to .488).

Table 9

Correlation matrix of significant associations between the total levels of personality dysfunction, their self and interpersonal dimensions, and depressive and anxiety symptoms from a Chilean sample consisting of participants from a clinical sample with a lifetime PD diagnosis and a community-based sample without a PD diagnosis

		LPFS Total	LPFS Interpersonal	LPFS Self	Depressive Symptoms
LPFS Interpersonal	Pearson Correlation	.895[**]			
	Sig. (2-tailed)	.000			
	N	1327			
LPFS Self	Pearson Correlation	.936[**]	.681[**]		
	Sig. (2-tailed)	.000	<.001		
	N	1327	1327		
Depressive	Pearson Correlation	.714[**]	.571[**]	.722[**]	
	Sig. (2-tailed)	<.001	<.001	<.001	
	N	1266	1266	1266	
Anxiety Symptoms	Pearson Correlation	.481[**]	.342[**]	.488[**]	.257[**]
	Sig. (2-tailed)	<.001	<.001	<.001	.002
	N	145	145	145	145

[**]· Correlation is significant at the 0.01 level (2-tailed).

Note: We present a total score of the levels of personality dysfunction accompanied by a self-functioning and an interpersonal score from the Levels of Personality Functioning Scale Brief Form 2.0 (LPFS-BF 2.0; Weekers et al., 2019). We assessed depressive symptoms with the Patient Health Questionnaire (PHQ-9) (Kroenke et al., 2001), and anxiety symptoms with the Penn State Worry Questionnaire (PSWQ-8) (Meyer et al., 1990).

Cut-off Score for the LPFS-BF 2.0 (Weekers et al. 2019):

The ROC curve analysis with a Youden's method maximized both specificity and sensitivity (Hair, 2019) yielding an optimal cut-off score of 27 points. The area under the curve (AUC) was .855, which is an acceptable level of diagnostic accuracy (Mandrekar, 2010). Sensitivity, in this case, was .821, and specificity was .754. Because this instrument is a short screening tool, a higher sensitivity may be of particular interest. It may help clinicians capture problems in

personality functioning and further discard if that is the case. The positive predictive value (the probability that a patient with a positive test will have problems in personality functioning) was .40, while the negative predictive value (the likelihood that an individual with a negative test does not present impairments in personality functioning) was .95. Given these results, the LPFS-BF 2.0 (Weekers et al., 2019) may be a suitable tool for screening impairments in personality functioning. However, we should conduct a clinical interview after this screening to compensate for specificity decrease and positive predictive value. We present the ROC Curve in figure 11.

Figure 11

ROC curves and AUCs for the Level of Personality Functioning Scale-Brief Form 2.0 (LPFS-BF 2.0; Weekers et al., 2019) scale in predicting a personality disorder in the Chilean sample consisting of a clinical group of individuals with a PD lifetime diagnosis and a community sample with individuals without a PD diagnosis
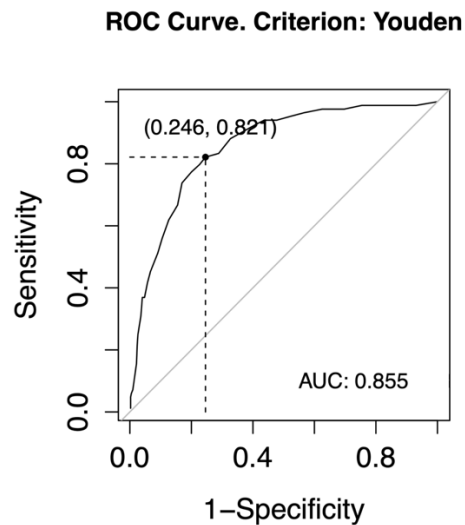
Translation and validation of the Levels of the Personality Inventory for DSM-5 and ICD-11 – Brief Form Modified (PID5BF+ M; Kerber et al., 2020) for assessing personality disorders from the dimensional model in the Chilean population

As in the previous validation with the LPFS-BF 2.0 (Weekers et al., 2019), our first step was again to calculate the construct validity, but this time with the PID5BF+ M. We computed a set of confirmatory factor analyses (CFA) using the theoretical structure of the test.

The PID5BF + M (Kerber et al., 2020), as derived from the PID-5 questionnaire (Krueger et al., 2012), was adapted from traditional models of personality traits, which are hierarchical constructs. This theoretical structure mirrors a hierarchical statistical model with two manifest indicators for each trait facet. These facets are indicators of six correlated trait domains (Negative Affectivity, Detachment, Antagonism, Disinhibition, Psychoticism, and Anankastia). We present a diagram of the proposed structure in figure 12.

Figure 12

Diagram of the Personality Inventory for DSM-5 Brief Version (PID5 BF +M; Kerber et al., 2020)
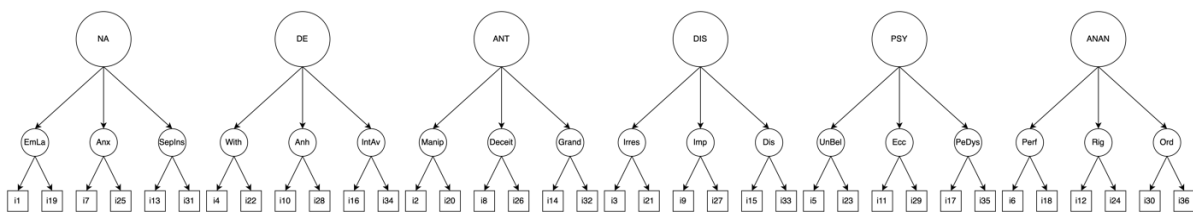
We followed the structure proposed by Bach et al., (2020). The authors included the last Trait domain, Anankastia, to build an instrument compatible with both DSM-5 AMPD and ICD-11 domains (APA, 2013; WHO, 2019). However, according to the literature, the authors who built the instrument reported difficulties with fitness when using the combined model. Because of

this potential complication, we decided to fit two models, one with Anankastia and the other without this domain.

Given the ordinal nature of the data, we used a Diagonally Weighted Least Squares (DWLS) estimator. We acknowledge robust versions of this estimator (WLSM and WLSMV). However, they tend to reject models overly (e.g., by computing decreased CFI fit indicators) when samples are relatively small, including categorical data, nonnormal distributions, and few categories (DiStefano & Morgan, 2014). Given our sample size, and because the PID5BF+ M (Kerber et al., 2020) consists of 36 items across four categories, we considered the robust estimators as inadequate for this study. Thus, we calculated the models using DWLS. Moreover, as the chi-square fitness test is usually asymptotic with medium to large sample sizes, we considered the criteria proposed by Hu & Bentler (1999) for deciding if the encountered fit to the data was acceptable for our model. This is TLI > .95. CFI > .95. RMSEA < .06, and RMSR < .08.

6.2.2.1.4 Construct validity

Model including Anankastia: The model including Anankastia showed a good fit to the data (TLI = .989. CFI = .988. RMSEA = .028 (90%CI = .023 - .032). RMSR < .050). However, it was impossible to compute the Gamma matrix given our sample size, so readers should take these results with caution. All factor loadings were statistically significant and above .4, while, as expected, all Trait domain correlations were also positive and statistically significant. Moreover, we found two Heywood cases (negative variances) for trait facets Perfectionism and Unusual Beliefs. This finding is reasonable as they are usually the result of factors composed of less than three manifest indicators (McDonald, 2014). Additionally, since their variances were small and not statistically significant, they were fixed as zero, we present all relevant parameters in table 12.

Model not including Anankastia: The model that did not include Anankastia also showed a good fit to the data (TLI = .994. CFI = .993. RMSEA = .021 (90%CI = .014 - .027). RMSR < .047) and did not present any convergence problem. All factor loadings were statistically significant and above .4, while, as expected, all Trait domain correlations were positive and statistically

significant. The Heywood case for Unusual Beliefs remained, so we fixed its variance to zero. We present all relevant parameters in table 10.

Table 10

Factor loadings resulting from the confirmatory factor analysis conducted with the responses of Chilean participants from a community and a clinical population in the PID5BF+ M scale (Kerber et al., 2020) belonging to the second dataset

Model with Anankastia			Model without Anankastia		
	Estimates (S.E)	P-Value		Estimates (S.E)	P-Value
Factor 1: Negative Affect			*Factor 1: Negative Affect*		
EmoLab	.898		EmoLab	.947	
PID_01	.743 (.069)	<. 001	PID_01	.736 (.069)	<. 001
PID_19	.731		PID_19	.738	
Anxiety	.773 (.072)	<. 001	Anxiety	.701 (.067)	<. 001
PID_07	.833 (.065)	<. 001	PID_07	.834 (.076)	<. 001
PID_25	.872		PID_25	.871	
SepInsec	.662 (.075)	<. 001	SepInsec	.713 (.076)	<. 001
PID_13	.686 (.075)	<. 001	PID_13	.675 (.075)	<. 001
PID_31	.711		PID_31	.722	
Factor 2: Detachment			*Factor 2: Detachment*		
Withdrawal	.786		Withdrawal	.757	
PID_04	.615 (.120)	<. 001	PID_04	.613 (.126)	<. 001
PID_22	.754		PID_22	.757	
Anhedonia	.785 (.179)	<. 001	Anhedonia	.802 (.197)	<. 001
PID_10	.824 (.056)	<. 001	PID_10	.823 (.054)	<. 001
PID_28	.826		PID_28	.827	
IntimacyAv	.785 (.143)	<. 001	IntimacyAv	.791 (.151)	<. 001
PID_16	.589 (.167)	<. 001	PID_16	.585 (.171)	<. 001
PID_34	.768		PID_34	.773	
Factor 3: Antagonism			*Factor 3: Antagonism*		
Manipulativeness	.774	<. 001	Manipulativeness	.774	
PID_02	.715 (.073)		PID_02	.725 (.073)	<. 001
PID_20	.740		PID_20	.729	
Deceitfulness	.923 (.119)	<. 001	Deceitfulness	.903 (.119)	<. 001
PID_08	.664 (.098)	<. 001	PID_08	.644 (.109)	<. 001
PID_26	.753		PID_26	.776	
Grandiosity	.772 (.111)	<. 001	Grandiosity	.787 (.113)	<. 001

PID _14	.585	(.098)	<. 001	PID _14	.593	(.096)	<. 001
PID _32	.594			PID _32	.586		

Factor 4:   Disinhibition   *Factor 4:   Disinhibition*

Irresponsiblty	.642			Irresponsiblty	.662		
PID _03	.695	(.110)	<. 001	PID _03	.701	(.103)	<. 001
PID _21	.502			PID _21	.498		
Impulsivity	.927	(.185)	<. 001	Impulsivity	.917	(.163)	<. 001
PID _09	.794	(.069)	<. 001	PID _09	.788	(.065)	<. 001
PID _27	.812			PID _27	.818		
Distractibilty	.719	(.174)	<. 001	Distractibilty	.717	(.156)	<. 001
PID _15	.834	(.066)	<. 001	PID _15	.832	(.060)	<. 001
PID _33	.834			PID _33	.836		

Factor 5:   Psychoticisim   *Factor 5:   Psychoticisim*

UnusualBelifs	.719			UnusualBelifs	1.000		
PID _05	.586	(.101)	<. 001	PID _05	.574	(.108)	<. 001
PID _23	.716			PID _23	.740		
Eccentricity	.882	(.093)	<. 001	Eccentricity	.879	(.099)	<. 001
PID _11	.812	(.056)	<. 001	PID _11	.829	(.055)	<. 001
PID _29	.713			PID _29	.715		
PerceptulDysrg	0.692	(.080)	<. 001	PerceptulDysrg	.679	(.082)	<. 001
PID _17	.765	(.099)	<. 001	PID _17	.757	(.108)	<. 001
PID _35	.750			PID _35	.758		

Factor 6:   Anankastia

Perfectionism	1.000		
PID _06	.730	(.076)	<. 001
PID _18	.722		
Rigidity	.894	(.080)	<. 001
PID _12	.747	(.086)	<. 001
PID _24	.763		
Orderliness	.782	(.069)	<. 001
PID _30	.766	(.093)	<. 001
PID _36	.716		

6.2.2.1.5 Reliability

Overall, the subscales presented acceptable to good reliability based on their degree of internal consistency being the highest Cronbach's alpha for Anankastia α = .82 and the lowest for Antagonism α = .73. Cronbach's alpha for Negative Affect was α = .81, followed by Psychoticism and Disinhibition, which presented the same value α = .79. Lastly, Cronbach's alpha for Detachment was α = .78.

6.2.2.1.6 Convergent Validity

As shown in table 11, a correlation matrix with all facet domains was positively and statistically significantly associated with the levels of personality functioning in terms of self and others (r = .430 to .720).

Table 11

Correlation matrix of significant associations between the trait domains of the PID5BF+ M (Kerber et al., 2020) and the two dimensions of the LPFS-BF 2.0 (Weekers et al., 2019) in Chilean participants from a clinical group consisting of a lifetime PD diagnosis and a community sample

		PID_5_PSY	PID_5_NA	PID_5_DISIN	PID_5_ANAN	PID_5_ANT	PID_5_DE	LPFS_INTER
PID_5_NA	Pearson Correlation	.436**						
	Sig. (2-tailed)	<.001						
	N	1340						
PID_5_DISIN	Pearson Correlation	.497**	.509**					
	Sig. (2-tailed)	<.001	<.001					
	N	1340	1340					
PID_5_ANAN	Pearson Correlation	.406**	.424**	.173**				
	Sig. (2-tailed)	<.001	<.001	<.001				
	N	1340	1340	1340				
PID_5_ANT	Pearson Correlation	.457**	.311**	.431**	.309**			
	Sig. (2-tailed)	<.001	<.001	<.001	<.001			
	N	1340	1340	1340	1340			
PID_5_DE	Pearson Correlation	.470**	.287**	.361**	.300**	.305**		
	Sig. (2-tailed)	<.001	<.001	<.001	<.001	<.001		
	N	1340	1340	1340	1340	1340		
LPFS_INTER	Pearson Correlation	.561**	.502**	.578**	.391**	.438**	.621**	
	Sig. (2-tailed)	<.001	<.001	<.001	<.001	<.001	<.001	
	N	1327	1327	1327	1327	1327	1327	
LPFS_SELF	Pearson Correlation	.575**	.675**	.575**	.384**	.358**	.582**	.681**
	Sig. (2-tailed)	<.001	<.001	<.001	<.001	<.001	<.001	<.001
	N	1327	1327	1327	1327	1327	1327	1327

. Correlation is significant at the 0.01 level (2-tailed).

Note: We present a maladaptive personality traits from the PID5BF +M (Kerber et al., 2019) total score of the levels of personality dysfunction accompanied by a self and interpersonal dysfunction score from the Levels of Personality Functioning Scale Brief Form 2.0 (LPFS-BF 2.0; Weekers et al., 2019). PID_5_PSY=Psychoticism, PID_5_NA= Negative Affect; PID_5_DISIN= Disinhibition, PID_5_ANAN= Anankastia, PID_5_DE= Detachment LPFS_INTER=Interpersonal dysfunction, LPFS_SELF=Self disfunction

6.2.3 Relationship between Adverse Childhood Experiences, Levels of Personality functioning and the main clinical components of BPD (affective, impulsive, relational, and cognitive) in a combined clinical and community-based Chilean and German sample

6.2.3.1 Model Specification of the Levels of Personality Functioning

We calculated a parallel mediation model where adverse childhood experiences predicted each of the BPD clinical components, mediated by levels of personality functioning, self-functioning, and interpersonal functioning (figure 13). As we used all possible paths, the models were saturated, so they had a perfect fit to the data as they could reproduce the original variance-covariance matrix perfectly (Asparouhov & Muthén, 2009; Hoyle, 2012; Kline, 2016; Rosseel, 2014). Accordingly, the model had four direct effects and eight mediation estimates, two for each BPD clinical component.

Figure 13

Diagram of a parallel mediation model of adverse childhood experiences, BPD symptom components, and the levels of personality functioning (self-functioning, and interpersonal functioning)
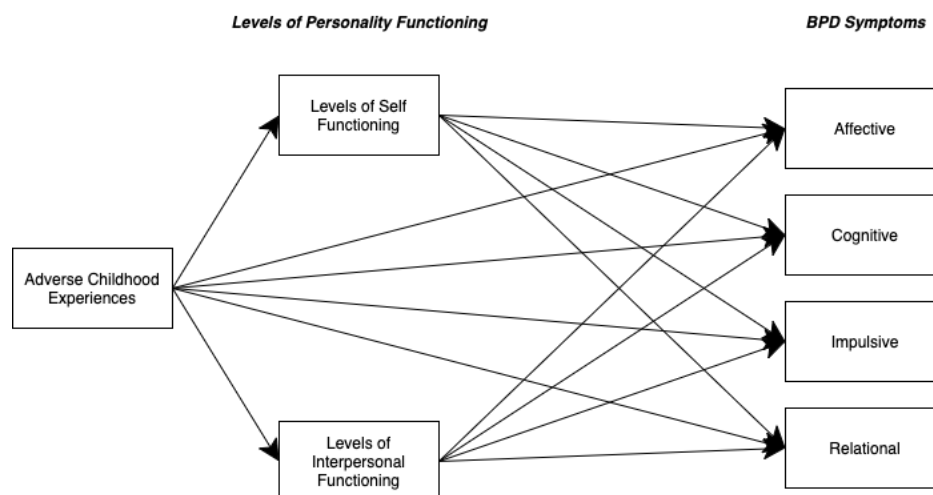
6.2.3.1.1 Total effects from Adverse Childhood Experiences to BPD Clinical symptom components

First, we looked at the total effect, which is the effect of the adverse childhood experiences on each BPD symptom component without the mediators included (Rockwood & Hayes, 2020). We looked for any change in adverse childhood experiences' impact on BPD symptoms at all. As expected, the effect of adverse childhood experiences on BPD symptoms was positive and statistically significant when we did not consider the mediators (levels of personality functioning). This effect means that we found associations between our sample's adverse childhood experiences and affective, cognitive, impulsive, and relational symptoms.

The effect of adverse childhood experiences on affective (Total effect; b= .479, z (0), p = .000), cognitive (Total effect; b= .478, z (0), p = .000), impulsive (Total effect; b= .446, z (0), p = .000), and relational symptoms (Total effect; b= .489, z (0), p = .000) were very similar in their intensity. It seems that in this model, and with this sample, the predictability of adverse childhood experiences is similar for all BPD symptom components.

6.2.3.1.2 Effects of Adverse Childhood Experiences to Levels of Personality Functioning

As in the first study, our next step was to test the effect of adverse childhood experiences on levels of personality functioning. As expected, the effect of adverse childhood experiences on levels of personality functioning were positive and statistically significative. For both self-functioning (Path "a"; b= .469, z (0) = 11.460, p=.000), and interpersonal functioning (Path "d"; b= .481, z (0) = 11.529, p=.000). The effect size was similar for both.

6.2.3.1.3 Effects of Adverse Childhood Experiences and Levels of Personality Functioning on BPD Symptoms

Third, we simultaneously tested the levels of personality functioning and the adverse childhood experiences' effect on BPD symptoms. A decrease in the total effect of adverse childhood experiences on BPD symptoms when we included the levels of personality functioning into the

equation would indicate a potential mediation effect. As we calculated the path analyses, we did this simultaneously for every mediator and dependent variable.

As expected, the total effect of adverse childhood experiences decreased when we included both levels of personality functioning into the equation.

The effect of adverse childhood experiences on affective symptoms decreased in 65.9% (Path .479; b= .163, z (0) = 4.077, p=0.00), on cognitive symptoms in 64.8% (Path "c2"; b= .168, z (0) = 3.807, p=.00), on impulsive symptoms on 50.4% (Path "c3"; b= .221, z (0) = 4.191, p=.00), and on relational symptoms on 41.1% (Path "c4"; b= .288, z (0) = 5.463, p=.00). In decreased order, we can see that affective symptoms had the highest decrease, followed by cognitive, impulsive, and relational symptoms. Nevertheless, because neither of these decreases turned to non-significant, we discarded any complete mediation effect, implying that the potential effect, if there are any, are partially explained by the mediator.

6.2.3.1.4 Proposed Mediational Models

Once we established a clear decrease in the direct effect, we needed a formal test of the proposed mediational mechanisms.

6.2.3.1.4.1 The role of interpersonal functioning in the relationship between Adverse Childhood Experiences and the symptom components of BPD

Affective Symptoms. The indirect (mediation) effect from adverse childhood experiences on affective BPD symptoms through interpersonal functioning was statistically significant (b=.059, 95% CI= .002- .016, z (0) = 2.496, p= .013). This effect would imply that higher levels of adverse childhood experiences would be associated with a higher tendency to present interpersonal functioning impairments, which may in turn be associated with higher affective symptoms.

Cognitive Symptoms. The indirect (mediation) effect from adverse childhood experiences on cognitive BPD symptoms through interpersonal functioning was also statistically significant (b=.106, 95% CI= .005- .017, z (0) = 3.617, p= .000). This effect would imply that higher levels of adverse childhood experiences would be associated with a higher tendency to present

impairments in interpersonal functioning, which may in turn be associated with higher cognitive symptoms.

Impulsive Symptoms. The indirect (mediation) effect from adverse childhood experiences on impulsive BPD symptoms through interpersonal functioning was also statistically significant (*b*=.077, 95% CI= .001- .012, *z* (0) = 2.325, *p*= .020). This effect would imply that higher levels of adverse childhood experiences would be associated with a higher tendency to present impairments in interpersonal functioning, which may in turn be associated with higher impulsive symptoms.

Relational Symptoms. The indirect (mediation) effect from adverse childhood experiences on relational BPD symptoms through interpersonal functioning was statistically significant (*b*=.133, 95% CI= .006- .018, *z* (0) = 3.981, *p*= .000). This effect would imply that higher levels of adverse childhood experiences would be associated with a higher tendency to present impairments in interpersonal functioning, which may in turn be associated with higher relational symptoms.

6.2.3.1.4.2 *The role of self-functioning in the relationship between adverse childhood experiences and the clinical components of BPD*

Affective Symptoms. The indirect (mediation) effect from adverse childhood experiences on affective BPD symptoms through self-functioning was statistically significant (*b*=.257, 95% CI= .030- .049, *z* (0) = 7.979, *p*= .000). This effect would imply that higher levels of adverse childhood experiences would be associated with a higher tendency to present self-functioning impairments, which may in turn be associated with higher affective symptoms.

Cognitive Symptoms. The indirect (mediation) effect from adverse childhood experiences on cognitive BPD symptoms through self-functioning was also statistically significant (*b*=.204, 95% CI= .015- .027, *z* (0) = 6.736, *p*= .000). This effect would imply that higher levels of adverse childhood experiences would be associated with a higher tendency to present self-functioning impairments, which may in turn be associated with higher cognitive symptoms.

Impulsive Symptoms. The indirect (mediation) effect from adverse childhood experiences on impulsive BPD symptoms through self-functioning was also statistically significant ($b=.148$, 95% CI= .008- .018, $z(0) = 4.972$, $p=$,000). This effect would imply that higher levels of adverse childhood experiences would be associated with a higher tendency to present self-functioning impairments, which may in turn be associated with higher impulsive symptoms.

Relational Symptoms. The indirect (mediation) effect from adverse childhood experiences on relational BPD symptoms through self-functioning was statistically significant ($b=.068$, 95% CI= .002- .011, $z(0) = 2.653$, $p=$ .008). This effect would imply that higher levels of adverse childhood experiences would be associated with a higher tendency to present self-functioning impairments, which may in turn be associated with higher relational symptoms.

We present the final model with their respective path coefficients in figure 14.

Figure 14

Path analysis of the relation between adverse childhood experience, the levels of personality functioning and BPD symptoms in a combined Chilean and German sample consisting of individuals from a clinical group with a lifetime PD diagnosis and a community-based sample
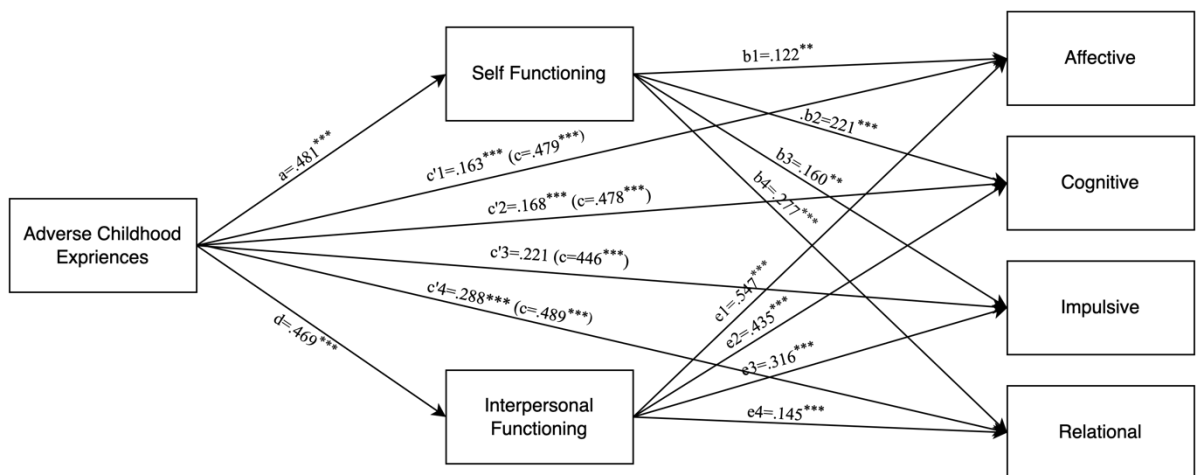
6.2.3.1.5   What can we learn from this model?

First, as in the first study, adverse childhood experiences were predictors of all symptom components of BPD symptoms. Those who reported having experienced childhood maltreatment during their infancy had higher chances of presenting affective, cognitive, impulsive, and relational BPD symptoms. All symptom components were similarly affected by childhood trauma, with very slight differences in intensity.

Second, adverse childhood experiences were also positively associated with self and interpersonal functioning scores. Again, this effect was very similar but slightly higher for interpersonal functioning than self-functioning.

Third, when comparing the mediation models, we can observe that they were statistically significant. It seems like both levels of personality functioning are good predictors of BPD symptoms.

We found that self-functioning was the best overall mechanism when considering effect sizes concerning the eight mediation effects. The mechanism from childhood trauma to affective symptoms through self-functioning was the one with the bigger effect size (b = .257). The following mechanism in terms of intensity was from childhood trauma to cognitive symptoms through self-functioning (*b*= .204), followed by self-functioning to impulsive symptoms (*b*= .148), which was quite like the mechanism from childhood trauma to relational symptoms through interpersonal functioning (*b*= .133), and cognitive symptoms through interpersonal functioning (b= .106). The mechanism from childhood trauma to impulsive symptoms through interpersonal functioning was slightly lower (*b*= .077). The lowest (but still statistically significant) effect was found from childhood trauma to relational symptoms through self-functioning (*b*= .068), and from childhood trauma to affective symptoms through interpersonal symptoms (*b*= .059). We found that the highest effect size mean of the two levels of personality functioning mechanism was for self-functioning (*b*=.169) followed by interpersonal functioning (*b*=.09).

Lastly, we analyzed the best mechanism from childhood trauma for each BPD symptom component.

For the affective symptoms, the best mechanism was through self-functioning ($b=$ .257), followed by interpersonal ($b=$ .059). In the case of cognitive symptoms, the best mechanism was through self-functioning ($b=$ .204), followed by interpersonal ($b=$ .106). For impulsive symptoms, the best mechanism was through self-functioning ($b=$ .148), followed by interpersonal ($b=$ .077). Finally, the best mechanisms for relational symptoms where through interpersonal ($b=$ .133), followed by self-functioning ($b=$ .059).

As expected, self-functioning as a mechanism from childhood trauma was best for affective, cognitive, and impulsive symptoms. While for relational symptoms, the best mechanism was through interpersonal functioning.

6.3   What can we learn from these two studies?

Overall and considering the two studies, we selected the best mechanisms from adverse childhood experiences to each BPD symptom component.

The best mechanism from adverse childhood experience to affective symptoms was through Negative Affect ($b=$ .333), followed by Extraversion ($b=$.301), self-functioning ($b=$ .257), Psychoticism ($b=$.188), and interpersonal functioning ($b=$ .059).

The best mechanism to cognitive symptoms was through Extraversion ($b=$ .278), followed by Negative Affect ($b=$ .260), Psychoticism Negative Affect ($b=$ .245), self-functioning ($b=$ .204), and lastly interpersonal functioning ($b=$ .106).

The best one to relational symptoms was through Negative Affect ($b=$ .367), followed by Extraversion ($b=$ .260), Psychoticism ($b=$ .134), interpersonal functioning ($b=$ .133), and lastly self-functioning ($b=$ .068).

Finally, for impulsive symptoms, the only two significative mechanisms were through the levels of personality functioning, being the best self-functioning ($b=$ .148), followed by interpersonal ($b=$ .077).

We then calculated the mean effect sizes of all studied mechanisms that were statistically significant. The highest mean effect size was for affective ($b=$ .228), followed by cognitive

symptoms (*b*= .204), relational (*b*= .192), and lastly impulsive symptoms (*b*= .113). The affective symptoms were the best predicted among all through the studied mechanisms.

Our next step was to calculate the mechanisms with the highest effect size among all finding that it was Negative Affect for predicting relational (*b*=.367) and affective symptoms (*b*= .333), followed by Extraversion for again predicting affective (*b*= .301), cognitive symptoms (*b*= .278), and relational symptoms (*b*= .260). The cognitive symptoms were equally predicted by Negative Affect (*b*= .260).

The affective, cognitive, and relational dimensions presented several significant mediators acting in the relationship between adverse childhood experiences and symptoms with five mediators (two maladaptive traits, one FFM trait and both subscales of personality functioning). Impulsive symptoms only had two significant mediators.

Lastly, we calculated the mean effect size of each mechanism to understand the additive value of each mediators considering all BPD symptoms. Negative Affect was the mechanism with a larger mean effect size (*b*= .271*)*. This was followed by Extraversion (*b*= .199*)* and Psychoticism (*b*= .187)*. Self-functioning (*b*= .169) presented higher mean effect size than interpersonal functioning (*b*=.09*)*.

In terms of mean effect sizes, it seems that personality traits, on average, work two times better as mechanisms in the relationship between adverse childhood experiences (*b*= .219), and BPD symptoms than the levels of personality functioning (*b*= .132) in this dissertation. If we disaggregate personality traits into maladaptive and FFM traits, we can see that the best mechanism was through the maladaptive personality traits (*b*= .229), and particularly Negative Affect. The following mechanism was through HEXACO-60 personality trait (*b*= .199), particularly Extraversion (Ashton & Lee, 2009). Lastly, the levels of personality functioning (*b*= .132), in which the self-functioning presented much larger effect sizes than the interpersonal functioning.

7   Discussion

During the last decade, we have witnessed a dramatic shift from simplistic categorical approaches for understanding personality disorders to alternative, more complex dimensional-based approaches that align very well with how clinicians understand, diagnose, and treat personality disorders. These changes have created the opportunity to make an early diagnosis during adolescence for timely interventions that could help change the trajectory of the disorder during adulthood, opening new doors for re-thinking what we knew about risk factors, particularly adverse childhood experiences. The purpose of this thesis was to build upon this framework of thought and aimed to take a step towards understanding the relationship between adverse childhood experiences, personality functioning and traits, and the standard symptomatic components of borderline personality disorder.

The first study of this thesis focused on the role of FFM and maladaptive personality traits on the relationship between adverse childhood experiences and BPD symptoms.

The second study of this thesis focused on the role of the levels of personality functioning on the relationship between adverse childhood experiences and BPD symptoms.

There is a gap in theoretical and empirical approaches to personality disorders. On the one hand, there is the tradition of personality traits, mainly built on empirical data. A great example is how the theoretical traits tradition has been searching for the best fitting model to explain how to describe individuals (i.e. factorial structures of three, five, or six personality traits) for years (Eysenck, 1979; Lee & Ashton, 2004; McCrae & John, 1992). On the other hand, the approach for understanding personality disorders has been mainly theoretical, and some of those theories, with very little interest in empirical testing. The current research, while taking an essential step in building on the newer dimensional perspective that challenges the categorical one, is exploratory. Therefore, we will need further research initiatives before these results can be applied to a clinical context.

To this end, the following discussion first summarize the overall results with an exhaustive reflection of their implications and how they relate to the existing literature.

The discussion of the results is organized in six sections mirroring the order in which we conducted the analyses.

The first three sections discuss general reflections regarding premises we consider for making our first decisions when designing and conducting the two studies of this dissertation.

First, we present the *BPD as a multidimensional construct: A problem of lumping and splitting* section, where we discuss why we decided to assess BPD in terms of components instead of assessing a global BPD score. Then the *Adverse childhood experiences and clinical components of BPD* section where we discuss the expected relationship found in both of our studies regarding adverse childhood experiences and BPD components. Lastly, we present the *Can impulsive symptoms be "sudden" severity indicators of BPD?* section, where we discuss our reflections of why the levels of personality functioning predicted impulsive BPD components while none of the personality traits did.

The next two sections discuss results from the first study.

The *Are personality traits from the FFM relevant to BPD development?* section reflect on the fact that at least in our study, the FFM personality traits predicted BPD symptom components as much as maladaptive traits did. We discuss how even one of the FFM trait was the best predictors among all and the implications of this. The next section, *Which traits predict BPD symptoms?* discuss the implications of the step-by-step process we conducted for deciding which trait to include in the two models about personality traits. This section presents three subsections, each one representing one umbrella construct derived from the personality trait domains we found most relevant in our models (emotional, social, and thought patterns). These subsections are: *The emotional pattern: Is neuroticism an umbrella construct for the emotional personality pattern found in our study; The social pattern: BPD as an introverted form of Emotionality or as an emotional consequence of frequent social failures?* and the *Thought pattern: Psychoticism as a severity indicator in BPD).*

The next three section discuss the results we found on the second study.

The first one. *Validating the questionnaires for assessing the levels of personality functioning and maladaptive traits in the Chilean population*, reflect on the translation, and validation of the two questionnaires regarding criterion A and B, we conducted for being able to use them in a Chilean Spanish speaking population. The next section, called *Levels of Personality Functioning: Early screeners of self- related and interpersonal-related BPD symptoms?* present

our findings regarding the predictive role that the levels of personality functioning had on BPD symptom components.

We lastly present one final section discussing the global results of this dissertation, mainly derived from both studies, and including reflections on the general mechanisms of personality traits and functioning within the relationship between adverse childhood experiences and BPD components. This section is called *Can personality functioning (criterion A) and personality traits (criterion B) and act as mediators in the relationship between adverse childhood experiences and BPD components*.

The paragraphs that follow cover a discussion about *limitations*, *research implications*, *clinical implications*, and *future areas of research*.

7.1   BPD as a multidimensional construct: A problem of lumping and splitting

In terms of the multidimensionality of the BPD construct, we want to start reflecting upon our decision of using symptomatic components instead of using global scores, along with the reason behind including four symptomatic components and no other symptomatic structure. Afterward, we present a discussion about our findings regarding the differential relationships between adverse childhood experiences and the four BPD components.

As we traditionally used it to diagnose, BPD presented a *"yes-no"* binary output, where individuals needed to fulfill at least five out of nine criteria to present the disorder (APA, 2013). This procedure is a categorical diagnosis, which is a rather usual way of thinking for human beings (Caplan, 2019). In mental health, and particularly in psychiatry, this tradition of seeing symptoms and grouping them for other purposes mirrors the so-called "lumping" effect (vs. the "splitter effect"). The first one refers to those who advocate broad categorizations based on overarching commonalities (who tend to connect by finding links, interfaces, and overlaps), while the second emphasizes unique characteristics by prioritizing a more refined structure (Norton & Paulus, 2016; Rousseau, 2009). For example, the following symptoms: 1) extreme attempts to avoid real or imagined abandonment, 2) intense and unstable interpersonal relationships, 3) lack of a sense of self or unstable self-image, 4) impulsivity that is potentially self-damaging, and 5) recurrent suicidal behavior or self-mutilating behavior, would be lumped into the Borderline Personality Disorder category (APA, 2013). This decision seems to be pragmatic to save time for researchers and clinicians. However, a natural consequence of lumping individuals who reported diverse psychiatric symptoms into one undifferentiated category is obscuring heterogeneity and differences between symptoms and individuals (Fried, 2015; Olbert et al., 2014; Zimmerman et al., 2015). This practice, in turn, contributes to the lack of progress in the discipline, given that the same category can mean very different symptomatic presentations (and thus the response to treatments and prognosis).

Even though this argument was presented in a scientific article by Fried (2017) to show the lack of content overlap in 52 depression scales, this phenomenon is not unique for depression or BPD but common to most psychiatric categories. This solution may not be the only option, as, for example, other specialists such as neurologists tend to do the opposite. When faced with

individuals with similar symptoms, they try to disaggregate these into multiple diagnoses based on different criteria (Caplan, 2019).

There is no one-fit-all or better approach for understanding mental disorders (Rousseau, 2009). However, as theoretical lumpers, we do have the problematic consequences of not explaining disorders in terms of mechanisms, with the consequence of not being able to adequately translate diagnosis into treatment strategies. Moreover, based on the heterogeneity within the category, we may find noise when trying to find precise correlates such as biological underpinnings, prognosis, and even developmental trajectories. As a discipline, our tentative solution for this has been to expand the number of diagnostic entities, which usually become unexplained again because they suffer from the same core problem (Caplan, 2019).

In the field of personality research, the tradition has been more varied, Individuals who studied personality traits have been mainly splitters (i.e., focusing on identifying individual differences). In contrast, researchers focused on studying personality pathology tend to make a combination of erratic back and forward efforts between splitters and lumpers. For example, in the DSM-IV (APA, 1994) , there was one lumped diagnostic entity called "personality disorders" but there were different splitter subtypes with their specific criteria. Considering that groups from diverse orientations (personality traits tradition, personality disorders from a psychodynamic perspective), are thinking about personality from a different level in the splitter-lumper classification, it is not surprising that we constantly fail to reach a consensus. Moreover, it is reasonable to think that we present problems such as heterogeneity (i.e., members with the same diagnosis having less mutually in common), comorbidity (i.e., members having more commonalities with outsiders than with other members of their diagnostic group), arbitrary criteria (i.e., diagnosis based on conventions, consensus and politic decisions), and over-use of Personality disorder not otherwise specified PD-NOS (i.e., needed for health systems when we realize some individuals do not fit well in any of what we, lumpenly created) presented by scholars (Skodol et al., 2002).

Thus, we get consequences in both clinical practice and research. Even though there are evidence-based treatments with clear symptomatic benefits such as Mentalization-based therapy (MBT) (Bateman & Fonagy, 2004, 2016), Transference-Focused Psychotherapy (TFP) (Clarkin et al., 1999), Schema therapy (ST) (Young et al., 2003), or Dialectical Behavioral Therapy

(DBT), some patients do not improve as expected (Storebø et al., 2020). On the other hand, in a research context we get contradictory results (findings showing that adverse childhood experiences are related to BPD but are neither sufficient or necessary for its development, or findings about significant effect sizes vary a lot among systematic reviews and meta-analyses) (Ibrahim et al., 2018; Porter et al., 2020; Widom et al., 2009).

We do not plan to solve this philosophical problem of psychiatric theoretical practices. However, our findings orient us to reflect upon this topic. Particularly, in this moment of history where we seem to somehow be more aligned than before to reach consensus -among lumpers and splitters- on how personality disorders, as a hybrid diagnostic entity, might now serve clinicians to select evidence-based treatments that are currently known as effective to those who are in need and better predict symptomatic improvements (Simms, 2021).

To understand our results and the different mechanisms involved, we need to consider that latent symptom components (affective, interpersonal, cognitive, and impulsive) that are linked by content (BPD being a higher structure), vary similarly across individuals. This position has been recognized by different authors, with contradictory findings of the number of clinical components being three (affective, interpersonal, and impulsive) , or four (affective, interpersonal, impulsive, and cognitive) the most frequent results but one and two found by several researchers as well (for a more profound discussion on this topic refer to Hawkins et al., 2014). Even though the theoretical model proposed by Leichsenring et al., (2011) considered only three components, we decided to include four for pragmatic reasons, considering we only found one instrument that addressed BPD in different components, the ZAN-BPD: SRV (Zanarini et al., 2015) , which considered four instead of three. The fourth component consists of cognitive symptoms (additional to the affective, interpersonal, and impulsive ones), related to identity disturbance, and suspiciousness/feelings of unreality.

We want to highlight the first result related to adverse childhood experiences predicting BPD symptoms differentially. Adverse childhood experiences differentially predicted the four BPD symptom components (affective, impulsive, relational, and cognitive symptoms), making us think that traumatic events may impact BPD symptoms in general, but more profoundly within some domains of the disorder than others. None of these findings are surprising, as symptoms belonging to some domains (e.g., affective) are often close in content and, in some instances,

maybe even overlapping within the content of the traumatic experience (e.g., emotional abuse or neglect).

This result is an important finding to discuss because it aligns with our initial hypothesis of heterogeneity and the multidimensional nature of BPD and the further intention of finding an instrument that addresses the BPD construct in this way. Our findings highlight the importance of prioritizing approaching BPD (and probably other mental health disorders) in terms of broader transdiagnostic mechanisms instead of global diagnostic scores when assessing prediction for research or clinical practice.

Moreover, the mechanisms from adverse childhood experiences to symptomatic components differed in size and in terms of the mediator (i.e., the personality trait or functioning) that worked best as a mechanism. The best mechanism for affective, relational, and cognitive symptoms was through personality traits (Negative Affect for the affective and relational component, and Extraversion for the cognitive). For the impulsive ones, the best mechanism was through personality functioning (particularly self-functioning). Both the effect sizes and the predictor changed depending on the component result, partly explaining the different results found in the literature about adverse childhood experiences as risk factors for BPD. As it happened with the 52 depression symptoms found by Fried (2017), it is possible that results in the literature somehow vary according to the instrument used and the theoretical background behind it. For example, a study where the assessment of BPD is with an instrument that presents affective dysregulation items as the focus of BPD might find more robust relationships between BPD and adverse childhood experiences compared to a study where the assessment is with an instrument that mainly presents cognitive distortion items referring to BPD. The latter would happen even if the questionnaire considered items from any of the other three, but most represent one component the most.

This finding also has clinical implications in terms of psychotherapeutic interventions. We know, for example, that the different evidence-based interventions with beneficial results for BPD such as Mentalization-based therapy MBT (Bateman & Fonagy, 2004, 2016). Transference-Focused Psychotherapy (TFP) (Clarkin et al., 1999) , Schema therapy (ST) (Young et al., 2003). or Dialectical Behavioral Therapy (DBT) (Linehan, 1993) , have different theoretical understandings of BPD and psychotherapy in general. For example, schema therapy and dialectical behavioral therapy have a cognitive-behavioral background, while mentalization-

based therapy and transference-focus therapy have a psychoanalytical background (Cristea et al., 2017). Moreover, clinicians from these different theoretical orientations also use various interventions to work on a specific mechanism. For example, behavioral therapy prioritizes the affective component's work, while transference focus therapy prioritizes interpersonal work during the session. This finding might contribute to understanding why they could be similarly effective despite these treatments being so different. Let us take an analogy from network analysis (i.e., complex networks of interacting symptoms instead of summative criteria). Each treatment modality might move the dynamic symptomatic network from a different node, where each node represents a criterion for each of the four symptomatic components (affective, interpersonal, impulsive, and cognitive). For a more profound discussion on network analysis, refer to Fried et al., (2017) or (Bringmann et al., 2022), and for examples of network analysis on BPD, refer to Leising et al., (2020) or Richetin et al., (2017).

In terms of the different effective treatments for BPD, we might again refer to the splitters and lumpers discussion. From the perspective of splitters, the specific technique used by the clinician through (choose your favorite between cognitive behavioral/psychoanalysis) acted on the mechanism for symptomatic reduction. While for lumpers, it is the common factors and the shared psychotherapeutic mechanisms responsible for the symptomatic reduction. Our results and the presented discussion open the possibility of thinking about pathways in terms of transdiagnostic mechanisms, which are those that transcend the diagnosis (e.g., affective symptoms found in BPD, but also in depressive disorders and post-traumatic stress disorders), and accounts for the multi causality that we frequently observe when evaluating longitudinal consequences of adverse childhood experiences during across the lifespan.

7.2   *Adverse childhood experiences and clinical components of BPD*

Our *Hypothesis 1* (study 1) and our *Hypothesis 6* (study 2) were that higher levels in adverse childhood experiences would be associated with higher levels of the main clinical components of psychopathology (affective dysregulation, behavioral dysregulation, and disturbed relatedness). We additionally added the "cognitive distortions" component.

As expected, and throughout all our models, we found that adverse childhood experiences predicted all BPD symptom components. Even though the effect size varied depending on the component, adverse childhood experiences seem to predict total BPD score (i.e., the total score from the four components combined).

Jeff Brown, an American writer, and psychotherapist describe trauma in his book Soulshaping as a "deeply embodied experience of suffering that fastens itself tightly to the cellular (and soulular) structure of every person who is victimized." This wound, according to the author, can show up in the most subtle or complicated ways:

> "(…) as an over-reaction to a slight in a relationship. As a pang of irrational jealousy that arises out of nowhere. As a dramatic over-reaction to the end of a friendship that wasn't actually that significant in your life. As a desire to get back together with someone you rejected, when you find out they are now seeing someone else. As a certainty that you are about to be fired, that is not grounded in the reality of your work circumstances. As a sudden fear of going out in public, because it feels less triggering to be alone at home where no one can reject you, (…) a perpetual need for freedom from attachment, (…) a desperate need for connection (…) as a fear of engulfment (…) as a tendency towards co-dependency (…) in the form of a monastic life, in an effort to avoid one's triggers with the world, (…) in the form of a life of service, in a determined effort to become so needed that no one leaves you, (…) in a refusal to commit to any life path or person, or its opposite- a desperate need to affix to, or commit to something, someone, anything! (…) in the decision to choose a safer relationship, or a less challenging career; (…) as the path of a risk-taker (…) as a fear of intimacy (…) as a desperate need for intimacy. For some, it compels them to dissociate from

their family of origin, for others it compels them to cling

to them even tighter, (Brown. n.d).

Through this reflective description -that would not manifest its nature in a better way with formal scientific writing-, the author describes how traumatic experiences during childhood (particularly referring to an abandonment wound but applies to any of them), start appearing into what seems to be unrelated contexts and unfold as patterns and ways of being (i.e., things that we do, or do not do; things we think, or do not think; ways of feeling or not feeling) (Brown. n.d). However, if this is a general response for most, including healthy individuals, how do these experiences become rigid patterns or a "personality disorder" for some and not others? This question is something we wanted to address with the aim of this thesis. The most solid theory regarding this question is the transaction between biology and environment, which was, in the first place, part of the model published in The Lancet by Leichsenring et al., (2011).

Specifically, in terms of effect sizes for predicting each BPD component, we found the most significant effect was for affective symptoms and the lowest for impulsive symptoms. One of the first and leading exponents of this particular relationship between adverse childhood experiences and affective dysregulation was Marsha Linehan with biosocial theory (Crowell et al., 2009, Linehan, 1987, 1993, 2018; Linehan & Schmidt III, 1995). According to Linehan, Borderline symptomatology forms when a child biologically predisposed to poor affect regulation develops within a pervasively invalidating environment. From the beginning of their lifespan, some individuals present higher Emotionality tendencies (e.g., salience, reaction times, intensity, and difficulties for coming back to baseline). When a child with this vulnerability additionally faces an emotionally invalidating environment characterized by caregivers who omit, ignore, punish, or trivialize internal experiences, she learns that she needs to respond more intensively to communicate their needs. In this chronic transaction between biological vulnerability and invalidating environment, the personality starts to become rigid to finally develop what we know as BPD (Linehan, 1993).

However, is the impact of adverse childhood experiences specific to BPD? Even though adverse childhood experiences predicted the four BPD symptom components, we found that the highest level of prediction was for affective symptoms, duplicating the size of the lowest (but still

statistically significant) effect, which was for impulsive symptoms. We studied the different types of childhood maltreatment (emotional abuse and neglect, physical abuse and neglect, and sexual abuse) and found that emotional abuse and neglect were the most frequently associated with BPD compared to healthy individuals. We expected this finding considering it aligns with the literature regarding the relationship between emotional maltreatment (abuse and neglect) and BPD as more substantial than other types of maltreatment (Porter et al., 2020). Since the 90's and consistent with more recent studies, authors have stated that emotional neglect, as it is more chronic and pervasive, tends to leave more profound wounds and more detrimental effects on affective dysregulation than emotional abuse (Brown et al., 2018; Elam & Kleist, 1999). Studies suggest that emotional abuse might install in the child the idea that she deserves attention (and she might compensate by misbehaving for trying to get it) , while neglect might make them feel chronically unlovable and unseen (Baker & Festinger, 2011; Xiao et al., 2022).

Emotional neglect is defined as "the failure of caretakers to meet children's basic emotional and psychological needs, including love, belonging, nurturance, and support." (e.g., "I knew there was someone to take care of me and protect me." or "There was someone in my family who helped me feel that I was important or special"), while emotional abuse is defined "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." (e.g., "People in my family called me things like 'stupid' 'lazy' or 'ugly' or "People in my family said hurtful or insulting things) (Bernstein et al., 2003). Affective dysregulation is defined as "inappropriate anger and/or frequent angry acts", "chronic feelings of emptiness", and "mood instability". Looking at these three definitions (emotional abuse, emotional neglect, and affective dysregulation), it is reasonable to think that if emotional abuse and neglect were the most frequent and severe among participants with BPD within our sample, the affective symptoms would be the best predicted by childhood trauma considering content overlap. However, it is also reasonable to think that emotional traumatic experiences might impact other dimension of individuals (e.g., relations with others), so the relationship between adverse childhood experiences and emotional maltreatment cannot be fully explained by this content overlap.

When looking specifically at the definitions of the affective symptoms, as assessed by the ZAN-BPD and the ZAN-BPD: SRV (Zanarini, 2003; Zanarini et al., 2015b), we see that they are probably not necessarily specific to BPD. Affective maladaptive processes, most known as

"emotion dysregulation." are involved in more than half of mental health disorders (e.g. Barlow et al., 2004; Jazaieri et al., 2013), supporting the notion that affective disturbances are not disorder specific, and even supporting the idea that it is a fundamental component in mental health (Gross & Muñoz, 1995). Several studies (for a comprehensive list refer to Moukhtarian et al., 2021). have investigated the differences in affective intensity and instability in individuals with BPD compared to other clinical groups, finding that they mainly varied in symptom fluctuation patterns but not in the level of intensity. For example. Moukhtarian et al., (2021) assessed emotion dysregulation in participants with BPD and Attention deficit hyperactivity disorder and backed up the idea that emotion dysregulation was a trans-diagnostic feature of psychopathology in these two groups, with similar levels of intensity and instability. These finding suggests that affective dysregulation is a more common feature among different mental health disorders. Even though we have not conducted these analyses across the other disorders we assessed, we hypothesize that affective dysregulation would present high correlations with the affective symptoms in the questionnaires from other disorders we assessed (i.e., anxiety, depression, and post-traumatic stress) (Aldan et al., 2010). However, suppose we decompose our affective component assessment for BPD (as assessed through the ZAN BPD: SRV; Zamorin et al., 2015). into the specific studied domains that constitute this construct in our questionnaire (anger, mood instability, and emptiness). In that case, we can more precisely identify how our results relate to the literature regarding these domains in other disorders.

First, anger is an essential and functional human state of emotion, which, when dysregulated, can lead to undesirable outcomes, particularly when it becomes part of the personality of an individual, as a trait (i.e., excessive frequency, intensity, duration, and expression that interferes with daily functioning) (Novaco, 2011). However, multiple psychological disorders include expressions of anger as defining characteristics (APA, 2013; Cumming et al., 2021; Onyedibe et al., 2020). Researchers have found that anger dysregulation is present in approximately one-third of the population with mental health disorders (McDermut et al., 2009). Examples of psychiatric conditions where anger is a clinical feature are post-traumatic stress disorder (Turgoose & Murphy, 2018). major depressive disorder (e.g. Troisi & D'Argenio, 2004). anxiety (Erwin et al., 2003). suicide attempts (e.g. Hawkins et al., 2014). bipolar disorder (e.g. Benazzi, 2003). and alcohol abuse (e.g. Lin et al., 2004). Second, mood instability is also an essential feature for several psychiatric conditions (Broome et al., 2015). The most evident is bipolar disorder (e.g.

Howes et al., 2011; Strejilevich et al., 2013). but also others such as psychosis (Marwaha et al., 2014). suicide (Peters et al., 2016). depression (Bowen et al., 2017) and eating disorders (Frank, 2020). Even though there are several definitions of mood instability and most studies have used one single question to assess it (including this study) a metanalysis conducted by Broome et al., (2015) defined it as a convergence between concepts, and characterized by "rapid oscillations of intense affect, with difficulty in regulating these oscillations or their behavioral consequences." Lastly, we reflect upon the chronic feeling of emptiness, probably the most unique to BPD among the symptomatic affective presentations. Researchers have conducted various recent studies in the last years examining this characteristic, but it is still an under-studied affective symptom (Elsner et al., 2018; Herron & Sani, 2021; Martin & Levy, 2021; Masland et al., 2020; Miller et al., 2020, 2021). considering it is the most difficult to define by both clinicians and individuals with BPD (Masland et al., 2020). According to Price et al., (2019) *emptiness* is a "pervasive and visceral sense of Detachment spanning intrapersonal, interpersonal, and existential domains of existence". After reviewing literature on the topic. Miller et al., (2020) found definitions such as "a perceived internal emptiness similar to that of having an internal hole or vacuum", "feeling aloneness", "feeling like one is being swallowed", "the feeling of vagueness", "a sense of internal absence", "woodenness and numbness", or "alienation" (Fuchs, 2007; Kernberg, 1967; Kernberg, 1993; LaFarge, 1989; Lamprell, 1994; Singer, 1977). Even though this is a characteristic symptom of BPD, authors such as Blasco-Fontecilla et al. (2016), Herron & Sani, (2021), Klonsky (2008), Federn (1953), and Zandersen & Parnas, (2019) have associated emptiness with other psychiatric conditions such as anxiety, depression, suicidal ideation, and psychosis.

By addressing the BPD construct in terms of -potentially transdiagnostic components-, we open the door to thinking about the extent of the specificity of the relationship between adverse childhood experiences and BPD experiences compared to other mental health disorders during adulthood. We know this phenomenon as "multifinality" of adverse childhood experiences, which means that one similar origin could have different pathways towards several mental health outcomes (Tyler, 2002). These results coincide with findings from a longitudinal study led by Avshalom Caspi, where they developed the concept of the P factor (Caspi et al., 2014). In their study about psychopathology structure, the authors considered dimensionality, persistence, co-occurrence, and sequential comorbidity of mental disorders across 20 years in Dunedin. New

Zealand. The arguments behind conducting such a study come back to how nosology in psychiatry is helpful for clinicians and researchers but can sometimes be confusing due to the high rates of comorbidity (Aragona, 2009). After analyzing their data. Caspi et al., (2014) propose a general psychopathological structure where diagnoses converge in a single dimension in which individuals vary in their propensity to develop all forms of common psychiatric disorders. Moreover, the authors suggest as a hypothesis that childhood maltreatment constitutes a risk factor in experiencing any disorder and that researchers should never assume a specific relation between one cause and the disorder they study. Even though we did not make this decision on purpose about this hypothesis, this would be a potential limitation that we managed to cover in our study. We covered it by first assessing other disorders (depressive, anxiety, and post-traumatic stress disorders), and identifying their relationships with BPD, and with adverse childhood experiences. Second, we decomposed the global BPD score into components.

Going back to the discussion about splitter and lumpers we presented some paragraphs above, in our study, adverse childhood experiences seem to be multifinal (one risk factor for all disorders or transdiagnostic symptoms) (Caspi et al., 2014; Tyler, 2002). If we lump symptoms into different higher-order categories (e.g., into components, disorders, or one general factor), we might better understand the different levels in which this specific relationship is present. It would be necessary to replicate this study or improve it to further understand the specificity or generality behind the relation between the adverse childhood experiences risk factor and BPD.

We believe the relationship between adverse childhood experiences and the affective component is essential for further studies to examine in more detail. We suggest further studies examine the effect of adverse childhood experiences on other disorders (e.g., depressive, anxiety, somatic, or post-traumatic disorders). Moreover, we suggest authors disaggregate psychiatric disorders in theoretically driven symptom components as we did with BPD and examine correlations those, especially, the affective ones.

Moreover, and with different data collection processes, we propose three ways in which researchers can replicate this study:

1. Researchers can include assessing other mental health disorders to identify if the risk factor is only for BPD or other psychiatric disorders.

2. Researchers can select those items related to content across disorders and examine its associations (e.g., affective items across BPD, depressive disorders, and anxiety disorders).

3. Researchers could use questionnaires that theoretically and psychometrically decompose global scores into components (e.g. the ZAN-BPD: SRV; Zanarini et al., 2015).

Can impulsive symptoms be "sudden" severity indicators of BPD?

Our results are not conclusive regarding the effect size of the relationship between adverse childhood experiences and impulsive BPD symptoms because we found contradictory results. In the first study, where we investigated the model with maladaptive and FFM personality traits, we found that impulsive BPD symptoms were less predicted by adverse childhood experiences comparing to other BPD symptoms. While in the second study we found that predictions of impulsive BPD symptoms were quite similar in intensity to the rest of the symptoms.

Moreover, we consistently found weaker personality traits and functioning, and impulsive BPD symptom compared to the other BPD components. We found this result in the three models (with FFM personality traits, maladaptive traits, and personality functioning), but particularly for personality traits. We found that no prediction was significant when introducing FFM or maladaptive personality traits as predictors of impulsive BPD components controlling for adverse childhood experiences. However, when including levels of personality functioning as predictors of BPD components, we found that they were significant predictors (even though this effect size was smaller than the prediction of other components). The only significant predictor of impulsive symptoms was the levels of personality functioning (in terms of self and interpersonal).

When considering the items involved in the impulsive component, we see they are related to physically self-destructive acts and other forms of impulsivity (e.g., substance abuse, break things, stealing, promiscuity, eating binges, hitting people, selling drugs). Because the construct "levels of personality functioning" was initially created for determining the severity of the impairment (Bender et al., 2011; A. L. Pincus, 2018). it is reasonable to think that this score would be related to the items that assess self-destructive acts in BPD, which has been identified as a severity indicator for individuals with this diagnosis in clinical practice (Linehan, 1999) . Even more interesting is that although the LPFS-BF 2.0 (Weekers et al., 2019) assesses the level

of dysfunction, it does not capture self-harm or suicidality. If replicated in further studies, the found relationship could help clinicians and researchers detect a risk factor for self-harm and other impulsive behaviors in individuals with BPD features according to their score on the levels of personality functioning. While this finding is potentially beneficial for earlier interventions, they are still premature, and readers should take these results with caution, particularly because severity is usually important for clinicians to make informed decisions, and in the case of BPD we still are not clear about what severity means (e.g. number of symptoms; intensity of symptoms; symptom frequency; persistence; impact of symptoms on functioning or quality of life; likelihood of the illness resulting in permanent disability or death), and if it should be general or disorder-specific (Zimmerman et al., 2018) . We suggest that researchers interested in this topic replicate this assessment in further studies for more accurate translations into clinical practice. Moreover, regarding the personality traits as incapable of predicting impulsive symptoms in our sample, we might think about these constructs in terms of frequency.

In this same line, self-destructive acts and suicidality tend to happen with a lower frequency than the required frequency in that one feature should present to be considered a pattern (i.e., personality traits), Because of this, authors such as Drabble et al., (2014) has stated that both self-harm or suicidality are poor indicators of the disorder, considering that they are neither sufficient or necessary for a BPD diagnosis. On the other hand, personality traits are *patterns* of thinking, feeling, and behaving (Costa et al., 1995). It seems reasonable to think that personality traits, as patterns, cannot completely predict a sudden behavior such as a self-destructive act or other impulsive behaviors, particularly when they happen less frequently and depending on contextual occurrences (Evans & Simms, 2018). It is precisely the unexpected and under-thought feature (because of behavioral inhibition and/or impaired decision-making), one of the main characteristics to define one behavior as impulsive (de Wit, 2009). However, our results do not coincide with the results we found in the literature when studying personality traits and impulsivity. From a theoretical perspective, some authors (e.g. Dawe et al., 2004). state that we can understand impulsivity as a relatively stable trait. From an empirical perspective Zhang (2021). recently conducted a study to examine the relationship between neuroticism, internet addiction, and impulsivity and found that neuroticism was related to impulsivity. Comparing our results to the ones found by this author, within our study, neither of our Emotionality-related traits (Negative Affect or Emotionality) predicted impulsivity. This result is probably related to

how we assessed these constructs. In our case impulsivity was assessed with items related to self-harm and other severe impulsive behaviors, while in this previous study, they assessed it with the Barratt Impulsiveness Scale—11th version (Patton et al., 1995). According to this scale, there are three dimensions of impulsivity, motor impulsiveness, cognitive impulsiveness, and non-planning impulsiveness. In the study by Zhang, (2021). all three correlated with neuroticism being the motor and the cognitive, the highest correlation, and the no planning impulsiveness the lowest. The non-planning impulsiveness is composed of self-control and cognitive complexity. Although the mechanisms behind the impulsive behaviors we assessed with the ZAN-BPD (Zanarini, 2003) and the ZAN-BPD: SVR (Zanarini et al., 2015) are out of the scope, we hypothesize that were are different than the ones describes in the literature regarding the traditional impulsivity scales.

Another hypothesis would be that impulsivity and other symptom components such as emotion dysregulation may emerge independently and sequentially during development and contribute to different aspects of functioning. This result aligns with a theory proposed by Lodi-Smith & Roberts (2007) as an extension of Linehan's biosocial theory. According to our results and in line with this theoretical proposal, we might think that impulsivity could be a symptom with more genetic influence comparing to adverse childhood experiences. For example. Braquehais et al., (2010) and Evren et al., (2013) found that adverse childhood experiences could interact with pre-existing temperament (impulsivity), which lead to impairment in adaptive responses to stress.

Moreover, we could hypothesize that impulsivity might be predicted from traits in healthy participants (or other participants with a psychiatric disorder different to BPD) while not in participants with a BPD diagnosis. However, it is too soon to make accurate predictions for these results, and it is something to be tested in further studies.

One idea we consider worth mentioning and reflecting upon for further studies is when does a behavior can be considered impulsive and who is to define it. Should it be impulsive for the individual who suffers it, for others or both? Is it necessary for the individual to feel she cannot control her behavior, or should the criteria involve others to consider the behavior as unexpected and thus impulsive? This consideration would be necessary for assessing the construct in both research and clinical practice. The theoretical background behind a general construct of

impulsivity states to when individuals cannot inhibit impulses (Zhang, 2021). Most narrowly, some authors have defined impulsivity as "a person's propensity to act on an arising impulse." It is increasingly clear that as other concepts we have presented during this dissertation, the concept of impulsivity is multi-dimensional. It could be more validly understood when involving more domains and considering its different internal motivations (de Wit, 2009; Evenden, 1999; Murphy & MacKillop, 2012).

7.3 *Are personality traits from the FFM relevant to BPD development?*

Regarding this topic, some authors have proposed that maladaptive traits may be sufficient to represent the nine BPD criteria taken as a whole (Bagby et al., 2008; Sellbom, Sansone, et al., 2014; Sellbom. Smid, et al., 2014; Wygant et al., 2006). According to three different BPD scales, we found that Extraversion could similarly predict BPD symptoms as traits from the PID-5 (Krueger et al., 2012).

This finding is not new; however, researchers have debated this topic as proposed in a commentary by Widiger & McCabe (2018) named "The Five-Factor Model is a Competing Theory of Borderline Personality Disorder." Widiger & McCabe (2018) wrote this paper commentary as a response to a theoretical review (Gunderson, Fruzzetti, et al., 2018) with the title "Competing theories of borderline personality disorder", where Gunderson et al., (2018) excluded the FFM of personality as a competing theory. In this paper, the author proposes empirical support that the traditional FFM personality traits model is a competing theory in terms of its ability to explain BPD's comorbidity, heredity, and differentiation from other diseases, which were the criteria used by (Gunderson, Fruzzetti, et al., 2018) to define a "competing theory." Moreover, this commentary aligns with what other authors have empirically-supported, with results that support that clinicians and researchers can utilize FFM traits to describe, identify, and predict BPD throughout life (Koster et al., 2019). For example. Trull & Durrett (2005) propose incorporating these results may contribute to theoretical advances on the origin, assessment, and therapy of personality pathology. To support this idea, the author states that researchers have recognized these personality trait domains for decades, and they underscore that they are relevant to both normal and pathological personalities. The authors continue proposing that such a definition is compatible with evidence that individual personality traits differ in degree rather than kind.

Furthermore, personality studies have discovered psychological (e.g. Brezo et al., 2006). neurological (Latzman et al., 2015). and genetic (e.g. Lo et al., 2017) correlates of these. As an example of the benefits of using these models. Widiger & Mullins-Sweatt (2009) present how beneficial it would be to include traditional FFM traits into the diagnosis. According to this statement, clinicians would not need to test for the many maladaptive variations of introversion if the subject scored high in the Extraversion category. The author indicates that in most cases, including standard personality traits will provide a more complete and more prosperous description of each individual and screen for the relevant maladaptive variants of personality pathology.

We agree with these proposals in that the inclusion of the FFM of personality traits would contribute to the field, however we acknowledge that they would not be enough, since there can present a "ceiling effect" that the maladaptive variants of personality traits do capture (as we see in our results regarding Emotionality and Negative Affect). We propose however to use content overlap and take advantage of what research have found regarding how both models mirror, to build a proper dimensional continuum in personality traits that could involve higher ranges of each trait without the usual "floor and ceiling effect" that we see in each scale. In this way, we could capture the types of personality dysfunction in a dimensional way without the proposed content overlap with criterion A in maladaptive features that has been proposed by some authors.

Which traits predict BPD symptoms?

Our *Hypothesis 4* was that there would be a significant and positive association between maladaptive personality traits and the main components of psychopathology in BPD, while our *Hypothesis 5* was that there would be a significant and positive association between the FFM personality traits and the BPD symptom components as well.

According to the DSM-5 (APA, 2013). personality traits are "tendencies to feel, perceive, behave, and think in a relatively consistent way across time and situations" (APA, 2013). According to Nettle, (2006). these traits might reflect individual differences in biological systems selected through evolution and shaped by individual life experiences (e.g., detection of rewards and threats, achievement of social dominance, striving after long-term goals, nurturance of the young, aggression, exploration of new environments) (Nettle, 2006). According to some

evolutionary theories, individuals differ in both the strength and open expression of those systems (MacDonald, 1995; Nettle, 2006; Shiner, 2009). and individual life experiences help to create further variations in the expression of those systems, until eventually, they become traits (Shiner, 2009).

Considering both maladaptive and FFM traits, we found that Extraversion (FFM). Emotionality (FFM). Psychoticism (maladaptive trait), and Negative Affectivity (maladaptive trait) were the four traits that best predicted BPD symptoms according to how they systematically behave in three different instruments, the ZAN-BPD (Zanarini, 2003). the Borderline Symptom List 23 (BSL-23) (Bohus et al., 2009). and the International Personality Disorder Examination-BPD (IPDE-BPD) (Loranger, 1999). Two of these instruments were interviews (ZAN-BPD and IPDE-BPD), and one was a self-report (BSL-23). Thus, even though they presented subtle differences in how they defined BPD, the way assess data varied across them (some were interviews and some self-reports), which allowed us to make a more informed decision. This strategy was one crucial step for the rest of the analyses because we were interested in generalizing our results to different conceptualizations of BPD, and thus, translating them more naturalistically into clinical implications

Even though we found four traits to be predictors of BPD symptoms, if we combine them considering their content and independently of their origin (FFM or maladaptive traits), there are mainly three trait domains that seem to be predictive of BPD symptoms. We could organize them in an emotional pattern (high Emotionality and high Negative Affect), a social pattern (low Extraversion), and a thought pattern (high Psychoticism). The first two domains (emotional and social) presented the most robust relationships, while the third one presented the lowest of the three (thought pattern). Specifically, the emotional patterns (and particularly Negative Affect) were the mechanism with a larger mean effect size acting as a predictor of three BPD components, the affective, the relational, and the cognitive symptoms. The second highest mechanism was through Extraversion, which predicted three components: affective, relational, and cognitive symptoms. Lastly. Psychoticism predicted two BPD components, cognitive and affective. No personality traits predicted impulsive symptoms,

It seems like a combination of emotional and social patterns developed in a complex interaction with adverse childhood experiences predicts most BPD symptoms, while a combination of

cognitive patterns developed after adverse childhood experiences predicts affective and cognitive symptoms. We will discuss these ideas in more detail in the paragraphs we present below.

7.3.1 The emotional pattern: Is neuroticism an umbrella construct for the emotional personality pattern found in our study?

Regarding the emotional pattern, where we find Emotionality and Negative Affect within our study, we can find vast literature under the umbrella construct of neuroticism (i.e., we found 2.747 scientific articles with the word "neuroticism" within their title being the first paper published in 1939). Neuroticism is the trait most frequently associated with BPD symptoms (Wright et al., 2015). However, rather than BPD being characterized by neuroticism, it is more accurate to say that neuroticism is one of the common risk factors for many other mental disorders (Lahey, 2009). More generally speaking Samuel & Widiger (2008) conducted a meta-analysis which revealed that almost each personality disorder is associated with neuroticism. This association applies to other mental health diagnoses besides personality disorders (Kotov et al., 2011).

What these findings suggest is in line with what we presented above regarding the relationship between adverse childhood experiences and BPD symptom components. We believe our results regarding the relationship between the personality traits in the emotional domain are unlikely to be limited to BPD. We could expect similar results in a broad spectrum of personality disorders and mental health diagnoses (e.g. major depression, anxiety, substance abuse) linked to these core personality components (affective, impulsive, cognitive, and relational) (Widiger & Mullins-Sweatt, 2009). Neuroticism has been linked to both changes in symptoms of BPD and symptoms of avoidant personality disorder. Extrapolating beyond these data suggests that personality changes or maturation are likely to represent more universal processes related to psychiatric disorders, with implications for psychopathology development and remission patterns in general (Wright et al., 2015).

According to Ashton & Lee, (2009), individuals that score high in the HEXACO-60 Emotionality trait experience "fear of physical dangers, (…) anxiety in response to life's stresses, (…) a need for emotional support from others, and (…) empathy and sentimental attachments with others." Therefore, four facets constitute this trait (fearfulness, anxiety, dependence, and

sentimentality). On the other hand, Negative Affect, as assessed through the PID-5 (Kerber et al., 2020), is the tendency to an "internal feeling state (affect) that occurs when one has failed to achieve a goal or to avoid a threat or when one is not satisfied with the current state of affairs." This trait has three facets: emotional lability, anxiety, and separation insecurity.

It was interesting for us to acknowledge the differences between these two (Emotionality and Negative Affect), to theoretically understand how Negative Affect, a stronger predictor of BPD symptoms (Rosenthal et al., 2008). compared to Emotionality. The anxiety facets seem in a perfect match (present in both Emotionality and Negative Affect), while dependence seems to be related to separation insecurity. Finally, sentimentality can be theoretically related to emotional lability. Three facets of the Negative Affect maladaptive trait seem to be extreme variants of the FFM Emotionality trait, as presented some authors (e.g. Gore & Widiger, 2013; Thomas et al., 2013; Wright & Simms, 2014). On the other hand, one facet is present in the Emotionality trait from the FFM that seems to be absent in the maladaptive trait model, which is the fearfulness facet. The reason behind finding much more robust relationships between Negative Affect and BPD than with Emotionality can probably relate to the following:

First, the "extreme" feature of the maladaptive version seems to better represent the emotional experience that led towards the BPD components. This is reasonable in our sample considering that in our first study, our clinical sample presented very severe manifestations of the disorder, while the healthy samples presented very healthy trajectories. This reflection opens the door to think if this is something that could be seen in BPD patients in general or is rather a characteristic of our own sample, considering it was particularly severe in their clinical presentations. This is something we would like to examine with data from our second study, where we assessed maladaptive traits as well, which was out of the scope of this dissertation. Further studies could benefit from considering assessing maladaptive and FFM traits as measured by the HEXACO-60 (Ashton & Lee, 2009) to better understand this difference.

Second, our BPD sample could underrepresent the additional "fearful" facet found in the Emotionality trait. According to the HEXACO-60 (Ashton & Lee, 2009). the fearfulness facet assesses a tendency to experience fear, where low scorers feel little fear of injury and are relatively tough, brave, and insensitive to physical pain, whereas high scorers are strongly inclined to avoid physical harm. It is reasonable to think that this facet would not manifest as a

predictor of BPD considering what the literature has shown regarding a hypo-sensitivity towards physical pain that goes along with hypersensitivity of social pain (i.e., rejection sensitivity) in these patients (Schmahl et al., 2006; Renneberg et al., 2012; Bungert, Koppe, et al., 2015; M. J. Bernstein & Claypool, 2012). It seems reasonable to think that individuals with BPD would score high in some of the facets in the Emotionality trait (high dependence, high sentimentality, and high anxiety) while scoring low in the fearful facet (e.g., little fear of injury, and insensitive to physical pain). Considering some of the facets in Emotionality trait would be high while others would be low, these results might be misleading. This trait might probably be appropriate for healthy individuals and not for individuals with a BPD diagnosis since the latter could be less fearful. If this replicates in further studies with the HEXACO-60 (Ashton & Lee, 2009). this misleading finding could be an essential argument in the debate about the potential role of personality traits from the FFM in assessing personality pathology.

One additional way to understand the difference between Negative Affect (a maladaptive trait) and Emotionality (an FFM trait) is to compare both with the neuroticism construct, considering the vast literature around neuroticism showing sound relationships with BPD symptoms (e.g. McCrae et al., 2001; Nigg & Goldsmith, 1994; Samuel et al., 2013; Widiger, 1998; Widiger et al., 2002; Wright et al., 2015). Two of the most used questionnaires to assess personality traits from the FFM perspective are The NEO Personality Inventory-Revised (NEO PI-R) (Costa & McCrae, 1992) and the Five-Factor Personality Inventory (FFPI) (Hendriks et al., 1999). The latter uses an "Emotional Stability" trait instead of "Neuroticism". The NEO Personality Inventory-Revised (NEO PI-R) (Costa & McCrae, 1992) defines neuroticism as a "tendency of an individual to experience psychological distress and emotional instability." The neuroticism facets are anxiety, hostility, depression, self-consciousness, impulsiveness/inmoderation, and vulnerability to stress. We can find anxiety as a facet in the Emotionality. Negative Affect, and the neuroticism constructs, while vulnerability to stress (neuroticism) in combination with depression (neuroticism) might be related to emotional lability (Negative Affect) and sentimentality (Emotionality). The facets of hostility, self-consciousness, and impulsiveness/inmoderation found in neuroticism might add additional features to the construct that Emotionality does not capture in the HEXACO-60 (Ashton & Lee, 2009). We hypothesize that this strong relationship might partly respond to the other three facets (hostility, self-consciousness, and impulsiveness constructs) and be inflated artificially by the hostility and

impulsiveness/inmoderation facets. It would be interesting to further study the factorial structure of the neuroticism trait and its facets and better understand how they contribute to the theoretical construct when assessed in individuals without a BPD diagnosis. Ashton et al., (2012a) found that even though facets of the NEO-Personality Inventory-3 (a newer version of the NEO PI-R; McCrae et al., 2005) defined the PID-5 (Krueger et al., 2012) Negative Affect, the facets of Hostility and Impulsivity did not show their primary loadings on this factor, suggesting they might relate in content to another theoretical construct. We suggest further studies investigate the relationship between personality traits and BPD with different assessment strategies and look at these relationships at the level of facets instead of only looking at traits.

7.3.2   The social pattern: BPD as an introverted form of Emotionality or as an emotional consequence of frequent social failures?

One of the most unexpected findings throughout this dissertation was the role of Extraversion, which worked hand in hand with Negative Affect as a mechanism for BPD. We did not expect our results regarding the predictive capacity of Extraversion compared to other traits such as Emotionality. As we discussed in the paragraph above, whenever we faced unexpected empirical results from what we previously examined in the literature, we took a closer look at the traits by analyzing them at the level of facets and item content. What was more interesting for us was that among all the facets of the Extraversion trait, the facet with best predictive capacity was social self-esteem. Ashton & Lee, (2009) define the social self-esteem facet as "a tendency to have positive self-regard, particularly in social contexts (e.g., "In general. I'm pretty happy with myself." "I think I am NOT popular." and "Sometimes I feel like I'm worthless."). We see that individuals with a BPD diagnosis tend to score low in this facet within our sample. According to the authors, low scorers tend to have a sense of personal worthlessness and see themselves as unpopular".

In criterion A of DSM-5 AMPD (APA, 2013). a meaningful sub-domain of self-image is the construct of self-esteem, which tends to be low compared with healthy controls and patients with major depression (Abela et al., 2003; Bungert, Liebke, et al., 2015; Kanter et al., 2001). Looking at the definitions of this facet, it is self-esteem as a subdomain of self and how an

individual perceives herself in relation to others, a specific aspect in which individuals with BPD tend to fail frequently (J. D. Brown, 2010; Zeigler–Hill & Abraham, 2006). Moreover, low social-self-esteem is strongly associated with shame, which is another core but underreported feature of BPD, and a frequent internal motive behind self-aggression and impulsive behaviors (Lester, 1997; Linehan, 1993; Rüsch et al., 2007). *Shame* is an inner social experience of self as an unattractive social agent, under pressure to make the most outstanding efforts to limit possible damage via escape or appeasement (Gilbert, 1998). According to Gilbert (1998). the subjective feeling of shame comes with observable behaviors (e.g. blushing, lowering the head, avoiding eye contact, impulse to hide and escape), and are often obscured by secondary emotions such as anger or rage seen in the characteristic impulsive behaviors in individuals with BPD (Tangney & Dearing, 2002). Low social self-esteem and shame could be obstacles for improvements because individuals tend to avoid these emotions with safety behaviors (e.g. avoiding social encounters or seeking help) (Swan & Andrews, 2003).

Our findings about the relationship between low Extraversion (particularly low self-esteem) are in line with other studies such as the one conducted by Bungert et al., (2015). where lower self-esteem was associated with increased BPD symptom severity. However, contrary to our findings, the authors did not find a relationship with a history of childhood maltreatment when studying the relationship between BPD symptom severity, rejection sensitivity, or self-esteem. Contrary to these findings, we found that social self-esteem was strongly related to adverse childhood experiences, particularly emotional abuse, and emotional neglect. This result is in line with Linehan's biosocial theory (1993). in which she underscores the impact of an invalidating environment, sometimes characterized by emotional childhood maltreatment. Accordingly. Bornovalova et al., (2013) found that emotional neglect was the highest predictor of problems like low self-esteem and interpersonal difficulties compared to other forms of maltreatment (e.g., physical abuse, sexual abuse). However, the same authors state that the genetic influences are necessary for a BPD to develop and that there are no direct pathways from adverse childhood experiences to BPD diagnosis.

More broadly, when reflecting upon the relationship between BPD and the Extraversion personality trait, including but not limited to social-self-esteem, it is interesting to notice some differences we found between our study and those reported in the literature. While searching the

literature, we found that most researchers who have studied the relationship between BPD and FFM personality traits measured traits with the NEO Personality Inventory-Revised (NEO PI-R) (Costa & McCrae, 1992). According to this instrument, the Extraversion trait contains the following facets: warmth, gregariousness, assertiveness, activity, excitement seeking, and positive emotions. None of these facets include social self-esteem. On the other hand, the HEXACO-60 (Ashton & Lee, 2009) includes social self-esteem, social boldness, sociability, and liveliness. From a first superficial analysis, it seems like they do not have much in common. In this same line. Gaughan (2009) compared the two questionnaires and calculated correlation estimates between the facets of each scale. The magnitude of the correlations between the "social self-esteem" facet in HEXACO-60 (Ashton & Lee, 2009) and Extraversion facets in NEO PI-R (Costa & McCrae, 1992) ranged from .47 to .38. It seems like, at least from the sample who participated in this empirical study, these two constructs are associated, but the magnitude of this association is like any other traits would do. In fact, they mostly share 22% of variability between them. The Extraversion construct as assessed by the HEXACO-60 (Ashton & Lee, 2009) does not overlap in content with the Extraversion construct as assessed by the NEO PI-R. It is likely that, as in the NEO PI-R, other scales for assessing FFM personality traits do not assess social self-esteem either. The differences in constructs behind the Extraversion personality trait might explain why it has not been frequently associated with BPD, as neuroticism has. Since according to our results (derived from our empirical studies but also from our literature search), most of the theories behind personality traits are unique and most of the features are not shared. These results underscore the importance of a more profound revision of the theories behind the trait constructs that each personality questionnaire use, so the interpretation and further generalization of findings can be more precise.

In terms of specific BPD symptoms, social self-esteem predicted affective, cognitive, and relational components. Interestingly, our results align with the proposals by Ashton et al., (2012b) who investigate the fitness between facets and domains of the PID-5 (Krueger et al., 2012) and the HEXACO-60 (Ashton & Lee, 2009). From the perspective of the HEXACO-60 (Ashton & Lee, 2009). both Emotionality and Extraversion traits would load together into the same PID-5 factors (Krueger et al., 2012). The PID-5 variables that loaded on the first factor tend to be those that were associated with Emotionality and low Extraversion (HEXACO-60; (Ashton & Lee, 2009) while the PID-5 variables that loaded on the second factor tend to be

those that were associated with Extraversion and high Emotionality. According to the authors, from the HEXACO-60 perspective (Ashton & Lee, 2009). the first factor would be an introverted form of Emotionality, while the second an emotional form of Extraversion.

These results are similar to what we found considering the Negative Affect (PID5BF+ M) (Kerber et al., 2020) and the Extraversion personality traits (FFM). These findings are even more interesting when considering the prediction capacity of adverse childhood experiences to these traits and how these two can further develop as more extreme variations into the affective and relational components of BPD.

Our interpretation would be that we can understand BPD as extreme variants of what Ashton et al., (2012b) proposed regarding the relationship between the FFM and the PID-5 (Krueger et al., 2012). BPD would then be either an extreme variant of an introverted form of Emotionality or as an extreme variant of an extroverted form of Emotionality (i.e., an emotional social reaction towards inner social failures considering what we found in the social-self-esteem facet and what we found on the literature about shame) or both.

The extreme *introverted form of Emotionality* perspective would highlight the richness of the internal emotional world of individuals who experienced traumatic events during their infancy (particularly emotional abuse and neglect). Therefore, these individuals recreate the world as they know it by reacting to events with increasingly stable patterns of thinking, feeling, and behaving (personality traits) that eventually come out of the skin as BPD components (Costa et al., 1995). On the other hand, the *extroverted form of Emotionality* perspective underscores the social manifestation of a chronic feeling of failing as a social agent and the accompanying feelings of rejection. This chronic inner experience starts with early traumatic events of mainly emotional abuse and neglect that increasingly get into the skin and develops a more stable pattern of thinking, feeling, and behaving socially with very profound emotional consequences that show as BPD components (Costa et al., 1995).

The pattern we saw in both traits was prototypical of BPD individuals. In each perspective we present (the introverted form of Emotionality or the emotional form of Extraversion), we highlight one aspect over the other. The first interpretation focuses on the subjective inner experience that is usually under-seen. In contrast, the second highlights the negative social self that the individual develops after years of failed experiences and its emotional consequences.

Both pathways from adverse childhood experiences to BPD might have different final components but can be particularly related to the affective and the relational ones. Moreover, they could happen in parallel, as they are not necessarily exclusive.

7.3.3   The thought pattern: Psychoticism as a severity indicator in BPD

Psychoticism, as a maladaptive trait could be defined as "a proneness to eccentric or delusional behaviors, cognitions, and thought processes" (Skodol et al., 2011). There are three facets within the Psychoticism domain (i.e., eccentricity, perceptual dysregulation, and unusual beliefs) (Bach et al., 2020).

In our results, we found that Psychoticism predicted three of the four BPD symptomatic components. In order of effect sizes, it first predicted the cognitive (i.e., identity disturbance and Suspiciousness or Feelings of Unreality) (Zanarini, 2003) followed by affective, and relational BPD symptoms. As in the other traits. Psychoticism did not predict impulsivity either. Moreover, the best mechanism from maladaptive traits to cognitive BPD symptoms was through Psychoticism.

Psychoticism is one trait that was included in the DSM-5 AMPD (APA, 2013) but not in the ICD-11 (WHO, 2019). The reasons behind these decisions lay on a tradition of the World Health Organization of separating schizophrenia related features to other section of the manual. Instead, the organization decided to include Anankastia (i.e., perfectionism, rigidly sticking to the norm and obligations or emotional and behavioral constraint) as a fifth maladaptive personality trait. This is, even though these two models converge in having five maladaptive traits, only four of them are shared (Negative Affectivity. Detachment. Disinhibition, and Antagonism (DSM-5 AMPD)/dissociality (ICD-11) (APA, 2013; Mulder, 2021; WHO, 2019). Both models demonstrate continuity with the FFM (Strus et al., 2021). However, while Anankastia has a counterpart in Conscientiousness. Psychoticism does not seem to fit with this model. Some authors have stated that the counterpart of Psychoticism would be Openness to Experience but several studies have failed to show this association (for a review on this topic refer to Góngora & Castro Solano, 2017). Psychoticism positively relates to one aspect of Openness to Experience (i.e., Openness to Experience), and negatively to another (i.e., intellect), which would probably explain this mismatch between traits (Crego & Widiger, 2017; DeYoung et al., 2016; Widiger & Crego, 2019; Zimmermann et al., 2019). We see there is no consensus around which of the two

could stay as definitive (Strus et al., 2021). One solution was the one proposed by Bach et al., (2020) and Kerber et al., (2020). which was to integrate them both within the same model and have six instead of five maladaptive personality traits. These authors proposed a concrete solution with the PID5BF+ M (Kerber et al., 2020). however, as the authors and our own research team found, Anankastia does not seem to fit within this model. This problem seems to reflect and old friction between the old American Psychiatry Association and the World Health Organization, relating to what is the core of personality disorders (Strus et al., 2021). We suggest further researchers conduct more sophisticated analysis with this kind of data, as a result of incorporating this question in their studies. This incorporation will help to better understand similarities and differences between the roles of Psychoticism and Anankastia.

Regarding BPD specifically, this discussion also comes back to old theoretical arguments regarding Kernberg's definition of BPD, as an dimension residing in the middle between neurotic and psychotic organization based on three essential aspects: three key domains: identity disturbance, primitive psychological defenses, and reality testing (Kernberg, 1967; Kernberg & Caligor, 2005). According to psychodynamic perspectives, patients with BPD are normally capable of reality testing, but they may lose this ability and experience transitory psychotic episodes under extreme stress (Oliva et al., 2014). Even though the concept of Psychoticism as a personality trait is not equivalent as psychosis, some studies have found that this trait predicts future onset of psychotic disorders with the potentiality of constituting a risk factor (e.g. (Bastiaens et al., 2019; Gooding et al., 2005; Kotov et al., 2020). This trait has been associated with experiencing "transitory psychotic episodes" in the general population without fulfilling criteria for a diagnosis (Catone et al., 2017; Starkowska et al., 2021). For example, these experiences were evaluated as part of a COVID-19 study, which found that these episodes were linked to conspiracy theory beliefs, with a focus on perceptual abnormalities and persecutory ideation (Ferreira et al., 2022).

In relation to these "transitory psychotic episodes" or "psychotic experiences". Seiler et al., (2020) reviewed the existing definition and assessment tools for seven terms: psychotic experiences, psychotic-like experiences, psychotic-like symptoms', attenuated psychotic symptoms, prodromal psychotic symptoms, and psychotic symptoms. Seiler et al, (2020). discovered that writers refer to psychotic experiences as psychotic symptoms 'in an attenuated form', and 'experiences hallucinatory or delusional in nature but with reality testing remaining

intact.' (Pontillo et al., 2018; Seiler et al., 2020). One terminology we frequently found while searching for the literature was the concept of "Psychotic-like experiences" or PLE symptoms' (Barrantes-Vidal et al., 2015).

Regarding our own findings around the predictivity that the Psychoticism trait had particularly for BPD symptom components, there is now enough evidence to suggest that BPD is associated with a high prevalence of various types of delusions and hallucinations, both transitory and persistent (Koyanagi et al., 2015; Ryan et al., 2017). In fact, this phenomena, was reported decades ago by Zanarini (1990). who found that in comparison to 1.8% of patients with other personality disorders, 40% of patients with BPD presented a "quasi-psychotic thought" characterized by transient (lasting less than two days), circumscribed (affecting no more than two areas of life), or atypical psychotic symptoms (based on reality or totally fantastic) and 50% have experienced at least once during their lifetime (Furnes et al., 2021). According to Zanarini (1990). none of these patients fulfilled criteria for a true psychotic thought, which is defined as "a pattern of prolonged, widespread, bizarre, and stereotypical psychotic symptoms", also known as Schneiderian first-rank symptoms (Taylor, 1972). Interpersonal functioning, for example, has been suggested to play a key role in the emergence of both delusions and hallucinations in BPD, where paranoid delusions may be underpinned by anger and hostility toward others, and avoiding of social relationships may lead to experiencing hallucinations (Koyanagi et al., 2015).

Lastly, in relation to the role we found Psychoticism had as a mechanism in the relationship between adverse childhood experiences and BPD symptom (particularly the cognitive component) it was interesting to notice that in a previous study conducted by Sengutta et al., (2019) the authors found a reversed relationship. This is, that the relationship between adverse childhood experiences and Psychoticism was mediated by borderline personality features. Moreover, patients that experienced adverse childhood are in higher risk of presenting psychotic-like symptoms (Meisner et al., 2021). However, it is important to note that these effects may be reversible in a cross-sectional setting, thus no conclusive evidence for the directionality of the effects may be found within them.

The interpretation of our results, combined with what we found in the literature converge in that Psychoticism can be an early predictor of psychotic-like experiences, and this, in turn, can be of particular risk for complex symptomatic presentations in individuals with BPD. One study

conducted by Catalan et al., (2018) found that the distinction between BPD and schizophrenia in terms of psychotic experiences was unclear, and that these experiences were relatively similar in both groups of patients. This result highlights the potential role that this trait might have on early detection of psychotic-like experiences in these patients so we can not only orient them earlier towards treatment but use it as a red flag for potential adaptations of their treatment for more specialized care in case of patients that already received the BPD diagnosis. Examples of this could be the use of additional antipsychotics (Mukherjee et al., 2006; Tohen et al., 2001) or hospitalization. In fact, studies such as the one conducted by James Hull et al., (1996) found that psychotic episodes were one of the main reasons individuals with BPD were hospitalized.

7.4   Validating the questionnaires for assessing the levels of personality functioning and maladaptive traits in the Chilean population

The main objective of this dissertation was to explain the role of personality traits and functioning in the consistently found relationship between adverse childhood experiences and BPD (e.g. Cattane et al., 2017; Ibrahim et al., 2018; Porter et al., 2020). Even though the first study was focused on personality traits, and the second was focused on the levels of personality functioning, one important part of our objectives in the second study was to translate and validate a battery of scales that would help researchers and clinicians assess personality disorders in the Chilean population. Therefore, once we analyzed the data from the first study, our next step was to translate and validate three scales for assessing personality disorders in the Chilean population. These scales were The Levels of Personality Functioning Scale–Brief Form 2.0 (LPFS-BF 2.0; Weekers et al., 2019). The Personality Inventory for DSM-5 and ICD-11 – Brief Form Plus(PID5BF +M) – Version 1.1 (Kerber et al., 2020) and the Zanarini Rating Scale for Borderline Personality Disorder: Self-report Version (ZAN-BPD: SRV) (Zanarini et al., 2015).

For assessing criterion A, we decided to validate a known and brief scale that in their original version (Weekers et al., 2020) showed good psychometric properties. The LPFS-BF 2.0 (Weekers et al., 2019) is a brief self-report questionnaire consisting of 12 items clustered in two higher domains, self-functioning, and interpersonal functioning. Participants were asked to rate each question into a 4-point likert scale. Even though this questionnaire was intended for

assessing criterion A for AMPD in DSM-5 (APA, 2013). it is compatible with the ICD-11 criterion A (WHO, 2019).

We decided to validate a brief self-report questionnaire for assessing criterion B, that could be used for both DSM-5 AMPD (APA, 2013) criterion B and ICD-11 criterion B (WHO, 2019). Because of this we selected the PID5BF +M (Kerber et al., 2020). which is a six-domain hierarchical model that capture trait facets for both including the ICD-11 domain Anankastia (WHO, 2019).

Lastly, we decided to use the ZAN-BPD: SRV which is a self-report questionnaire consisting of 9 items to assess the severity of a BPD disorder regarding four components (affective dysregulation, behavioral dysregulation, disturbed relatedness, and cognitive distortions). Even though, as part of the study we translated and validated the questionnaire, this was not part of the objectives because the process we had to follow was standardized and different from a traditional validation study.

In terms of the construct validity, the LPFS-BF 2.0 (Weekers et al., 2019) showed that the best fit was for the bi-factor structure, where the sum of items 1 to 12 can be interpreted as a general dimension, and then two sub-dimensions, for more fine-grained analysis (self-functioning and interpersonal functioning). Overall, the whole LPFS-BF 2.0 (Weekers et al., 2019) scale and both subscales showed adequate reliability based on their degree of internal consistency. Moreover, the questionnaire showed good convergent validity with questionnaires assessing depression and anxiety symptoms. Finally, we made a ROC curve analysis with a Youden's method that maximizes both specificity and sensitivity with an optimal cut-off score of 27 points for the LPFS-BF 2.0 (Weekers et al., 2019). According to our values of area under the curve, sensitivity (.821), and specificity of (.754), as well as the predictive value, we can say that we have an acceptable level of diagnostic accuracy, with a highly enough sensitivity for clinicians to capture problems timely, which was important considering it future purpose as a screening tool. According to our results, the LPFS-BF 2.0 (Weekers et al., 2019) may be a suitable tool for screening impairments in personality functioning, and particularly personality disorders. However, this instrument is a screening and should not be used as a clinical instrument without an interview. We suggest further researchers conduct studies to test these properties with more

rigorous designs where additionally to the self-report, they can conduct systematic clinical interviews for the participants.

For the PID5BF + M (Kerber et al., 2020). we based our analyses on the theoretical proposal presented by the authors for building an instrument with personality traits from both the DSM-5 AMPD (APA, 2013) and the ICD-11 (WHO, 2019). However, we found reports from the authors that the model with Anankastia, which is the one with DSM-5 AMPD traits (APA, 2013). plus the additional ICD-11 trait (WHO, 2019) presented fitting difficulties. Therefore, we decided to test the two models, one with Anankastia and the other one without it. Regarding the construct validity, we found that the model without Anankastia presented a good fit and did not present the convergence problem the other model presented. However, convergence problems were likely to be caused by our sample size, because of which we suggest further studies can conduct this analysis with a larger sample. Overall, the subscales presented acceptable to good reliability based on their degree of internal consistency measured by the Cronbach's alpha. Lastly, we observed positive and significant associations between the different PID5BF +M (Kerber et al., 2020) maladaptive personality traits and the two subscales derived from the LPFS-BF 2.0 (Weekers et al., 2019). the self-functioning, and the interpersonal functioning. Overall, our results show that the Chilean PID5BF+ M (Kerber et al., 2020). is a reliable and efficient measure of criterion B of the DSM-5 AMPD (APA, 2013) based on maladaptive personality traits.

The validation of these two questionnaires is a very important milestone in Chile, considering that by the moment we started this thesis, there was a lack of validated scales for measuring personality disorders from either the categorical or the dimensional diagnosis. Because of this, we decided to modify some of the aims (with previous approval) and take a step back into the field to set the foundations that would allow this thesis to be possible but also further studies in personality disorders.

In parallel to these instruments, we have been working on validating additional scales, not only for adult population but also for adolescents, considering that the recent classification manuals DSM-5 (APA, 2013) and ICD-11(WHO, 2019). agrees on the fact that personality disorders do appear from this period of life, and not being able to diagnoses have been for years detrimental for individuals who wait years to receive and finally get to the right treatment.

7.5 Levels of Personality Functioning: Early screeners of self- related and interpersonal-related BPD symptoms?

Our *Hypothesis 8* was that there would be a significant and positive association between the levels of personality functioning and the main components of psychopathology.

The criterion A has is defined as the dimensional severity criterion of the AMPD which can be assessed using the LPFS scale, a severity continuum consisting of five-points and characterized by four domains of the personality functioning: identity, self-direction, empathy, and intimacy (APA, 2013).

According to Sharp & Wall (2021), the levels of personality functioning (criterion A) (APA, 2013) is the core and common feature of personality disorders and was included into the latest editions of psychiatric classification manuals in response to the criticisms made to the categorical model. The dimensional model with a severity continuum from normal functioning to severe functioning problems could be then understood as a response to the failure of the categorical model. Among other useful features, the dimensional model explain the high comorbidity of the different personality disorders (Widiger & Samuel, 2005). Therefore, this criterion A, reintroduces the idea of a common core among all the personality pathology, which in words of Sharp & Wall (2021) comes down to the subjective experience of being human. With this shift, the authors reintroduce the self, identity, and personhood concepts as central to how an individual functions, and, with this, to how this individual might experience her own existence across time and space —what it feels like to be "me"— (which can be integrated/ coherent or incoherent/diffuse in the case of PD) (Sharp & Wall, 2021).

Regarding the levels of personality functioning, we found that among the personality functioning scales, the self-functioning was the best overall mechanism when considering effect sizes. Particularly, self-functioning worked as a good mechanism from adverse childhood experiences to affective, cognitive, and impulsive BPD symptom components. On the other hand, the best mechanism from adverse childhood experiences to relational BPD symptom components was interpersonal functioning. When looking at the content of each symptomatic component and the two subdomains of the scale, the results we found seem reasonable. This is, three of four components (cognitive distortions, affective dysregulation, and behavioral dysregulation) contain symptomatic manifestations related to the inner world of the individual

(associated to self-functioning), while one (disturbed relatedness) is related to the social world of the individual (associated to interpersonal functioning).

In conclusion, our results suggest that self-functioning is the main level of personality functioning associated with adverse childhood experiences, affecting all the symptomatic components of BPD and the two subdomains of the scale. In contrast, interpersonal functioning is associated with only one symptomatic component, namely disturbed relatedness, which is in line with our expectation considering the content that each of those subscales are intended to assess.

Even though this was an expected finding, it was interesting to discover that the levels of personality functioning (particularly the self-functioning) were able to predict impulsive behaviors as assessed in the ZAN-BPD (self-aggression and other high-risk behaviors) (Zanarini et al., 2015). a symptom component that was not predicted by any of the personality traits we studied. This finding might have theoretical implications in that the items assessing the self-functioning in the LPFS-BF 2.0 (Weekers et al., 2019) might orient us to what might be internal motives of self-aggressive acts and other impulsive behaviors. Moreover, it was interesting for us to acknowledge that the self-functioning scale was the best predictor of the two. The Concise Oxford English Dictionary define the self as "a person's essential being that distinguishes that person from others, especially considered as the object of introspection or reflective action" (Soanes & Stevenson, 2004).

The metacognitive model of personality functioning suggests that the core of personality functioning (with a disorder or not) is best defined by a metacognitive process of reflection and integration of aspects of self in a coherent manner (e.g., Kernberg, 1967, 1970, 1987). It represents the view that personality encompasses how a person controls herself and her relationships additional to how we can describe her (i.e., maladaptive traits) (Sharp & Wall, 2021). Our findings regarding the predictive role of this "core aspect" of the personality functioning on symptomatic components of BPD might also contribute to clinical comprehensions.

According to Nakash et al., (2015) clinicians tend to underuse psychiatric classification manuals such as DSM (APA, 1994, 2013). not gathering enough information to establish a correct diagnosis for most disorders (including personality disorders). The authors propose that

systematically evaluating the clinicians' assessment process in routine care could help identify the best ways to improve diagnostic efficiency. In this line of thought Zimmerman (2015) states that a comparison of diagnoses made by clinicians utilizing unstandardized, unstructured interviews, and researchers employing standardized, organized interview schedules has been a focus of their study in the Rhode Island Methods to Improve Diagnostic Assessment and Services (MIDAS) project. Examples of this has been shown in a study conducted by Zimmerman & Mattia, (1999) where they demonstrate that interviewers using the Structured Interview for DSM-IV Personality (Pfohl et al., 1997) were substantially more likely to identify borderline personality disorder when compared to clinicians who used an unstructured interview.

The DSM-5, and particularly, the levels of personality functioning construct is closer to what clinicians tend to do in their clinical practice when diagnosing personality disorders. However, the use of a specific construct might help to systematize these practice to increase diagnostic accuracy and treatment outcomes (e.g., if an individual with BPD is misdiagnosed as with bipolar disorder, decisions on medication and psychotherapy will come with poorer outcomes) (Zimmerman, 2015). Thus, the empirical evidence we present of how this construct predict BPD components, and particularly those components more difficult to predict (i.e., impulsive symptoms) might contribute to close the gap between clinical and routine clinical practices.

7.6 Can personality functioning (criterion A) and personality traits (criterion B) and act as mediators in the relationship between adverse childhood experiences and BPD components

Our *Hypothesis 2* was that the association between adverse childhood experiences and the BPD symptom components would be mediated by maladaptive personality traits, while our *Hypothesis 3* was that the association between adverse childhood experiences and the main components of psychopathology in BPD would also be mediated by FFM personality traits. Lastly our *Hypothesis 7* was that the association between adverse childhood experiences and the main components of psychopathology would be mediated by the levels of personality functioning.

According to the DSM-5 AMPD (APA, 2013) personality functioning (criterion A) and traits (criterion B) are relatively inflexible and pervasive across a broad range of personal and social situations (criterion C), relatively stable over time, with onset in adolescence or early adulthood (criterion D), and not better explained by another mental disorder (Criterion E), a substance or medical condition (Criterion F), or an individual's developmental stage or sociocultural environment (Criterion G). According to the evidence, personality traits (criterion B), are relatively stable across developmental stages, however a personality disorder may manifest only after the normal developmental emergence of integrated self and identity functions (criterion B), which according to Sharp & Wall (2021) explains the installation of PDs during adolescence.

To understand personality traits and functioning as part of a mechanism, we first need to consider two main premises. One, is that personality traits and functioning are different and complementary personality features, and second, that personality can and might change during lifespan.

Regarding our first premise we state that while personality traits, as patterns, refer to a structure of thinking, feeling, and behaving, they express who we are. This is personality traits are the descriptive behavioral manifestations of our personalities as social actors. However, they stick to descriptions and do not account for the rationale of why individuals act as they do, which is, their motivations. Personality functioning, on the other hand can be more related to the content in the intrapsychic world containing the internal motives behind these actions. According to McAdams (2015), to understand individual differences in personality, we must also consider a person's goals and motivations—traits alone are not enough. With our results, we underscore that while personality traits (FFM and maladaptive) capture individual differences and continuity, the levels of personality functioning capture differences in how individuals experience and interpret the world, which is manifested in internal shifts on how they develop in perceiving themself and others (Sharp & Wall, 2021).

For our second premise, we will focus on the "relatively stable" property of personality, which is the fact that personality can and do change over the course of life (Chapman et al., 2019). From a developmental perspective, traits are the earliest appearing aspect of personality (as temperament), specifically in the first year of life (Rothbart & Bates, 2006). Afterwards, these

systems start to get more complex and new traits appear, being both the temperamental traits and the later traits influenced by genetics (Krueger & Johnson, 2008; Saudino, 2005). However, more and more research has shown that personality can change across lifetime, due to maturation or shaped by experiences (e.g. Neyer & Lehnart, 2007; Roberts et al., 2006; Robins et al., 2001). Experiences presenting during the first years of life with our caregivers, tend to be particularly impactful for the ways we understand and interact with the world (e.g., Broomell et al., 2020; Hanford et al., 2018). It seems that the brain growth velocity (Nelson et al., 2007) and the high plasticity that characterizes this stage (Ferré et al., 2021; Twardosz, 2012). in convergence with the installment of the first emotional and social dynamics set the bases for further development. In a normative development, for example, emotional stability increases with age, as shown, for example, in a 5-annual-wave study conducted by Klimstra et al., (2009). while others change as a result of specific life experiences (Roberts & Mroczek, 2008). Studies such as the one by Roberts et al., (2008) have shown that life and work experiences are associated with changes in personality. For example those who experience successful careers during their young adulthood will increase their scores in personality traits such as emotional stability and Conscientiousness (Roberts et al., 2003). Across the late adolescence and adulthood, there is usually a greater investment in social roles (e.g. spouses or partners, workers, parents), which tend to regulate some traits (Lodi-Smith & Roberts, 2007). The first years of life, as a plastic developmental stage is of course susceptible to influence personality for the better (e.g., nurturing relationships with caregivers) or for the worse (e.g., by experiencing maltreatment or negligence). When adults do not experiment this positive growing trend in their personality, and instead, develop pathways into more negative directions, can sometimes experience how they the stick and impregnate the way they interact with themselves and the world. Moreover, individuals who, as a consequence of these non-normative experiences are particularly at risk for problems during adulthood, which is probably the case of individuals with personality pathology (Roberts et al., 2008).

In this dissertation, we studied how the latter (i.e., adverse experiences that appear earlier in life) can impact both personality traits and personality functioning, and how these in turn can manifest into symptomatic components of BPD.

Overall, and in line with our hypothesis, our findings reveal that adverse childhood experiences predicted both personality traits and personality functioning, and in turn, these personality

features predicted BPD symptom components. As we hypothesized, the four BPD components (i.e., cognitive, affective, relational, and impulsive) were predicted by either personality traits, personality functioning, or both. For affective, cognitive, and relational symptoms, the best mechanism was through personality traits, particularly Negative Affect, and Extraversion. For impulsive symptoms, the best mechanism was through the levels of personality functioning, particularly, self-functioning, but with an effect that was half the size comparing to the other components. Personality traits seemed to be the strongest mechanisms among all, particularly. Extraversion. It was interesting to notice that contrary to our expectations Extraversion from the FFM was the best mechanism among all. On the other hand, the levels of personality functioning, also predicted affective, cognitive, and in less degree relational and impulsive BPD symptom components. The levels of personality functioning were the only mechanism we found in the relationship between adverse childhood experiences and impulsive BPD symptom components.

As a research and clinical implications of these results it is interesting to notice that even though personality traits start to appear from the very first years of life. the diagnosis and treatment of BPD. is usually delayed resulting in a less favorable outcomes (Bozzatello et al., 2019, 2021). Moreover there is evidence that the personality traits of children are structured similarly as adults by the school-age years (Caspi & Shiner, 2006; John et al., 2008; Shiner & DeYoung, n.d.). For example, low Extraversion in children might be expressed by a tendency to be "shy, reserved, and lethargic", while high neuroticism in children might be expressed by a tendency to be "anxious, vulnerable, tense, easily frightened, "falling apart", under stress, guilt-prone, moody, low in frustration tolerance, and insecure in relationships with others" (Shiner, 2009).

Regarding the levels of personality functioning, both theoretical and empirical propositions suggest that even though the normative development starts earlier in life during childhood as internal intrapsychic motives, they keep developing until adolescence as diverse internal experiences regarding interpreting themselves and the world. According to this, even though personality traits appear from early in life, it is with the normative developmental emergence of an integrated self and identity that the personality dysfunction can emerge. This coincide with the described emergence of personality disorders in adolescence (Sharp & Wall, 2021). Despite the general improvements that typically occur in personality functioning from

adolescence to adulthood, there may be some individuals whose functioning worsen and thus become a more persistent pattern.

We propose that the personality traits and the levels of personality functioning constitute parallel processes with own change speeds that integrates and consolidate during adolescence, which is why the diagnosis of BPD can be made during this time of life (Sharp & Wall, 2021). Once they are consolidated and installed during adolescence, we can assess the four symptomatic components of a BPD diagnosis (i.e., affective, cognitive, relational, and impulsive).

Our propose is in line to (McAdams, 2015, 2020). who theoretically state that there are three layers in personality? The first one is the person-as-actor, the second one is the person-as-agent, and the third one is the person-as-author. The first layer is where individuals are born with a temperament, that starts interacting with the environment and creates a personality trait. During this layer, at around 2 years old, the individual starts getting an awareness of an "I" and a "me". The second layer is mainly characterized by mentalization (there is an intention behind behaviors, and they do not happen at random). The third layer appears in adolescence where the individual start building a consistent, global and integrated story of their lives, coined by Sharp & Wall (2021) a narrative identity. By this moment, the individual is potentially making sense of their own life, which is felt as with a purpose and a temporal continuity

The fact that both personality traits and functioning can present before adulthood is the reason behind the legitimization of BPD diagnoses in adolescents in DSM-5 (APA, 2013) and ICD-11 (WHO, 2019). We now know that this diagnosis during adolescence is reliable and valid (Fossati, 2014; Jørgensen et al., 2021; Kaess et al., 2014; Sharp et al., 2012; Wall et al., 2020). In fact, we now have prevalence in this population and they are relatively high compared to adults (Sharp & Romero, 2007). We acknowledge the differences that have been found in the presentation of BPD in adolescents and adults differ on each of the components (i.e., affective dysregulation, impulsivity, disturbed relatedness, cognitive distortions) (Chanen, 2015; Fonagy et al., 2015; Kaess et al., 2013, 2014; Sharp & Romero, 2007; Stead et al., 2019). However, the evidence suggesting that personality pathology occurs in youth, and the studies suggesting that pathways towards adult personality disorders can begin in childhood in the form of personality

traits (Blair & Viding, 2008; Lynam & Gudonis, 2005) might help us develop indicated prevention strategies.

Therefore, we might benefit from using the alternative models (i.e., personality traits and functioning) to better capture and predict further presentations in adolescents, particularly in those who report adverse childhood experiences, which we know is a highly predictive risk factor of psychopathology (including BPD) (e.g. Porter et al., 2020). These are the individuals we were interested in with this dissertation. This is individuals that due to adverse experiences during infancy were prone to decrease on desirable personality features and increase on the maladaptive ones. However, as personality traits and functioning are "relatively" stable across time and considering that BPD symptoms might differ in presentation from adolescent to adult population, it would not be ideal to assess adolescents with adapted adult measurements to more appropriate situations or wording. This is precisely how personality traits and functioning might take a preventive role by facilitating the identification of high-risk younger individuals through certain personality patterns even if the symptomatic presentation (of BPD or any other psychiatric disorder), as we know it, has not been installed yet (Haggerty et al., 2018).

We cannot analyze these results without acknowledging the fact that adverse childhood experiences are neither sufficient nor necessary for developing a BPD diagnosis. There are at least five potential explanations to this phenomenon,

First, the heritability may explain the rest of the variability, and therefore "adverse childhood experiences are nor sufficient" to present a pathway towards a mental health condition including BPD. For example, patients with BPD seem to be five times more likely to have a first-degree relative with the disorder. In the meantime. BPD has been linked to genetic variables, according to strong evidence from twin, adoption, family, and linkage studies, with an estimated heritability of around 63-67 % (Martens & van Loo, 2007; Torgersen et al., 2012).

Second, it would be reasonable to think that some individuals, after they experienced these adversities face other repairing realities that extends the way they perceive the world, which are associated with better psychological health and well-being (Cicchetti & Rogosch, 2009; Morris et al., 2021).

Third, some individuals might born with temperamental traits that might help facilitate them to reach a more healthy intrapsychic solution to deal with the maltreatment experience (Rothbart

& Bates, 2006). There are more temperamental traits that have been found to correlate with BPD (refer to Bornovalova et al., 2006 for a review), however, less has been studied in relation to temperamental traits that might work as protector factors to developing psychopathological pathways after adverse childhood experiences that would be interesting to explore (Chanen & Kaess, 2012).

Fourth, it might be that some individuals develop a capacity to grow from these traumatic experiences, a construct known as posttraumatic growth (Kaye-Tzadok & Davidson-Arad, 2016; Mohr & Rosén, 2017). As an example. Marriott et al., (2014) present some empirical findings about internal (e.g., coping skills, interpretation of experiences and self-esteem), and external resources (e.g., family relationships, friendships, community resources) associated with a posttraumatic growth after adverse childhood experiences. Particularly, self-esteem would be an interest construct to examine in further studies, considering our findings regarding the social self-esteem facet in Extraversion and an important mechanism.

And fifth, adverse childhood experiences "are not necessary" for developing BPD. Even though we have presented vast literature regarding the relationship between adverse childhood experiences and BPD, we know that that resilience is the norm rather than the exception when facing adverse childhood experiences (e.g. Cicchetti & Rogosch, 2009). In fact, in a recent study, about 29% of individuals living with BPD reported no adverse childhood experiences (Chanen, 2021). This adds to the long-held belief that not all people with BPD have a history of trauma. The value of early adversity for victim survivors should not be diminished by acknowledging non-traumatic etiological pathways to BPD. It does, however, underscore the lived experience of a subgroup of individuals with BPD, enabling a more nuanced understanding of the variability and uniqueness of each individual with the diagnosis (Callan & Howland, 2009; Chanen, 2021; Elzy & Karver, 2018).

Both equifinality and multifinality are likely to be present in the developmental pathways to BPD according to Shiner & Tackett (2014). The concept of equifinality, as applied to BPD, highlights the need of establishing whether different pathways might lead to similar symptom patterns in BPD. Despite adverse childhood experiences enhanced the risk of presenting BPD, early abuse and neglect are unlikely to be found in the histories of all individuals with BPD. Some people, on the other hand, may struggle from a young age with such severe personality features that can override the effects of a generally "good enough" environment (e.g. Zanarini

& Frankenburg, 2007). In conclusion, it is crucial to recognize that temperament may play a bigger role in certain pathways, whereas adverse childhood experiences may play a larger role in others (Nigg et al., 2005).

7.7   Limitations

First and foremost, a common challenge throughout this thesis was determining the best appropriate methodological technique to explore personality from so many different levels (i.e., traits, functioning, and symptoms). That is because until the multiple conference meetings developed years before the launching of the DSM-5 in 2013, several traditions for understanding personality were working in parallel without intersection points (e.g. personality traits tradition, psychodynamic personality organization tradition, categorical personality disorder tradition) (APA, 2013; Morey et al., 2015; Skodol et al., 2013; T. A. Widiger et al., 2015; T. A. Widiger & Crego, 2015; Zachar et al., 2016). Part of the history of how the DSM-5 was created after consensus is narrated as an anecdote by Zachar et al., (2016).

The newer dimensional model seems to be a starting point for integrating helpful knowledge derived from these different traditions (Clarkin, 2018; Hopwood & Krueger, 2018; Schoenleber, 2018; Sharp, 2018; Widiger & McCabe, 2018a). We can see a clear example of this in the multiple theoretical and empirical reviews published by highest quality scientific journals such as The Lancet (e.g. Bohus et al., 2021; Dodds, 2021; Leichsenring et al., 2011; Lieb et al., 2004). Nature (e.g. Gunderson. Herpertz, et al., 2018). or JAMA (e.g. Cristea et al., 2017; Reichborn-Kjennerud et al., 2013). We see this even in the paper published by Gunderson. Fruzzetti, et al., (2018) in a Special Section in Journal of Personality Disorders on Theories of Borderline Personality Disorder where the author intends to organize the competing theories to understand BPD. More interestingly are the additional commentary papers that came as a response after this publication (e.g. Clarkin, 2018; Hopwood & Krueger, 2018; Schoenleber, 2018; Sharp, 2018; Widiger & McCabe, 2018a). particularly the one by (Widiger & McCabe, 2018) titled "The Five-Factor Model is a Competing Theory of Borderline Personality Disorder", where the author present arguments in favor of using this theory hand by hand with the others for understanding BPD, because Gunderson. Fruzzetti, et al., (2018) left it out of the "competence".

As a natural consequence, constructs from each of these domains tend to cluster together and show stronger associations around similar theoretical contents. Within most of the models of this thesis, we found closer relationships around same-domain constructs, and weaker links around those from different domains. For example. Emotionality (FFM trait). Negative Affect (maladaptive trait), and affect dysregulation presented stronger associations. This can be explained because they all belong to a latent "emotional" or "affective" construct. These associations might be reflecting how these phenomena occur in real life, but they can also be artificial methodological associations, particularly considering that many of the questionnaires contain similar items with different timeframes, and thus, they can present content overlap.

The latter can be even more problematic considering that the design of our studies, and therefore, our assessment, was cross-sectional, while the phenomena we were studying (i.e., adverse childhood experiences) is longitudinal in nature. Being a cross-sectional study make it difficult to imply causality (Maxwell et al., 2011). To account for these issues, we selected a methodological approach (i.e., structural equation modelling) that allowed us to infer causal relationships of a model, from a cross-sectional assessment (Lei & Wu, 2007; Pearl, 2012; Tarka, 2018). To use this statistical methodology, we needed to previously build a theoretically driven model from which we could elaborate hypothesis to test. One of the advantages of using this method is that it forces researchers to explicitly specify how the variables relate to each other, encouraging them to develop clear and logical theories of all the processes that hypothetically impact the outcome (Fried, 2020, 2017; Robinaugh et al, 2021). In our case, we used personality traits, which were especially good mediators, considering they can both predict and be predicted by environmental and psychological variables. We should interpret the results with caution because using cross-sectional data for mediation analyses may produce biased results considering mediation in inherently a process, and as a process phenomenon occur in different moments of time. We suggest further studies replicate our analyses with a prospective design before these results can be applied to a clinical context. In the meantime, this is a good first step and can be used as a resource for further studies.

One additional aspect we consider important to acknowledge is that we collected our data retrospectively. The validity of these results depend in part of an accurate report from participants of events that occurred many years ago, and because it is a retrospective report, might present recall bias (Baldwin et al., 2019; Brewin et al., 1993; Hardt & Rutter, 2004; Reuben et al., 2016). This might be accentuated in our study, considering that the report of adverse childhood experiences might be confounded with the current psychological condition (i.e., particularly in individuals with a BPD diagnosis), and normative age changes. For example Finkelhor et al., (2013) found that there may be a distinction between younger and older authors when referring to childhood events as adversities and not, which reflects social shifts in norms and knowledge of childhood experiences. However, according to previous studies (Delaney & Smith, 2012; Hardt & Rutter, 2004) retrospective reports of childhood maltreatment are sufficiently valid for research purposes despite the potential memory biases, being the greater risk the underreport of abuse experiences (instead of an over-report). What these authors suggest is that retrospective reports provide a conservative examination of the impact of adverse childhood experiences on contemporary symptomatic variables (Kopala-Sibley et al., 2013). Moreover, studies have demonstrated that the recall of adverse childhood experiences remain relatively stable throughout the course of life (Ferraro et al., 2016). Retrospective studies as the ones we conducted might be very useful especially on groups such as the ones who participated in our study, which would be hard to target in prospective samples (Hill & Nathan, 2008). We require long-term prospective research to tackle this challenge utilizing accessible prospective data sets.

It is also worth noting that one additional limitation was utilizing cumulative scores for childhood maltreatment as a proxy for adverse childhood experiences. In practice, this implies that each subtype of childhood maltreatment is given identical weight in the analysis, despite the fact that the different forms of adversity may differ in terms of salience and sequelae (Benjet et al., 2010). It would be expected that the subtype but also other relevant variables (e.g. duration, severity, subtypes of events, chronicity, age of occurrence the perpetrator, and the existence of reparative experiences after the traumatic events) might play a crucial role in this relationship (Lacey & Minnis, 2020; McLaughlin et al., 2020). Future analysis specifically conducted for this purpose might address this relationship by decomposing the score of adverse

childhood experiences into specific types of childhood maltreatment, allowing to better identify specific pathways from each subtype of traumatic experience to each symptomatic domain. Moreover, future studies could benefit from including more comprehensive assessment strategies that address these variables or complementing this questionnaire with an additional interview for better understanding specific aspects surrounding these events, and their contribution to personality.

This study was not comprehensive in that it does not capture any biological components. The model proposed by Leichsenring, (2011) is composed by the interrelationship between what the authors call psychosocial and biological factors (i.e., genetics, neurobiological structures, and neurobiological dysfunctions). In this dissertation we tested the psychosocial part of the model (i.e., adverse childhood experiences, personality traits, and personality functioning), leaving out other essential variables (and their interrelations with the psychosocial factors) that would provide a better explanation about how the disorder develop considering results from previous studies focused on the gene/environment influences. This is a limitation because it does not account for the fact that there may be other variables that lead to the development of BPD. However, researchers and clinicians might benefit from these results as they could help them identify personality features associated to adverse childhood experiences with a potential prediction of BPD symptoms earlier than the usual onset on adolescence. This information is particularly useful given that some psychological variables have been shown to be and changeable through different therapeutic approaches (Bleidorn et al., 2021; Bornovalova et al., 2009; Roberts & Mroczek, 2008). Further studies that involve variables from both factors (psychosocial and biological) could help inform early interventions that could timely prevent the persistence of these symptoms during lifespan while reducing the negative impacts that are usually associated with this disorder.

Even though in the first study with secondary data the variables were assessed with different methodologies (some assessments where clinical interviews. while some where self-reports), in the second study all our assessments where self-reports. Using only one source of information (e.g., self-report) can be problematic because it can lead to biases and over/under estimation of certain variables. Using one source of information makes more likely that the participants would

not necessarily report their true feelings or behaviors, or they may have been confused when answering the questions, especially considering the battery of questionnaires was long. This means that our data may be biased and could have influenced our results. In the future, we should consider using multiple sources of information for all assessments, not only by asking individuals using different methodologies (e.g. interviews, self-reports, observation), but also by using information from informants additional to the reports about the individuals' own personality (e.g. spouses, friends) (Connelly & Ones, 2010). It is important to consider however that the informants' observation should be complementary as they do not have access to the individuals' feeling or thoughts associated with the behavior (Klonsky et al., 2002). By doing this, we would be able to gain a better understanding of how adverse childhood experiences, personality traits and functioning, and BPD symptom components are related to each other enriching the empirical results of this model, and thus the potential theories deriving from them.

There are five important aspects to consider in this study regarding the sample. The first one is that in the second study, individuals in the clinical sample were recruited by being referred directly by professionals. From those who were referred, the ones who were finally included were those who voluntarily wanted to be part of the study rather than being selected through random sampling. Thus, our sample could be biased. Specifically, those participants with more severe presentations of BPD may have decided to participate in our study because they were more interested or had more knowledge about BPD compared to those with milder presentations of these symptoms. Therefore, some findings may be over-estimated. This bias can additionally apply to the community sample as well, in that individuals knew that the study was about personality disorders. Those individuals that found the online advertisement and presented mental health conditions might be more interested in participating in such a study comparing to individuals without these conditions. This is however one decision we decided to make considering ethical aspects regarding participating in a study.

Our second consideration was regarding our first study. The first study, which was secondary data, collected data from individuals without a BPD diagnosis (i.e., community sample), and individuals with a BPD diagnosis (i.e., clinical sample). However, individuals from the clinical sample presented very severe presentation of the disorder, while individuals from the community sample presented an outstanding healthy condition in terms of mental health. This

was problematic because it made the sample somehow homogeneous naturally organizing in two extreme groups, which was not ideal for our statistical analyses. Because of this, in the second study we decided to include participants fulfilling different number of criteria, so that they could distribute in a more continuous fashion along the BPD dimension.

The third consideration is related to the data refers to the fact that the data collection of the second study was conducted during the COVID-19 pandemics. This is problematic because a higher than usual number of individuals were probably emotionally affected. Since most of our variables contained questions regarding affective processes, it is probable that the variables in this dimension could be inflated, particularly in individuals that before the pandemics were undergoing a mental health condition, such as our clinical group.

The first study used secondary data which was collected earlier, without the pandemics. Therefore, despite including data from the two studies was including within the same interpretation, we could not make comparisons between them, because the differences might be explained partially with the emotional consequences of the ongoing pandemic situation.

The fourth consideration regards the way in which individuals completed the questionnaires in the second study. All the participants responded to the questionnaires online. This is a limitation because it could be less representative of the general population (i.e., individuals who spend time on the internet where more likely to receive an advertisement to participate in the study). Moreover, it is not possible to determine whether people were answering honestly. Particularly if we consider that participants who completed the questionnaire participated in a raffle that was conducted at the end of the study. The possibility for individuals to participate in this raffle might work as an external motivator to complete the questionnaire without necessarily dedicating the time to think about the questions regarding their real current situation.

One last consideration is related to the sample size. Even though our sample size was large enough for most of our analyses (i.e., in the first study the sample was indeed large and in the second study we collected our data from two different countries), our results on the validation of the PID5BF +M (Kerber et al., 2020) could be more robust if our sample was larger. Specifically, a larger sample might let us use more robust estimators (e.g., WLSM or WLSMV, instead of DWLS) for our analyses, and compute the Gamma matrix con estimating the convergent validity. We suggest further studies could replicate these analyses with a large

enough sample to reach more robust results regarding the validation of this questionnaire in a Spanish speaking Chilean population.

Because of the mentioned limitations, it is critical to stress that the results derived from the current dissertation are exploratory, and even though they have clinical implications for evaluation and treatment of personality disorders, much more research is needed before they can be directly applied in clinical practice, including more explanatory hypothesis testing, such as longitudinal designs.

Our intention is rather to make an empirical approximation to a theory that seems to be integrating in an interesting and parsimonious way how recent perspectives could be related to previous knowledge of BPD, and to BPD features per se. We acknowledge that many efforts have been developed to advance theoretically and empirically towards a more valid and reliable way to make diagnosis in the field of personality disorders. We still must develop clinical and research strategies for accurate and timely matches between individual profiles and evidence-based treatments. We believe these findings are initial steps to bridge on the existing gap of knowledge in BPD literature.

7.8   Implications for research

With the expected change that came from the shift from categorical to dimensional models in personality disorders, emerged a new opportunity for understanding what we knew about risk factors for BPD, particularly, the role of adverse childhood experiences. This dissertation adds to earlier research by demonstrating potential mechanisms acting in the relationship between adverse childhood experiences and each BPD symptom component, considering that most of the built knowledge on this topic was conducted with the traditional categorical model (e.g. Cohen et al., 2014; Johnson et al., 2001; Lobbestael et al., 2010). The mechanism we propose consists of criteria from the dimensional alternative models for personality disorders, including criterion A and B (APA, 1994, 2013).

Specifically, the goal of this thesis was to expand on this framework to gain a better understanding of the link between adverse childhood experiences, personality functioning and traits, and the BPD symptom components. First, this research fills an important gap, since, as

far as we know, this is the first time a study has been conducted to examine within one model the relationship between adverse childhood experiences, the alternative dimensional model, and the categorical model for BPD using specific symptomatic components.

Moreover, even though there is vast research on the relationship between adverse childhood experiences and BPD, most of it has been done with global BPD scores. This study bridge in that incorporated specific pathways in which adverse childhood experiences impact the different symptom components. Even the idea of thinking about BPD in terms of components requires previous premises regarding the fact that as many other mental health conditions. BPD is multidimensional, and thus, we suggest studying it this way, particularly in this moment of history where we seem to be witnessing an important shift of paradigms in the field of personality disorders. This is underscored by the fact that we found differential effects on the different BPD symptom components. For example, neither of the two models of personality traits were able to predict BPD impulsive behaviors, while the affective dysregulation was highly predicted by all the variables we included as predictors (i.e., adverse childhood experiences, personality traits from the FFM, maladaptive personality traits, and personality functioning). It is therefore one thing that we suggest further researchers consider when designing their own studies in this field of knowledge.

Additionally, to the gap that this dissertation fill, one important aspect that we consider crucial in the way we conducted our work, was the reutilization of previous theoretical proposals instead of creating one brand new theory to test. This movement was an intentional statement as in the psychological discipline it is usual to repeatedly reinvent the wheel without a comprehensive revision of what has done, and even worse, without trying to first understand what is available for empirical testing. This is an important research implication, not only of our results, but of the theoretical proposal of trying to integrate within one model empirically valid knowledge from instead of building from scratch. We believe that this is the only way that we can build more complicated models, that could eventually become evidence-based robust theories, and therefore advance in the discipline, one that seems to be somehow stuck in ego-based debates.

Besides this initial intention of building empirically and looking forward to contributing to a higher order goal of making theory, our findings are still at an exploratory level. This means that even though it can set bases for further clinical applications, many of the reflections derived

from our results are inferential and therefore should be taken with caution. However, we have learnt a lot about research in the topic during the process of building this dissertation. We present these learnings here as research implications.

As we observed a non-expected effect of FFM personality traits, we found one additional implication of our findings regarding the role of personality traits. We not only found that personality traits from the FFM was able to predict BPD components as the maladaptive trait, but also that one of the best predictors was one trait from the FFM. This finding provides evidence on the importance of incorporating evidence regarding personality traits from the FFM besides only considering maladaptive traits for describing or predicting personality disorders, particularly BPD. We acknowledge that this finding could be random and specific to our sample. However, when we looked at these findings more specifically at the facet level, and when we tried to understand the role of traits from a wider perspective considering content domains, we learnt that this could have research implications independent to this study. We learnt for example that one same construct can vary a lot depending on the approach of the assessment strategy (e.g., two different questionnaires), and the theoretical background in which it is based. For us, one example was Extraversion from the HEXACO-60 (Ashton & Lee, 2009). which differed a lot from the same construct in other questionnaires, and included one interesting facet, the social self-esteem that seemed to explain a large proportion of the variance in BPD symptom components. Moreover, we acknowledge that subtle differences in how authors behind the PID5BF +M (Kerber et al., 2020) and the HEXACO-60 (Ashton & Lee, 2009) define an emotional trait, and how these differences can have a very large impact in the effect they have on other variable (in our case BPD symptom components). Looking at personality perspective from these two different perspectives (first a specific one and then a wider one) helped us to understand this umbrella constructs of personality traits that best predicted BPD components (social, emotional, and thought). Through this way of thinking we acknowledge that the combination of traits with a higher impact were the ones with a social and an emotional content, which is interesting considering how early we can capture personality traits in the lifespan of an individual. This might also explain why we find so many contradictions within the research in our field (e.g., sometimes adverse childhood experiences are strongly associated with BPD, while sometimes it is not). We invite further researchers to make this exercise for a more

profound understanding of the theoretical and research implications of their findings. We believe this is other way in which we can advance in the science, and therefore theory in our field in a humbler way.

In this same line of thought it is a research implication, what we found regarding the effects that adverse childhood experiences have on affective symptoms. Without the consideration we presented above, we could think that the results we found regarding the BPD affective symptoms are specific to this disorder. Because our hypothesis was confirmed, we would explain it as an interesting and important finding. However, if we try to cautiously think about the theoretical implications of this finding, we immediately come to the idea of affective symptoms as a common factor across many mental health diagnoses. Thus, apart to the fact that our hypothesis was confirmed, it is likely that our findings are not specific to BPD but reflect a more generalized relationship between adverse childhood experiences and mental health conditions. We cannot warrantee that it is as we present it, however, this can be an interesting path to follow when studying the effect of not only adverse childhood experiences, but other risk factors on specific mental health conditions. We suggest that further studies include participants with different mental health conditions as a control group, additionally to healthy participants when studying this relationship, to control for multicausality.

Besides the mentioned research implications, we believe this study has several advantages that might contribute to the generalization of our findings.

First, our sample size was large enough and highly heterogeneous. This decision was not because we wanted to compare the two samples. This was out of our scope and we did not present hypotheses regarding this aspect, as the literature shows that a general national character is usually unfounded and mostly based on stereotypes (Terracciano et al., 2005). The rationale behind this decision was to create a model that would include more than one cultural background to enhance its applicability and validity. To further reach this heterogeneity goal, our sample involved healthy and clinical individuals. The healthy sample consisted of students and community participants. This variability in data collection was a contribution since most of the studies we revised while conducting this thesis involved student samples, thus not necessarily reflecting the psychological BPD dynamics in population outside this group. Moreover, in the

second study we included participants with different levels of BPD features, from the healthiest participants to the very severe ones, including lots of participants in the middle point of those two.

Second for selecting which traits to include, we considered three different measures that might present subtle differences which may helped us to generalize our results to a broader conceptualization of BPD instead of being specific to one questionnaire.

Third, in our first study we assessed personality from more than one source of information, namely interviews and self-report questionnaires, which may decrease the likelihood of bias during the study, and thus increase generalization of our findings.

Lastly, we want to mention as a research implication of our work during the process of this thesis, what we found regarding the lack of validated instruments for Spanish speaking Chilean population. Our initial plan was to conduct a study about personality, but soon discovered that there were very few validated instruments for assessing personality from either the categorical or the dimensional model. Without a validation process it would be impossible to conduct studies such as the ones we conducted. We highly encourage researchers to commit to validation initiatives for theoretically sound instruments that may help advance in this field of knowledge, not only for personality disorders but for other constructs in mental health and psychology. This is usually a task that both clinicians researchers avoid, due to the low intellectual challenge it implies. Instead, individuals tend to find the task of creating a new instrument as more interesting. We believe, it is again important to re-think how these practices are again efforts for re-inventing the wheel and are detrimental for our advances as a discipline.

While our results should be taken care of with caution because of methodological limitations, the research implications we present highlight their potentiality to be a model from which we can further build, theoretically, empirically, and clinically.

7.9   *Implications for clinical practice.*

Assessing personality disorders using the dimensional model is clearly closer to what clinicians due in their everyday work. Before this effort for integration in the context of DSM-5 (APA,

2013) and ICD-11 (WHO, 2019). there was an evident gap between researchers and clinicians working on the field of personality disorders, and particularly BPD. The results of these efforts, while still in their status of "work in progress" have been designing orienting paths to advance theoretically and empirically towards a more valid and reliable protocol to make accurate diagnosis of personality disorders. Making accurate diagnosis is essential for decision making in the delivery of evidence-based treatments for the different targets. This delivery requires several abilities. For example, the clinician must have the theoretical knowledge about BPD, but also the ability to identify these features in an individual. It also requires that the clinician predict some prognosis so she can make timely diagnosis. She additionally needs to know how to communicate this diagnosis to the individual and their families. Even after doing this, a clinician must know about the evidence-based treatments that are available for her patient and who will benefit from what. All these abilities are usually learned for other diagnosis, but it seems like for personality disorders, the field has been vaguer (Fischer et al., 2019). Since all these abilities seem to be part of a specialized program, and considering there are lots of "brand" treatments for personality disorders that would need intensive education (Bateman & Fonagy, 2016; Doering et al., 2010; Linehan, 1987; Young et al., 2003). we believe it is not possible that every clinician dominates each of these abilities. However, we do believe that clinicians must work on their abilities to know what is best for who and according to that, be able to suggest adequate specific preventive and reactive strategies that may reorient the patient towards a healthier pathway according to their own specific patterns (Porter et al., 2020). This is clinicians might learn when and what to look for in an individual so that they can better predict a potential psychopathological trajectory and accordingly select what would be best.

This dissertation is aligned to the purpose behind the shift to dimensional models which was based on the idea that it would help to diagnose and intervene at early stages. Considering that personality traits and functioning might start to appear earlier in life, we could consider them as more proximal consequences of adverse childhood experiences. By identifying the levels of personality functioning and personality traits as psychosocial markers with etiological significance, we might advance on clinical interventions to modify the course of individuals who experienced different levels of adverse childhood experiences. Moreover, by detecting specific pathways from adverse childhood experiences to each BPD symptom components we

might also orient professionals to decide on adequate and individualized interventions considering the most likely affected clinical component based on the effects we found from community and clinical samples from two different countries in this dissertation.

These results, while exploratory constitute initial step towards developing the mentioned ability by contributing to bridging the gap between what has been going in the currently fast speed field of personality disorders research and the clinical practice. Once these results are replicated in further (hopefully prospective longitudinal) studies, clinicians might use dimensional models to predict potential pathways from a reporting of adverse childhood experiences to a specific BPD symptom component. For example, an individual who report having experienced emotional abuse during their childhood, and in therapy might reputedly manifested feeling with no hope towards having a rich social life due to repeated failure experience in this area (i.e., Social Self Esteem facet of the Extraversion trait, might probably be more likely to develop relational or affective BPD symptoms than an individual whose main pattern is more related to having pseudo-psychotic thoughts about their future (i.e., Psychoticism). While this information might help once a clinician suspect of a personality dysfunction, it would be even more useful if used to predict these symptom components in younger individuals while their meaning of the world and their purpose in life is not yet configured, as it would happen with younger adolescents, Moreover, a clinician might also benefit from these results for deciding on what type of intervention would work better considering these patterns and the trajectories that are more likely to present. This is particularly important considering that even though personality traits and functioning start developing develop childhood, the diagnosis of BPD, when it is done, is often delayed (Comtois & Carmel, 2016; Magnavita. Critchfield. Levy, & Lebow, 2010; Zimmerman & Mattia, 1999). The loosed time without a proper treatment usually have lasting consequences on several dimensions of the individuals' life, sometimes even with the cost of their life through suicide (Porter et al., 2020). This reflection might be of help when considering the importance of timely interventions and the costs that may have prioritizing specificity (with the risk of a false negative) in contrast to sensitivity (with the risk of a false positive).

For clinicians to better capture the differences between personality traits and functioning, one could imagine that the first can be understood as an external correlate of the personality (i.e., what we see), while the levels of personality functioning might be better understood by the

internal motives of why we act as we do. For example, one individual might act as if he is constantly abandoning their social relationships and openly manifest their commitment rejection (i.e., detachment). However, when seen from the inside, the individual might be so desperate for being liked and accepted that he might end up in relationships in which he was not particularly interested in more than to test what would happen. Moreover, if we look at the social and emotional history through his life, we might find that during his infancy he might suffered emotional abuse by his mother, and this dynamic might have repeated during his adolescence. Therefore, he might be not naturally detached (i.e., personality trait), but might have learnt from his infancy and adolescence to configurate an internal system of meaning (i.e., personality functioning) based on synchronizing with others to be liked. He might even try to modulate his traits so that he is more likable to others but might eventually fail because the feeling of being an actor was no longer sustainable. One individual such as this, might benefit from an early detection and timely derivation for a proper treatment, even if it is before the final integration of his personality (preferring sensitivity over specificity).

We believe our results might work as a toolbox for making decisions considering variables such as how early a clinician would like to intervene, in which part of the mechanism she would like to focus, how intensive should the treatment be, and in which components she might see more results. This is particularly important if we consider results from recent prospective studies Choi-Kain et al., (2020) and meta-analysis (Bateman & Fonagy, 2016; Doering et al., 2010; Linehan, 1987; Young et al., 2003) founding favorable long term prognosis of individuals with BPD (60% of remission rates) with improvements in global functioning at five years.

Despite the evidence, clinicians still hesitate diagnosing personality disorders in adolescent population primarily because of a concern regarding the associated stigma that might accompany this diagnosis (Bondurant et al., 2004; Sharp et al., 2012). We hope that this dissertation contributes to demystifying these practices by weighting it against empirical evidence of the potential action window it may for changing a pathological pathway as soon as it is possible.

Moreover, during this thesis we were particularly careful with making our results as generalizable as possible for clinicians to feel "relatable". One of the main strategies for this

was prioritizing heterogeneity within our simple. For this, we included participants from two different countries, and we strategically designed our inclusion criteria for including community and clinical participants who fulfilled different numbers of criteria for a BPD diagnosis (vs, very healthy or very ill participants, which was the case in the first study). By including participants with different levels of our variables, we incremented our ecologic validity, and thus, made results more generalizable to community and clinical population. The decision of including participants from two different countries, even though it was not with a comparison purpose, let us account for the potential impact that normative patterns may have on how individuals might process adverse childhood experiences, and on what is considered adaptive, maladaptive/dysfunction in personality during adulthood. In this dissertation, we also include different clinical components of BPD so that pathways were specific and differential across BPD symptoms. Lastly, we included different instruments, different theoretical perspectives, different symptom components, different models of personality traits (FFM and maladaptive personality traits), and different sources of information (self-reports and interviews) so that our results are as generalizable as possible. This approach to BPD might contribute to take advantage from the early intervention windows for detection and intervention in early stage of the diagnosis. Identifying diverse indicators with etiological significance may help predict the course of the disorder and somehow change these trajectories.

We suggest, that to continue with this initiative, clinicians from different countries might familiarize with the use of the instruments of the dimensional model, so that we can further combine results and facilitate the application in different contexts. One good step we took in this dissertation was to make sure that we have culturally valid scales that might open the possibility of make assessments from these dimensional models. We suggest further studies in Chile replicate this study with systematic interviews additional to the questionnaires to be able to routinely use them into clinical practice.

7.10   Futures research areas

We suggest that further studies assess adverse childhood experiences. BPD symptom components, personality traits and functioning in prospective, longitudinal designs including the measurement of these in multiple occasions in different time points (either by traditional or

intensive longitudinal designs). A longitudinal approach might help illuminating the temporal relationships between BPD clinical components, personality traits and functioning. For example, it would be interesting to understand in a more naturalistic way whether one symptom precedes the other (intra or inter components). Results of such studies may inform more clearly the research on the etiology and course of personality over time, and the underlying mechanisms that explain these associations. We are particularly interested in designing further studies with ecological momentary assessments that allow us to capture the different personality-related variables in real time. Particularly, we are interested in identifying the variability of BPD components, which are the ones we believe will change the most, according to personality traits and functioning, which are the most stable personality variables.

Moreover, we suggest that further researchers assess and report results of this model for other psychiatric disorders besides BPD to gain a more comprehensive understanding of the impact of adverse childhood experiences on different transdiagnostic symptoms in mental health. Moreover, studies such as this might help us understand to what extent the tested model is specific to BPD or can be a broader model. Even though the personality functioning is specific to personality problems, personality traits (normative and maladaptive) in conjunction with experiencing adverse childhood experiences, might work as risk factors and orient clinicians (as well as caregivers and school staff) predict children at risk.

We also suggest that further studies assess BPD symptomatic components, personality traits and functioning from a multimethod perspective. Even though this is one strategy used in secondary data from our first study (i.e., some of the assessments involved interviews and some were self-reports), our data collection for the second study was all based on self-report. We suggest that further studies combinate the assessment strategy for not only assess personality through interviews and self-reports, but also to assess personality considering other reporters. To have input from others when assessing personality disorders might be particularly important in personality considering that others might capture different information from the individual, and at the same time because personality disorders are characterized to be ego syntonic, this is, behaviors, thoughts and feelings are compatible with the individual's framework. Considering this, it can be difficult for an individual to report some of the experiences, because they are not

in contrast or incompatible with previous patterns, such as in depressive or anxiety disorders. In the same order of ideas, the use of interviews will be necessary for finding more accurate results in the psychometric properties of the instruments we validated with Chilean population (i.e., the LPFS-BF 2.0 (Weekers et al., 2019) and the PID5BF +M; Kerber et al., 2020). Even though these instruments are mainly designed as screeners for research. These interviews will be particularly important for translating their use into clinical practice with patients. We suggest designing a study where researchers could systematically interview participants with and without a diagnosis of personality disorder with one same instrument while applying the LPFS-BF 2.0 (Weekers et al., 2019) to corroborate the cut-off score we found with the self-report and therefore optimize its sensitivity and specificity.

In terms of methodical approaches, in this thesis, we decided to analyze data through path analytics methods. We made this decision considering that we had a previous theoretical proposal, and we derived our hypothesis from this for examining casual relationships between our variables. However, because some of the variables we studied might not be sequential but work as a system, we would like to further analyze this same data set with network analysis to understand with a more exploratory perspective the dynamics between the different constructs from this thesis.

Considering we were interested in the different pathways from adverse childhood experiences to BPD clinical components, the focus of our study was to disaggregate a BPD global score. We made this decision because of three reasons. Although we presented the prevalence of each subtype of maltreatment in the with a descriptive purpose, we used a global score in the model as a proxy for severity. First, there is vast of literature reporting that the co-occurrence of different types of maltreatment is the norm rather than the exception. Second, the theoretical proposal we wanted to test empirically, did not presented clear hypothesis regarding subtypes of trauma. Even though this was something we could do in our own, part of the initiative behind this thesis was related to reusing knowledge that has not been tested yet instead of creating one of our own, as it is usually done in our field. Third, as probably the most important, is the methodological argument. Path analyses is characterized by a parsimony principle. In concrete, this reflects in the number of parameters included in the model. Each variable we include

consists of a new parameter and is detrimental for the model. We therefore decided to maintain a simpler model and to further study this specific construct in more detail. However further studies (or further analyses within this same study) might benefit from disaggregating this global score for understanding the specific role that each type of traumatic experience might have on these pathways.

Other aspect that can be further studied deriving from this study is the subjective experience of adverse childhood experiences and the narratives that emerge from having to live it. This is something we acknowledge as a limitation from the very beginning of our study when deciding on which instrument to use for assessing adverse childhood experiences. The scale we used for assessing adverse childhood experiences presented items from five subtypes of maltreatment in terms of their frequency. However, it does not assess other parameters that might be important for better understanding the pathway (e.g., if they were eventual or chronic, during which period of life they happened, is they had a familiar relation with the perpetrator, if they had repairing experience with other individuals). Moreover, this instrument does not capture the subjective experiences around having those experiences. As far as we know, there are other instruments that do assess these subjective experiences with open questions or a brief interview. The reason behind this decision lies in the fact that in the first study we used secondary data, and thus we could not decide on the instrument we used. Moreover, since we wanted the first and the second studies to be comparable, we decided to use the same instrument. Further studies might benefit of using a more comprehensive instrument that capture the mentioned parameters and the subjective interpretation surrounding the specific events of maltreatment. This decision, without doubt, could enrich the model by including more proximal mechanisms that might influence how personality (in its different levels) might change due to the influence of adverse childhood experiences.

One aspect we were interested in when conducting this study was the cross-cultural replication. This study was built in conjunction between research members from two different countries. Chile, and Germany. Additionally, the data collection was conducted in these two countries. In the case of the first study, it was secondary data, but for the second one, the data collection we conducted the data collection in parallel. We acknowledge that strategy cannot be considered a

cross-cultural study because we do not assess culture with a specific variable that can orient of towards generating cultural hypothesis. However, the results from this study were derived from samples in these two countries, and this, at least, can allow us to generalize them to a broader population. We expected to conduct a more systematic study in which we can specifically assess cultural variables to a further comprehension on how adverse childhood experiences might impact different groups with specific pathways. This study does not have to be limited by different countries, but even with different subgroups within the same country. We believe this is particularly important considering that culture impact expectations and implicit norms that rule how individuals must appear and relate in the world, as well as so many dimensions in the way we behave, think, feel, and think about ourselves and others.

One last proposal we would like to include in this thesis for further study is the possibility to merge normative and maladaptive traits within one same questionnaire, which, as the scales for personality functioning might dimensionally assess personality traits in a complete range without floor and ceiling effects that currently characterize the behavior of each of those models when trying to make generalizations (e.g. using the FFM in personality disorders or using the PID5BF +M in healthy samples; Kerber et al., 2020). We believe this initiative might make the available questionnaires more clinically useful in that they might really capture the real level in which the specific trait is present in any individual, including the maladaptive but also the normative traits. This is a preliminary idea that needs further development. However, the fact that our results confirm that the FFM can predict BPD symptoms, might orient us to make efforts for integrating valid knowledge and use it for better understanding personality disorders and therefore improve diagnosis modalities, and treatment outcomes.

Besides these suggested modifications on the design of further studies, we also propose some questions that because of space and the scope of this thesis, were not able to discuss. These questions include: During which ages are children more prone to be emotionally impacted by the adverse childhood experiences? What is the biological mechanism behind these changes? In which ages can we see most of the changes from adverse childhood experiences? Are there differences in change rates of normative vs, maladaptive traits? How long does it take for personality changes to manifest in response to adverse childhood experiences? Do these

processes occur sequentially (as we tested them) or in parallel? Which personality variables influence that someone develops a pathological vs, a growth trajectory from traumatic experiences? Which part of these personality traits are temperamental, and which are traits that develop because of experiences? How does the genetic counterpart interact with the processes in this model? How can we, as clinicians treat high risk individuals identified by adverse childhood experiences, personality traits and functioning? In case there are underlying general normative and maladaptive traits, which would better represent the individual differences?

There are not sufficient theories on personality development which are necessary to conduct longitudinal studies more robust for making theoretically oriented predictions (e.g., we still do not know when and how changes unfold so we would need to assess more frequently with short lags to learn more about the pace and timings).

7.11   Ethical aspects of this thesis

Predicting if a child or an adolescent is in risk for moving towards a pathway to develop a severe diagnosis such as BPD, was one of the main higher goals of this dissertation. To achieve this goal, we had two studies. The first one consisted of analyzing secondary data collected in Germany between 2012 and 2016. This study was approved by the Ethics Committee of the Medical Faculty of the University of Heidelberg. In the second study, we recruited a heterogeneous group of participants from two different countries consisting of community and clinical population. Because we would not be able to refer all the participants to a psychiatric or a psychotherapeutic facility one of our inclusion criteria for the clinical sample (besides a lifetime PD diagnosis) was to be currently receiving psychiatric or psychological treatment.

Additionally, the last page of the questionnaire completed by participants within the clinical sample contained a handout with clear indications about specific answers on specific questionnaires that depending on the answer suggested that the individual could be at risk. For example, if someone reported self-aggressive acts, or suicidal ideation in a specific question in the ZAN-BPD: SRV (Zanarini et al., 2015b) for assessing BPD symptoms, according to the

handout they might be at risk. After this, the handout included a step-by-step sequential process that they could follow in case they thought they could act on these thoughts. Considering all these participants were receiving specialized treatment and considering that self-aggressive behaviors and suicidal thoughts are part of the criteria for making a BPD diagnosis, it was likely that participants would have worked on a crisis plan with their therapist. Thus, the first step involved that individuals remembered and apply what they discuss with their therapist regarding these critical events. It also reminds them to talk about these events at their next session with their therapist. The handout included several steps ending with a list of emergency units that worked with psychiatrists including their addresses, phone numbers and approximate costs. This handout was validated with all the centers that trust us for asking their patients If they wanted to know more about the study. None of the clinicians directly invited their patients. The clinicians asked their patients if they wanted to be contacted by us for further sending them information about the study. They told us a not their clinicians whether they were interested in participating in the study. Moreover, as a benefit offered for participants in the clinical sample, was that we offered the possibility of sending a report to their clinicians that could help them make informed decisions according to their responses in the questionnaires. This of course was voluntary and was explicitly asked in the informed consent. We only sent reports to the clinicians whenever someone explicitly manifested this in a specific question designed for this in the informed consent. Because of this, the participation of individuals from the clinical sample was not anonymous, but it was confidential. This is, we encrypted the data and saved it as a dataset without identification after building and sending the reports. Moreover, the reports only had the initials of the participants for making it private for the clinician. We did not shared information with people outside the research team, whose names where explicitly stated in the informed consent.

For individuals in the community sample, we also included a handout with some of the same steps, except for the section involving their psychiatric o psychotherapeutic treatment. These questionnaires were anonymous and confidential. This procedure was clearly and explicitly stated in the informed consent of these group as well. The second study was reviewed and approved by the ethics committee for human research of Universidad de Chile. Additionally, this project also went to the ethics committee from Universidad Finis Terrae, and from Complejo

Asistencial Dr. Sótero del Río. Since the first ethics committee we went through was certified, the approval from the other committees involved subtle modifications and considerations particular to their population.

8   Conclusions

> "A part is not just a temporary emotional state or habitual thought pattern. Instead, it is a discrete and autonomous mental system that has an idiosyncratic range of emotion, style of expression, set of abilities, desires, and view of the world. In other words, it is as each contain. In other words, it is as if we each contain a society of people, each of whom is at a different age and has different interests, talents, and temperaments."

(Schwartz & Sweezy, 2019)

Individuals sometimes feel like a part of them (e.g., one developed trait or one way of functioning) is getting in their way (e.g., I cannot stop myself from getting angry when someone ignores me). And sometimes individuals are very articulated about these parts (e.g., therefore I avoid hanging out with my friends). This is, individuals tend to create internal systems as a consequence of learning. Schwartz & Sweezy (2019) present in their book "Internal family systems therapy", that these articulations seem to be more than just emotion or thought patterns. According to the author, they seem to work in relatively autonomous ways and often polarized with each other (e.g., there are traits that we like and others that we do not). It seems that we all have them. And even though some of these different states can even be useful, others can get in our way towards our goals, particularly in individuals with a personality disorder, where this polarization is more extreme and difficult to integrate. The author propose that it is the nature of the mind to be multiple in this way (i.e., what we learn as a response after traumatic experiences was probably adaptive to those circumstances). The thing with adverse childhood experiences and personality disorders is that these "parts" are blown apart from the traumatic experience and rigidly and inflexibly impregnates into the different domains of the individuals' life, including situation where it is not adaptive and staying sometimes during their whole life, In summary, the results of this dissertation provide significant evidence for the hypothesis that personality traits and levels of personality functioning are critical underpinnings for BPD. We could interpret these findings implying that standard personality traits, maladaptive traits, the levels of personality functioning, and BPD symptoms are manifestations of a single underlying

system. It is possible then to confirm that environmental risk factors such as adverse childhood experiences could impact BPD symptom components differentially through these psychosocial pathways: personality traits and levels of personality functioning.

After this brief reflection, we highlight the summarize our results in the following paragraphs.

First, we found that adverse childhood experiences differentially predicted BPD symptoms, which highlights the multidimensional nature of BPD. The reason behind including different components for assessing BPD through this dissertation lay down in the fact that personality disorders, as we knew them for decades, presented with several consequences such as comorbidity, heterogeneity, arbitrary thresholds, and overuse of Personality disorder not otherwise specified (PDNOS), all of them being consequences of philosophical and theoretical perspectives of psychiatry, as a discipline. To understand the role of personality traits and personality functioning on the relationship between adverse childhood experiences and BPD symptoms, we needed to reflect upon these consequences and implications in terms of multidimensionality. We believe that incorporating the multidimensionality of BPD and the philosophical implications involved in these considerations was one of the advantages of this thesis since it let the different trajectories unfold and, accordingly we were able to discuss the theoretical and clinical implications of doing this.

Second, we found that the best prediction from adverse childhood experiences in most models was for the affective dimension. This finding is sound when seen at the level of components since this prediction has been systematically reported in other internalizing and externalizing mental health disorders, which lead us to think that these outcomes are probably not specific to BPD. We also relate this to the fact that the emotional type of adverse childhood experience - either abuse or neglect- was the most frequently found within our sample. This could be related to how these experiences might influence how individuals learn about their emotional inner and outer world when the abuse and negligence are chronic during infancy.

Third, a recurring aspect in this thesis was that neither of the two models of personality traits were good predictors of the impulsive BPD component. However, the levels of personality

functioning did predict this component. This finding is interesting considering that the ZAN-BPD (Zanarini, 2003) and the ZAN-BPD: SRV

(Zanarini et al., 2015b) addresses the impulsive dimension as self-aggressive acts and other types of risky behaviors. We can consider these items as severity indicators in BPD patients, which is consistent with the initial idea behind creating a questionnaire, such as the LPFS-BF 2.0 (Weekers et al., 2019). which assesses the severity of the level of personality functioning among individuals. The LPFS-BF 2.0 (Weekers et al., 2019). as part of the DSM-5 AMPD, does not assess suicidal ideation or aggressive acts to self and others, so this relationship is not likely to be explained by content overlap between both instruments. This instrument could work as a good predictor -and maybe an earlier one- of these behaviors among individuals with BPD features. Moreover, it is interesting to notice that the lack of prediction of personality traits and the fact that this was consistent with both models that included traits (maladaptive and FFM) call back to the idea that traits are relatively stable patterns of thinking, feeling, and behaving while impulsive symptoms in BPD are more ways in which individuals try to regulate antecedent emotions.

Fourth, we found that personality traits (Extraversion and Emotionality) worked as well as the maladaptive traits did for predicting BPD symptoms. This finding builds onto the idea of the empirically supported arguments stated by some authors such as Widiger & McCabe, (2018a) about the Five Factor Model (FFM) of personality as a competing theory for personality disorders. Some of these arguments claim the clinical utility of FFM, considering they are easy to use, communicate, and even design treatment plans (Widiger & Mullins-Sweatt, 2010). Moreover, proponents of the FFM claim that this model accounts for comorbidity with other disorders from the previous Axis I in DSM IV better than other models do (APA, 1994; Trull & McCrae, 1994). Even though these ideas seem to be consistent with our findings, the FFM trait we found as one of the best predictors for BPD symptoms (Extraversion) does not match what we found in the literature (Saulsman & Page, 2004) except for one study comparing the HEXACO-60 (Ashton & Lee, 2009) with the PID5BF +M (Kerber et al., 2020) where they found similar results as us (Ashton et al., 2012b). This finding might be explained by one particularity in the facets that compose the Extraversion trait in the HEXACO-60 (Ashton & Lee, 2009). considering it include one social self-esteem facet that in our study was a strong predictor. More research into this line would help to better understand this facet.

Fifth, we found that Psychoticism, as a maladaptive trait, worked together with Negative Affect as a mechanism from adverse childhood experiences to BPD components. We did not expect this finding considering most studies with maladaptive traits report that Negative Affect. Disinhibition, or Antagonism are most related traits to BPD (Saulsman & Page, 2004). These results are interesting because our first study consisted of community and clinical samples that presented either very healthy mental trajectories or very severe personality disorder presentations. We can interpret this finding as that Psychoticism trait in personality disorders could manifest when personality disorder presents with very severe features, mirroring the psychotic episodes that can sometimes be experimented by these patients. Having these two extreme samples was a limitation we corrected in our second study.

Sixth, we found a complex dynamic between personality traits and BPD symptoms characterized by a direct and a cross-domain prediction involving relational and affective features. We can understand this dynamic in that relational traits predicted relational BPD symptoms (direct prediction) and affective symptoms (cross-domain prediction). Additionally, affective traits predicted affective BPD symptoms (direct prediction) and relational symptoms (cross-domain prediction). This finding is interesting considering that these are BPD patients' two core characteristics. We suggest researchers test these results more specifically in further studies involving longitudinal and network analysis.

Seventh, personality traits and functioning predicted BPD symptoms in participants who reported adverse childhood experiences. This prediction was an interesting finding considering it was the focus of our study. According to our findings, personality traits and functioning can potentially act as a more proximal consequences of BPD when the disorder has not been installed yet. Even though this is very exploratory, and we still need to explore temporal sequence within these variables, this finding is promising. It might contribute to better understanding theoretically and empirically the constructs of personality traits, personality functioning, and symptoms of personality disorders as individual dimensions and their interaction as a model. On the one hand, this model addresses the problems emerging from categorical traditions, while on the other, it incorporates previous valid knowledge to the newer dimensional ones. In individuals with adverse childhood experiences. BPD could be a final consequence of several internal and external changes. We acknowledge this is the first step and our methods have lots of space for improvement.

Eighth, we believe that besides the limitations, our study has several advantages that helped us generalize our findings. We will highlight some of them:

1. Our sample size was large enough in both studies and highly heterogeneous, particularly in our second study where participants were individuals from two different countries and different number of BPD features.
2. We included several questionnaires for deciding on which traits to include in our first study.
3. We included more than one source of information in our first study (i.e., interviews and questionnaires).

Nineth, as a clinical implication we propose that mental health workers could use these results to better work with their patients. For example, they could use these findings for informed decision-making based on early screening with personality traits and functioning assessments. We could also use indicated prevention strategies, particularly with individuals who additionally to be at risk according to their traits and functioning evaluations, report adverse childhood experiences, considering they could present a greater risk of experiencing BPD symptoms later in life. We could also develop empirically-based preventive interventions based on effective treatments for BPD such as Mentalization-based therapy (MBT) (Bateman & Fonagy, 2004, 2016). Transference-Focused Psychotherapy (TFP) (Clarkin et al., 1999). Schema therapy (ST) (Young et al., 2003). or Dialectical Behavioral Therapy (DBT) (Linehan, 1993). We could select which intervention would be best for an individual depending on the BPD symptom component with higher chances of being affected in the future according to our predictions. This kind of treatment could be based on free-standing modules organized by components (i.e., affective dysregulation, behavioral dysregulation, disturbed relatedness, and cognitive distortions), and conducted in ways that target potential symptoms while enhancing coping strategies for resilient and growth trajectories (Bonanno & Diminich. 2013).

Lastly. as future research areas, we addressed the subsequent analysis we would like to make with this dataset and some guidelines for future researchers who might be interested in using our findings to develop future research in this line of knowledge. We present how we can

disaggregate childhood maltreatment for understanding specific trajectories considering each type of adverse childhood experience. This separation might add to our findings, even though we know most that multi-traumatic experiences are usually the norm and not the exception. We present how, with a larger sample, we might develop a more robust analysis to validate the PID5BF +M (Kerber et al., 2020) using item response theory strategies. We also present guidelines for detecting if our findings about the mechanisms are particular to BPD, or if they can be part of a general model of mental health disorders. Moreover, we can further use additional analytic strategies such as network theory to better understand the dynamics between affective and relational features we systematically found in this thesis. Lastly, we refer to future studies reflecting on how a longitudinal design could be a enrich the findings and further advance in this line of research. We also highlight the potential contribution of interview-based measures for reducing biases within the sometimes-subtle language found in the questionnaires for the variables we assessed.

Given the weight of the evidence not only by this dissertation but also by previous work from different traditions, it's difficult to justify ignoring basic personality models in diagnostic taxonomies regarding BPD and other types of psychopathologies. Synthesizing this literature and further considering the links between personality (FFM or maladaptive) traits, levels of personality functioning, and BPD symptoms might help us understand disordered personalities. As a result, we could find better methods for assessing and treating this frequent and severe condition, as well as other forms of psychopathology. The findings from this dissertation underscore the importance of combining these large bodies of knowledge previously separated: personality psychology research on the etiology, the course, the predictivity value, and the measurement of traits on one hand, and clinical psychology and psychiatry research on the etiology, the course, the predictivity value, and the diagnosis of BPD on the other, including the different theoretical traditions that have been working in parallel inside of these two lines. Examples of these are the psychodynamic traditions based on the initially dimensional model proposed by Kernberg, (1987; 1993) or the cognitive behavioral perspective where BPD is a dysfunction in emotional regulation originally proposed by Linehan (1987; 1993) .

Considering our results on personality traits and functioning as mechanisms, we can interpret that affective, relational, cognitive and impulsive BPD symptoms can be a final consequence of a changing process that starts with an individual presenting a genetic vulnerability, who is in a higher or lower degree exposed to certain (emotional) adverse experiences during her infancy, and as a consequence develop certain thinking, feeling and behaving patterns towards their emotions (emotional traits) and their interpersonal world (social traits) (Costa et al., 1995). along with a specific way of perceiving themselves (self-functioning) and the world (interpersonal functioning). In severe cases (probably not all of them), some of these individuals might develop a particularly eccentric or way of thinking and behaving pattern ism). According to these processes, these patterns might progressively become rigid and inflexible, so that it can install as proper affective, relational, cognitive, and impulsive BPD symptoms.

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10   Annexes.

10.1   *Informed consent for the Chilean community sample in the second study*

CONSENTIMIENTO INFORMADO

Información para Participantes

El propósito del presente documento es invitarle a participar en un estudio de investigación sobre personalidad y experiencias de vida:

- La investigadora principal es la psicóloga Marianne Cottin A.
- Esta investigación está financiada por la Agencia Nacional de Investigación y Desarrollo (ANID) y el Programa de Doctorado en Psicoterapia de la Universidad Católica de Chile y la Universidad de Chile.
- Su participación es absolutamente voluntaria.
- Para que usted pueda tomar una decisión informada, le explicaremos a continuación cuáles serán los procedimientos involucrados en la ejecución de la investigación, así como en qué consistirá su participación:

Correo *

Correo válido

Este formulario registra los correos. Cambiar configuración

Dónde y cuándo se llevará a cabo la investigación

La investigación mencionada se realizará online y podrá participar desde un computador con conexión a internet o un teléfono móvil con datos disponibles.

Motivación y propósito del estudio

• Varios estudios han encontrado que algunas personas podrían tener problemas para regular sus emociones, controlar ciertas conductas y relacionarse con otras personas.

• Regulamos nuestras emociones cuando nos esforzamos por monitorear y modificar nuestras emociones para lograr nuestras metas. Controlamos nuestras conductuas cuando nos resistimos comportarnos de formas poco saludables para regular nuestras emociones (p.ej. comer excesivamente, consumir alcohol/drogas o autoagrederse). Estas conductas podrían terminar dañando más que beneficiando sin hacer a las personas más felices. Las dificultades en las relaciones con los otros se observan cuando nos vemos afectados frecuentemente por las acciones de otros, lo que podría llevar a sentir emociones desagradables, discutir o alejarnos de las personas.

• La investigación ha mostrado que las personas que tienen dificultades para desarrollar estas habilidades han mostrado también ciertos rasgos de personalidad más estables en el tiempo y han vivido cierto tipo de experiencias durante su infancia.

El presente estudio busca

• Conocer qué factores influyen en el desarrollo de las habilidades interpersonales y de regulación en personas con dificultades en la personalidad.

• Nuestro objetivo será evaluar la importancia de la presencia o ausencia del antecedente de experiencias adversas en la infancia, y el rol de algunos rasgos de personalidad sobre estas habilidades.

En qué consiste su participación

En caso de aceptar esta invitación, usted será evaluado/a de forma anónima por la investigadora principal del proyecto (profesora universitaria y estudiante de doctorado en la Universidad de Chile) y su equipo (una psicóloga egresada de la Pontificia Universidad Católica, una psicóloga estudiante de Magíster de la Pontificia Universidad Católica de Chile o una estudiante de doctorado de la Pontificia Universidad Católica de Chile), de forma anónima mediante las siguientes pruebas:

o   Datos sociodemográficos
o   Antecedentes de vida.
o   Habilidades interpersonales y de regulación (afectiva y conductual)
o   Cosas que habitualmente hace y no hace en su vida cotidiana

-   El total de la evaluación debería durar aprox. 30 minutos.

Algunos de estos cuestionarios contienen preguntas con información emocionalmente sensible tales como trauma infantil e ideación suicida.

Riesgos

-   Este estudio no presenta riesgos directos, ya que sólo observaremos las respuestas a los cuestionarios, sin embargo el tipo de información que éstos solicitan podría evocar recuerdos traumáticos o emociones intensas que pueden afectar a algunas personas.

-   En caso de requerir asistencia adicional, un miembro del equipo estará disponible para responder a sus necesidades: Ps. Marianne Cottin (mcottin@uc.cl)

Beneficios

• La importancia de generar investigación en ésta área se fundamenta en la necesidad de conocer mejor estos procesos con el fin de poder diseñar nuevas estrategias de tratamiento mas específicas y personalizadas para personas con Trastornos de Personalidad.

• Hasta la fecha no existen estudios similares realizados en Chile, por lo cual esperamos que la información que podamos obtener aporte para una mejor comprensión del diagnóstico desde una perspectiva local.

Costos y pagos

-   Tras completar todos los cuestionarios usted automáticamente participando en un sorteo de 35 giftcards de 10.000 pesos a ser canjeados online en tiendas Cencosud. Este sorteo se realizará al final del estudio y los ganadores serán informados por correo electrónico.

-   Los investigadores no recibirán pago por la realización del estudio.

Derechos del participante

Usted tendrá derecho a manifestar sus dudas y hacer preguntas a la investigadora en cualquier momento. También podrá realizar consultas que surjan de forma posterior a la investigación.
Ante cualquier duda puede ponerse en contacto con: Ps. Marianne Cottin (mcottin@uc.cl).

a.   A la participación voluntaria, a conocer alternativas y a retirar consentimiento.

Usted se puede retirar del estudio en cualquier momento si lo considera necesario. La decisión de participar o no, o de su eventual retiro, no lo perjudicarán en caso alguno, es decir, no tendrá consecuencias para usted.

b.   A la atención y a una derivación oportuna.
En caso de eventos adversos provocados por la exposición a la investigación podrá tomar contacto con Ps. Marianne Cottin (mcottin@uc.cl), siendo guiado para poder buscar una opción de tratamiento adecuada.

c.   A recibir información relevante derivada de la investigación
En caso de que usted desee recibirá información sobre los resultados de la investigación al finalizar el proyecto de investigación (2021).

Confidencialidad

a.   Reserva de la identidad del participante
Toda información solicitada será manejada a través de códigos, por tanto, en ningún caso se le solicitará su nombre como dato para completar formularios. De esta forma, reservaremos la identidad del participante.

b.   Privacidad de los datos personales y sensibles
El registro de los datos será reservado, y sólo tendrán acceso a ellos los investigadores del proyecto. La investigadora principal se encargará personalmente de guardar los archivos de forma segura.

c.   Difusión y entrega de los resultados

Al finalizar la investigación, se espera difundir los resultados del estudio a través de publicaciones científicas, presentaciones en congresos científicos, seminarios, reuniones de tipo científico-académica, siempre resguardando la identidad del participante.

Re-utilización de la información

En el caso de que Ud. consienta sus datos se utilizarán nuevamente en investigaciones relacionadas. Esto solo podrá hacerse con los datos anonimizados y previa autorización de la investigador principal.

Contactos en el futuro

En el caso de que Ud. consienta, se le volverá a contactar vía correo para invitarlo/a a participar en investigaciones similares en el futuro.

Evaluación Ético Científica

Esta investigación ha sido evaluada y aprobada por el Comité de Ética en Investigación en Seres Humanos Facultad de Medicina-Universidad de Chile y por el Comité de Ética de la Universidad Finis Terrae. En caso de tener alguna duda acerca de sus derechos como participante, puede contactarse con el Presidente del Comité de Ética en Investigación en Seres Humanos Facultad de Medicina-Universidad de Chile, el Dr. Manuel Oyarzúnsu al número de teléfono +56229789536 o escribir al correo electrónico: comiteceish@med.uchile.cl. o bien con la Presidenta del Comité Ético-Científico de la Universidad Finis Terrae, la Dra. Beatriz Shand al correo electrónico: cec@uft.cl.

HE TENIDO LA OPORTUNIDAD DE LEER ESTA DECLARACIÓN DE CONSENTIMIENTO
INFORMADO Y ACEPTO PARTICIPAR EN ESTE PROYECTO.   *

◯ Acepto participar en la investigación (el link de acceso a los cuestionarios aparecerá en pantalla una vez e…

◯ No acepto participar en la investigación

ADEMÁS, ESTOY DE ACUERDO CON QUE SE VUELVA A UTILIZAR LA INFORMACION QUE
ENTREGUE PARA FUTURAS INVESTIGACIONES   *

◯ Estoy de acuerdo con que se vuelva a utilizar la información que entregue

◯ No estoy de acuerdo con que se vuelva a utilizar la información que entregue

---

ADEMÁS, ESTOY DE ACUERDO EN SER CONTACTADO PARA SER INVITADO A PARTICIPAR EN
INVESTIGACIONES SIMILARES   *

◯ Acepto ser contactado/a para participar en futuras investigaciones

◯ No acepto ser contactado/a para participar en futuras investigaciones

---

POR ÚLTIMO, DESEO RECIBIR LOS RESULTADOS ANÓNIMOS DEL ESTUDIO TRAS FINALIZAR EL
PROYECTO DE INVESTIGACIÓN   *

◯ Deseo recibir los resultados del estudio tras finalizar el proyecto de investigación

◯ No deseo recibir los resultados del estudio tras finalizar el proyecto de investigación

---

Nombres y Apellidos

Texto de respuesta corta

RUT (con puntos y dígito verificador) o número de identificación (p.ej. pasaporte o cédula de identidad)

Texto de respuesta corta

Fecha de hoy

Mes, día, año 📅

CONSENTIMIENTO INFORMADO

Información para participantes

El propósito del presente documento es invitarlo/a a participar en un estudio de investigación sobre la personalidad:

· Usted ha sido invitado/a a participar en un estudio por estar trabajando en terapia algún tema asociado a la personalidad.
· La investigadora principal es la psicóloga Marianne Cottin A.
· Esta investigación está financiada por la Agencia Nacional de Investigación y Desarrollo (ANID) y el Programa de Doctorado en Psicoterapia de la Universidad Católica de Chile y la Universidad de Chile.
· Su participación es absolutamente voluntaria.
· Para que usted pueda tomar una decisión informada, le explicaremos a continuación cuáles serán los procedimientos involucrados en la ejecución de la investigación, así como en qué consistirá su participación:

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· Regulamos nuestras emociones cuando nos esforzamos por monitorear y modificar nuestras emociones para lograr nuestras metas. Controlamos nuestras conductuas cuando nos resistimos comportarnos de formas poco saludables para regular nuestras emociones (p.ej. comer excesivamente, consumir alcohol/drogas o autoagrederse). Estas conductas podrían terminar dañando más que beneficiando sin hacer a las personas más felices. Las dificultades en las relaciones con los otros se observan cuando nos vemos afectados frecuentemente por las acciones de otros, lo que podría llevar a sentir emociones desagradables, discutir o alejarnos de las personas.

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El presente estudio busca

• Conocer qué factores influyen en el desarrollo de las habilidades interpersonales y de regulación en personas con dificultades en la personalidad.

• Nuestro objetivo será evaluar la importancia de experiencias adversas, presencia o ausencia de maltrato infantil, y el rol de algunos rasgos de personalidad sobre estas habilidades.

En qué consiste su participación

En caso de aceptar esta invitación, usted será evaluado/a de forma anónima por la investigadora principal del proyecto (profesora universitaria y estudiante de doctorado en la Universidad de Chile) y su equipo (una psicóloga egresada de la Pontificia Universidad Católica, una psicóloga estudiante de Magíster de la Pontificia Universidad Católica de Chile o una estudiante de doctorado de la Pontificia Universidad Católica de Chile), mediante las siguientes pruebas:

o Datos sociodemográficos
o Antecedentes de vida.
o Habilidades interpersonales y de regulación (afectiva y conductual)
o Cosas que habitualmente hace y no hace en su vida cotidiana

- El total de la evaluación debería durar aprox. 30 minutos.

Algunos de estos cuestionarios contienen preguntas con información emocionalmente sensible tales como trauma infantil e ideación suicida.

Riesgos

- Este estudio no presenta riesgos directos, ya que sólo observaremos las respuestas a los cuestionarios, sin embargo el tipo de información que éstos solicitan podría evocar recuerdos traumáticos o emociones intensas que pueden afectar a algunas personas.

- En caso de requerir asistencia adicional, un miembro del equipo estará disponible para responder a sus necesidades: Ps. Marianne Cottin (mcottin@uc.cl)

Beneficios

• La importancia de generar investigación en ésta área se fundamenta en la necesidad de conocer mejor estos procesos con el fin de poder diseñar nuevas estrategias de tratamiento mas específicas y personalizadas para personas con Trastornos de Personalidad.

• Hasta la fecha no existen estudios similares realizados en Chile, por lo cual esperamos que la información que podamos obtener aporte para una mejor comprensión del diagnóstico desde una perspectiva local.

Costos y pagos

- Tras completar todos los cuestionarios usted automáticamente estará participando en un sorteo de 35 giftcards de 10.000 pesos a ser canjeados online en tiendas Cencosud. Este sorteo se realizará al final del estudio y los ganadores serán informados por correo electrónico.

- Los investigadores no recibirán pago por la realización del estudio.

Derechos del participante

Usted tendrá derecho a manifestar sus dudas y hacer preguntas a la investigadora en cualquier momento. También podrá realizar consultas que surjan de forma posterior a la investigación.
Ante cualquier duda puede ponerse en contacto con: Ps. Marianne Cottin (mcottin@uc.cl).

a.   A la participación voluntaria, a conocer alternativas y a retirar consentimiento

Usted se puede retirar del estudio en cualquier momento si lo considera necesario. La decisión de participar o no, o de su eventual retiro, no lo perjudicarán en caso alguno, es decir, no tendrá consecuencias para usted.

b.   A la atención y a una derivación oportuna
En caso de eventos adversos provocados por la exposición a la investigación podrá tomar contacto con Ps. Marianne Cottin (mcottin@uc.cl), siendo guiado para poder buscar una opción de tratamiento adecuada.

c.   A recibir información relevante derivada de la investigación
En caso de que usted desee recibirá información sobre los resultados de la investigación al finalizar el proyecto de investigación (2021). Estos resultados serán respecto al estudio en general y no resultados individuales ya que no constituye una evaluación clínica.

e. A que su equipo tratante reciba información que pueda informar y beneficiar el tratamiento
Solo en caso que usted desee, su tratante recibirá información que pudiese informar y aportar a su tratamiento (2021). En este caso debe indicar en el cuestionario su nombre y el nombre de su tratante para hacerle llegar esta información.

Confidencialidad

a.   Reserva de la identidad del participante
Toda información solicitada será manejada a través de códigos, por tanto, en ningún caso se le solicitará su nombre como dato para completar formularios. De esta forma, reservaremos la identidad del participante a menos que haya indicado su deseo de que esta información sea entregada a su tratante.

b.   Privacidad de los datos personales y sensibles
El registro de los datos será reservado, y sólo tendrán acceso a ellos los investigadores del proyecto. La investigadora principal se encargará personalmente de guardar los archivos de forma segura.

c.   Difusión y entrega de los resultados

Al finalizar la investigación, se espera difundir los resultados del estudio a través de publicaciones científicas, presentaciones en congresos científicos, seminarios, reuniones de tipo científico-académica, siempre resguardando la identidad del participante.

Re-utilización de la información

En el caso de que Ud. consienta sus datos se utilizarán nuevamente en investigaciones relacionadas. Esto solo podrá hacerse con los datos anonimizados y previa autorización de la investigadora principal.

Contactos en el futuro

En el caso de que Ud. consienta, se le volverá a contactar vía correo para invitarlo/a a participar en investigaciones similares en el futuro.

Evaluación Ético Científica

Esta investigación ha sido evaluada y aprobada por el Comité de Ética en Investigación en Seres Humanos de la Facultad de Medicina-Universidad de Chile. En caso de tener alguna duda acerca de sus derechos como participante, puede contactarse con el Presidente del Comité de Ética en Investigación en Seres Humanos Facultad de Medicina-Universidad de Chile, el Dr. Manuel Oyarzúnsu al número de teléfono +56229789536 o escribir al correo electrónico: comiteceish@med.uchile.cl.

HE TENIDO LA OPORTUNIDAD DE LEER ESTA DECLARACIÓN DE CONSENTIMIENTO
INFORMADO Y ACEPTO PARTICIPAR EN ESTE PROYECTO. *

○ Acepto participar en la investigación

○ No acepto participar en la investigación

ADEMÁS, ESTOY DE ACUERDO CON QUE SE VUELVA A UTILIZAR LA INFORMACION QUE
ENTREGUE PARA FUTURAS INVESTIGACIONES *

○ Estoy de acuerdo con que se vuelva a utilizar la información que entregue

○ No estoy de acuerdo con que se vuelva a utilizar la información que entregue

ADEMÁS, ESTOY DE ACUERDO EN SER CONTACTADO PARA SER INVITADO/A A PARTICIPAR EN
INVESTIGACIONES SIMILARES *

○ Acepto ser contactado para participar en futuras investigaciones

○ No acepto ser contactado para participar en futuras investigaciones

ADEMÁS, ESTOY DE ACUERDO CON QUE LOS RESULTADOS SEAN ENTREGADOS A MI
PSICÓLOGO O PSIQUIATRA TRATANTE EN BENEFICIO DE MI TRATAMIENTO **Los resultados se
entregan al psicólogo o psiquiatra tratante y no directamente al paciente. *

○ Estoy de acuerdo con que los investigadores entreguen mis resultados a mi psicólogo o psiquiatra tratante

○ No estoy de acuerdo con que los investigadores entreguen mis resultados a mi psicólogo o psiquiatra trat…

POR ÚLTIMO, DESEO RECIBIR LOS RESULTADOS GENERALES ANÓNIMOS DE LA
INVESTIGACIÓN TRAS FINALIZAR EL PROYECTO DE INVESTIGACIÓN *

○ Deseo recibir los resultados del estudio tras finalizar el proyecto de investigación

○ No deseo recibir los resultados del estudio tras finalizar el proyecto de investigación

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ADEMÁS, ESTOY DE ACUERDO CON QUE LOS RESULTADOS SEAN ENTREGADOS A MI
PSICÓLOGO O PSIQUIATRA TRATANTE EN BENEFICIO DE MI TRATAMIENTO **Los resultados se
entregan al psicólogo o psiquiatra tratante y no directamente al paciente. *

○ Estoy de acuerdo con que los investigadores entreguen mis resultados a mi psicólogo o psiquiatra tratante

○ No estoy de acuerdo con que los investigadores entreguen mis resultados a mi psicólogo o psiquiatra trat...

POR ÚLTIMO, DESEO RECIBIR LOS RESULTADOS GENERALES ANÓNIMOS DE LA
INVESTIGACIÓN TRAS FINALIZAR EL PROYECTO DE INVESTIGACIÓN *

○ Deseo recibir los resultados del estudio tras finalizar el proyecto de investigación

○ No deseo recibir los resultados del estudio tras finalizar el proyecto de investigación

---

Nombres y Apellidos *

Texto de respuesta corta

RUT (con puntos y dígito verificador) o número de identificación (p.ej. pasaporte o cédula de
identidad)

Texto de respuesta corta

Fecha de hoy *

Mes, día, año 📅

10.2 Original version of The Level of Personality Functioning Scale-Brief Form 2.0 (LPFS-BF 2.9; Weekers et al., 2019)

LPFS-BF 2.0 English

Report for each of the following statements to what extent they apply to you at this moment.	Very false or Often False	Sometimes or Somewhat False	Sometimes or Somewhat True	Very true or often True
1 I often do not know who I really am	☐	☐	☐	☐
2 I often think very negatively about myself	☐	☐	☐	☐
3 My emotions change without me having a grip on them	☐	☐	☐	☐
4 I have no sense of where I want to go in my life	☐	☐	☐	☐
5 I often do not understand my own thoughts and feelings	☐	☐	☐	☐
6 I often make unrealistic demands on myself	☐	☐	☐	☐
7 I often have difficulty understanding the thoughts and feelings of others	☐	☐	☐	☐
8 I often find it hard to stand it when others have a different opinion	☐	☐	☐	☐
9 I often do not fully understand why my behavior has a certain effect on others	☐	☐	☐	☐
10 My relationships and friendships never last long	☐	☐	☐	☐
11 I often feel very vulnerable when relations become more personal	☐	☐	☐	☐
12 I often do not succeed in cooperating with others in a mutually satisfactory way	☐	☐	☐	☐

Escala de Niveles de Funcionamiento de la Personalidad BF 2.0 – (LPFS-BF 2.0)

Nombre/ID: _____ Edad: _____ Género: ☐ Masculino ☐ Femenino ☐ Otro   Fecha: _____

Instrucciones: Indique para cada una de las siguientes afirmaciones hasta qué punto aplican para ti en este momento

		Muy falso o a menudo falso	A veces falso o algo falso	A veces verdadero o algo verdadero	Muy verdadero o a menudo verdadero
1.	A menudo no sé quién soy realmente.	0	1	2	3
2.	A menudo pienso muy negativamente sobre mí mismo/a.	0	1	2	3
3.	Mis emociones cambian sin que yo tenga control sobre ellas.	0	1	2	3
4.	No tengo idea de a donde quiero ir en mi vida.	0	1	2	3
5.	A menudo no entiendo mis propios pensamientos y sentimientos.	0	1	2	3
6.	A menudo me pongo exigencias poco realistas a mi mismo/a.	0	1	2	3
7.	A menudo tengo dificultades para entender los pensamientos y sentimientos de otros.	0	1	2	3
8.	A menudo me es difícil tolerar cuando otros tienen una opinión diferente.	0	1	2	3
9.	A menudo no entiendo del todo por qué mi conducta tiene un cierto efecto sobre otros.	0	1	2	3
10.	Mis relaciones y amistades nunca duran mucho.	0	1	2	3
11.	A menudo me siento muy vulnerable cuando las relaciones se vuelven más personales.	0	1	2	3
12.	A menudo no logro cooperar con otros de una manera mutuamente satisfactoria.	0	1	2	3

10.4 Original version of The Personality Inventory for DSM-5 and ICD-11 – Brief Form Modified (PID5BF+ M; (Kerber et al., 2019)

The Personality Inventory for DSM-5 und ICD-11 – Brief Form Modified (PID5BF+ M)

Name/ID:_____ Age:_____ Gender: ☐ Male ☐ Female ☐ Other **Date:_____**

Instructions: This is a list of things different people might say about themselves. We are interested in how you would describe yourself. There are no "right" or "wrong" answers. So you can describe yourself as honestly as possible, we willkeep your responses confidential. We'd like you to take your time and read each statement carefully, selecting the response that best describes you.

		Very False or Often False	Sometimes or Somewhat False	Sometimes or Somewhat True	Very True or Often True
1.	I have much stronger emotional reactions than almost everyone else.	0	1	2	3
2.	I'm good at conning people.	0	1	2	3
3.	I'm often pretty careless with my own and others' things.	0	1	2	3
4.	I keep my distance from people.	0	1	2	3
5.	I often see unusual connections between things that most people miss.	0	1	2	3
6.	Even though it drives other people crazy, I insist on absolute perfection in everything I do.	0	1	2	3
7.	I'm always worrying about something.	0	1	2	3
8.	Sometimes you need to exaggerate to get ahead.	0	1	2	3
9.	I feel like I act totally on impulse.	0	1	2	3
10.	Nothing seems to interest me very much.	0	1	2	3
11.	People have told me that I think about things in a really strange way.	0	1	2	3
12.	It is important to me that things are done in a certain way.	0	1	2	3
13.	I worry a lot about being alone.	0	1	2	3
14.	I deserve special treatment.	0	1	2	3
15.	I lose track of conversations because other things catch my attention.	0	1	2	3
16.	I prefer to keep romance out of my life.	0	1	2	3
17.	It's weird, but sometimes ordinary objects seem to be a different shape than usual.	0	1	2	3
18.	I keep trying to make things perfect, even when I've gotten them as good as they're likely to get.	0	1	2	3
19.	I get emotional easily, often for very little reason.	0	1	2	3
20.	It is easy for me to take advantage of others.	0	1	2	3
21.	I often forget to pay my bills.	0	1	2	3
22.	I don't like spending time with others.	0	1	2	3
23.	I've had some really weird experiences that are very difficult to explain.	0	1	2	3
24.	I have a strict way of doing things.	0	1	2	3
25.	I worry about almost everything.	0	1	2	3
26.	I'll stretch the truth if it's to my advantage.	0	1	2	3
27.	Even though I know better, I can't stop making rash decisions.	0	1	2	3
28.	I rarely get enthusiastic about anything.	0	1	2	3
29.	I have several habits that others find eccentric or strange.	0	1	2	3
30.	I've been told that I spend too much time making sure things are exactly in place.	0	1	2	3
31.	I can't stand being left alone, even for a few hours.	0	1	2	3
32.	I often have to deal with people who are less important than me.	0	1	2	3
33.	I am easily distracted.	0	1	2	3
34.	I break off relationships if they start to get close.	0	1	2	3
35.	Sometimes when I look at a familiar object, it's somehow like I'm seeing it for the first time.	0	1	2	3
36.	People complain about my need to have everything all arranged.	0	1	2	3

The PID5BF+ M is short form of the Personality Inventory for DSM-5 (PID-5), augmented with a scoring algorithm to assess the ICD-11 personality trait domain Anankastia. The PID-5 is the official rating scale of the American Psychiatric Association for the assessment of maladaptive personality traits according to criterion B of the alternative model for personality disorders in section III of the DSM-5. Criterion B is an empirically derived and hierarchical model of problematic personality expressions, which is compatible with 4 of the 5 maladaptive trait domains in the ICD-11. The PID5BF+ M is therefore suitable to assess maladaptive personality traits both according to DSM-5 and ICD-11.
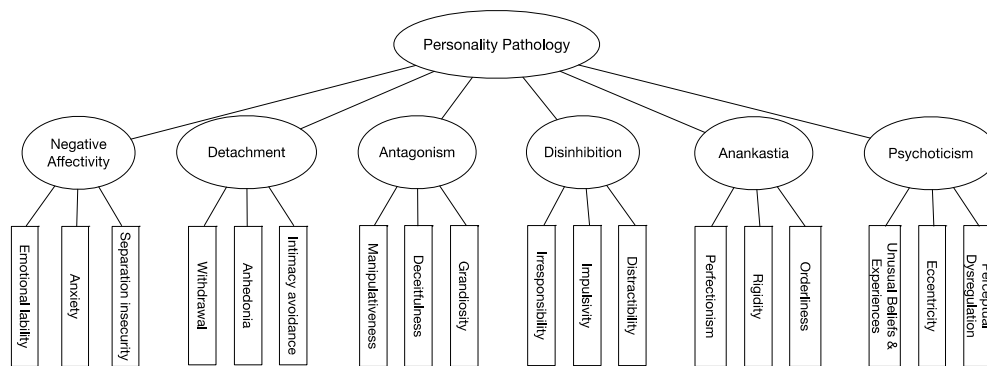
The assessment model comprises 18 trait facets, each consisting of 2 items. Specific trait facets can be combined to yield indices of the six broader trait domains according to the scheme above using the PID-5 items stated in the table below. The scores on the items within each trait facet should be summed, no item needs to be reverse scored. The average domain scores are calculated by averaging the 3 facet scores contributing to a specific domain. Higher average scores indicate greater dysfunction in a specific personality trait facet or domain.

	Personality Trait Facet	PID5BF+ M item number	PID-5 item number	Sum Score Trait Facet	Average Score Trait Domain	Trait Domain
PID5BF+ M SCORING ALGORITHM	Emotional Lability	1, 19	62, 122			Negative Affectivity
	Anxiety	7, 25	109, 110			
	Separation Insecurity	13, 31	50, 64			
	Withdrawal	4, 22	82, 136			Detachment
	Anhedonia	10, 28	23, 189			
	Intimacy Avoidance	16, 34	89, 108			
	Manipulativeness	2, 20	162, 219			Antagonism
	Deceitfulness	8, 26	126, 218			
	Grandiosity	14, 32	187, 197			
	Irresponsibility	3, 21	129, 160			Disinhibition
	Impulsivity	9, 27	4, 17			
	Distractibility	15, 33	6, 132			
	Perfectionism	6, 18	123, 176			Anankastia
	Rigidity	12, 24	140, 220			
	Orderliness	30, 36	34, 115			
	Unusual Beliefs & Experiences	5, 23	194, 209			Psychoticism
	Eccentricity	11, 29	25, 185			
	Perceptual Dysregulation	17, 35	44, 77			

The PID5BF+ was developed using ant colony optimization algorithms, validity of the model and of the assessment could be confirmed in large German and English speaking samples[1]. The PID5BF+ M differs only in the definition of the Anankastia domain, validity of this modified version could be ascertained in samples of 15 different countries[2].

[1] Kerber A., Schultze M., Müller S., Wright A. G. C., Spitzer C., Krueger R. F., Knaevelsrud, C., Zimmermann, J. *Development of a Short and Reliable Measure for DSM-5 and ICD-11 Maladaptive Personality Traits Using Ant Colony Optimization Algorithms.* (2019). https://doi.org/10.31234/osf.io/rsw54

[2] Bach, B., Kerber, A., Aluja, A., Bastiaens, T., Keeley, J., Claes, L., Fossati, A., Gutierrez, F., Oliveira, S. E. S., Pires, R., Riegel, K. D., Rolland, J., Roskam, I., Sellbom, M., Somma., A., Spanemberg, L., Strus, W., Thimm, J., Wright, A.G.C., Zimmermann, J. (2019). *International Assessment of DSM-5 and ICD-11 Personality Disorder Traits: Toward a Common Nosology in DSM-5.1.* https://doi.org/10.31234/osf.io/qcwsb

10.5 Translated and Validated Questionnaire of The Personality Inventory for DSM-5 and ICD-11 – Brief Form Modified (PID5BF+ M; (Kerber et al., 2019)

**Inventario de personalidad para DSM-5 y ICD-11- Forma Breve Modificada (PID5BF+ M)**

Nombre/ID: _____ Edad: _____ Género: ☐ Masculino ☐ Femenino ☐ Otro   Fecha: _____

Instrucciones: Esta es una lista de diferentes cosas que las personas podrían decir sobre sí mismas. Estamos interesados/as en cómo te describirías a ti mismo/a. No hay respuestas "correctas" o "incorrectas", así que puedes describirte a ti mismo/a de la forma más honesta posible. Nosotros mantendremos tus respuestas confidenciales. Nos gustaría que te tomaras el tiempo y leyeras cada afirmación cuidadosamente, seleccionando las respuestas que mejor te describen.

		Muy falso o a menudo falso	A veces falso o algo falso	A veces verdadero o algo verdadero	Muy verdadero o a menudo verdadero
1.	Tengo reacciones emocionales mucho más fuertes que casi todos los demás.	0	1	2	3
2.	Soy bueno/a engañando a las personas.	0	1	2	3
3.	A menudo soy bastante descuidado/a con mis cosas y las de los demás.	0	1	2	3
4.	Mantengo mi distancia de las personas.	0	1	2	3
5.	A menudo veo conexiones inusuales entre las cosas que la mayoría de la gente pasa por alto.	0	1	2	3
6.	A pesar de que vuelve locas a otras personas, insisto en la absoluta perfección en todo lo que hago.	0	1	2	3
7.	Siempre estoy preocupándome por algo.	0	1	2	3
8.	Algunas veces se necesita exagerar para ponerse en ventaja.	0	1	2	3
9.	Siento que actúo de manera totalmente impulsiva.	0	1	2	3
10.	Nada parece interesarme demasiado.	0	1	2	3
11.	Las personas me han dicho que pienso en las cosas de manera muy extraña.	0	1	2	3
12.	Es importante para mí que las cosas se hagan de determinada manera.	0	1	2	3
13.	Me preocupa mucho estar solo/a.	0	1	2	3
14.	Yo me merezco un trato especial.	0	1	2	3
15.	Pierdo el hilo de las conversaciones porque otras cosas llaman mi atención.	0	1	2	3
16.	Prefiero mantener el romance fuera de mi vida.	0	1	2	3
17.	Es raro, pero a veces los objetos cotidianos parecen tener una forma diferente a la habitual.	0	1	2	3
18.	Insisto en seguir perfeccionando las cosas, incluso cuando logré dejarlas lo mejor que podrían estar.	0	1	2	3
19.	Me pongo emocional fácilmente, a menudo sin mucha razón.	0	1	2	3
20.	Es fácil para mí aprovecharme de los demás.	0	1	2	3
21.	A menudo olvido pagar mis cuentas.	0	1	2	3
22.	No me gusta pasar tiempo con otras personas.	0	1	2	3
23.	He tenido algunas experiencias realmente extrañas que son muy difíciles de explicar	0	1	2	3
24.	Tengo una forma muy estricta de hacer las cosas.	0	1	2	3

El PID5BF + M es una forma breve del Inventario de Personalidad para DSM-5 (PID-5), aumentado con un algoritmo de puntuación para evaluar el dominio de rasgo de personalidad del CIE-11 Anancastia. El PID-5 es la escala de calificación oficial de la Asociación Estadounidense de Psiquiatría para la evaluación de los rasgos de personalidad desadaptativos según el criterio B del modelo alternativo para los trastornos de la personalidad en la sección III del DSM-5. El Criterio B es un modelo jerárquico y derivado empíricamente de expresiones de personalidad problemáticas que es compatible con 4 de los 5 dominios de rasgos desadaptativos del CIE-11. Por lo tanto, el PID5BF + M es adecuado para evaluar los rasgos de personalidad desadaptativos tanto de acuerdo con el DSM-5 como con el ICD-11.

El modelo de evaluación consta de 18 facetas de rasgos, cada una de las cuales consta de 2 ítems. Las facetas de rasgos específicos se pueden combinar para producir índices de los seis dominios de rasgos más amplios de

acuerdo con el esquema anterior utilizando los elementos PID-5 indicados en la tabla siguiente.

Se deben sumar las puntuaciones de los elementos dentro de cada faceta de rasgo, y no es necesario calificar de forma inversa ningún ítem. Los puntajes promedio de dominio se calculan promediando los puntajes de 3 facetas que contribuyen a un dominio específico. Los puntajes promedio más altos indican una mayor disfunción en una faceta o dominio específico de un rasgo de personalidad.

	Faceta de Rasgo de Personalidad	N mero de tem PID5BF+ M	N mero de tem PID-5	Suma Puntaje Faceta de Rasgo	Promedio Puntaje Dominio de Rasgo	Dominio de Rasgo
ALGORITMO DE OUNTUACIÓN PID5BF+ M						Afectividad Negativa
						Desapego
						Antagonismo
						Deshinibición
						Anancastia
						Psicoticismo

El PID5BF + se desarrolló utilizando algoritmos de optimización de colonias de hormigas. La validez del modelo y de la evaluación pudo confirmarse en grandes muestras de habla alemana e inglesa[1] y próximamente española. El PID5BF + M solo difiere en la definición del dominio de Anancastia. La validez de esta versión modificada se pudo comprobar en muestras de 15 países diferentes[2].

[1] Kerber A., Schultze M., Müller S., Wright A. G. C., Spitzer C., Krueger R. F., Knaevelsrud, C., Zimmermann, J. *Development of a Short and Reliable Measure for DSM-5 and ICD-11 Maladaptive Personality Traits Using Ant Colony Optimization Algorithms.* (2019). https://doi.org/10.31234/osf.io/rsw54

[2] Bach, B., Kerber, A., Aluja, A., Bastiaens, T., Keeley, J., Claes, L., Fossati, A., Gutierrez, F., Oliveira, S. E. S., Pires, R., Riegel, K. D., Rolland, J., Roskam, I., Sellbom, M., Somma., A.,Spanemberg,L.,Strus,W.,Thimm,J.,Wright,A.G.C.,Zimmermann,J.(2019). *InternationalAssessmentofDSM-5andICD-11PersonalityDisorderTraits:TowardaCommon Nosology in DSM-5.1.* https://doi.org/10.31234/osf.io/qcwsb

10.6   Ordinary Least Squares (OLS) regressions of personality traits as predictors of BPDs symptom with the ZAN-BPD (Zanarini, 2003)

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.823[a]	.677	.676	3.928
2	.847[b]	.717	.715	3.684
3	.861[c]	.742	.739	3.527
4	.866[d]	.751	.746	3.476

a. Predictors: (Constant), PID5_Negative_Affect

b. Predictors: (Constant), PID5_Negative_Affect, PID5_Psychoticism

c. Predictors: (Constant), PID5_Negative_Affect, PID5_Psychoticism, Hexaco_Extraversion

d. Predictors: (Constant), PID5_Negative_Affect, PID5_Psychoticism, Hexaco_Extraversion, Hexaco_Emotionality

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	7942.177	1	7942.177	514.643	<.001[b]
	Residual	3780.941	245	15.432		
	Total	11723.117	246			
2	Regression	8410.805	2	4205.403	309.789	<.001[c]
	Residual	3312.312	244	13.575		
	Total	11723.117	246			
3	Regression	8699.496	3	2899.832	233.051	<.001[d]
	Residual	3023.621	243	12.443		
	Total	11723.117	246			
4	Regression	8799.242	4	2199.810	182.071	<.001[e]
	Residual	2923.876	242	12.082		
	Total	11723.117	246			

a. Dependent Variable: ZAN_ges

b. Predictors: (Constant), PID5_Negative_Affect

c. Predictors: (Constant), PID5_Negative_Affect, PID5_Psychoticism

d. Predictors: (Constant), PID5_Negative_Affect, PID5_Psychoticism, Hexaco_Extraversion

e. Predictors: (Constant), PID5_Negative_Affect, PID5_Psychoticism, Hexaco_Extraversion, Hexaco_Emotionality

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-2.717	.436		-6.227	<.001
	PID5_Negative_Affect	7.276	.321	.823	22.686	<.001
2	(Constant)	-2.466	.411		-5.994	<.001
	PID5_Negative_Affect	4.846	.511	.548	9.475	<.001
	PID5_Psychoticism	3.701	.630	.340	5.875	<.001
3	(Constant)	5.549	1.710		3.245	.001
	PID5_Negative_Affect	3.585	.555	.406	6.456	<.001
	PID5_Psychoticism	3.153	.614	.290	5.137	<.001
	Hexaco_Extraversion	-1.951	.405	-.243	-4.817	<.001
4	(Constant)	9.190	2.108		4.359	<.001
	PID5_Negative_Affect	4.402	.617	.498	7.139	<.001
	PID5_Psychoticism	2.867	.613	.263	4.678	<.001
	Hexaco_Extraversion	-1.942	.399	-.242	-4.868	<.001
	Hexaco_Emotionality	-1.396	.486	-.117	-2.873	.004

[a] Dependent Variable: ZAN_ges

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10.7. Ordinary Least Squares (OLS) regressions of personality traits as predictors of BPDs symptom with the BSL-23 (Bohus et al., 2009)

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.878[a]	.771	.770	3.569
2	.901[b]	.811	.810	3.250
3	.910[c]	.827	.825	3.112
4	.913[d]	.833	.830	3.067
5	.916[e]	.838	.835	3.026

[a.] Predictors: (Constant), PID5_Negative_Affect

[b.] Predictors: (Constant), PID5_Negative_Affect, Hexaco_Extraversion

[c.] Predictors: (Constant), PID5_Negative_Affect, Hexaco_Extraversion, PID5_Psychoticism

[d.] Predictors: (Constant), PID5_Negative_Affect, Hexaco_Extraversion, PID5_Psychoticism, Hexaco_Emotionality

[e.] Predictors: (Constant), PID5_Negative_Affect, Hexaco_Extraversion, PID5_Psychoticism, Hexaco_Emotionality, Hexaco_Agreeableness

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	216.927	1	216.927	692.032	<.001[b]
	Residual	79.306	253	.313		
	Total	296.233	254			
2	Regression	237.316	2	118.658	507.522	<.001[c]
	Residual	58.917	252	.234		
	Total	296.233	254			
3	Regression	242.421	3	80.807	376.915	<.001[d]
	Residual	53.812	251	.214		
	Total	296.233	254			
4	Regression	244.625	4	61.156	296.252	<.001[e]
	Residual	51.608	250	.206		
	Total	296.233	254			
5	Regression	245.498	5	49.100	240.975	<.001[f]
	Residual	50.735	249	.204		
	Total	296.233	254			

[a.] Dependent Variable: BSL 23 Gesamtscore (Mittelwert)

[b.] Predictors: (Constant), PID5_Negative_Affect

[c.] Predictors: (Constant), PID5_Negative_Affect, PID5_Detachment

[d.] Predictors: (Constant), PID5_Negative_Affect, PID5_Detachment, PID5_Psychoticism

[e.] Predictors: (Constant), PID5_Negative_Affect, PID5_Detachment, PID5_Psychoticism, Hexaco_Extraversion

[f.] Predictors: (Constant), PID5_Negative_Affect, PID5_Detachment, PID5_Psychoticism, Hexaco_Extraversion, Hexaco_Emotionality

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-.377	.062		-6.114	<.001
	PID5_Negative_Affect	1.184	.045	.856	26.306	<.001
2	(Constant)	-.434	.054		-8.099	<.001
	PID5_Negative_Affect	.731	.062	.528	11.760	<.001
	PID5_Detachment	.652	.070	.420	9.339	<.001
3	(Constant)	-.393	.052		-7.557	<.001
	PID5_Negative_Affect	.553	.070	.399	7.915	<.001
	PID5_Detachment	.518	.072	.334	7.176	<.001
	PID5_Psychoticism	.411	.084	.242	4.880	<.001
4	(Constant)	.454	.264		1.718	.087
	PID5_Negative_Affect	.488	.071	.353	6.848	<.001
	PID5_Detachment	.362	.086	.233	4.224	<.001
	PID5_Psychoticism	.419	.083	.246	5.063	<.001
	Hexaco_Extraversion	-.201	.062	-.162	-3.267	.001
5	(Constant)	.901	.340		2.651	.009
	PID5_Negative_Affect	.575	.082	.416	6.986	<.001
	PID5_Detachment	.309	.089	.199	3.487	<.001
	PID5_Psychoticism	.406	.082	.239	4.926	<.001
	Hexaco_Extraversion	-.223	.062	-.179	-3.585	<.001
	Hexaco_Emotionality	-.134	.065	-.072	-2.071	.039

[a.] Dependent Variable: BSL 23 Gesamtscore (Mittelwert)

10.8. Ordinary Least Squares (OLS) regressions of personality traits as predictors of BPDs symptom with the IPDE-BPD (Loranger, 1999)

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.856[a]	.732	.731	.55988
2	.895[b]	.801	.800	.48353
3	.905[c]	.818	.816	.46302
4	.909[d]	.826	.823	.45435
5	.910[e]	.829	.825	.45139

[a] Predictors: (Constant), PID5_Negative_Affect

[b] Predictors: (Constant), PID5_Negative_Affect, PID5_Detachment

[c] Predictors: (Constant), PID5_Negative_Affect, PID5_Detachment, PID5_Psychoticism

[d] Predictors: (Constant), PID5_Negative_Affect, PID5_Detachment, PID5_Psychoticism, Hexaco_Extraversion

[e] Predictors: (Constant), PID5_Negative_Affect, PID5_Detachment, PID5_Psychoticism, Hexaco_Extraversion, Hexaco_Emotionality

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	10393.044	1	10393.044	816.056	<.001[b]
	Residual	3082.038	242	12.736		
	Total	13475.082	243			
2	Regression	10930.080	2	5465.040	517.514	<.001[c]
	Residual	2545.002	241	10.560		
	Total	13475.082	243			
3	Regression	11150.372	3	3716.791	383.717	<.001[d]
	Residual	2324.710	240	9.686		
	Total	13475.082	243			
4	Regression	11226.409	4	2806.602	298.299	<.001[e]
	Residual	2248.673	239	9.409		
	Total	13475.082	243			
5	Regression	11296.400	5	2259.280	246.805	<.001[f]
	Residual	2178.682	238	9.154		
	Total	13475.082	243			

[a] Dependent Variable: Borderline Personality Disorder, Dimensional Score

[b] Predictors: (Constant), PID5_Negative_Affect

[c] Predictors: (Constant), PID5_Negative_Affect, Hexaco_Extraversion

[d] Predictors: (Constant), PID5_Negative_Affect, Hexaco_Extraversion, PID5_Psychoticism

[e] Predictors: (Constant), PID5_Negative_Affect, Hexaco_Extraversion, PID5_Psychoticism, Hexaco_Emotionality

[f] Predictors: (Constant), PID5_Negative_Affect, Hexaco_Extraversion, PID5_Psychoticism, Hexaco_Emotionality, Hexaco_Agreeableness

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-2.837	.403		-7.035	<.001
	PID5_Negative_Affect	8.331	.292	.878	28.567	<.001
2	(Constant)	7.752	1.530		5.068	<.001
	PID5_Negative_Affect	6.201	.400	.654	15.515	<.001
	Hexaco_Extraversion	-2.571	.361	-.300	-7.131	<.001
3	(Constant)	6.507	1.488		4.373	<.001
	PID5_Negative_Affect	4.778	.485	.504	9.846	<.001
	Hexaco_Extraversion	-2.233	.353	-.261	-6.335	<.001
	PID5_Psychoticism	2.591	.543	.222	4.769	<.001
4	(Constant)	9.715	1.850		5.250	<.001
	PID5_Negative_Affect	5.486	.539	.578	10.173	<.001
	Hexaco_Extraversion	-2.234	.347	-.261	-6.431	<.001
	PID5_Psychoticism	2.349	.542	.201	4.331	<.001
	Hexaco_Emotionality	-1.221	.430	-.096	-2.843	.005
5	(Constant)	13.577	2.298		5.908	<.001
	PID5_Negative_Affect	5.143	.546	.542	9.416	<.001
	Hexaco_Extraversion	-2.206	.343	-.258	-6.434	<.001
	PID5_Psychoticism	2.133	.541	.183	3.947	<.001
	Hexaco_Emotionality	-1.212	.424	-.095	-2.861	.005
	Hexaco_Agreeableness	-1.101	.398	-.090	-2.765	.006

[a.] Dependent Variable: Borderline Personality Disorder, Dimensional Score