

Borderline Personality Disorder in Young People:

Complexities in Understanding of
and Relating to Others

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Borderline Personality Disorder in Young People:

Complexities in Understanding of
and Relating to Others

Borderline Persoonlijkheidsstoornissen bij Jongeren:

Problemen in het Begrijpen van
en Omgaan met Anderen
(met een samenvatting in het Nederlands)

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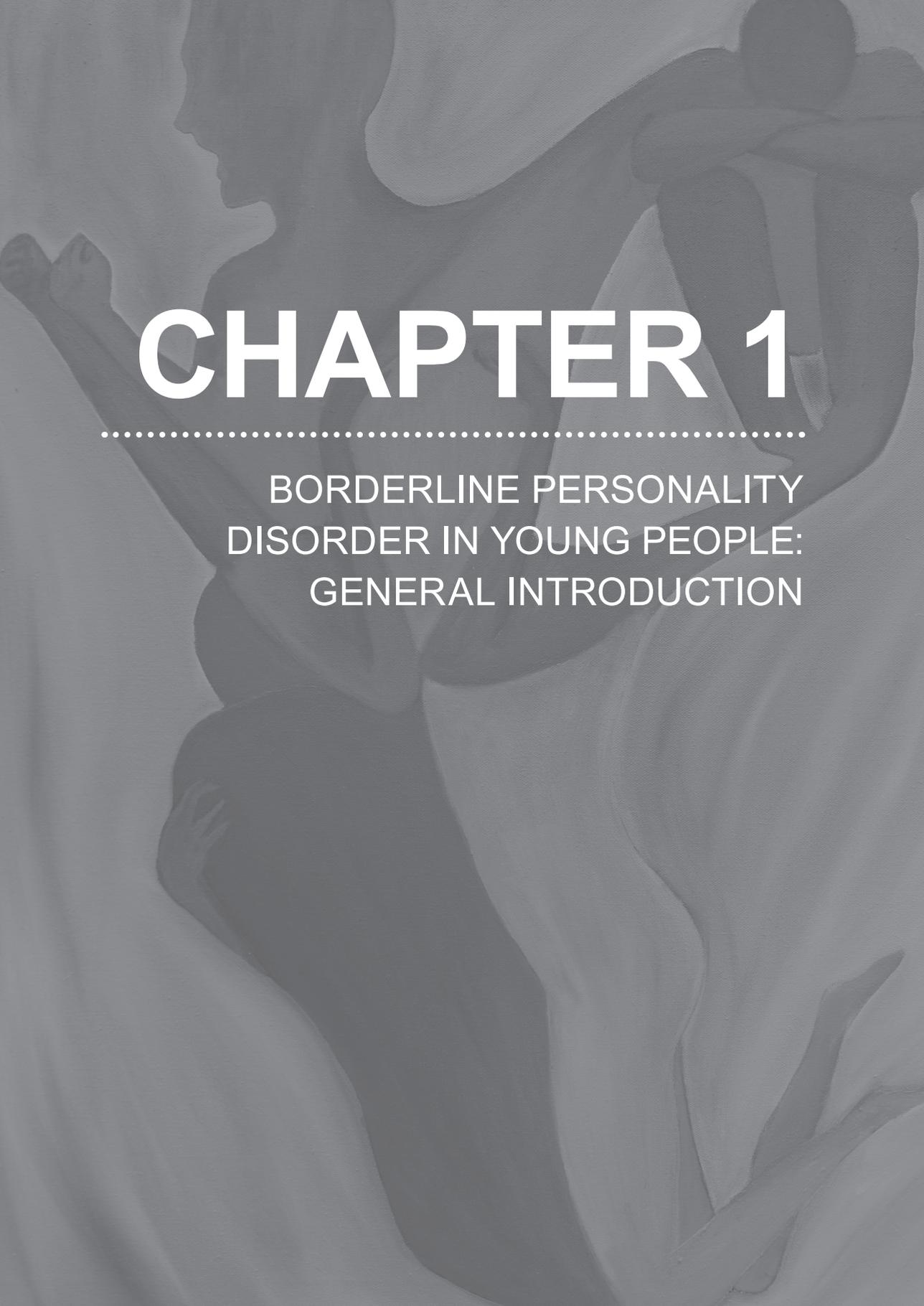
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'... alles was zoals het wezen moest en het gevolg van een aaneenschakeling van oorzaken en redenen; alles had recht van bestaan; niemand kon iets veranderen aan wat was of zijn zou; niemand had een vrijen wil; ieder was een gestel, een temperament en kon niet anders handelen, dan volgens de eischen van dat temperament, overheerscht door omgeving en omstandigheden; dat was de waarheid, die de menschen steeds met hun kinderachtig idealisme, zeurend over deugd en met een handjevol religieuze poëzie, zochten te bedekken...'

(Couperus, 1987, p. 114)

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CHAPTER 1

BORDERLINE PERSONALITY
DISORDER IN YOUNG PEOPLE:
GENERAL INTRODUCTION

Introduction

Individual differences in personality have been studied by researchers in the field of child and adolescent psychology as well as by researchers in the field of adult psychiatry. Historically, these two research fields have done so within different research traditions and with different impact in clinical practice. Whereas researchers in the field of child and adolescent psychology have focused on *normal* personality and temperamental traits, as well as the behavioural and developmental aspects of these, researchers in the adult psychiatry field have focused on personality traits and *pathology*. The last two decades have been an exciting and productive period in the study integrating the two research traditions. This has led to a new view on personality disorder as a lifespan developmental disorder. Within this life span approach, personality disorders in adolescence have been found to be continuous with the disorder in adults, as similarities in phenomenology, structure, stability, validity, and morbidity have been reported (Chanen & Thompson, 2014). This has added to a more developmental psychopathology perspective on personality pathology.

The developmental view on personality across the lifespan focuses on personality traits as constructs that summarize characteristic patterns of thinking, feeling, and behaving that are pervasive across situations and stable across time (Shiner & Tackett, 2014). Children and adolescents differ strikingly in their personalities as they vary in the way they experience themselves, others and their lives. Their personality traits are moderately stable (de Fruyt et al., 2006). The Five Factor Model (FFM or “the Big Five”; Costa & McCrae, 1990) defines five broadly defined traits that capture features across persons within the factors Extraversion, Neuroticism, Conscientiousness, Agreeableness and Openness to Experience. These traits characterize the personalities of children as early as in their preschool age (De Pauw, Mervielde, & Van Leeuwen, 2009) as well as in later childhood and adolescence (Shiner & DeYoung, 2013). Significant associations have been reported between FFM traits in childhood and adult personality (van Aken, Hutteman, & Denissen, 2011).

Moreover, relations between personality traits and personality pathology from childhood to adulthood have been suggested. Shiner and Tackett (2014) describe both “top-down” and “bottom-up” evidence for such relations. The “top-down” evidence comes from adult measures adapted for adolescents, suggesting that the same pathological personality traits describe early manifestations of personality pathology in young people. In addition, within “bottom-up” evidence, pathological personality traits in young people are described as maladaptive extreme variants of normal personality traits in children (for example De Clercq & De Fruyt, 2012; De Clercq, De Fruyt, Van Leeuwen, & Mervielde, 2006).

Children's early personalities shape their experiences of the environment through different processes and therefore help explain why children who are exposed to relatively similar environments do not have the same outcomes. In order to understand more about both normal and pathological personality development we need to understand how personality both shapes and gets shaped by the social environment. Within the comprehensive personality model developed by McAdams (McAdams & Pals, 2006), three levels of individual differences in personality are distinguished, in which personality traits form the first level and represent an important focus in understanding the emergence and development of personality disorders in youth. The second level within the personality theory of McAdams, is the level of characteristic adaptations, defined as "a wide range of motivational, social-cognitive, and developmental adaptations, contextualized in time, place, and/or social role" (McAdams & Pals, 2006, p. 208). Within this level, aspects of the individual's functioning such as attachment to a primary caregiver and social cognitive functioning are of great relevance for personality disorders in youth (Shiner & Tackett, 2013). Specifically in young people, these adaptations are characterised by two important transitions regarding the development of their relational functioning; First, the transition from middle childhood to adolescence is marked by the increasing salience of the peer group. Second, the transition of adolescence to young adulthood is marked by the shift toward intimate partners as the primary relational context. Because of these two psychosocial transitions, adolescence is a key developmental period for the understanding of the interaction between personality and social environment, such as the social cognitive or mentalizing capacities and the relationships with both parents and peers, both subjects of this thesis. Within the third level formulated by McAdams, the personal narratives, life stories that individuals begin to develop in adolescence to help them make sense of their identities over time are seen as of fundamental importance for identity development. The development of personal narratives is a process that is firmly imbedded in an individual's social context (Shiner, 2009) and that could be disturbed in the development of certain types of personality disorders (Fonagy & Bateman, 2008).

The three levels of personality development as described by McAdams and Pals (2006) are crucial in the understanding of the development of personality disorders in young people, as they describe how personality traits can become pathological when they are maladapted and hamper the identity formation and therefore lead to distress and impaired functioning. More specifically, Shiner and Tackett (2014) described how personality traits (Level 1) can serve as both risk and resilience factors in the development of personality pathology; Characteristic adaptations (Level 2) show connections to emerging personality disorders, through social-cognitive processes, such as attachment, emotion regulation and coping strategies, and finally

the content and structure of adolescents' life narratives (Level 3) hold particular relevance for adaptive identity development and adjustment.

Until now, the three levels of personality development as formulated by McAdams and Pals (2006) have not been studied in personality pathology. In this dissertation, we will address several of the concepts and mechanisms formulated in this model, applied to personality pathology in young people. We will focus on personality traits (level 1), social-cognitive processes (level 2, in terms of social information processing) and their relations with personality pathology in Chapter 2, in more detail on social-cognitive processes and various forms of personality pathology in Chapter 3, on the relation between characteristic adaptations in the form of support and negative interactions with parents and peers and personality pathology in Chapter 4, and on both earlier and concurrent relationship experiences and personality pathology in Chapter 5.

First, we will now focus on the specific aspects of personality pathology in adolescence, and on a dimensional versus categorical approach to personality pathology. After that, we will specifically focus on the importance of interpersonal functioning in adolescent with personality pathology. We will present thoughts on different person-environment transactions, and we will further introduce the four empirical studies in this dissertation.

Personality Disorders in Adolescence

In the last decennia, the view on personality disorders especially within adolescence has changed, both in clinicians and researchers. The reluctance and controversy associated with diagnosing personality disorders under the age of eighteen years, have been shifting gradually, as data have shown that this reluctance is no longer justified. Paulina Kernberg (2000) was one of the first clinicians to argue that *not* diagnosing personality disorders in adolescents could actually jeopardize their future by making it difficult or impossible for them to obtain the necessary and appropriate treatment.

Kernberg denominated three reasons for the reluctance in clinicians to diagnose a personality disorder in adolescents. The first reason is a self-sustaining one. As most epidemiological studies of mental disorders in children and adolescents did not focus on personality pathology, empirical support for the existence of personality disorder in adolescents was lacking. This lack of empirical support in turn, caused researchers and clinicians to avoid making the diagnosis. A lot has changed in the last decade, as recent reviews have concluded that the reliability and validity of the diagnosis of personality disorders, such as borderline personality disorder (BPD) in at least middle to late adolescence is comparable to that in adulthood (Chanen, Jovev, McCutcheon, Jackson, & McGorry, 2008; Kaess, Brunner, Chanen, 2014; Miller,

Muehlenkamp, Jacobson, 2008; Westen, DeFife, Malone, & DiLallo, 2014) and in addition, several national treatment guidelines and expert centres (National Institute for Health and Clinical Excellence, 2009; Landelijk Kenniscentrum Kinder- en Jeugdpsychiatrie, 2011) explicitly acknowledge that diagnosing BPD is justified and necessary in adolescence.

A second reason Kernberg (2000) denominated are the reservations about labeling young people 'with a diagnosis that implies severity and nonmalleability' (p. 6). This reason is closely related to a fear of stigma, which despite research findings and national guidelines, still seems a key lingering barrier to diagnosis in day-to-day clinical practice (Laurenssen et al., 2013). BPD is associated with patient "self-stigma" (Rüsch et al., 2006) and furthermore, highly stigmatized among professionals (Aviram, Brodsky, & Stanley, 2006). Although the concerns about stigma are genuine, this practice runs the risk of maintaining negative stereotypes and increasing the likelihood of inappropriate diagnoses and interventions, leading to iatrogenic harm, including polypharmacy (Fonagy et al., 2015) or reinforcing impaired functioning and therapeutic nihilism (Chanen, Sharp & Hofman, 2017).

A third reason Kernberg (2000) denominated, is the believe that personality has not yet matured in adolescents, which would imply that the existence of a personality disorder would not make sense at this age. Kernberg stated that this approach is basically nondevelopmental, because it does not consider the process by which, at each phase of development, an age-appropriate personality is formed. Although personality disorders are less stable than previously assumed, both in adults and in adolescents, rank-order stability showed that symptoms of personality disorders in young people display moderate to strong levels of rank-order across time, ranging from .40-.65 (Bornovalova et al., 2013; Cohen, Crawford, Johnson, & Kasen, 2005; Winograd, Cohen, & Chen, 2008). This is similar to the rank-order stability in adults (e.g. Clark, 2009). The rank-order stability results parallel those found for normal-range personality traits, which are already moderately stable by childhood (Roberts & DelVecchio, 2000), and become increasingly stable from childhood through adolescence (Ferguson, 2010).

As empirical data showed that there is 'nothing developmentally special about the age of 18 years with regard to BPD' (Chanen, 2015, p. 4), there is no empirical argument to delay the diagnosis until the age of eighteen years, we could argue that the reluctance to make the diagnosis in adolescents is based more on sentimental reasons than on empirical data. Nonetheless, there is empirical research that all three of the reasons denominated by Kernberg (2000) may also in current times prevent clinicians from actually diagnosing personality disorders in adolescence. A recent study found among practicing Dutch and Belgian psychologists only 9% of clinicians reporting diagnosing personality disorders in adolescence, and even

fewer offering specialised treatment for adolescents with personality disorders (Laurenssen et al., 2013), leading to underdiagnoses and undertreatment of personality disorders in adolescence. Not diagnosing and offering tailored treatment for personality disorders under the age of eighteen years, is a missed opportunity because adolescence is a key developmental phase for intervention, as data suggest considerable malleability and flexibility of the traits in young people and disorder-specific early intervention and treatment are beneficial (Kaess, Brunner, & Chanen, 2014).

In the last two decades, research focusing on personality disorders in adolescents has expanded increasingly. Kaess, Bruner and Chanen (2015) stated therefore that research over the past decades has disproven the assumptions averting the diagnosis of personality disorder in adolescents, and that greater knowledge about personality pathology in young people has potential to influence the assumption of stigma. Most of this research has focused on borderline personality disorder (BPD). This is not without good reason. BPD in adolescence identifies a group with high psychiatric comorbidity, low psychosocial functioning and poor outcome (Chanen & McCutcheon, 2013; Kaess, Brunner, Chanen, 2014; Kaess et al., 2013; Laos et al., 2013) as it sometimes is a lifelong condition (Grilo, McGlashan, & Skodol, 2014). Suicide rates are around 8%-10%, which is 50 times higher than in the general population (Leichsenring, Leibing, Kuse, New & Leweke, 2011). BPD is associated with substantial personal, social and economic burden (Feenstra et al., 2012; Soetman et al., 2010; Soeteman, Hakkaart-van Roijen, Verheul, & Busschbach, 2008), while early detection and intervention can improve the prognosis (Chanen & Thompson, 2015). For these reasons, we have focused this thesis on cluster B personality pathology and more specifically on BPD.

BPD is a common mental disorder, especially in mental health settings. Based on DSM-IV and DSM-5 criteria (APA, 2000; APA, 2013), the prevalence of BPD in adolescents is similar to or higher than that found in adults: approximately 1.4% of young people in the community by age 16 years, rising to 3.2% by age 22 (Johnson, Cohen, Kasen, Skodol, & Oldham, 2008). Within mental health settings, the estimated prevalence is 11% in psychiatric outpatients (Chanen et al., 2004; Chanen et al., 2008), and up to 50% of inpatients (Grilo, 1996). Longitudinal data show a normative increase in BPD traits after puberty, reaching peak prevalence in early adulthood and subsequently declining in a linear fashion over subsequent decades (Cohen, Crawford, Johnson, & Kasen, 2005), leading Chanen and McCutcheon (2013) to conclude that BPD might better be considered 'as a disorder of young people' (p. s24).

BPD in adolescents is associated with high levels of psychiatric comorbidity (Kaess et al., 2013). Ha et al. (2014) found that a significant percentage of adolescents with BPD additionally met criteria for psychiatric disorders in the area of

externalizing problems, substance abuse/dependence problems, and internalizing disorders including mood and anxiety disorders, when compared to psychiatric inpatients without BPD. In addition, in comparison to the non-BPD group, a significantly higher percentage of BPD patients (up to 60%) met criteria for complex comorbidity, which was defined as a confluence of internalizing and externalizing disorders (Eaton et al., 2013).

BPD, like other major psychiatric disorders, evolves from the interaction between genetic diathesis and environmental stressors, implying a gene-environment developmental model (Gunderson & Lyons-Ruth, 2008). Twin studies suggest that BPD features in adulthood have an estimated heritability of around 40-50% (i.e. Boronova, Hicks, Iacono, McGue, 2009; Distal et al., 2008). However, no specific genes have been associated with BPD so far (Leichsenring, Leibing, Kruse, New, Leweke, 2011). When compared to healthy peers, adolescents with BPD have substantial impairments in their psychosocial functioning (Chanen, Jovev, & Jackson, 2007; Kaess et al., 2013). Although BPD criteria have been shown to decline over time, functional impairment has been shown to be remarkably stable in adults (Gunderson, et al., 2011). In addition, within the Children in the Community Study, BPD in adolescents with a mean age of 14 years old, was found to uniquely predict poor outcomes in follow-up interviews, when the cohort was on average 16.1, 22.0, and 33.2 years old, respectively. These results imply poor outcome up to 2 decades into the future, such as increased risk for other mental disorders and a BPD diagnosis, interpersonal problems, distress, and reduced quality of life (Crawford et al., 2008; Winograd, Cohen, & Chen, 2008).

Personality Disorders in DSM-IV and DSM-5

Within DSM-IV and DSM-5 section II, personality disorders are defined as deviant patterns of inner experience and behaviour in at least two of the following four areas: '(1) cognition (i.e., ways of perceiving and interpreting self, other people, and events); (2) affectivity (i.e., the range, intensity, lability, and appropriateness of emotional response); (3) interpersonal functioning; (4) impulse control' (APA, 1994, p.633; APA, 2013, p.646). These patterns must be enduring, pervasive and inflexible and are expected to have its onset at least in adolescence or early adulthood. Furthermore, they lead to distress for the person or impairment in important areas of daily life, such as social relationships, school or work. Finally, these patterns must not be better accounted for as a consequence of another disorder, a medical condition, or substance use (APA, 1994; APA, 2013). DSM-IV and DSM-5 outline diagnostic criteria for 10 specific personality disorders, which are grouped into three clusters. Cluster A includes the odd or eccentric personality disorders (paranoid, schizoid, and schizotypal personality disorder); Cluster B includes the dramatic, emotional,

or erratic personality disorders (antisocial, borderline, histrionic, and narcissistic personality disorders) and; Cluster C includes the anxious or fearful personality disorders (avoidant, dependant, and obsessive-compulsive personality disorder) (APA 1994, APA 2013).

Cluster B personality disorders are among the most prevalent mental disorders in the general population (Lenzenweger, Loranger, Korfine, & Neff, 1997; Torgerson, Kringlen, & Cramer, 2001) and appear to be more prevalent earlier in life. This is particularly the case in adolescence, as they are found to be more prevalent compared to adulthood (Johnson, et al. 2000). Cluster B personality disorders are associated with high societal costs and low quality of life (Soeteman, Hakkaart-van Roijen, Verheul, & Busschbach, 2008; Soeteman, Verheul, & Busschbach, 2008).

Categorical versus Dimensional Perspectives on BPD in Adolescence

Although the criteria within DSM-IV and DSM-5, section II are found to be adequate to diagnose BPD in adolescents in a reliable and valid way (Miller, Muehlenkamp, Jacobson, 2008; Sharp, Ha, Michonski, Venta, & Carbone, 2012), both within the research field on adolescent personality disorders and within clinical practice, scepticism exists about these criteria based on two important arguments. First of all, accurate diagnosis is hampered by the lack of developmentally appropriate personality disorder criteria or illustrations of current criteria consistent with adolescent behaviour (Chanen et al., 2008b). Within clinical practice this leads to discussion whether or not all adolescents more or less might have BPD in a sense that they tend to be more impulsive and worse at regulating their emotions and behaviour compared to other developmental phases. Although this is an understandable discussion, as typical features of BPD, such as affective instability, impulsivity or disturbed self-image being normative in adolescents (Kaess, Brunner, & Chanen, 2014), this does not consider the fact that we are able to distinguish between adolescents with and without BPD in a reliable and valid way. A more refined description of criteria or an 'age-appropriate translation' of the current criteria would help to differentiate between BPD criteria and age appropriate adolescent turmoil and to expand the use of the criteria in clinical practice.

Second, the descriptions of personality disorders in DSM-IV and DSM-5 section II are categorical; each personality disorder is seen as a distinct pattern that differs qualitatively both from normal personality functioning and from other personality disorders (Shiner & Tackett, 2014). Especially in young people, a dimensional approach may add to the conceptualizing of BPD, because it is better able to account for the developmental fluctuations and increased heterogeneity that have been reported in younger samples (Sharp et al., 2012). Therefore, a dimensional approach offers opportunity to investigate the development of personality traits in the dif-

ferent developmental stages. In a dimensional perspective, personality disorders represent maladaptive extremes of personality traits that can merge gradually into normality and into one another, as diagnostic heterogeneity within diagnoses probably results from the mixture of pathological traits with a category of personality disorder (Shiner & Tackett, 2014). This shift to a dimensional approach to personality pathology increases insight in the development of personality pathology as it enhances the integration of the knowledge of normal personality in children and adolescents with the literature on BPD. The diagnosis from a dimensional viewpoint, being more open to change and being increasingly aware for fluctuations in severity, might also help to address the reluctance in clinicians to diagnose BPD in adolescents as it will no longer reflect a label for life.

DSM-5 acknowledges the value of dimensional models for personality disorders, by the inclusion of the alternative DSM-5 model for personality disorders in Section III of the manual (APA, 2013). There are two key components required for a personality disorder diagnosis in the dimensional approach. The first key component is impairment in the areas of self (including elements of identity and self-direction) and interpersonal functioning (including elements of empathy and intimacy). The second key component is the presence of one or more pathological personality traits, which are organized in five domains or dimensions (Negative Affectivity, Detachment, Antagonism, Disinhibition, and Psychoticism), each covering specific domains. Within the dimensional model in section III of DSM-5 as well as in other dimensional models as the Five Factor Model, both the self and the relation with others are taken into account. Personality is an important predictor of relationships in adulthood. For example, Neuroticism and Agreeableness are the strongest and most consistent personality predictors of relationship outcomes (Karney & Bradbury, 1995). As personality traits speak to the overall style of a person's adjustment to and engagement with the social world (McAdams & Pals, 2006), which undergoes many developmental changes during adolescence, specifically in adolescence the transactional process between personality and relationships influencing each other is necessary to consider.

Within the recent literature, both a categorical perspective (BPD described as 5 or more diagnostic criteria in DSM-IV and DSM-5), a dimensional perspective based on the five dimensions in DSM-5 section III (Negative Affectivity, Detachment, Antagonism, Disinhibition, and Psychoticism), as well as a dimensional perspective based on the number of diagnostic criteria according to DSM-IV and DSM-5, section II are used in young people (Chanen et al., 2004). These different approaches seem to reflect the changes in the field, which have developed from a dichotomous or categorical approach, to a dimensional approach, taking development and fluctuations within the development more into account.

Within this thesis BPD was mainly, although not exclusively studied from a dimensional approach. In the studies described in Chapters 2 and 3 a dimensional perspective based on the number of diagnostic criteria according to DSM-IV diagnosis (APA, 2000) are used; in the study in Chapter 4 a dimensional perspective based on the five dimensions in DSM-5, section III (APA, 2013) is used, and finally in the study described in Chapter 5 a comparison is made between the categorical and the dimensional perspective based on the number of diagnostic criteria in DSM-IV and DSM-5.

Interpersonal Functioning in Adolescence

Several of the most salient developmental tasks faced by adolescents and young adults are related to interpersonal functioning and social relationships, such as the establishment of friendships and acceptance among peers (Hartup & Stevens, 1999), the development of the capacity for mature intimacy in friendships and in romantic relationships while maintaining close and autonomous relationships with parents, coping effectively with the home-leaving transition, and developing a sense of efficacy and individuation (Arnett, 2000, 2001). The psychosocial context of adolescents is different to that of children and adults. Relationships with peers, family and society go through changes during this time, as adolescents begin to assert more autonomous control over their actions.

In addition, social cognitive processes are crucial for both normative and maladaptive development in adolescence. Different reviews (Paus, 2005; Steinberg, 2005) commented on the neuropsychological development in adolescence and highlighted the way the behavioural and cognitive systems mature at different rates and under the control of both common and independent biological processes. These different rates are reason that adolescence forms a critical period of increased vulnerability and adjustment. However, brain maturation is not limited to the early adolescent period, nor is it invariably linked to processes of pubertal maturation. In young adolescence, the role of puberty forms an influence on social information-processing. Emotion regulation and social understanding are two key factors in the understanding of personality pathology which go through significant developmental changes during adolescence. Social cognitive development can be understood as a reciprocal transactional process between the adolescent and his environment, which shapes the development of his personality.

Therefore, in furthering the understanding on the developmental pathway of BPD, both characteristics of adolescents and characteristics of their social environment seem to be intertwined. This implies that social cognitive aspects and social relationships appear to be crucial in the phase of adolescence with the pathway of BPD.

Interpersonal Functioning in Relation to Personality in Adolescence

Both clinicians and researchers agree that problems in social functioning and social understanding are central features of cluster B personality pathology, and BPD specifically. Increasing our understanding of the interaction between personality and the social environment is important in order to understand more about the development and emergence of BPD. Caspi and Roberts (2001) differentiated three transactional patterns between personality and environment, which can predict a certain continuity in personality during changes in time or situations, and furthermore describe how personality both shapes and gets shaped by the social environment. First, the *evocative interaction pattern* describes how a person triggers a certain response with people around him or her, for example the adolescent who gets more harsh or negative reactions in different situations at different times or elicits more coercive behaviours from adults around him than adolescents with a more easy temperament. Second, the *reactive interaction pattern* describes how different adolescents can interpret and react differently in the same situation. This interaction pattern resembles processes of social cognition, which has been the subject of the studies in the Chapters 2 and 3 and is considered as a necessary precondition to form satisfying social interaction and reliable intimate relations. During adolescence important developmental changes occur in social cognition. Sharp et al. (2011) investigated social cognitions in adolescents with emerging BPD and found a strong association between BPD features and ‘hypermentalizing’, defined as the reflecting overinterpretative mental state reasoning, e.g. making overly complex inferences based on social cues that result in errors, rather than the reduction or loss of theory of mind capacity per se. The third interaction pattern, the *proactive interaction pattern* describes how an adolescent forms or seeks the situation that matches his or her personality or interactional style. For example adolescents with a strong need for sensation seeking, seem to choose more deviant peer groups. Caspi and Bem (in Kernberg, 2000) suggest that proactive interactions increase with age and autonomy, which resembles the transition of adolescents to gradually devote an increasing amount of time and energy to activities and relationships outside the family in order to function independently and fulfil more mature responsibilities. However, as Johnson, Chen and Cohen (2004) suggested, based on their findings that high levels of personality disorder (PD) traits in adolescents, were associated with both elevated contact and conflict with family members, that adolescents with elevated PD symptom levels may find it particularly difficult to separate from the family and to develop the capacity for independent functioning during the transition to adulthood. The relationships with parents and peers in adolescents with BPD are subject of the studies presented in Chapters 4 and 5. There is evidence that personality disorders in adolescents are associated with problems in psychosocial

adaptation both concurrently and later in adulthood (Skodol, Johnson, Cohen, Sneed, & Crawford, 2007). In particular, cluster B symptoms showed particular relevance for romantic relations in associations with lower well-being and intimacy in relationships in adolescence, with the latter becoming stronger in adulthood (Crawford, Cohen, Johnson, & Sneed, 2004). The theory of person-environment transactions may elucidate the development of personality in the risk for personality pathology, which seems specifically relevant during adolescence when relations between personality and social environment go through significant changes.

For the understanding of the course of personality disorders, both problems in social functioning and social relationships are considered key problems (Paris, 2014). The objective of this thesis is to extend the knowledge on adolescent BPD by furthering the understanding of the transactional patterns between personality and environment. Both psychological mechanisms and environmental factors which play an important role in BPD in adolescents can be distinguished (Fonagy et al., 2015). These factors can be understood as part of the reactive and the proactive transactional patterns within the theory of person-environment transactions.

Reactive Interactions between Personality and Social Environment: Mentalizing Capacities

Both problems in mentalizing (Bateman & Fonagy, 2004) and in emotion regulation (Linehan, 1993) are considered crucial psychological mechanisms for BPD. In light of the present thesis, both mechanisms seem important to consider as they can be interpreted as reactive interaction patterns within the person-environment transactions.

The first psychological mechanism, deficiencies in mentalizing has been specified as the core of personality disorders, most notably BPD, by Bateman and Fonagy (2004). Mentalizing is defined as a metacognitive capacity or mental process by which an individual implicitly and explicitly interprets the actions of himself and others as meaningful based on intentional mental states, such as feelings, desires and values. Mentalizing includes interpersonal and intrapersonal processing and involves both cognitive and emotional processing, in order to attempt to predict and understand behaviour. This social cognitive process enables individuals to navigate the social world effectively. Mentalizing theory suggests that reductions in mentalizing is not simply a deficit in cognitive mentalizing, but also the consequence of the dominance of emotion-dominated processing, as people with BPD are more sensitive to emotional cues than individuals who do not have BPD (Fonagy & Bateman, 2016).

The second psychological mechanism, problems in emotional dysregulation, stems from Linehan's developmental model of BPD (1993). This model considers BPD primarily as an emotion dysregulation disorder emerging from transactions

between biological vulnerabilities (heightened emotion intensity) and specific environmental influences (invalidating developmental environment). Although, emotions and emotion regulation are both well documented as psychological mechanisms for BPD, Fonagy et al. (2015) pointed out that more specifically, the impact of *socially based* emotions such as shame, guilt, and fear for social rejection, seem to be central in BPD in adults (Schmahl et al., 2014). This is an important conclusion, as affective instability per se is not specific to BPD and has also been found in individuals with posttraumatic stress disorder and binge eating disorder (Santangelo, Bohus, & Ebner-Priemer, 2014). Specifically in adolescents, difficulties in mentalizing and emotion dysregulation together were found to mediate the relation between attachment coherence and BPD features, but this effect was driven by problems in mentalizing, while problems in mentalizing and not emotion dysregulation demonstrated the mediational effect (Sharp et al., 2016). This seems to confirm the hypothesis that the core of personality disorders is mainly interpersonal (Hopwood et al., 2013) and we need to further understand mentalizing as a mechanism within the developmental pathway and as a reactive interaction pattern between personality and social environment.

Although, in adolescents, just as in adults, deficits in mentalizing are considered as one of the key features in the understanding of BPD, mentalizing remains a difficult concept to specify and objectify (Choi-Kain & Gunderson, 2008), leading to the question, which specific problems in mentalizing characterize adolescents with personality pathology. This question is hampered by both a lack of consensus on how mentalizing can be operationalized as well as by limited availability of mentalizing measures in this age group. Considering the lack of consensus, different terms are used interchangeably in the literature, for example mentalizing, social cognition or theory of mind. However, these different terms stem from different research traditions. While mentalizing is rooted in attachment theory, social cognition and theory of mind are derived from cognitive theories (Rutherford et al., 2012). However, in a recent paper, the authors who originally described the mentalizing framework, described terms as reflective functioning, mentalizing, social cognition, metacognition and mindfulness in general as higher-order cognition. Higher-order cognition was defined as the metacognitive capacities to rearrange processes within the brain in order to master life challenges and assure “business as usual” notwithstanding adverse conditions (Fonagy & Bateman, 2016). The limited availability of mentalizing measures in adolescents is related to this lack of consensus as most tasks measuring social cognition are theory-of-mind tasks developed for the assessment of autism spectrum disorders, which lack divergent validity for personality disorders or tend to measure only singular aspects of mentalizing, and do not adequately resemble the demands of social cognition in daily life. In our

opinion, the Social Information Processing (SIP) model of Crick and Dodge (1994) might be able to provide a valid model describing real-life mentalizing in actual social situations. The SIP model (Crick & Dodge, 1994) reflects how children process and respond to social encounters in six steps: encoding and interpreting stimuli, clarifying one's goals, generating ways of responding to cues, and evaluating alternative responses across various domains and make use of a "database" of past experiences and biologically determined capabilities. Mentalizing, objectified as SIP in relation to both personality and cluster B personality pathology is investigated in a clinical sample of adolescents in the study presented in Chapter 2. This study is expanded in the study presented in Chapter 3, where associations are investigated between SIP and cluster B personality pathology, differentiating between BPD and ASPD specifically. In order to enhance our understanding on the emergence of BPD, we need to increase our understanding of specific mentalizing capacities within the developmental phase of adolescence as a key period where both psychosocial development and the early manifestations of BPD.

Proactive Interaction between Personality and Environment: Social Relationships

In addition to reactive interaction patterns, also proactive interaction patterns are likely to play a role in adolescent BPD. Previous studies have suggested that both social context and inequality (i.e. Chanen & Kaess, 2012) and problems in social functioning and social relations (Hopwood et al., 2013) are important factors within the proactive interaction patterns in BPD. As we pointed out earlier, in contrast to the relatively unstable nature of the diagnosis BPD, both in adolescents and in adults, problems in social functioning seem to be relatively stable and may have long-lasting consequences for the individual's functioning (Chanen & Kaess, 2012). Johnson, Chen and Cohen (2004) found that adolescents who are developing personality disorders may be more likely to experience conflicts with family members throughout the transition to adulthood and in turn, that persistent conflict with family members may have an adverse impact on psychosocial development throughout this important transitional period. Furthermore, there are indications for co-development of BPD symptoms and psychosocial dysfunctioning, pointing out that when BPD symptoms in adolescence increase, so does psychosocial dysfunctioning, whereas when BPD symptoms decline, psychosocial functioning seems to improve (Wright et al., 2016). This possible shared association between trajectories of BPD and psychosocial functioning implies that the failure to develop adequate psychosocial and relational functioning during adolescence may ultimately result in severe impairments in interpersonal functioning recognized as key feature in adult BPD.

Issues addressed in this thesis

Overall, in light of the increasing support for personality disorders during adolescence, and BPD specifically, more research is needed into the correlates and mechanisms underlying of adolescent personality pathology (Fonagy et al., 2015). Personality and social functioning are not independent events and they can interact in a variety of ways, as described for example in the theoretical model of person-environment transactions (Caspi & Robert, 2001). Understanding more of the associations between personality and the interaction with the social environment is necessary in order to gain more understanding of interactional processes between personality traits, personality pathology and factors of interpersonal functioning which can be risk factors as well as protective within the development of personality pathology.

Social Information Processing and Personality and Cluster B Personality Pathology

To promote the theoretical and empirical conceptualization of the specific aspects of mentalizing, the study presented in Chapter 2 is based on an integration of two research traditions from child and adolescent psychology which are highly relevant for the field of personality pathology in adolescents. The empirical study in Chapter 2 relates normal personality according to the Five Factor Model (FFM) with the capacity to mentalize, reflected in Social Information Processing (SIP). This examination departs from the assumption that each individual's subjective experience and perception of the world may shape the development of personality and psychopathology (Shiner & Caspi, 2003) and can be described as part of the transactional reactive interaction patterns between personality and environment, which can describe how personality both shapes and gets shaped by the social environment (Caspi and Roberts, 2001). The study in Chapter 2 investigates whether associations between the FFM factors and personality pathology in adolescents can be replicated. Next, the study in Chapter 2 will investigate whether specific FFM dimensions are relevant for three specific steps in SIP; (1) coping, which can be defined as strategies to regulate negative emotions associated with a social situation; (2) the generation of responses and (3) memories of earlier social frustration situations, which can be placed in the database of SIP. In addition, the study investigates whether SIP can have a mediating effect, explaining the relationship between personality according to FFM and cluster B personality pathology and finally, personality as a possible moderator of the relationship between SIP and personality pathology is investigated. Knowledge on the mediating effects of SIP factors in the relationship between personality and personality pathology and moderating effect of personality dimensions on the relationship between SIP-variables and cluster B personality pathology, can help us

understand how personality dimensions and social cognitions both independently and together can play a role in adolescents' personality pathology.

To further extend our knowledge on social information processing and cluster B personality pathology in adolescents, the study described in Chapter 3 studies relations between SIP and cluster B personality pathology, and more specifically differentiates between severity of traits of antisocial personality disorder (ASPD) and BPD in a clinical sample of adolescents. Although ASPD and BPD show an overlap in both symptoms and risk factors, several lines of evidence suggest they are different disorders associated with unique trait profiles (Paris, Chenard-Poirier, & Biskin, 2013). Knowledge of the unique associations of ASPD and BPD with distinctive SIP-variables is valuable to not only have an understanding of the shared background of different cluster B personality pathology, but also differentiate the specific problems concerning SIP for ASPD and BPD. A better understanding of how the social environment becomes mentalized can improve our understanding of the mechanisms in the development of personality pathology (Fonagy et al., 2015).

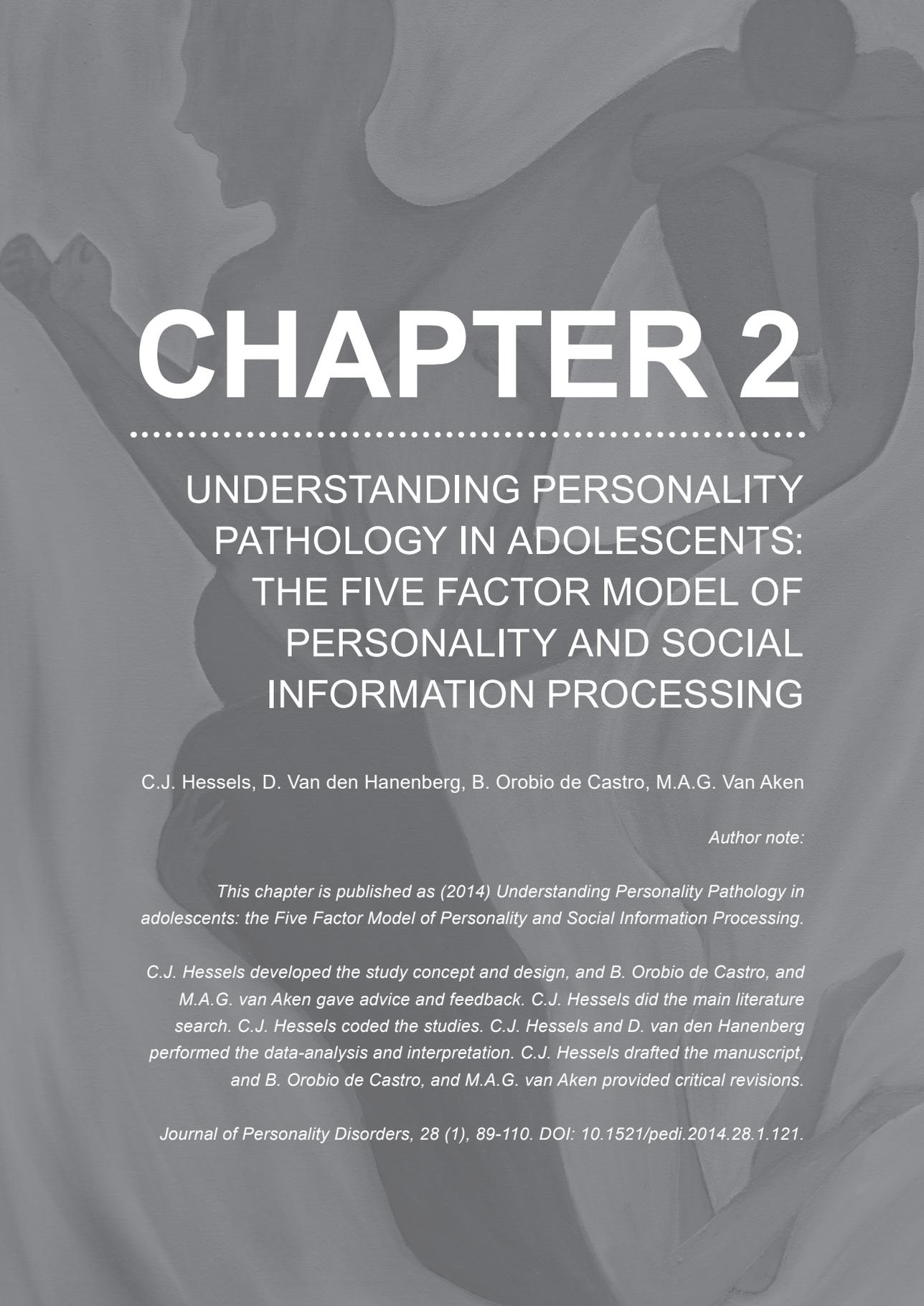
Social Relations and Borderline Personality Disorder

Crucial mechanisms in the understanding of BPD, such as mentalizing take place and develop within the context of social relations. In addition, problematic social relations are considered a key problem in BPD. BPD has been associated, early in the course of the disorder, with high levels of social impairment (Kaess et al., 2013), such as poorer general psychosocial functioning, poorer peer relationships and problems with family relationships (Chanen et al., 2007). Moreover, a unique predictive value of BPD has been shown for poor psychosocial functioning, above and beyond Axis I disorders and other PD diagnoses (Chanen et al., 2007; Kaess et al., 2013). The emergence of BPD can interfere with developmental tasks regarding social development, due to personality pathology complicating day-to-day interpersonal situations and relations. In addition, poor social functioning might influence the emergence of BPD, since the nature of emerging BPD is considered fundamentally interpersonal (Hopwood et al., 2013).

The empirical study described in Chapter 4 investigated the relations between BPD symptoms in adolescents and both support and negative interactions within the dyadic relationships with parents and with a best friend. Both relations and buffering or reinforcing effects between relationships with parents and friends were studied. Gaining insight into the associations between BPD and social relationships can extend our understanding about the social factors that are crucial in emerging BPD, more specific in the developmental phase were social relations with peers gain importance in the psychosocial functioning overall.

As the reluctance about assessing BPD in young people has shifted to a view in which personality disorders are being considered lifespan developmental disorders, the identification of risk factors and precursors within the developmental pathways leading to a diagnosis of BPD is needed. In addition, to the earlier described relations with parents and peers, two other factors which are crucial in the developmental pathway of BPD are considered in Chapter 5. Self-harm is highly associated with BPD (Chapman et al., 2005; Ayodeji et al., 2015) and is considered to be a key precursor (Chanen & Kaess, 2012) as the BPD criterion 'self-harm and suicidal behaviour' is the one most frequently met in adolescents with BPD (Zanarini et al., 2008). Self-harm consists of both suicidal behaviours and nonsuicidal self-injury (NSSI). However, roughly 50% of both adolescent and adult patients with NSSI do not meet diagnostic criteria for BPD (e.g., Glenn & Klonsky, 2009), which has led to the consideration of NSSI as a distinct and clinically significant diagnostic entity (Glenn & Klonsky, 2013), and the inclusion of the newly diagnostic entity of non-suicidal self-injury (NSSI) disorder in Section III of DSM-5 (APA, 2013). Adverse childhood experiences can be considered a risk factor for BPD as well as for NSSI and suicidal behaviour (Infurna et al., 2016; Kaess et al., 2013). There is substantial evidence that adverse childhood experiences are associated with key features of BPD (Infurna et al., 2016; Zanarini et al., 2000; Zanarini et al., 2002). Additionally, given the recent shift in the BPD literature from a categorical approach to a more dimensional, continuous approach, the study in Chapter 5 will pay special attention to the possible additive value of the dimensional, to the traditional categorical approach. Especially in young people, a dimensional perspective may improve the conceptualizing of BPD, because such a perspective may allow to take into account the developmental fluctuations and increased heterogeneity that have previously been reported in young samples (Sharp et al., 2012).

This thesis closes with a general discussion of the findings presented in the preceding chapters. Chapter 6 provides a comprehensive evaluation of the social information processing and social relationships in relation to cluster B personality pathology and more specifically BPD in adolescents and young adults. The chapter then continues with a discussion of the strengths and limitations of the present study and possible future directions in the study of personality disorders in adolescence. Subsequently, the chapter presents implications of the findings and ends with several general conclusions that can be drawn based on the findings.



CHAPTER 2

UNDERSTANDING PERSONALITY PATHOLOGY IN ADOLESCENTS: THE FIVE FACTOR MODEL OF PERSONALITY AND SOCIAL INFORMATION PROCESSING

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C.J. Hessels developed the study concept and design, and B. Orobio de Castro, and M.A.G. van Aken gave advice and feedback. C.J. Hessels did the main literature search. C.J. Hessels coded the studies. C.J. Hessels and D. van den Hanenberg performed the data-analysis and interpretation. C.J. Hessels drafted the manuscript, and B. Orobio de Castro, and M.A.G. van Aken provided critical revisions.

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Abstract

This study seeks to integrate two research traditions that lie at the base of the understanding of personality pathology in adolescents. The first research tradition refers to normal personality according to the Five Factor Model (FFM). The second tradition specifies the key feature of personality disorder as the capacity to mentalize, which can be reflected in Social Information Processing (SIP). In a clinical sample of 96 adolescents, the authors investigated response generation, coping strategy, and memories of past frustrating experiences as part of SIP, as mediator in the relationship between personality and personality pathology, and a possible moderating role of personality on the relationship between SIP and personality pathology. The hypothesized mediation, by which the effects of personality dimensions on personality pathology was expected to be mediated by SIP variables, was found only for the effect of Neuroticism, most specifically on BPD, which appeared to be mediated by memories the patients had about past frustrating conflict situations with peers. Some moderating effects of personality on the relationship between SIP variables and personality pathology were found, suggesting that high Agreeableness and sometimes low Neuroticism can buffer this relationship. These results suggest that personality dimensions and social cognitions both independently and together play a role in adolescents' personality pathology.

Introduction

A growing body of research recognizes the existence of personality pathology in adolescence (Durret & Westen, 2005; Miller, Muehlenkamp, & Jacobson, 2008; Westen & Chang, 2000). However, the theoretical understanding and therefore the assessment of personality pathology in adolescents remains a subject of discussion. Widiger and Mullins-Sweatt (2009) note that a personality disorder diagnosis can be quite stigmatizing because it suggests that ‘who you are and always have been, is itself a mental disorder’ (p. 203). In contrast, they state that the Five Factor Model (FFM) description of personality disorder provides a more complete description of each person’s self that recognizes and appreciates that the person is more than just the personality disorder. There are aspects to the self that can be adaptive, even commendable, despite the presence of the personality disorder.

Five Factor Model of Personality

The FFM represents a general consensus on the structure of normal personality, dividing personality into the five broad dimensions of Neuroticism, Extraversion, Openness to Experience, Agreeableness, and Conscientiousness (Costa & McCrae, 1990). The FFM is considered to be a valid and comprehensive taxonomy for describing personality differences in childhood and adolescence, and significant associations have been reported between FFM traits in childhood and adult personality and adaptation (van Aken, Hutteman, & Denissen, 2011). Mervielde, De Clercq, De Fruyt, and Van Leeuwen (2005), in an adolescent sample, largely replicated the associations between adaptive FFM facets and categorical Axis II disorders that are observed in adulthood (Trull, Widiger, & Burr, 2001). Integrating the classification of personality disorder with the FFM brings to an understanding of personality pathology a considerable body of scientific research on childhood antecedents, which helps to understand a developmental perspective on personality pathology (Widiger, De Clercq, & De Fruyt, 2009).

Five Factor Model and Personality Pathology

Saulsman and Page (2004) have reviewed studies in a meta-analysis examining the relationships between the five personality dimensions of the FFM and the diagnostic personality disorder categories of DSM-IV. The hypothesis underlying this research is that personality disorders can be conceptualized as extreme variants of normal personality dimensions. The meta-analysis supports the view that personality disorders can be conceptualized using the FFM. Given their individual diagnostic criteria, all personality disorders were found to have associations with FFM dimensions that are meaningful and predictable, although the FFM is better

in conceptualizing and describing certain personality disorders (e.g., borderline personality disorder (BPD)) than others. Moreover, Neuroticism and Agreeableness are the dimensions common across personality disorders, while Extraversion and to a lesser extent Conscientiousness are unique to certain personality disorder categories. Saulsman and Page (2004) suggest that Neurotic and Disagreeable type traits are of primary importance because they are relevant to most personality disorders and that extraverted-introverted type traits are of secondary importance because they are relevant to only a few personality disorders. It is important to note that the FFM is a descriptive account of personality; it does not reveal how personality traits are related to specific (pathological) behaviours. Also, in the realm of the relationship between the FFM and personality pathology, studies are needed that address personality processes or mechanisms by which personality traits “get outside the skin” and can develop into personality pathology (cf. Hampson, 2012).

Social Information Processing

Another research tradition in child and adolescent psychology that is relevant to the assessment of personality pathology in adolescents concerns the processing of social information. Each person’s subjective experience and unique perception of the world may shape the development of personality, adaptation, and psychopathology (Shiner & Caspi, 2003). The role of cognitive factors in personality and psychopathology has been detailed by Crick and Dodge (1994) in their Social Information Processing model (SIP). In a child’s social information processing, including factors such as attention and interpretation, a selective process of interactions with the social environment is shaped by individual differences in temperament and personality (cf. Shiner & Caspi, 2003). In their SIP model, Crick and Dodge assume that children enter social situations with a “database” of past experiences and biologically determined capabilities, which they may access during social encounters. Crick and Dodge describe how children process and respond to social information in six steps, including encoding and interpreting stimuli, clarifying one’s goals, generating ways of responding to cues, and evaluating alternative responses across various domains. The SIP model has been the subject of much research concerning aggression in children (e.g., Orobio de Castro, Veerman, Koops, Bosch, & Monshouwer, 2002) and has proven its relevance for the understanding of peer victimization (Graham & Juvonen, 1998), social withdrawal (Burgess, Rose-Krasnor, Wojslawowicz, Rubin, & Booth-LaForce, 2006; Wichman, Coplan, & Daniels, 2004), childhood anxiety (Bell-Dolan, 1995; Daleiden & Vasey, 1997; Suarez & Bell-Dolan, 2001), and childhood/adolescent depression (e.g., Garber, Keiley, & Martin, 2002).

More recently, attention has shifted to the relationship between SIP and more stable traits, such as shyness (Burgess et al., 2006), and attachment representations

(Dwyer et al., 2010), but as far as we know, research on SIP has not often addressed relationships with personality traits or personality pathology. However, research has found some indirect links with the FFM of personality and different steps from the SIP model. In adults, Extraversion is linked with the frequent experience of positive moods (Hampson, 2012). This could imply that extraverted persons are more capable of regulating their moods because they have more adequate coping strategies (Carver & Connor-Smith, 2010). Moreover, Extraversion and Agreeableness are related specifically to social, interpersonal functioning (Widiger & Mullins-Sweatt, 2009). Disagreeable youth not only perceive more interpersonal conflicts in their environment, but they also attempt to resolve conflicts with destructive tactics (Jensen-Campbell & Graziano, 2001). This is reflected in the strong feelings of anger and frustration, which are not tempered by adequate self-control in disagreeable children. Miller, Lynam, and Jones (2008) found that Agreeableness was negatively related to the generation of a higher percentage of aggressive responses to a situation and to the choice to enact such an aggressive response.

Children high on Neuroticism have difficulty settling and soothing themselves when aroused (Rothbart, Ahadi, Hershey, & Fisher, 2001). Shiner and Caspi (2003) describe how Neuroticism (or high negative emotionality) encompasses two related but distinct lower order traits. The first is “irritable distress,” which assesses distress directed outward, including children’s tendencies toward irritability, anger, and frustration. The second lower order trait is “anxious distress,” which appears to assess inner-focused distress, including a child’s tendency to withdraw fearfully from new situations. This could imply that highly neurotic children experience more negative emotions and show more angry and frustrated reactions (irritable distress) or avoidant reactions (anxious distress). Indeed, Hampson (2012) mentions a greater sensitivity to negative events as a central feature of Neuroticism.

Next, the dimension Conscientiousness taps children’s individual differences in effortful control (Rothbart et al., 2001), which includes their capacities to plan behaviour, inhibit inappropriate responses, focus and shift attention, take pleasure in low-intensity situations, and perceive subtle external stimuli. Active, effortful control in early childhood predicts better self-regulation of anger and joy later in childhood (Kochanska, Murray, & Harlan, 2000), and also in adults perceived behavioural control was found to mediate the effect of Conscientiousness on health behaviours (De Bruijn, Brug, & van Lenthe, 2009).

Social Information Processing, Mentalizing, and Personality Disorders

Consensus exists that problems in social functioning and disturbances in interpersonal relationships are key features in personality disorders. However, the nature of the association between personality disorders and social dysfunction remains

unclear (e.g., Hill et al., 2008). Mentalizing and social cognition have been studied for two personality disorders in particular, BPD and antisocial personality disorder (ASPD) (e.g., Hessels, Van Aken, Orobio de Castro, & Van Voorst, 2013; Lobbestael, Cima, & Arntz, 2013; Sharp et al., 2011). ASPD is characterized by a pervasive pattern of disregard for, and violation of, the rights of others that begins in childhood or early adolescence and continues into adulthood (American Psychiatric Association [APA], 2000). BPD is characterized by interpersonal dysfunction, behavioural impulsivity, affective regulation, and identity disturbance. Beauchaine, Klein, Crowell, Derdidge, and Gatske-Kopp (2009) proposed a unified theory of ASPD and BPD that incorporates a number of overlapping biological vulnerabilities, environmental risk factors, and outward expressed features of both personality disorders. ASPD and BPD are described as disorders for which biological vulnerabilities interact with potentiating environments to produce debilitating and enduring personality disturbance (Beauchaine et al., 2009). Chanen and Kaess (2012) state that in contrast to the relatively unstable nature of the BPD diagnosis, both in adolescents and in adults, problems in social functioning are much more stable. The idea that mentalizing dysfunctions are at the foundation of these disturbances has now become widespread. Also, the importance of the developmental period of adolescence for social functioning, mentalizing capacities, and the onset of personality disorders is widely accepted. Despite this consensus, however, not much research has been conducted to advance the understanding of mentalizing capacities and difficulties in adolescents with personality pathology.

As Sharp et al. (2011) pointed out, there are two possible reasons why mentalizing has not yet been studied in relation to personality disorders in adolescents. The first reason is the controversy still associated with the diagnosis of personality disorder in adolescents. Many clinicians are still reluctant to diagnose a personality disorder in an individual under the age of 18, often out of fear of stigmatizing the person. As a result, most research on personality pathology in adolescence relies on instruments used to understand adult personality pathology. Thus, knowledge of childhood antecedents or developmental factors is lacking. This reason relates to the second reason mentioned by Sharp et al., which concerns problems with measurement instruments. Sharp et al. note that most instruments for evaluating social cognition measure Theory of Mind tasks, which show ceiling effects in older age groups or lack divergent validity for disorders except autism spectrum disorders. This means that those tasks are not suited for the assessment of personality disorders. We would like to add a third reason: a lack of consensus on how mentalizing can be operationalized. Although the concept of mentalizing has become a common factor in the past decade in theorizing about personality disorders, a valid method of operationalization still seems lacking, and a valid model describing

real-life mentalizing in actual social situations is still missing. In our opinion, the SIP model is a candidate for providing such a description.

As far as we know, only two studies have addressed this topic. The first is the previously mentioned study by Sharp et al. (2011), who examined mentalizing in adolescents with emerging BPD. In their study, they subdivide mentalizing into (a) undermentalizing, which involves insufficient mental state reasoning, resulting in incorrect, “reduced” mental state attribution; (b) no mentalizing, which involves complete absence of mental state terms in explaining behaviour; and (c) hypermentalizing, which reflects overinterpretive mental state reasoning, such as making overly complex inferences based on social cues that resulted in errors. The results of Sharp et al. show that neither undermentalizing nor complete absence of mentalizing was linked to borderline traits. In contrast, hypermentalizing was strongly associated with BPD features in adolescents.

The second study (with the present data set, Hessels et al., 2016) investigated relationships between features of cluster B personality pathology in general, and ASPD and BPD specifically, and the mentalizing capacities reflected in social information processing by adolescents. Significant relationships were found between severity of personality pathology and SIP; the more severe the cluster B personality pathology, the higher the intensity of reported emotions, the more likely adolescents were to choose inadequate coping strategies and aggressive reactions in social situations, and the more positively they evaluated aggressive reactions. Severity of traits of ASPD and BPD had unique associations with distinctive SIP variables. These results suggest that the steps in the SIP model can be used to operationalize mentalizing problems. However, differentiation should be made between the SIP correlates of ASPD and BPD traits.

Research questions and hypothesis in the present study

The present study seeks to contribute to the understanding of personality pathology in adolescents by using two theoretical models often used with children and adolescents to describe normal personality and the interaction with the social world—the Five Factor Model of personality (FFM) and the Social Information Processing model (SIP)—and studying their association with personality pathology.

This study will first investigate whether we can replicate associations between the FFM and personality pathology in adolescents. We will investigate relationships with Neuroticism and Agreeableness, which are the most prominent FFM factors related to personality pathology. We also will investigate the relationship between personality pathology and Extraversion and to a lesser extent Conscientiousness, which are unique to certain personality disorder categories (Saulsman & Page, 2004). Meta-analyses indicate that the FFM dimension Openness is not strongly re-

lated to personality disorders (Saulsman & Page, 2004; Skodol et al., 2011a, 2011b), but we will keep this fifth FFM dimension in our analyses for exploratory reasons. According to the meta-analysis by Saulsman and Page (2004), we expect that cluster B personality pathology will be characterized mainly by negative associations with Agreeableness and Conscientiousness and by positive associations with Extraversion.

The second research question focuses on whether specific FFM dimensions are relevant for specific steps in SIP. We focused on three steps in the SIP model. The first is coping, which can be defined as strategies to regulate negative emotions associated with a social situation, which is reflected in Step 4 of the SIP model. Based on previous research investigating different FFM dimensions and behaviour-related consequences, we expect that participants scoring high on Extraversion will show better coping strategies. The second SIP dimension we focus on is the generation of responses, which can be placed in Step 6 of the SIP model. We expect that participants scoring low on Agreeableness will have difficulties in enacting adequate or proactive responses, since earlier studies showed that Agreeableness was negatively related to the choice to enact aggressive responses. The third SIP factor we focus on is memories of earlier social frustration situations, which can be placed in the database of SIP. In line with findings of Shiner and Caspi (2003), we expect adolescent patients scoring high on Neuroticism to show difficulties in accessing their cognitive repertoires, because they experience more negative emotions and show more angry and frustrated reactions or avoidant reactions. This can be a result of distorted cognitive repertoires.

The third research question is whether SIP can have a mediating effect, explaining the relationship between personality according to FFM and personality disorders. The expectation for this research question is that some specific variables of the SIP model will have a mediating effect between the FFM and personality psychopathology. Adolescent patients low on Agreeableness would be more likely to experience more conflicts, use more inadequate coping strategies, and respond in an aggressive way, which in turn would relate to cluster B personality pathology. Adolescent patients high on Neuroticism would be more likely to use inadequate coping strategies, respond in an aggressive or avoidant way, and experience greater sensitivity to negative events, which in turn would relate to cluster B personality pathology.

Finally, the fourth research question addresses possible moderator effects of personality on the relationship between SIP and personality pathology. Our hypothesis is that temperament or personality in children and adolescents plays a role in the relationship between the SIP variables and the actual personality pathology. For adolescents high on certain personality traits, these associations might

be stronger than for adolescents low on these personality traits. Because testing for moderating effects involves the tests of many interaction effects in a multiple regression approach, to avoid overtesting, we limit our analyses of moderation effects to the two personality factors that have most consistently been found to be related to personality pathology (cf. Saulsman & Page, 2004): Agreeableness and Neuroticism. More specifically, we expect that positive scores on personality traits might have buffering effects, so that for adolescents high on Agreeableness and low on Neuroticism, the associations between SIP and personality pathology are expected to be weaker.

Summarizing, we expect (a) that cluster B personality pathology will be characterized by negative associations with Agreeableness as well as Conscientiousness, and positive associations with Extraversion and (b) that adolescent patients scoring low on Agreeableness will enact less proactive responses and adolescent patients scoring high on Neuroticism will show more aggressive or avoidant responses and report more memories of comparable previous social frustrating situations. Furthermore, (c) we expect adolescent patients low on Agreeableness to use more inadequate coping strategies, and aggressive responses, which in turn would relate to cluster B personality pathology, and that adolescent patients high on Neuroticism would be more likely to use inadequate coping strategies, express aggressive or avoidant responses, and would experience greater sensitivity to negative events, which in turn would relate to cluster B personality pathology. Finally, (d) we expect that for adolescents high on Agreeableness and low on Neuroticism, the associations between SIP and personality pathology will be weaker.

Method

Participants

The sample consisted of adolescents referred to the outpatient ward for youth psychiatry of GGz Centraal in the Netherlands. They were referred, mostly by their family physicians, for assessment and treatment of psychiatric problems such as attention-deficit disorder, anxiety disorder, autistic spectrum disorder, eating disorder, depression, or personality pathology. After their first interview, all patients seen between March 2006 and September 2007 were asked to participate in this study. Ninety-six adolescents (53% of the patients who were asked) aged 12–18 years participated after informed consent was given by both the participants and their parents. Forty-four (46%) of the participants were boys, and 52 (54%) were girls. Their mean age was almost 15 years ($M = 14.87$; $SD = 1.4$). Their cognitive functioning was average (TIQ: $M = 99.8$, $SD = 17$, Range = 64–141), as measured

with the Dutch translation of the Wechsler Intelligence Scale for Children (WISC-III NL) and the Dutch translation of the Wechsler Adult Intelligence Scale (WAIS). Participants' gender, age, and diagnoses on both Axis I and Axis II of *DSM-IV-TR* were comparable to those of the total patient group in the outpatient ward in the given period. As was to be expected from the general underestimation due to reluctance to diagnose personality disorders in children under the age of 18, only 5.2% of the participants were diagnosed with a personality disorder (mostly personality disorder not otherwise specified), as compared to 5.6% in the total patient group. The majority of the sample were white adolescents, which is comparable to the clients entering youth psychiatry in the Netherlands.

In a research session, a research assistant completed a structured interview regarding SIP, and participants filled in a questionnaire regarding the FFM. Information about cognitive functioning was gathered from the patients' files. When there was no recent intelligence test in a file, three subtests of the intelligence test were completed in the research session.

Measures

Severity of Cluster B Personality Pathology.

On an Axis II checklist, a well-trained clinical psychologist or psychiatrist assessed the severity of each criterion of Axis II pathology after two or three clinical interview sessions. The Axis II checklist included the exact formulations of all *DSM-IV* criteria for personality disorders. Scores varied from 1 to 3.3 on five-point rating scales ($M = 1.75$, $SD = 0.60$), and Cronbach's alpha was .94. A total cluster B score was constructed as well as separate scores for ASPD and BPD pathology. The clinicians who assessed the Axis II pathology and *DSM-IV* diagnosis were not the same as the research assistant who completed the structured interview regarding SIP, so both variables were assessed independently of each other.

Five Factor Model of Personality (FFM).

The Dutch translation of the Big Five Inventory, a 43-item instrument designed to measure the FFM factors of personality, was used in which adolescents have to judge their own personalities. This measurement has high levels of internal consistency, factorial and external validity, and good applicability in different age groups (Denissen, Geenen, van Aken, Gosling, & Potter, 2008). After recoding negatively worded items, a mean score was computed for every FFM dimension.

Neuroticism: this dimension consists of eight items and measures whether the adolescent is anxious, irritable, touchy, nervous, and fearful. Internal consistency was high with a Cronbach's α of .82.

Extraversion: this dimension consists of eight items and measures whether the adolescent is talkative, introverted, quiet, reserved, and withdrawn. Internal consistency was high with a Cronbach's α of .80.

Openness: this dimension consists of 10 items and measures whether the adolescent is creative, complex, imaginative, artistic, deep, and innovative. Internal consistency was relatively high with a Cronbach's α of .75.

Conscientiousness: this dimension consists of nine items and measures whether the adolescent is organized, systematic, thorough, neat, and careful. Internal consistency was high with a Cronbach's α of .80.

Agreeableness: this dimension consists of nine items and measures whether the adolescent is kind, cooperative, sympathetic, pleasant, agreeable, and helpful. Internal consistency was acceptable with a Cronbach's α of .60.

Social Information Processing.

SIP was assessed using the Social Information Processing Interview in Adolescents, which is based on the Interview Social Information Processing (Orobio de Castro, 2000; Orobio de Castro, Merk, Koops, Veerman, & Bosch, 2005). In this interview, participants were read six short vignettes of conflict situations among peers, in which the intentions and emotions were not clear. After every story, participants answered questions based on the SIP model. Participants were asked to describe the feelings they would experience in the presented situation, how they would react, and whether they had ever experienced something like this themselves. A research assistant and a clinical psychologist scored coping strategies, response generation, and the number of memories of past similar frustrating situations that were reported. SIP was assessed with open-ended questions concerning each vignette. To assess interrater reliability of coded open answers, trained clinicians independently coded transcriptions of randomly selected participants' answers to 60 vignettes.

Coping strategies, which included emotion regulation, were assessed with the questions "When you feel so [negative emotion mentioned by participant], can you think of something that could make you feel better? What can you think of?" Answers to these questions were coded as adequate coping when an attempt to solve the problem was mentioned (e.g., "I'll go to the teacher and explain what happened"), when an attempt was made to find distraction (e.g., "Go to my room and play my music"), or when a cognitive strategy was suggested (e.g., "I'll think it was not really a big deal"). Answers were coded as inadequate when any form of aggression was mentioned (e.g., "Yes! Beat him up! Then it's my turn to laugh!"), when only acts by another person were mentioned (e.g., "When he gives me a new one"), or when

respondents answered that they did not know or considered the issue irrelevant. Interrater agreement kappa was .62.

Response generation was assessed with the question “What would you do now?” Answers were coded in three categories: avoidant responses, prosocial responses, and aggressive responses. Interrater agreement kappa was .74.

Recall of memories of past frustrating experiences was assessed with the question “Have you ever experienced something like this story yourself?” The number of affirmative reactions (as victim, as frustrater, or without any further indication of the subject’s role) over the six vignettes was counted.

Additional Diagnosis. After multidisciplinary assessment, the *DSM-IV-TR* diagnoses were assigned in consensus in a multidisciplinary staff meeting. On Axis I, 20.8% of the participants had as the primary diagnosis an autism spectrum diagnosis; 30.2% had a disruptive diagnosis, 20.8% had an internalizing diagnosis, and 28.1% had other diagnoses. Thirty-two percent of the participants had more than one diagnosis on Axis I, and the global assessment of functioning was 60 ($SD = 5$).

Statistical analyses

Prior to conducting the analyses, we checked the assumptions of outliers and normality. In general, variables had acceptable levels of kurtosis and skewness, with the exception of avoidant responses and aggressive responses. Because only a few exceptions were found, we decided not to perform transformations. To explore the data, descriptive statistics were requested to give insight into the sample. After this, Pearson correlations were computed between the different study variables to check for significant relationships between the study variables.

We then examined whether the SIP variables mediate the link between FFM dimensions and personality pathology. For each FFM dimension, a mediation analysis was performed with all five SIP variables as mediators. Moreover, this was done for all three dependent variables (see Figure 2.1). Various multiple mediation analyses, using the recommendations proposed by Preacher and Hayes (2008), were performed. The multiple mediation analyses with bootstrapping procedures conducted in the present study were preferred above the causal step strategy (Baron & Kenny, 1986), because they increased power, reduced Type I error, did not impose the assumption of normality, and did reduce parameter estimation bias normally presented in simple mediation models due to omitted variables (Preacher & Hayes, 2008).

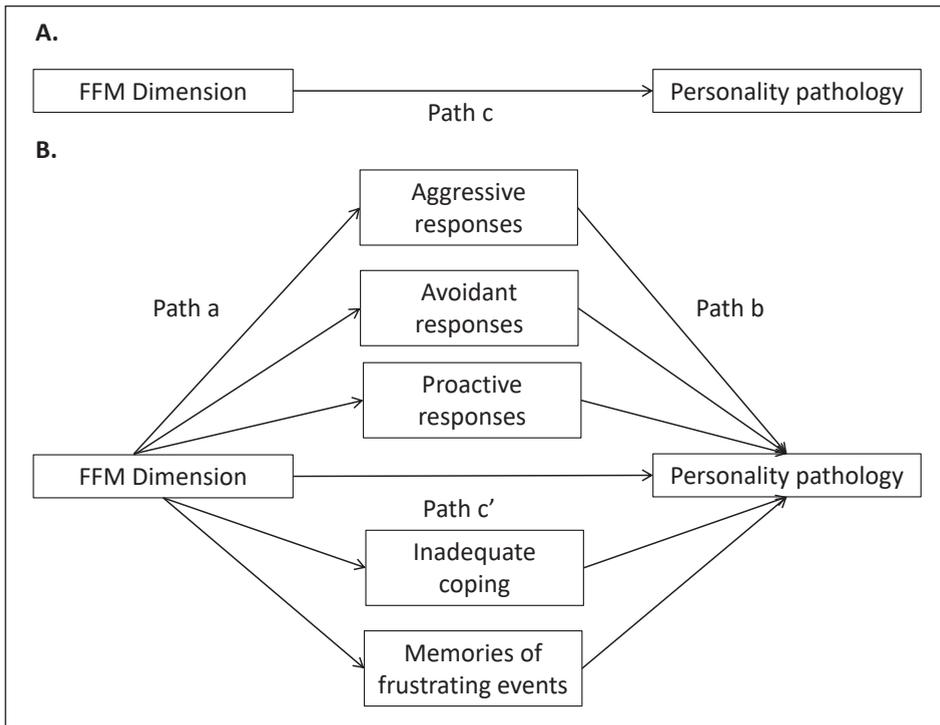


FIGURE 2.1. Multiple mediation model Part A is the direct effect, which is the unmediated effect of an FFM dimension on personality pathology (Path c). Part B is the multiple mediation model with Path c' as the effect of an FFM dimension on personality pathology mediated by SIP variables.

The assumption of normality of the sampling distribution of the total and specific indirect effects is questionable, particularly in small samples; therefore, mediation was assessed based on a point estimate (the mean $a \times b$ coefficient computed over the 1,000 samples) and bootstrapped 95% confidence interval (CI; 1,000 bootstrap iterations). In addition to traditional mediation methods (e.g., Baron & Kenny, 1986), multiple mediation models provide the added benefit of exploring more than one mediator at a time by giving effect values for each model path while accounting for the other model paths. For every mediation model, a total effect—the effect of an FFM dimension on personality pathology, not considering the mediators—was reported (path c in Figure 1). A direct effect—the effect of an FFM dimension on personality pathology, controlled for the mediators—was given (Path c' in Figure 1). Last, a total indirect effect—the effect via the mediators (Preacher & Hayes, 2008)—was reported (Path $a \times b$ or $c-c'$).

The only requirement for mediation is that the indirect effect of $a \times b$ is significant (MacKinnon, Krull, & Lockwood, 2000; Shrout & Bolger, 2002). A mediator

effect is significant if zero is not included in CI; the specific indirect effect is said to be significant at $p < .05$.

For the moderation analyses, a stepwise regression approach was followed in which, after the main effects of personality and SIP, the interaction terms of the centered variables were added. Cluster B, ASPD, and BPD were entered as dependent variables. In Step 1, a centered SIP variable was added into the model, as well as centered Neuroticism or centered Agreeableness. In the second step, the interaction term between the SIP variable and Agreeableness or Neuroticism was added to the model. If the interaction term was significant, the simple slopes tests recommended by Aiken and West (1991) was used to probe interactions involving a continuous variable. These tests determined the degree of association between an FFM factor and a personality disorder at one standard deviation above and below the mean of a moderator.

Results

Descriptive statistics

Mean scores and standard deviations for the personality disorders, FFM dimensions, and SIP variables are shown in Table 2.1. A MANOVA was used to assess whether there were gender differences in personality disorders, FFM dimensions, and SIP variables. The multivariate test showed a significant main effect of gender, $F(14, 73) = 4.00, p < .001, \text{partial } \eta^2 = .43$. For ASPD, the univariate test showed a significant difference between boys and girls, $F(1, 86) = 5.38, p = .023, \text{partial } \eta^2 = .06$, with boys scoring higher than girls. Besides, a significant difference between boys and girls on BPD was found, $F(1, 86) = 4.49, p = .037, \text{partial } \eta^2 = .05$, with girls scoring higher than boys. Also, the univariate test showed that there is a significant gender difference for Neuroticism, $F(1, 86) = 15.99, p < .001, \text{partial } \eta^2 = .16$, and for Agreeableness, $F(1, 86) = 5.37, p = .023, \text{partial } \eta^2 = .06$, with girls scoring higher on both personality traits. Finally, for the SIP variables, there was a significant gender difference for memories of past frustrating experiences, $F(1, 86) = 4.17, p = .044, \text{partial } \eta^2 = .05$, with girls having more of these memories than boys. For proactive responses, there was a significant gender difference as well, $F(1, 86) = 4.40, p = .039, \text{partial } \eta^2 = .05$, with girls showing more proactive responses than boys.

TABLE 2.1. Means and Standard Deviations of Personality Disorders, Big Five Personality Characteristics, and SIP Variables of Adolescents

	Boys ^a		Girls ^b		Total	
	M	SD	M	SD	M	SD
Personality disorders						
Cluster B	1.69	0.56	1.79	0.64	1.74	0.91
Antisocial	2.01	0.95	1.60	0.85	1.78	0.79
Borderline	1.67	0.63	2.03	0.87	1.87	0.61
Big Five dimensions						
Neuroticism	2.78	0.60	3.41	0.85	3.12	0.80
Extraversion	3.56	0.73	3.35	0.77	3.45	0.75
Openness	3.18	0.60	3.34	0.72	3.26	0.67
Conscientiousness	3.03	0.72	3.07	0.76	3.05	0.74
Agreeableness	3.40	0.46	3.70	0.60	3.56	0.56
SIP variables						
Aggressive response	1.00	1.18	1.31	1.44	1.16	1.32
Proactive response	4.74	2.95	6.36	2.58	5.56	2.87
Avoidant response	0.83	1.05	1.47	1.53	1.16	1.35
Inadequate coping	1.19	1.33	1.60	1.59	1.40	1.48
Memories of past frustrating events	1.45	1.49	2.20	1.67	1.83	1.62

Note. ^a $N = 41$ on personality disorders, $N = 43$ on Big Five dimensions, $N = 53$ on SIP variables. ^b $N = 52$ on personality disorders, $N = 50$ on Big Five dimensions, $N = 55$ on SIP variables.

Correlations between personality pathology and FFM dimensions

The relationships between FFM dimensions and personality pathology are displayed in Table 2.2. Cluster B personality pathology is significantly correlated with Extraversion ($p = .013$) and Agreeableness ($p < .001$). Patients with a higher level of cluster B personality pathology score higher on Extraversion, whereas they score lower on Agreeableness. BPD pathology shows only a significant negative correlation with Agreeableness ($p < .001$), indicating that the higher the Agreeableness, the lower the BPD pathology. Last, ASPD pathology shows significant correlations with all FFM dimensions except for Openness. Patients scoring higher on ASPD pathology have lower scores on Neuroticism ($p = .021$), Conscientiousness ($p = .044$), and Agreeableness ($p = .001$), whereas they have high scores on Extraversion ($p = .002$).

Correlations between FFM dimensions and SIP variables

Correlations between FFM dimensions and SIP variables are shown in Table 2.2. Giving an Avoidant Response was significantly correlated with Neuroticism ($p = .001$), Extraversion ($p = .013$), and Openness ($p = .049$). Patients who were more neurotic, less extraverted, and less open showed more avoidant responses. Moreover, ag-

gressive response showed a significant correlation with Agreeableness ($p = .001$). Patients who were less agreeable showed more aggressive responses. Memories of past frustrating experiences were significantly correlated with Neuroticism ($p = .002$). Patients who were more neurotic showed more memories of past frustrating experiences. Finally, inadequate coping was significantly correlated with Conscientiousness ($p = .005$) and Agreeableness ($p = .023$). Patients who were less conscientious and less agreeable showed more inadequate coping strategies.

Correlations between SIP variables and personality disorders

Various significant correlations were found between SIP variables and personality disorders, as displayed in Table 2.2. Aggressive response showed significant correlations with all three types of personality pathology. Patients with more severe cluster B pathology ($p = .023$), more severe ASPD pathology ($p = .005$), or more severe BPD pathology ($p = .049$) all showed high levels of aggressive responses. Also, inadequate coping was significantly correlated with all three types of personality pathology. Patients with cluster B pathology ($p = .020$), ASPD pathology ($p = .007$), and BPD pathology ($p = .039$) all showed high levels of inadequate coping strategies. Finally, memories of past frustrating experiences showed significant correlations with cluster B ($p = .001$) and BPD ($p = .001$) as well, which indicated that patients with more severe cluster B pathology and more severe BPD pathology have more of these memories.

TABLE 2.2 Pearson Correlations between Personality Disorders, Big Five Dimensions, and SIP variables

Measures	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1. Cluster B	-													
2. ASPD	.78**	-												
3. BPD	.88**	.57**	-											
4. N	-.02	-.25*	.18	-										
5. E	.26	.33*	.10	-.55**	-									
6. O	.10	-.11	.01	-.09	.24*	-								
7. C	-.19	-.22*	-.21	-.19	.12	.23*	-							
8. A	-.37**	-.36**	-.35**	-.05	.01	.10	.43**	-						
9. Agr	.24*	.29*	.21*	.01	.07	.03	-.03	-.34**	-					
10. Pr	.07	-.13	.13	.07	-.001	.08	-.02	.15	-.03	-				
11. Avr	.04	-.06	.14	.35**	-.26*	-.21*	-.01	-.06	.07	.02	-			
12. Hi	-.05	.07	-.001	.08	.03	-.16	.09	.12	.22*	.35**	.31**	-		
13. MasF	.28*	.17	.26*	.11	.06	.06	-.24*	-.17	.26*	.02	.09	.04	-	
14. MasForV	.35**	.16	.34**	.31*	.08	.14	-.17	-.08	.18	.34	.21*	.17	.47**	-

Note. N = Neuroticism, E = Extraversion, O = Openness, C = Conscientiousness, A = Agreeableness, Agr = Aggressive response, Pr = Proactive response, Avr = Avoidant response, Hi = Hostile intent, MasF = Memories as frustrator, MasForV = Memories as frustrator or Victim.

* $p < .05$; ** $p < .01$. N range from 88 to 93.

Test of mediation

Table 2.3 shows the unstandardized coefficients of Path *a* (independent variable on mediator) and Path *b* (mediator on dependent variable) as well as the point estimate and CIs of all specific indirect effects for the significant mediation model.

We examined whether the five SIP variables mediate the link between the five FFM dimensions and cluster B personality, ASPD, or BPD. With two exceptions (presented below), none of the models showed significant indirect effects (Path $a \times b$), indicating that the five SIP variables did not mediate the link between one of the FFM dimensions and cluster B personality pathology, ASPD, or BPD.

The first significant mediation effect that was found concerned the effect of Neuroticism on cluster B personality pathology and BPD. The total effect of Neuroticism on cluster B (Path *c*; $B = -.02$, $t = -.19$, $p = .848$)¹ was not significant, nor was the direct effect of Neuroticism on cluster B adjusted for the mediators (Path *c'*; $B = -.14$, $t = -1.71$, $p = .092$). The direct effect was smaller than the total effect (and almost significant), which indicates partial mediation by the five mediators.

TABLE 2.3. Mediation of Neuroticism on Personality Pathology Through Five SIP Variables ($N = 88$).

	Path <i>ab</i>		BCa 95% CI ^c		
	Path <i>a</i> (se_a)	Path <i>b</i> (se_b)	Point estimate	Lower	Upper
Cluster B					
Inadequate coping	0.28 (0.19)	0.08 (0.04)	0.02	-.00	.08
Avoidant responses	0.59 (0.17)**	0.02 (0.05)	0.01	-.05	.08
Proactive responses	0.18 (0.29)	0.05 (0.03)	0.01	-.01	.05
Aggressive responses	0.04 (0.18)	0.11 (0.05)*	0.004	-.03	.06
Memories of past frustrating events	0.62 (0.20)*	0.13 (0.04)*	0.08	.02	.20
Total			0.13	.02	.28
BPD					
Inadequate coping	0.28 (0.19)	0.08 (0.05)	0.02	-.00	.09
Avoidant responses	0.59 (0.17)**	0.08 (0.07)	0.05	-.03	.20
Proactive responses	0.18 (0.29)	0.11 (0.04)	0.02	-.04	.11
Aggressive responses	0.04 (0.18)	0.16 (0.06)	0.01	-.04	.08
Memories of past frustrating events	0.62 (0.20)*	0.13 (0.05)	0.08*	.01	.21
Total			0.17*	.02	.35

Note. BCa = bias correct and accelerated confidence intervals. Paths *a* and *b* are unstandardized regression coefficients. ^cIf the 95% confidence interval produced by the bootstrap does not include zero, then the criteria for mediation have been met. * $p < .05$. ** $p < .01$.

1 Hayes (2009) recommends reporting unstandardized regression coefficients.

The total indirect effect was significantly different from zero, indicating that the effect of Neuroticism on cluster B was mediated by the five proposed mediators. Also, the total effect of Neuroticism on BPD (Path c ; $B = .18$, $t = 1.72$, $p = .089$) was not significant, nor was the direct effect of Neuroticism on BPD adjusted for the mediators (Path c' ; $B = .01$, $t = 0.05$, $p = .959$). The direct effect was smaller than the total effect, which indicates partial mediation by the five mediators. The total indirect effect was significantly different from zero, indicating that the effect of Neuroticism on BPD was mediated by the five proposed mediators.

In both cases, the total indirect effect can be further divided into the indirect effects of each of the mediators. Only memories of past frustrating events showed a significant positive indirect effect on the link between Neuroticism and cluster B personality pathology, and between Neuroticism and BPD, indicating that memories of past frustrating events were a significant mediator. The positive indirect effect showed that patients with higher levels of Neuroticism had more memories of past frustrating events and consequently they had higher levels of cluster B personality pathology or BPD. The total model for cluster B is significant, $F(6, 81) = 4.09$, $p = .001$, and accounted for 23.23% of the variance in cluster B personality pathology. The total model for BPD is also significant, $F(6, 81) = 4.23$, $p = .001$, and accounted for 23.84% of the variance in BPD.

Tests of moderation

As mentioned, moderation analyses were only performed with Agreeableness and Neuroticism as factors of the FFM, and with all SIP variables.

Moderation by Agreeableness of the Relationship Between Aggressive Responses and Personality Pathology. Results of the moderation analysis showed that, after adding the main effects of Agreeableness and aggressive response to the prediction of cluster B pathology; the interaction term added 6% of the explained variance, $Fchange(1, 84) = 6.55$, $p = .01$. Simple slope tests showed that the slope of the line representing the link between Aggressive responses and cluster B pathology was positive and of medium effect size (Cohen, 1993) for individuals showing low levels of Agreeableness ($B = -0.11$, $\beta = 0.24$, $t(87) = 2.04$, $p = .045$, $d = 0.44$). The simple slope for individuals scoring high on Agreeableness was not significant. The same moderation effects were found for ASPD, 5% additional explained variance, $Fchange(1, 84) = 5.01$, $p = .03$, and BPD, 7% additional explained variance, $Fchange(1, 84) = 7.32$, $p = .01$. Moreover, the simple slope tests showed the same pattern of significant results for individuals showing low levels of Agreeableness for ASPD, $B = 0.21$, $\beta = 0.30$, $t(87) = 2.53$, $p = .013$, $d = 0.54$, and for BPD, $B = 0.13$, $\beta = 0.22$, $t(87) = 2.15$, $p = .035$, $d = 0.46$. No significant slopes were found for individuals scoring high on Agreeableness.

Moderation by Agreeableness of the Relationship Between Avoidant Responses and Personality Pathology. Moderation analyses showed also that after adding the main effects of Agreeableness and avoidant responses to the prediction of cluster B pathology; the interaction term added 5% of the explained variance, $F_{change}(1, 84) = 5.42, p = .02$. The simple slope test showed that none of the results were significant. These results indicated that the slope is significant when individuals score more than one standard deviation above or below the mean on Agreeableness. The same moderation effect was found for BPD; the interaction term added 8% of the explained variance, $F_{change}(1, 84) = 8.24, p = .01$. Simple slope tests showed that the slope of the line representing the link between avoidant responses and BPD was positive and of medium effect size (Cohen, 1988) for individuals showing low levels of Agreeableness, $B = 0.24, \beta = -0.41, t(87) = 2.81, p = .006, d = 0.60$. No significant slope was found for individuals scoring high on Agreeableness.

Moderation by Agreeableness of the Relationship Between Proactive Responses and Personality Pathology. The moderation analyses showed that after adding the main effects of Agreeableness and proactive response to the prediction of ASPD, the interaction term added 7% of the explained variance, $F_{change}(1, 84) = 7.95, p = .01$. Simple slope tests showed that the slope of the line representing the link between proactive responses and ASPD was negative and of medium effect size (Cohen, 1988) for individuals showing low levels of Agreeableness, $B = -0.15, \beta = -0.48, t(87) = -2.67, p = .009, d = 0.57$. No significant slope was found for individuals scoring high on Agreeableness.

Moderation by Neuroticism of the Relationship Between Memories of Frustrating Experiences and Personality Pathology. Finally, after adding the main effects of Neuroticism and memories of past frustrating experiences to the prediction of BPD, the interaction term added 9% of the explained variance, $F_{change}(1, 84) = 9.44, p < .01$. Simple slope tests showed that the slope of the line representing the link between memories of past frustrating events and BPD was positive and of large effect size (Cohen, 1993) for individuals showing high levels of Neuroticism, $B = 0.30, \beta = 0.61, t(87) = 4.39, p < .001, d = 0.94$. No significant slope was found for individuals scoring low on Neuroticism.

Discussion

This study investigated response generation, coping strategy, and memories of past frustrating experiences as mediators as well as moderators in the relationship between personality and personality pathology. There were five major findings.

First, relationships between FFM dimensions and personality pathology were found. Adolescent patients with a higher level of cluster B personality pathology scored higher on Extraversion, whereas they scored lower on Agreeableness. Patients scoring higher on BPD had a lower score only on Agreeableness, while patients scoring higher on ASPD had lower scores on Neuroticism, Conscientiousness, and Agreeableness, whereas they had high scores on Extraversion.

When comparing these results to the literature, we see that the important role of Agreeableness in (adolescents') personality pathology in general, and in BPD more specifically, is confirmed, stressing again the social-interactive nature of these problems. Not fully confirmed was the importance of Neuroticism, or Emotional Stability. Also notable was the difference in FFM scores between ASPD and BPD pathology. Clearly, ASPD was related to unfavourable scores on all FFM dimensions except Openness. The profile of ASPD very much resembles the profile of an under-controlled personality type (cf. Asendorpf, Borkenau, Ostendorf, & van Aken, 2001), for which a pattern of externalizing behaviours is consistently reported (van Aken & Dubas, 2004). The only FFM dimension that was related to the level of BPD was Agreeableness.

Second, relationships between FFM dimensions and SIP variables were found. Adolescent patients who were more neurotic, less extraverted, or less open showed more avoidant responses. Patients who were less agreeable showed more aggressive responses. Patients who were more neurotic showed more memories of past frustrating experiences. Finally, patients who were less conscientious and less agreeable showed more inadequate coping strategies. Because, to our knowledge, this is the first study that connects the FFM with the SIP model, further research is needed to determine whether these associations are specific for adolescents (as opposed to younger children), specific for patients with personality pathology (as opposed to healthy controls), or both.

Third, various significant relationships were found between SIP variables and personality pathology. Patients with more severe cluster B pathology, and specifically with more severe ASPD pathology or BPD pathology, showed high levels of aggressive responses and high levels of inadequate coping strategies. Moreover, patients with more severe cluster B or BPD pathology reported more memories of past frustrating experiences. This finding could be linked to problems in mentalizing due to the implication that adolescents with more severe cluster B personality pathology and specifically more severe BPD become overwhelmed by memories of past frustrations or trauma and do not focus enough attention on the present social situation. There are two possible explanations of this problem. The first possibility is that adolescents with more severe cluster B personality pathology and specifically more severe BPD have encountered more frustrating situations in their develop-

ment and therefore have stored more negative experiences in their database. This hypothesis is consistent with literature concerning trauma and personality pathology (Jang, Stein, Taylor, Asmundson, & Livesley, 2003). The second possible explanation is that these adolescents lack the skills to cope with negative situations, and therefore experience more helplessness and insecure feelings compared to adolescents with more healthy coping skills. This could promote their perception of more negative and frustrating experiences.

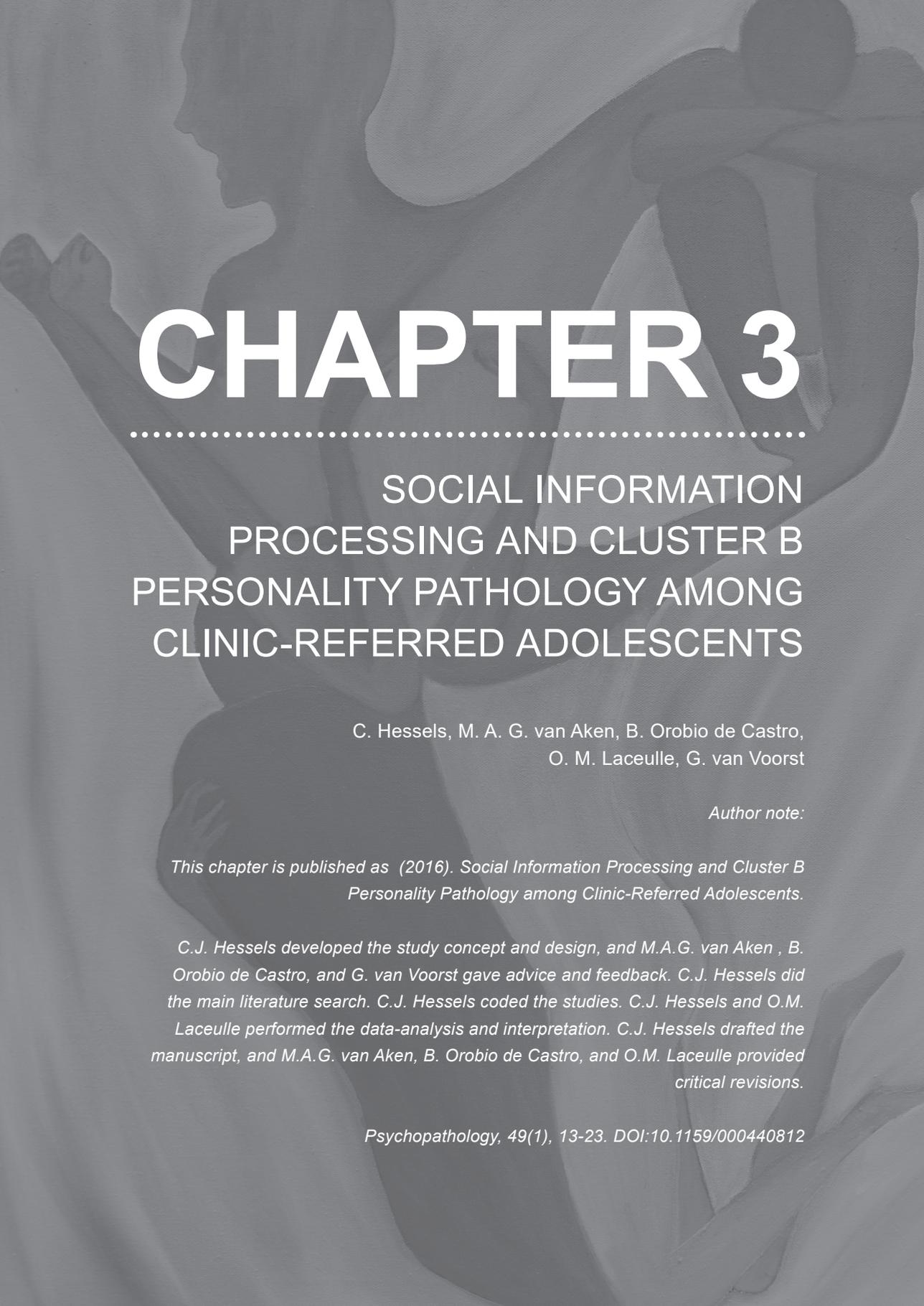
Fourth, the hypothesized mediation, by which the effects of personality dimensions on personality pathology were expected to be mediated by SIP variables, was restricted to some of the effects of Neuroticism. The effect of Neuroticism on cluster B personality pathology (and more specifically on BPD) was mediated by memories of past frustrating events of the type described in the vignettes, for example, conflict situations among peers in which intentions and emotions were not clear. Given the small sample size, we need to be cautious about interpreting this finding, and we would need replication of these findings. Nevertheless, these findings are similar to two of the person-environment patterns described by Caspi and Roberts (2001), who studied how personality can interact with the social environment. First, the *evocative interaction pattern* describes how a person triggers a certain response from people around the individual, for example, the child who gets bullied in different situations at different times. This could mean that highly neurotic adolescents trigger more socially frustrating encounters. Second, the *reactive interaction pattern* describes how different adolescents can interpret and react differently in the same situation. This interaction pattern resembles social cognition and could mean that, compared to less neurotic adolescents, highly neurotic adolescents are more likely to interpret social situations as frustrating or that they are more likely to remember the frustrating situations.

Fifth, a moderating effect of Agreeableness on the relationship between SIP variables and personality pathology was found. For adolescent patients high on Agreeableness, the relationship between the SIP variables aggressive and avoidant response and pathology (in terms of general cluster B pathology, as well as BPD and ASPD [the latter effect only for aggressive response]) was smaller, but the effect of proactive responses was bigger. This seems to suggest that Agreeable adolescents might have additional social and interactional skills that more or less buffer the effect of their social-cognitive impairments. One additional moderating effect was found for Neuroticism: Patients high on Neuroticism showed a larger effect of memories of past frustrating experiences on their BPD pathology. However, since such an effect was not consistently found for Neuroticism, nor for various SIP variables, it should be replicated first to warrant further discussion.

These findings endorse the general notion that social functioning is a central concept during adolescence, when developing of social autonomy, forming intimate relationships, and establishing a new balance in the relationship with parents are important developmental tasks. Moreover, these findings reinforce the growing consensus that problems in social functioning are a central key to personality pathology (Fonagy, Luyten, & Strathearn, 2011). The importance of addressing problems in social functioning from a developmental perspective is also noted by Chanen and Kaess (2012), who state that in contrast to the relatively unstable nature of the diagnosis of borderline personality disorder, both in adolescents and in adults, problems in social functioning are much more stable.

Three caveats should be considered with respect to the current results. First, they should be considered preliminary given the small sample size. Although our results do seem to suggest certain patterns, separate results should be regarded with some caution and need to be replicated in future research. Second, the sample did not consist specifically of adolescents with diagnosed personality disorders. The reason for this, as we mentioned in the Introduction and the Method section, is that there is still a strong reluctance to diagnose personality disorders in adolescents. However, we believe our approach has value: By measuring the severity of cluster B personality pathology in a more general group of clinically referred adolescents, we were able to test our hypotheses. Although this approach brings along comorbidity, we know that is simply the case: Personality disorders in adolescents have high levels of comorbidity (Chanen & Kaess, 2012). Further studies should of course refine these results by studying more pure groups of adolescents with specific personality disorders. Third, the use of vignettes to measure SIP brings with itself a limitation because real-life social information processing is far more complex and involves integration of visual and auditory information, as well as constant interaction with others, which makes the social situation more complex and dynamic. Future studies should include observational studies of social situations encountered by adolescents with personality pathology. Also, specific attention should be given to emotional processes, for example, empathy and emotion regulation processes, because they are relevant for both types of personality pathology.

In sum, our study showed that both personality dimensions and social cognitions play a role in adolescents' personality pathology. These contributions can be considered partly additive, partly SIP mediating the effect of personality on personality pathology, and partly personality moderating the relationship between SIP and personality pathology.



CHAPTER 3

SOCIAL INFORMATION PROCESSING AND CLUSTER B PERSONALITY PATHOLOGY AMONG CLINIC-REFERRED ADOLESCENTS

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C.J. Hessels developed the study concept and design, and M.A.G. van Aken, B. Orobio de Castro, and G. van Voorst gave advice and feedback. C.J. Hessels did the main literature search. C.J. Hessels coded the studies. C.J. Hessels and O.M. Laceulle performed the data-analysis and interpretation. C.J. Hessels drafted the manuscript, and M.A.G. van Aken, B. Orobio de Castro, and O.M. Laceulle provided critical revisions.

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Abstract:

This study investigated relations between personality pathology and mentalizing capacities reflected in Social Information Processing (SIP) of adolescents. 96 adolescent outpatients completed a structured interview regarding SIP. Their clinicians completed a checklist based on the DSM-IV, assessing severity of cluster B personality pathology. Significant relations were found between severity of cluster B personality pathology and SIP: the more severe the personality pathology, the higher the intensity of reported emotions; the more likely adolescents were to choose inadequate coping strategies and aggressive reactions in social situations; and the more positively they evaluated aggressive reactions. Severity of traits of antisocial personality disorder (ASPD) and borderline personality disorder (BPD) had unique associations with distinctive SIP-variables: ASPD being more related to inadequate coping strategies, less reflection on other's motives, and aggressive responses; and BPD being more related to avoidant or prosocial responses and in particular to memories of frustrating events. This study provides evidence for difficulties in SIP among adolescents with more severe cluster B personality pathology, suggesting that the steps in the SIP-model can be used to operationalize mentalizing problems. The results seem to paint a picture of ASPD and BPD having a shared background, but their own specific problems concerning social information processing.

Introduction

Personality disorders are considered lifespan developmental disorders, as these disorders have been found to be continuous in different developmental categories and similarities in terms of phenomenology, structure, stability, validity, and morbidity are found for adolescents and adults (Chanen, & Thompson, 2014; Newton-Howes, Clark, & Chanen, 2015). Especially in adolescence (subclinical) personality pathology can interfere with the process of gradually assuming more adult roles and responsibilities and hamper the developmental tasks in adolescence. Although adolescents with personality pathology commonly seek help, they often go unrecognized, due to clinicians still seeming to be reluctant to diagnose personality disorder prior to the age of eighteen (Laurenssen, Hutsebaut, Feenstra, Van Busschbach, & Luyten, 2013) and due to stigma being considered a key lingering barrier to early diagnosis in day-to-day practice (Fonagy et al., 2015). Notwithstanding this reluctance, a growing body of research shows that personality pathology can be assessed in adolescents in a reliable and valid manner (Chanen et al., 2004; Westen, Shedler, Durrett, Glass, & Martens, 2003). However, the theoretical understanding of personality pathology in adolescents still remains unclear.

In this article, we focus on cluster B personality pathology, which according to the DSM-IV (APA, 2000) includes the dramatic and emotional personality disorders (antisocial, borderline, histrionic and narcissistic personality disorders). Cluster B personality disorders are among the most prevalent mental disorders in the general population (Lenzenweger, Loranger, Korfine, & Neff, 1997; Torgerson, Kringlen, & Cramer, 2001) and are associated with high societal costs and low quality of life (Soeteman, Hakkaart-van Roijen, Verheul, & Busschbach, 2008). Both clinicians and researchers agree that problems in social functioning and social understanding are central features of cluster B personality pathology.

Bateman and Fonagy (2004) describe the core of personality disorders, most notably Borderline Personality Disorder (BPD), as deficiencies in mentalizing, a form of social cognition. It is the mental process by which an individual implicitly and explicitly interprets the actions of himself and others as meaningful based on intentional mental states. However, mentalizing is a difficult concept to specify and objectify (Choi-Kain, & Gunderson, 2008). Although mentalizing and social cognition or theory of mind are sometimes used interchangeably in the literature, they stem from different research traditions. While mentalizing is rooted in attachment theory, social cognition and theory of mind are derived from cognitive theories (Rutherford et al., 2012).

Fonagy and Luyten (2009) have linked the key features of BPD to impairments in specific facets of mentalizing. By describing mentalizing as organized along four

polarities: automatic/controlled, cognitive/affective, internal/external based, and self/other focused, mentalizing was differentiated with regard to self and others, as well as in specific relationships. This perspective implies that in research and clinical practice, both the social context and specific categories of relationships have to be considered in the assessment of mentalizing, enabling the integration of mentalization and the social cognitive perspective. While automatic/implicit mentalizing is more reflexive and requires less cognitive effort, controlled/explicit mentalizing requires more focused attention when decoding mental states, and more closely resembles social cognitive tasks. In patients with BPD increased levels of arousal appear to affect explicit mentalization more than implicit mentalization (Fonagy, & Luyten, 2009). Ha et al. (2013) found that adolescent patients with higher levels of BPD symptoms demonstrated significantly poorer reflective function compared to patients without BPD. Sharp et al. (2011) examined social cognitions and reflections in adolescents with emerging BPD and found a strong association between BPD features and hypermentalizing, defined as the reflecting overinterpretative mental state reasoning, e.g. making overly complex inferences based on social cues that result in errors. The question remains, however, which specific problems in social cognition characterize adolescents with personality pathology. This question is hampered by the lack of studies addressing mentalizing dysfunctions in adolescents, partly due to limited availability of mentalizing measures in this age group (Sharp et al., 2011). Most tasks measuring social cognition are theory-of-mind tasks developed for the assessment of autism spectrum disorders, which lack divergent validity for personality disorders. In recent years different mentalization tasks have been developed, for example: the Reflective Functioning Scale for Children (CRFS) (Ha et al., 2013), the Movie for the Assessment of Social Cognition (MASC) (Dziobek et al., 2006), and the Mentalizing Stories for Adolescents (MSA) (Vrouva & Fonagy, 2009). Sharp et al. (2011) concluded however, that these more advanced tests of social cognition, as developed in the recent years, tend to measure only singular aspects of mentalizing, and do not adequately resemble the demands of social cognition in daily life.

A model that could further our understanding of social cognition, was proposed by Crick and Dodge (1994), who posited in their Social Information Processing ('SIP') model that children enter a social situation with a 'database' of past experiences and biologically determined capabilities, which they may access during social encounters. This database resembles the context of secure early attachments in the mentalization theory (Bateman, & Fonagy, 2004). Representations of attachment relationships based on attachment experiences with primary caregivers, develop into internal working models, which in turn form the database of rules that guide the processing of information in social situations (Dwyer et al., 2010).

Crick and Dodge described how children process and respond to social information in six steps. When faced with a social dilemma, children first attend to (encode) and interpret social cues and information with regard to others' feelings and intentions (step one and two); next, they specify their interaction goals and access their cognitive repertoires (step three and four); then they decide upon and evaluate possible responses to the given situation (step five) and finally, they enact the chosen response (step six). Lemerise and Arsenio (2000) explicitly described how emotional processes interact with (cognitive) social information processing and hypothesized that individual differences in emotionality and emotion regulation influence each step of social information processing. More specifically, children who are high in emotionality and poor at regulating emotions will show deficits in social information processing. The SIP model has been investigated in various areas of research, such as aggression in children (Orobio de Castro et al., 2002), social withdrawal (Burgess, Rose-Krasnor, Wojslawowicz, Rubin, & Booth-LaForce, 2006) childhood anxiety (Suarez & Bell-Dolan, 2001), and childhood/adolescent depression (Garber, Keiley, & Martin, 2002). More recently attention has shifted to the relation between SIP and more stable traits, such as shyness (Burgess, Wojslawowicz, Rubin, Rose-Krasnor, & Booth-LaForce, 2006) and attachment representations (Lemerise, & Arsenio, 2000). However, to the best of our knowledge, research regarding SIP has not addressed the relations with personality pathology.

Although rooted in different theoretical models, SIP shows remarkable similarities to a theoretical specification of mentalizing proposed by Twemlow, Fonagy and Sacco (2005), who identified four psychological problems that individuals who are not capable of mentalizing: First, these individuals suffer from an incapacity to fully know, recognize and therefore regulate affect, that is, to soothe themselves and to control impulses as needed, to improve judgment in social and interpersonal situations; second, these individuals experience an incapacity to accurately estimate how other people feel in relation to their own feeling states; third, they tend to attribute negative intent to others when none is meant, and are rigid and inflexible about their expectations of others; and fourth, they are incapable of developing solutions to interpersonal problems that are considered as acceptable to all parties.

We propose that we may further the understanding of mentalizing problems in adolescents with personality pathology by mapping the four psychological problems of poor mentalizing as described by Twemlow et al. onto the six specific steps of the SIP model. The first psychological problem of Twemlow et al., the incapacity to fully know and regulate affect, resembles the bias present in the encoding of internal and external cues (to know the affect) and in the response access and construction (to regulate arousal), of the SIP model. The second problem summarized by Twemlow et al., the incapacity to accurately estimate how other people feel

in relation to their own feelings and the third problem, the tendency to attribute negative intent to others when none is meant, both show a strong resemblance to the problems in the second step of SIP: the interpretation of cues. The fourth problem described by Twemlow et al., the incapability of developing solutions to interpersonal problems that are acceptable to all parties, could be due to a shortcoming in response access or construction (i.e., they do not know how they could react), but also due to a deficit in the response decision (i.e., they do not evaluate the outcomes of the response in terms what this would mean to the other or the relationship, for example) or in the behavioural enactment (i.e., they are not capable to act in a way that is acceptable to all parties).

Although adolescence is a period during which individuals undergo significant changes in social behaviour, few empirical behavioural studies have reported significant behavioural development specific to social cognition, which cannot be explained by general improvements in, for example, attention or memory (Blakemore, 2008). No developmental study of SIP has been conducted to date (Orobio de Castro, Merk, Koops, Veerman, & Bosch, 2005). Studies have cross-sectionally compared SIP in different age groups, but given the lack of hypotheses regarding development, tests for age-effects in these studies were exploratory and revealed inconsistent findings (Orobio de Castro et al., 2002).

The present study aimed to contribute to the understanding of personality pathology in adolescents by connecting mentalizing problems, as reflected in the steps of the SIP-model, to cluster B personality pathology in adolescents. In line with the theory of mentalization (Bateman, & Fonagy, 2004), we hypothesized that adolescents with a greater severity of cluster B personality pathology would have more problems in their social information processing, such as making more hostile attributions, having stronger emotional reactions, reporting more inadequate coping strategies and being more likely to attribute negative intent to others in ambiguous social situations. Furthermore, we hypothesized that greater severity of cluster B personality disorder would be associated with less reflecting on other people's motives; being less capable of developing solutions to interpersonal problems that are acceptable to all parties; being more likely to choose an avoidant or aggressive reaction; and reporting more memories of past frustrating situations they encountered - this specifically, as we expected them to not focus enough attention to the present social situation, but getting overwhelmed by emotions, which were triggered when traces of past disappointing or frustrating social experiences in the database were activated through encoding and interpretation.

In combining the research traditions of mentalization (which focused primarily on BPD), with SIP (which focused primarily on aggressive behaviours), we hypothesized different patterns in social cognition specific for adolescents with greater

severity of BPD traits and adolescents with greater severity of Antisocial Personality Disorder (ASPD) traits. Kobak, Zajac and Smith (2009) stated that although ASPD and BPD may share some core features, such as impulsivity, the trajectories leading to these disorders may be influenced by the degree of emotionality associated with impulsive and aggressive behaviour. We hypothesized that more ASPD traits in adolescents would be uniquely associated with generation and positive evaluation of aggressive responses. Furthermore, we hypothesized that more BPD traits in adolescents would be uniquely associated with a higher intensity of emotions and more reported feelings of anger or disappointment. When considering problems in regulating emotions, we hypothesized a unique positive association with inadequate coping strategies and a unique negative association with adequate coping strategies. Lastly, we hypothesized adolescents with more BPD traits to be more likely to recall a greater amount of memories of past frustrating experiences.

Method:

Participants and procedure:

All participants were patients at the youth psychiatry outpatient ward, Fornsese in the Netherlands. They were mostly referred to Fornsese by their family physicians, for assessment and treatment of psychiatric problems, such as attention deficit disorder, anxiety disorder, autistic spectrum disorder, eating disorder, depression or personality pathology. All patients in the period March 2006 – September 2007 were asked to participate in the current research project after their first interview. 96 adolescents (53%) of the approached patients between the ages of 12-18 years participated, after both the participants and their parents gave informed consent. There were no specific exclusion criteria. Reasons for non-participation were generally not wanting to plan additional appointments during the assessment phase. For the current study we used data from the 90 participants who had complete data. Thirty-eight (42%) of the participants were boys, 52 (58%) were girls. Their mean age was approximately 15 years (mean= 14,86; SD=1,41). Cognitive functioning, as measured using the Dutch translation of the Wechsler Intelligence Scale for Children (WISC-III NL) and the Dutch translation of the Wechsler Adult Intelligence Scale (WAIS) was average (TIQ: mean=99,8, SD=17, range: 64-141). Participants' gender, age, and diagnoses on both axes I and II of the DSM-IV-TR were comparable to the total patient group in the outpatient ward during the given period.

A research assistant completed a structured interview regarding Social Information Processing. Information about cognitive functioning was gathered from the patient file. If no recent intelligence test was present in the file, three subtests of the

intelligence test were completed. On an Axis II checklist, which consisted all DSM-IV criteria for personality disorders, clinicians were asked to assess the severity of each criterion of axis II pathology on 5 point rating scales, ranging from clearly absent to present. The clinicians who assessed the Axis II pathology and DSM-IV diagnosis were not the same as the research assistant who completed the structured interview regarding SIP, so these variables were assessed independently from each other.

After a multidisciplinary assessment, the DSM-IV-TR diagnoses were assigned in consensus during a multidisciplinary staff meeting. The primary diagnosis on Axis-I was evenly distributed across Autistic Spectrum Disorders, Disruptive disorders, Internalizing disorders and other diagnoses. Of the participants, 32% had more than one diagnosis on axis I, and the global assessment of functioning was 60 (SD=5), which corresponds with moderate symptoms or moderate difficulties in social or school functioning. As was to be expected from the general underestimation due to reluctance of diagnosing personality disorders in adolescents, only 5% of the participants were diagnosed with a personality disorder (mostly Personality Disorder NOS) on axis II.

Measures

Social Information Processing Interview in Adolescents:

The Social Information Processing Interview in Adolescents² was used to assess SIP. This interview was based on those published in the literature (Orobio de Castro, 2000; Orobio de Castro et al, 2005). The participants were read 6 short vignettes of conflict situations among peers (only text, no visual information), in which the intentions and emotions were not clear. The stories concerned conflicts about school-work, friendships, jobs and romantic feelings. After every story, the participants were asked questions based on the SIP model. Participants were asked to describe the feelings they would experience in the presented situation, the attribution of the provocateur's intent, how they would react and which consequences they would expect of their reaction. Finally, participants also reviewed hypothetical responses of others, who reacted either aggressively, dismissively or proactively. The reported emotions, coping strategies, attribution of intent, response generation, and capacity to reflect upon the motives of someone else, were scored by a research assistant and a clinical psychologist.

2 Case examples of vignettes, questions and scoring procedure of the Social Information Processing Interview in Adolescents are available upon request.

SIP and emotion processes were assessed with open-ended questions and rating scales describing the intensity of emotions for each vignette. To assess interrater reliability of the coded open answers, trained clinicians independently coded transcriptions of randomly selected participants' answers to 60 vignettes.

Reported emotions were assessed with open-ended questions, of which the responses that included anger and disappointment (i.e. 'angry, betrayed or annoyed') were counted. Interrater agreement kappa was 1. The intensity of the reported emotion was given on a ten-point scale.

Coping strategies, were assessed with the questions 'when you feel so (negative emotion mentioned), can you think of something that could make you feel better? What can you think of?' Answers to these questions were coded as adequate coping when an attempt to solve the problem was mentioned (i.e. 'I'll go to the teacher and explain what happened'); an attempt was made to find a distraction ('Go to my room and play my music'); or when a cognitive strategy was suggested ('I'll think it was not really a big deal'). Answers were coded as inadequate when any form of aggression was mentioned ('Yes! Beat him up! Then it's my turn to laugh!'); when only acts by another person were mentioned ('When he gives me a new one'); or when respondents answered with don't know/irrelevant. Interrater agreement kappa was .62.

Attribution of intent was assessed with an open-ended question. Answers to the question 'why do you think he (behaviour in vignette)?' were coded as *benign, accidental, ambiguous* or *hostile*. On rare occasions when multiple answers were given, participants were prompted to provide one definitive answer. Interrater agreement kappa was .71. The answers to the open-ended questions were combined into hostile attribution variables, which were created by counting the number of hostile answers (i.e. 'He is trying to pay me back because he is jealous') and counting the number of non-hostile answers (i.e. 'He did not know that I would be in trouble' or 'He probably had to be somewhere else, like a funeral').

Response generation was assessed with the question 'what would you do now?' Answers were coded in three categories: avoidant reactions (i.e. 'I would not mention it'), prosocial responses (i.e. 'I would ask what was going on') and aggressive responses (i.e. 'I would beat him up and teach him a lesson'). Interrater agreement kappa was .74.

To assess *response evaluation*, participants were presented with three responses to each vignette in random order. One response was clearly aggressive, one response was prosocial and one response was avoidant. Participants were asked to evaluate these responses by indicating on a six-point rating scale to what extent they would enact this response themselves, and whether or not they approved this response as a clever/useful solution. Ratings were averaged across vignettes into the variables avoidant responses, prosocial responses and aggressive responses.

Recall of memories of past frustrating experiences was assessed with the question 'Have you ever experienced something like this story yourself?' The number of affirmative reactions (either as victim, as frustrator, or without any indication of the subject's role) across the six vignettes was counted.

Reflecting upon other's motives was assessed by asking the participants in situations where they reported they would never choose a response like the presented one, whether they could reflect on a person who had indeed chosen this response. The number of responses that presented some reflection (e.g. 'maybe when that person was very angry' or 'when the other person has done the same thing over and over in the past') was counted across the six vignettes. Interrater agreement kappa was 1.

Severity of Cluster B Personality Pathology:

Clinical psychologists or child psychiatrists, specialized in working with adolescents assessed the severity of cluster B personality pathology on a checklist containing all Axis II criteria currently included in the DSM-IV, presented in random order. The clinicians completed the Axis II checklist after two or three clinical interview sessions, rating each criterion on a 5-point scale, ranging from clearly absent to clearly present. Means were calculated for a total cluster B score as well as separate scores for ASPD, BPD, Histrionic (HPD), and Narcissistic Personality Disorder (NPD). Scores varied from 1 to 3.3 with a mean of 1.75 and SD of 0.6, indicating variation in the severity of personality pathology in this sample. Only total cluster B scores, ASPD-scale scores and BPD-scale scores are used in the present report. The 4 subscales correlated between .78 and .88 with the total cluster B score, the ASPD-scale and BPD-scale correlated .57 ($p < .01$).

Statistical analyses

Descriptive statistics were calculated for all variables under study. Correlations were calculated between 1) all SIP variables, 2) the three personality disorder variables and 3) the SIP variables and the three personality disorder variables, respectively. Three stepwise regression analyses were performed to examine the associations between SIP and personality disorders. First, it was examined which of the SIP variables were related to the cluster B total score. Secondly, it was examined which of the SIP variables were related to ASPD, while taking BPD into account. Finally, we tested which of the SIP variables were related to BPD, while taking into account ASPD.

Results

Descriptive statistics

Means and standard deviations of all variables under study are presented in Table 3.1.

TABLE 3.1. *Descriptive statistics for the SIP and Personality Disorder variables (n=90).*

	Min.	Max.	Mean	SD
SIP-variables				
<i>Emotions</i>				
Intensity of emotions	3.50	10.00	7.06	1.39
Reported amount of anger or disappointment	0	6.00	4.09	1.42
<i>Coping</i>				
Inadequate coping	0	6.00	1.60	1.47
Adequate coping	0	6.00	4.04	1.56
<i>Attribution of intent</i>				
Hostile intent	0	5.00	1.81	1.06
Non hostile intent	1.00	5.00	2.60	1.04
<i>Response generation</i>				
Avoidant response	0	7.00	1.34	1.39
Prosocial response	2.00	11.00	6.39	2.14
Aggressive response	0	6.00	1.33	1.35
<i>Estimated likelihood to choose response</i>				
Avoidant response	0	4.17	1.91	.83
Prosocial response	2.33	6.00	4.35	.80
Aggressive response	0	3.67	1.55	.87
<i>Positive evaluation presented response</i>				
Avoidant response	0	4.00	1.41	1.17
Prosocial response	2.00	6.00	4.78	1.15
Aggressive response	0	4	1.09	.92
<i>Memories of past frustrating experience</i>				
Total number of memories	0	6.00	2.07	1.60
<i>Reflecting upon other's motives</i>				
Limited/no reflecting	0	2.20	.75	.47
Reflecting	0	1.83	.82	.49
Personality disorder variables				
Cluster B total score	1.00	3.30	1.76	.61
Antisocial personality disorder	1.00	4.10	1.80	.92
Borderline personality disorder	1.00	4.00	1.89	.80

TABLE 3.2. Correlations between SIP variables

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
<i>Emotions</i>																	
1. Intensity of emotions																	
2. Reported amount of anger or disappointment	.10																
<i>Coping</i>																	
3. Inadequate coping	.07	.11															
4. Adequate coping	-.05	.03	-.91*														
<i>Attribution of intent</i>																	
5. Hostile intent	.10	.12	.15	-.10													
6. Non hostile intent	-.02	-.05	-.00	-.00	-.45*												
<i>Response generation</i>																	
7. Avoidant response	.11	.08	.26*	-.20	.17	.06											
8. Prosocial response	-.13	.02	-.19	.27*	-.00	-.5	.33*										
9. Aggressive response	.23*	.15	.14	-.13	.05	-.19	-.04	-.42*									
<i>Estimated likelihood to choose response</i>																	
10. Avoidant response	.09	-.05	-.02	.06	.01	.02	.17	-.05	-.02								
11. Prosocial response	.26*	.14	-.12	.15	-.29*	.09	-.35*	.15	.04	-.00							
12. Aggressive response	.19*	.16	.01	.02	-.02	-.08	-.08	-.15	.39*	.32	.26*						
<i>Positive evaluation presented response</i>																	
13. Avoidant response	-.07	-.08	.19	-.18	.05	.06	.04	-.07	-.06	.61*	-.19	.15					
14. Prosocial response	.07	.21*	-.07	.09	-.33*	.30*	-.03	.09	-.05	-.05	.51*	.02	-.16				
15. Aggressive response	.17	.08	.07	-.05	.01	-.13	.00	-.10	.34*	.28*	.14	.71*	.21*	-.00			
<i>Memories of past frustrating experience</i>																	
16. Total number of memories	.19	.22*	.14	-.05	-.07	.08	.09	.09	.06	-.09	.00	.09	-.06	.03	.08		
<i>Reflecting upon other's motives</i>																	
17. Limited/no reflecting	-.13	-.24*	-.00	-.05	.20	-.20	-.17	.11	-.02	-.35*	-.23*	-.46	-.13	-.29*	.39*	-.11	
18. Reflecting	.07	.28*	-.03	.13	-.04	.08	.18	.09	-.11	-.14	.04	-.26*	-.28*	.03	.23*	.09	-.37*

Note. * = p < .05

Bivariate correlations between SIP-variables are presented in Table 3.2. Correlations ranged between $-.91$ (inadequate coping with adequate coping) and $.61$ (estimated likelihood to choose an avoidant response with positive evaluation of an avoidant response). The cluster B total score showed, as was to be expected, substantial correlations with both ASPD ($r = .78, p < .001$) and BPD ($r = .88, p < .001$). ASPD showed a significant correlation with BPD ($r = .88, p < .001$). Finally, correlations between the SIP variables and the three personality disorder variables, respectively, are reported in Table 3.3. Correlations ranged from $-.26$ (adequate coping with ASPD) and $.34$ (total number of memories of past frustrating experiences with BPD).

TABLE 3.3. Correlations between SIP variables and personality disorder variables.

	Cluster B total score	Antisocial personality disorder	Borderline personality disorder
<i>Emotions</i>			
Intensity of emotions	.23*	.23*	.16
Reported amount of anger or disappointment	.16	.00	.18
<i>Coping</i>			
Inadequate coping	.23*	.26*	.21*
Adequate coping	-.17	-.26*	-.13
<i>Attribution of intent</i>			
Hostile intent	-.08	.04	-.02
Non hostile intent	-.03	-.04	-.04
<i>Response generation</i>			
Avoidant response	.02	-.08	.13
Prosocial response	.02	-.19	.11
Aggressive response	.22*	.28*	.10
<i>Estimated likelihood to choose response</i>			
Avoidant response	.05	.12	.01
Prosocial response	.14	.09	.08
Aggressive response	.25*	.29*	.14
<i>Positive evaluation presented response</i>			
Avoidant response	.12	.21	.02
Prosocial response	.11	.02	.10
Aggressive response	.19	.16	.12
<i>Memories of past frustrating experience</i>			
Total number of memories	.33*	.14	.34*
<i>Reflecting upon other's motives</i>			
Limited/no reflecting	-.02	.06	-.00
Reflecting	-.10	-.22*	-.01

Note. * = $p < .05$

Associations between SIP and personality disorders

Using stepwise regression analyses associations between SIP and personality disorders were examined.

SIP and Cluster B total score.

Stepwise regression analyses showed that only the total number of memories of past frustrating experiences and estimated likelihood to choose an aggressive response significantly predicted the cluster B total score (Table 3.4). Adolescents who experienced more frustrating experiences and reported a greater likelihood to choose aggressive responses, reported more cluster B personality disorder symptoms. Together the two SIP variables explained 16% of the variance in cluster B personality disorder symptoms. None of the other SIP variables was significantly related to cluster B personality disorder symptoms.

Table 3.4. *Stepwise regression analyses for the association between the SIP variables and Cluster B total score.*

	B	SE	β	t	p
<i>Model 1</i>					
Total number of memories	.13	.04	.33	3.29	.001
<i>Model 2</i>					
Total number of memories	.12	.04	.31	3.14	.002
Estimated likelihood: aggressive response	.15	.07	.22	2.19	.031

Note. All other SIP variables were excluded from the analyses since they did not add significantly to the model.

SIP and ASPD

Adolescents who reported more BPD symptoms (entered as the first step in the analyses) also reported more ASPD symptoms (Table 3.5). Subsequently, all SIP variables were added to the model. Analyses showed that adolescents who reported less response generation of a prosocial response, less response generation of an avoidant response, and a more positive evaluation of an avoidant response, reported more cluster B personality disorder symptoms. Together, the BPD symptoms and three SIP variables explained 48% of the variance. None of the other SIP variables was significantly related to cluster B personality disorder symptoms.

TABLE 3.5. Stepwise regression analyses for the association between the SIP variables and ASPD, corrected for BPD.

	B	SE	β	t	p
<i>Model 1</i>					
Borderline personality disorder	.65	.10	.56	6.36	.000
<i>Model 2</i>					
Borderline personality disorder	.68	.10	.59	6.96	.000
Response generation: prosocial	-.11	.04	-.26	-3.07	.003
<i>Model 3</i>					
Borderline personality disorder	.73	.09	.64	7.79	.000
Response generation: Prosocial	-.15	.04	-.36	-4.15	.000
Response generation: Avoidant	-.18	.06	-.28	-3.25	.002
<i>Model 4</i>					
Borderline personality disorder	.73	.09	.63	7.93	.000
Response generation: Prosocial	-.15	.04	-.34	-4.11	.000
Response generation: Avoidant	-.19	.05	-.28	-3.37	.001
Positive evaluation: Avoidant	.14	.06	.18	2.34	.022

Note. BPD was entered in the first step of the regression analyses. All SIP variables were entered stepwise in step 2. SIP variables not included in the table were excluded from the analyses since they did not add significantly to the model.

SIP and BPD

Adolescents who reported more ASPD symptoms (entered as the first step in the analyses) also reported more BPD symptoms (Table 3.6). Additionally, adolescents who reported more memories of past frustrating experiences, *more* response generation of a prosocial response (in contrast to *less* generation when examining associations with ASPD), *more* response generation of an avoidant response, and more response generation of an aggressive response reported more cluster B personality disorder symptoms. Together, the BPD symptoms and three SIP variables explained 51% of the variance. None of the other SIP variables was significantly related to cluster B personality disorder symptoms.

TABLE 3.6. Stepwise regression analyses for the association between the SIP variables and BPD, corrected for ASPD.

	B	SE	B	t	p
<i>Model 1</i>					
Antisocial personality disorder	.49	.08	.56	6.36	.000
<i>Model 2</i>					
Antisocial personality disorder	.46	.07	.52	6.16	.000
Total number of memories	.13	.04	.26	3.11	.003
<i>Model 3</i>					
Antisocial personality disorder	.49	.07	.57	6.68	.000
Total number of memories	.12	.04	.24	2.88	.005
Response generation: Prosocial	.08	.03	.20	2.38	.020
<i>Model 4</i>					
Antisocial personality disorder	.19	.07	.61	7.43	.000
Total number of memories	.53	.04	.20	2.51	.014
Response generation: Prosocial	.10	.03	.30	3.43	.001
Response generation: Avoidant	.15	.05	.26	3.04	.003
<i>Model 4</i>					
Antisocial personality disorder	.50	.07	.58	7.09	.000
Total number of memories	.09	.04	.18	2.33	.022
Response generation: Prosocial	.15	.04	.39	4.17	.000
Response generation: Avoidant	.17	.05	.30	3.52	.001
Response generation: Aggressive	.12	.05	.21	2.32	.023

Note. ASPD was entered in the first step of the regression analyses. All SIP variables were entered stepwise in step 2. SIP variables not included in the table were excluded from the analyses since they did not add significantly to the model.

Discussion

The present study explored the relations between the severity of cluster B personality pathology and mentalizing capacities in adolescents, as measured with the Social Information Processing model. The common idea that relations exist between cluster B personality pathology and problems in mentalizing is supported by the present findings. Using vignettes that presented various social situations, positive correlations were found between the severity of cluster B personality pathology and various steps in the SIP-model. The more severe cluster B personality pathology in participants, the higher the intensity of their reported emotions and the more likely they were to choose inadequate coping strategies, such as avoidance or aggression, instead of actively trying to solve the problem or gain support. Furthermore, partici-

pants with more severe cluster B personality pathology were more likely to choose aggressive responses, evaluate aggressive responses of hypothetical others more positively and estimate that they were more likely to choose aggressive responses. This study thus provides evidence for difficulties in SIP in adolescents with a greater severity of cluster B personality pathology.

A significant correlation was also found between severity of cluster B personality pathology and the number of times participants reported memories of frustrating social situations. This could imply that adolescents with more severe cluster B personality pathology have encountered more frustrating situations in their development and have, therefore, stored more negative experiences in their database. This could be a possible explanation for their mentalizing difficulties, and is consistent with literature concerning trauma and personality pathology (Jang, Stein, Taylor, Asmundson, & Livesly, 2003). Another explanation could be that adolescents with more severe cluster B personality pathology lack the skills to cope with negative situations and therefore, experience more helplessness and insecure feelings compared to adolescents with healthier coping skills. Both the experience of more negative events and the feeling of helplessness could indicate that adolescents with more severe cluster B personality pathology can get overwhelmed by memories of past frustrations or trauma and then do not focus enough attention to the present social situation.

Several specific hypothesized relations between severity of cluster B personality pathology and mentalizing problems were not found. No significant correlations were found between the severity of cluster B personality pathology and the ability to interpret actions of others as meaningful based on their intentional mental states or motives. This is the SIP factor that resembles mentalizing abilities the most, so this result would imply that adolescents with more severe cluster B personality pathology actually are capable of mentalizing. Possible explanations for this counter-intuitive finding are that, in the present study, participants were asked to explicitly reflect on a hypothetical situation, possibly implying that their attachment system was not activated and it was easier for participants to regulate their arousal. Also, the highly structured research situation might have helped the participants to focus their attention on the social information in the interview. This corresponds to the idea of Bateman and Fonagy (2004), that the ability to mentalize is present in adolescents with cluster B personality pathology but is abandoned in actual frustrating social situations, when emotional arousal is high and attention span is limited.

Furthermore, no correlation was found between the severity of cluster B personality pathology and the attribution of both negative and positive intent. Severity of cluster B personality pathology does not seem to be related to a bias in the attribution of the other's intention. This is a remarkable finding for two reasons: First,

the finding is in contrast with research findings in facial recognition tasks. Domes, Schulze, & Herpertz (2009) reviewed a number of studies that revealed a pattern of negativity or an anger bias, and a heightened sensitivity to the detection of negative emotions in patients with BPD. Secondly, this is in contrast with what we would expect of the findings on explicit mentalizing (Fonagy & Luyten, 2009), such as in patients with BPD, increased levels of arousal appear to affect explicit mentalizing more than implicit mentalizing. The fact that we did not find an association between attribution of intent and severity of personality pathology might be the result of the reliance on hypothetical vignettes, lacking visual information, which might be a key factor in sensitivity to the detection of negative emotions. Additionally, it should be noted that our sample was rather small, which might have resulted in power issues to detect modest associations. Future research using more sophisticated measures and a larger sample is needed to elucidate associations between attribution of intent and personality pathology in more detail.

Stepwise regression analyses showed that only two SIP factors predicted cluster B personality pathology: the total number of memories of past frustrating experiences and the estimated likelihood to choose an aggressive response. Adolescents who experienced more frustrating experiences and reported a larger likelihood to choose an aggressive response reported more cluster B personality disorder symptoms.

Although adolescents who reported more BPD symptoms, also reported more ASPD symptoms, our stepwise regression analyses on the differences between SIP-correlates of ASPD versus BPD revealed some interesting directions for future research.

First, particularly for ASPD, but not for BPD, higher levels of personality pathology were related to a lower level of response generation of both prosocial and avoidant responses, and to a more positive evaluation of an avoidant response. Particularly for BPD, but not for ASPD, higher levels of pathology were related to more memories of past frustrating experiences, and furthermore, to increased response generation of avoidant, aggressive and prosocial responses. This was a remarkable finding, as increased generation of prosocial and avoidant responses was in contrast to less generation of prosocial and avoidant responses when examining associations with ASPD. Aggressive response generation is correlated with ASPD traits (Lobbestael, Cima, & Arntz, 2013), and we also found more aggressive response generation in BPD, however, the major difference did not seem to be aggressive response generation, but differences in prosocial and avoidant response generation.

All in all, these results seem to paint a picture of ASPD and BPD having a shared background, but revealing distinct problems in social information processing: ASPD being more related to less avoidant and prosocial responses, and BPD being more

related to more avoidant or prosocial responses and particularly to memories of frustrating events. This seems to fit in with a 'shared risk'-model (Beachaine, Klein, Crowel, Derbridge, & Gatzke-Kopp, 2009) where both ASPD and BPD are assumed to originate in similar high impulsivity and high risk environments, but then develop in a more internalizing direction in the form of BPD for girls, and a more externalizing direction in the form of ASPD for boys. More research, including studies on the specific role of gender, is warranted before we can draw more firm conclusions on these differences.

Limitations

Some limitations should be considered with respect to the current findings. A first limitation is that we were not able to test our hypothesis specifically with adolescents with diagnosed personality disorders. The reason for this, as aforementioned, is that there is still a strong reluctance in clinical practice to diagnose personality disorders in adolescents. However, we think our approach is next in quality: by measuring the severity of cluster B personality pathology in a more general group of clinically referred adolescents, we were still able to test our hypotheses, considering that adolescents with personality pathology generally have high comorbidity (Chanen, Jovev, & Jackson, 2007). In addition, the lack of a control group means that we cannot compare our findings to adolescents in a normal population. At this moment, not enough is known about the development of SIP in normal populations (Orobio de Castro, 2004) to make a clear comparison between our clinical group and a normal population. However, the fact that the variance within our clinical population is meaningfully related to the severity of cluster B pathology indicates that differences in SIP are also relevant in our clinical group. Further studies should of course, refine these results by studying groups of adolescents with specific personality disorders as well as normal populations.

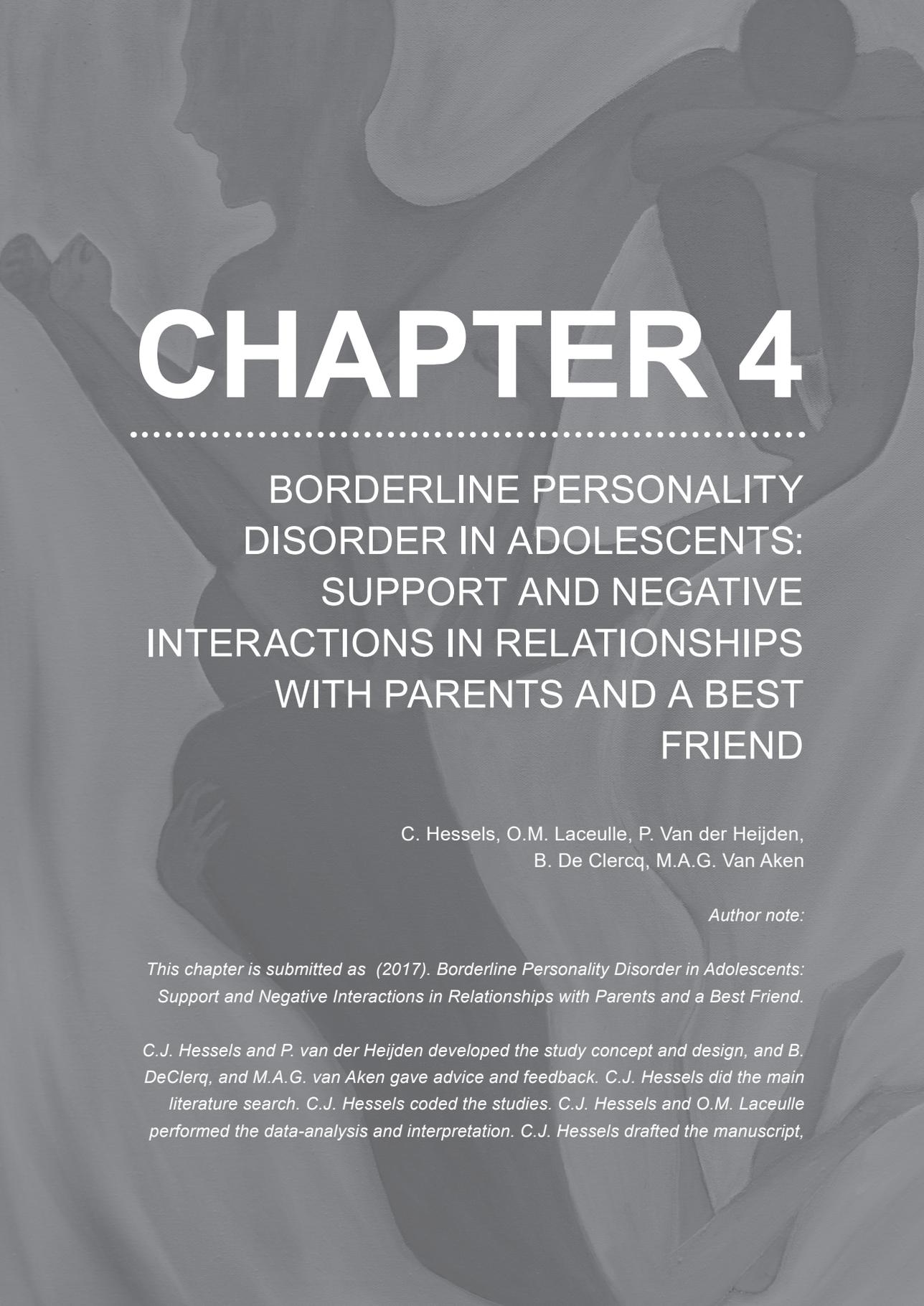
A second limitation is our reliance on a relative small sample size. Additional studies involving larger samples are necessary to replicate the present findings. One specific issue, in this regard, is that a relatively large number of tests was performed. Future studies should try to replicate our analyses with more statistical power. Also, in larger groups we would be able to examine the findings for boys and girls separately.

A third limitation is in the use of vignettes. Real life social information processing may be far more complex and involve not only the integration of visual and auditory information, but also the constant interaction with others, making the social situation and concomitantly social information processing more complex and dynamic. In future studies a combination of these aspects could be examined in observational studies of social situations that adolescents with personality pathology encounter.

In addition, observational studies could counter any social desirability that might occur in responding to vignettes.

A fourth limitation is that, due to the integration of research instruments in the clinical assessment of the outpatient center for youth psychiatry, we were not able to use a semi-structured interview to measure personality pathology. Future studies should try to replicate our analyses with for example a structured interview, such as the Structured Clinical Interview for DSM-IV Axis II Personality Disorders, SCID-II (First, Gibbon, Spitzer, Williams, Smith Benjamin, 1997). The diagnosis for BPD should also integrate dimensional factors alongside categorical diagnostic criteria, such as the promising alternative model for personality disorders presented in Section III of DSM-5 (APA, 2013), which emphasizes impairments in self and relatedness as dimensional core features of personality disorders.

The findings in this study underscore the importance of the theoretical and empirical conceptualization of the specific aspects of mentalizing. The associations that were found between the elements of the SIP-model and the elements of mentalizing contribute to a deeper understanding of personality pathology in the adolescence. Although personality pathology in adolescents is a complex concept, also considering the co-occurrence of axis I and other axis II disorders, SIP seems a promising model in differentiating between cluster B personality pathology and thereby furthering the understanding of personality pathology in adolescence. As cluster B personality disorders are considered social disorders, which develop within the interaction of genetic vulnerability and environmental risk, it is important to understand more of how the social environment, both at risk and when adequate, becomes mentalized, in order understand the mechanisms that are important in the development of personality pathology.



CHAPTER 4

BORDERLINE PERSONALITY DISORDER IN ADOLESCENTS: SUPPORT AND NEGATIVE INTERACTIONS IN RELATIONSHIPS WITH PARENTS AND A BEST FRIEND

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C.J. Hessels and P. van der Heijden developed the study concept and design, and B. DeClerq, and M.A.G. van Aken gave advice and feedback. C.J. Hessels did the main literature search. C.J. Hessels coded the studies. C.J. Hessels and O.M. Laceulle performed the data-analysis and interpretation. C.J. Hessels drafted the manuscript,

Abstract

In adolescents, the emergence of borderline personality disorder (BPD) can interfere with developmental tasks within social relationships. In turn, social relationships can influence the development of BPD. Within a clinical sample of 123 adolescents relations between BPD symptoms and both support and negative interactions with parents and best friends were investigated. Findings showed that adolescents with more BPD symptoms experienced less parental support and more negative interactions with parents. Multiple regression analyses demonstrated that, experienced negative interactions with parents - but not with best friends - are related to symptoms of BPD. Relationships with best friends did not buffer or reinforce the effect of negative interactions with parents. These findings highlight the importance of parental relationships in adolescents with BPD.

Introduction

In the last decennia, the reluctance and ambivalence about assessing borderline personality disorders (BPD) in young people, has shifted to personality disorders being considered lifespan developmental disorders. The data supporting this view are convincing, as personality disorders have been found to be continuous in different developmental categories and similarities in terms of phenomenology, structure, stability, validity, and morbidity are found for adolescents and adults (Chanen & Thomson, 2014; Newton-Howes, Clark, & Chanen, 2015). A growing body of research shows that personality pathology can be assessed in adolescents in a reliable and valid manner (Chanen et al., 2004; Chanen, Jovev, & Jackson, 2007; Miller, Muehlenkamp, & Jackson, 2008; Westen, Shedler, Durrett, Glass, & Martens, 2003) and different national guidelines acknowledge that diagnosing BPD is justified in adolescents (Fonagy et al., 2015; Landelijk Kenniscentrum Kinder- en Jeugdpsychiatrie, 2011; Landelijke stuurgroep Multidisciplinaire richtlijnontwikkeling in de GGZ, 2008; National Health and Medical Research Council, 2012). Within this lifespan developmental view, adolescence and young adulthood are crucial developmental phases. BPD usually emerges during adolescence (Chanen, et al., 2007) and is defined by high comorbidity and poor outcomes (Chanen & McCutcheon, 2013). Chanen and McCutcheon (2013) concluded that BPD might be considered as a disorder of especially young people, based on a rise in prevalence from puberty and a steady decline with each decade from young adulthood onwards.

Particularly during adolescence, (subclinical) BPD may interfere with the process of gradually assuming more adult roles and responsibilities typical for the adolescent years. Both inside and outside the family, social interactions are important for the development of personality in young people. Problems in social functioning are considered a key problem in BPD as well as in personality pathology in general (Hopwood, Wright, Ansell, & Pincus, 2013). Paris (2014) stated that social relations of individuals with personality pathology are a key element for understanding the course of disorders. Moreover, Chanen and Kaess (2012) stated that in contrast to the relatively unstable nature of the diagnosis BPD, both in adolescents and in adults, problems in social functioning are relatively stable and may have long-lasting consequences for the individual's functioning. Consequently, it seems plausible that problematic social relations are one of the potential mechanisms by which personality traits 'get outside the skin' and develop into personality pathology (cf. Hampson, 2012). Two important psychological mechanisms in the understanding of BPD, both in adults and in adolescents (Fonagy et al., 2015), might be the relationship between emotional patterns and interpersonal problems (Hopwood et al., 2013; Paris, 2014) and the problems in mentalizing (Hessels, van den Hanenberg,

de Castro & van Aken, 2014; Sharp et al., 2011). Both mechanisms take place within social relationships. The current study therefore investigated the relations between BPD symptoms in adolescents and both support and negative interactions within the dyadic relationships with parents and with a best friend.

Social relations in adolescents with personality pathology

Social functioning is a key concept in research on adolescents, considering that the development of social autonomy, establishing intimate relationships, and finding a new balance in the relationship with parents are important developmental tasks during these years (Laursen & Collins, 1994). Internal representations of relationships are recognized as influencing mental concepts of concrete interpersonal behaviour in close relationships across the life span, and are considered to become resistant to change and generalized to other close relationships throughout adolescence (Bowlby, 1969; Doyle, Lawford, Markiewics, 2009). Adolescents perceive the highest levels of support from their parents, followed by support from their best friend (Scholte, van Lieshout, van Aken, 2001).

BPD has been associated, early in the course of the disorder, with high levels of social impairment (Kaess et al., 2013), such as poorer general psychosocial functioning, poorer peer relationships and problems with family relationships (Chanen et al., 2007), and impairments in theory of mind and mentalizing (Sharp et al., 2011). Moreover, research has shown that BPD has a unique predictive value for poor psychosocial functioning, above and beyond Axis I disorders and other PD diagnoses (Chanen et al., 2007; Kaess et al., 2013). The emergence of BPD can interfere with developmental tasks regarding social development, due to personality pathology complicating day-to-day interpersonal situations and relations. In addition, poor social functioning might influence the emergence of BPD, since the nature of emerging BPD is considered 'at its core, fundamentally interpersonal' (Hopwood et al., 2013).

Relations between BPD and parenting have been found in both community and clinical samples. Stepp et al. (2014) found evidence for a reciprocal relationship between the developmental trajectory of BPD symptoms and parenting factors in adolescent girls in the community. Within clinical samples the combination of perceived maternal rejection with cluster B traits in parents was related to BPD severity in adolescents (Schuppert et al., 2014). Considering the current social relations with parents, Johnson, Chen and Cohen (2004) found that adolescents who are developing personality disorders may be more likely to experience conflicts with family members throughout the transition to adulthood and in turn, that persistent conflict with family members may have an adverse impact on psychosocial development throughout this important transitional period. Johnson et al. (2004) proposed

different explanations for their findings that PD traits were associated with both elevated contact and elevated conflict with family members. One of the hypotheses the authors stated was that due to social skills deficits and interpersonal conflict adolescents with PD's may find it difficult to maintain satisfying relationships with others outside the family circle and tend to maintain frequent contact with family members during the transition to adulthood because they need sustained support from the family. This hypothesis, however, raises questions about how the relationships of adolescents with BPD are related to support and negative interactions with their parents and in addition, with a best friend, and whether relationships with a best friend can buffer against the negative effects of low parental support and frequent negative interactions. Friendships are particularly important for socialization towards roles and expectations in late adolescence and early adulthood. This could imply that friendships have an important role in the adaptive social development of adolescents with BPD traits. Indeed, in a review Brechwald and Prinstein (2011) have shown that in comparison to risky peer influence, healthy peer socialization processes can provide potential protection from maladaptive outcomes.

Research has shown various relations between both parental and peer influences and both externalizing behaviour and internalizing behaviour, problem behaviours which are often related to BPD. For example, Stice, Reagan and Randall (2004) found that deficits in parental support, but not peer support predicted future increases in depressive symptoms and onset of major depression, which in turn predicted future decreases in peer support but not parental support. Young, Berenson, Cohen and Garcia (2005) found anticipated peer support to be protective among adolescents with higher parental support, but acts as a possible risk factor for depression in adolescents with low parental support. Marshall and Chassin (2000) found different interactional patterns between parental and peer support for boys' and girls' alcohol use. Parental support buffered the effects of peer group affiliation on girls' alcohol use, but exacerbated peer effects on boys' alcohol use and concluded that in girls parental support could serve as a protective factor, while in boys this might have been interpreted as a threat to the autonomy of adolescent boys. These findings might be generalizable to adolescents with BPD. That is, during adolescence, support and conflict in both parents and best friends have multiple implications and can have either main or interacting effects on BPD. As far as we know, the buffering effect of support from a best friend in the association between negative interactions with parents has not yet been studied in adolescents with BPD. Based on the literature in depression and alcohol use (Young et al., 2005; Marshall & Chassin, 2000), we expect the effect of the relationship with parents to be moderated by the relationship with a best friend.

Hypotheses

Taken together, gaining insight into the associations between BPD and social relationships is important in order to understand more about the social factors that are crucial in emerging BPD, more specific in the developmental phase were social relations with peers gain importance in the psychosocial functioning overall. Therefore, we will investigate relations between BPD and perceived support and negative interactions with their parents and a best friend, in a clinical sample of adolescents. We expect that higher levels of BPD symptoms are related to less perceived parental support and more negative interactions with parents (Doyle, Lawford, & Markiewics, 2009). Similarly, we expect that higher levels of BPD symptoms are related to less perceived support from a best friend and more negative interactions with a best friend (Brechwald & Prinstein, 2011; Stice et al., 2004).

Subsequently, interaction effects will be explored. It is hypothesized that support and negative interactions in the relation with a best friend can have a cumulative effect to parental support or negative interactions, but can also form a compensatory source when parental support is low or negative interactions with parents are high (Brechwald & Prinstein, 2011; Stice et al., 2004).

Method

Participants

The sample consisted of participants in a multi-site research investigation on personality pathology in adolescents and young adults in the Netherlands. Participants were referred to specialized mental health care, mostly by their general practitioner, for assessment and treatment of psychiatric problems, such as anxiety disorders, mood disorders and personality pathology. The sample was representative for psychiatric adolescent and young adult outpatients. After their first intake-interview, patients were asked to participate in this study. They received a personal online code to be able to fill in questionnaires on a website anonymously. In total, 182 participants filled in the questionnaires online; 123 participants had scores on all aggregated study variables. Their average age was 21.22 (SD = 2.64, range =15.29-28.78); 89 (72.4%) were women; and 121 (98.4%) were born in the Netherlands. 80 (65 %) lived with one or both parents, 30 (24.4 %) lived independently alone, with a friend or with a partner.

Measures

Traits of Borderline Personality Disorder

BPD was operationalized according to the DSM-5 section III trait measure, and based on and informed by well-known trait models of personality and personality pathology. This measure provides a higher order structure within which are included a number of lower order traits relevant to PD and explains a substantial proportion of variances in DSM-IV PD's (Hopwood, Thomas, Markon, Wright, & Krueger, 2012). The Personality Inventory for DSM-5 (PID-5) (Krueger, Derringer, Markon, Watson, & Skodol, 2012) is a 220-item questionnaire with a 4-point response scale ranging from "very false or often false" to "very true or often true", used for assessing the trait model proposed for the DSM-5. Items assessed 25 trait scales, corresponding to 25 specific personality pathology constructs. Using a Dutch translation of the PID-5, De Fruyt et al. (2013) found that internal consistency coefficients ranged from .75 to .95, with a median value of .86. They also demonstrated structural comparability of the Dutch translation with the American version and provided evidence that the structure among the 25 PID-5 scales is best represented by a five-dimensional model, containing Negative Affectivity, Detachment, Antagonism, Disinhibition, and Psychoticism as higher order factors. Furthermore, the evidence supported the ability of the PID-5 traits to cover the diagnostic territory of DSM-IV personality disorders. This is found especially for the constructs that have received the largest amount of empirical research, such as BPD (Hopwood et al., 2012). Mean scores from the lower order traits (i.e. depressivity, emotional lability, and anxiousness) proposed as criteria for BPD in the DSM-5, were computed, with higher scores indicating higher levels of borderline personality pathology. In the current study, internal consistency (Cronbach's alpha) of the BPD construct (N=61 items) was .91.

Support and negative interactions with parents and a best friend

The adolescents' perception of social relationships was measured with a Dutch translation of the *Network of Relationship Inventory – Behavioural Systems Version* (NRI-BSV) (Furman & Buhrmester, 2009). The NRI-BSV assesses the extent to which adolescents' dyadic relationships with romantic partners, friends, and parents are each characterized by behaviours commonly involved in the attachment, caregiving, and affiliative behavioural systems. The questionnaire consists of 24 items, using a 5-point Likert-scale, ranging from 1 = 'very little or not at all' to 5 = 'could not be more'.

Furman and Buhrmester (2009) provided consistent support for a two level hierarchical factor structure of the NRI-BSV in which all items pertaining to a specific relationship loaded highly on an eight first-order factor structure (Seeks Safe Haven;

Seeks Secure Base, Provides Safe Haven, Provides Secure Base, Companionship, Conflict, Criticism and Antagonism). These factors in turn loaded on two second-order factors (Support and Negative Interactions), which were minimally related ($r = -.30, p < .001$ to $r = .07, p = .86$). Models in which there were no first-order scale factors and items loaded directly on a Support or Negative Interactions factor provided significantly poorer fits to the data than the hierarchical models. The psychometric properties of the NRI-BSV have been found to be good: scores on all scales had sufficient variability and the internal consistencies of both the scales and factors were good. In our sample the second order factor Support was based on the mean score of the first order scales 'Seeks Safe Haven' (Cronbach's alpha ranged from $\alpha = .92$ to $\alpha = .96$), 'Seeks Secure Base' (Cronbach's alpha ranged from $\alpha = .83$ to $\alpha = .92$), 'Provides Safe Haven' (Cronbach's alpha ranged from $\alpha = .85$ to $\alpha = .95$), 'Provides Secure Base' (Cronbach's alpha ranged from $\alpha = .84$ to $\alpha = .93$), and 'Companionship' (Cronbach's alpha ranged from $\alpha = .89$ to $\alpha = .95$). The second order factor Negative Interactions was based on the mean scores of the first order scales 'Conflict' (Cronbach's alpha ranged from $\alpha = .64$ to $\alpha = .90$), 'Criticism' (Cronbach's alpha ranged from $\alpha = .73$ to $\alpha = .90$), and 'Antagonism' (Cronbach's alpha ranged from $\alpha = .72$ to $\alpha = .88$). Cronbach's alpha for the Second order factor were comparable to the findings of Furman and Buhrmester (2009); 'Support' ranged from $\alpha = .92$ to $\alpha = .96$ and 'Negative interactions' ranged from $\alpha = .89$ to $\alpha = .96$.

Statistical analyses

Of the 182 participants, 123 participants had data on our main variables and were included in the statistical analyses. We first computed the two higher-order factors of the NRI-BSV: Support and Negative Interactions. Correlations between the scores for mothers and fathers were moderate to high (ranging from .28 to .71 in both first and second order scales). Therefore, we aggregated the scores to Parental Support and Parental Negative Interactions, by computing the mean score of both scales in mothers and fathers. Support and Negative Interactions were also computed for a best friend. We computed bivariate correlations between the four variables of the NRI-BSV and the construct BPD of PID-5.

Hierarchical regression models were used in which BPD was regressed in separate blocks of first, the higher order factors of the NRI-BSV (Support Parents, Negative Interactions Parents, Support Best Friend, Negative Interactions Best Friend), and second the interactions between these higher order factors (for example Support Parents X Support Best Friend). Gender and age were taken into account in all analyses.

Results

Descriptive statistics

Mean scores and standard deviations of age, PID-5 factor BPD and the NRI-BSV subscales are shown in Table 4.1. The group of participants we had data on for our main variables did not differ ($t(175) = .60, p = .487$) on their BPD scores according to the PID-5 ($N = 123, M = 2.36, SE = .03$) from the group that we did not have complete data on ($N = 54, M = 2.33, SE = .05$).

TABLE 4.1. *Descriptive statistics for the Main Study Variables (N=123)*

	Range	Mean	SD
Age	15.29-28.78	21.22	2.64
<i>PID-5: constructs and dimensions</i>			
BPD (i)	1.51-3.12	2.36	.36
Neg. Affect (I)	1.67-3.20	2.48	.33
Detachment (i)	1.20-3.18	2.10	.42
Antagonism (i)	1.18-2.66	1.83	.34
Disinhibition (i)	1.02-3.03	2.05	.37
Psychoticism (i)	1.00-3.23	1.93	.51
<i>NRI-BSV Second Order Subscales</i>			
SupportParents (i)	1.00-4.47	2.78	.73
Neg Interactions Parents (i)	1.00-5.00	2.54	.80
Support Best Friend (i)	1.00-5.00	3.52	.93
Neg Interactions Best Friend (i)	.49-3.00	1.57	.52

Bivariate associations

Correlations between personality pathology, BPD and social relations are displayed in Table 4.2. Gender correlated significantly with support from a best friend, with higher scores in females. Age was not related to any of the research variables. Higher levels of perceived support from parents was related to less negative interactions with parents. Similarly, more negative interactions with parents was related to more negative interactions with a best friend. Higher scores on the BPD construct were related to lower levels of perceived support from parents and to more negative interactions with parents, but not to any of the best friend variables.

TABLE 4.2. Pearson's Correlations between Borderline Personality Disorder and Predictor Variables (N=123).

Measures	1	2	3	4	5	6	7	8	9	10	11
1 Gender	-										
2 Age	-.21	-									
3 PID-5 BPD	.15	.02	-								
4 PID-5 Negative Affect	.04	.08	.89**	-							
5 PID-5 Detachment	.11	.01	.62**	.68**	-						
6 PID-5 Antagonism	-.12	.12	.41**	.41**	.10	-					
7 PID-5 Disinhibition	.00	.04	.65**	.53**	.31**	.49**	-				
8 PID-5 Psychoticism	-.07	.05	.56**	.57**	.42**	.52**	.48**	-			
9 NRI-BSV Support Parents	-.08	.04	-.26**	-.22*	-.31**	-.08	-.20*	-.14	-		
10 NRI-BSV Negative Interactions Parents	.02	-.09	.31**	.31**	.19*	.07	.22*	.13	-.34**	-	
11 NRI-BSV Support Best Friend	.26**	-.14	.05	-.06	-.20*	.12	.14	.13	.20*	.05	-
12 NRI-BSV Negative Interactions Best Friend	-.01	-.11	.04	.09	.06	.20*	.04	.03	-.06	.23**	-.02

Note. * $p < .05$. ** $p < .01$.

TABLE 4.3. Regression Coefficients of the Relationship Between Borderline Personality Disorder and Parental support and Negative Interactions and the moderating Support and Negative Interactions of a Best Friend (N=123).

		B	SE B	β	p	ΔR^2
Step 1	Age	.01	.01	.06	.544	.03
	Gender	.13	.07	.17	.078	
Step 2	Age	.01	.01	.09	.336	.12
	Gender	.11	.07	.14	.132	
	Support Parents	-.08	.05	-.17	.069	
	Negative Interactions Parent	.11	.04	.26	.008	
	Support Best Friend	.02	.04	.05	.558	
	Negative Interactions Best Friend	-.02	.06	-.03	.757	
Step 3	Age	.01	.01	.09	.306	.02
	Gender	.12	.07	.15	.104	
	Support Parents	-.08	.05	-.17	.092	
	Negative Interactions Parents	.12	.04	.27	.007	
	Support Best Friend	.02	.04	.06	.561	
	Negative Interactions Best Friend	-.01	.06	-.01	.935	
	Support Parents x Support Best Friend	.07	.05	.14	.161	
	Support Parents x Negative Interactions Best Friend	.08	.09	.08	.405	
	Neg Interactions Parents x Support Best Friend	.00	.05	.01	.928	
	Neg Interactions Parents x Neg Interactions Best Friend	-.05	.08	-.06	.572	

Note: **bold** values are significant $p < .05$. $R^2 = .03$ for Step 1; $R^2 = .15$ for Step 2; $R^2 = .17$ for Step 3.

Multivariate associations

To further investigate whether parent support and peer support had an interaction (buffer) effect on BPD in adolescents, we regressed both age and gender (step 1) and the variables support and negative interactions with both parents and a best friend (step 2) and the interaction between these variables on BPD (step 3). Results (Table 4.3) show that the model accounted for 17% of the variance in BPD scores. Effect sizes were small to moderate. When testing the interaction effects separately, results did not change in any meaningful way.

Results suggested that both age and gender are not significant predictors of BPD. Of the social network variables, negative interactions with parents had the only significant contribution to our model and a rather large effect size ($\beta = .26$), implying that negative interactions with parents, but not with a best friend are related to BPD. The interaction variables did not have a significant contribution to the model, implying that relationships with a best friend do not buffer or reinforce the effect of support from or negative interactions with parents.

Discussion

The purpose of this study was to evaluate the degree to which (a) parental support and negative interactions were related to borderline personality disorder (BPD) in adolescents, (b) support from and negative interactions with a best friend were related to BPD in adolescents, and (c) the relation between both parental factors and BPD was moderated by best friend support and negative interactions.

Overall, the results provide support regarding the first hypothesis: Adolescents with more BPD symptoms reported less parental support and more negative interactions. Although we were unable to test causality in this cross-sectional study, the findings might indicate that parental support is a protective factor, while parental negative interactions seem to be a risk factor for adolescent BPD. This is consistent with research findings indicating that parental support is a protective factor for different manifestations of psychopathology (Wills, Resko, Ainette, & Mendoza, 2004). Whalen et al. (2014) found that in mother-daughter relations, positive maternal affective behaviour (i.e., supportive/validating behaviour) and positive dyadic affective behaviours were associated with decreases in girls' BPD severity scores over time. Dyadic negative escalation was associated with higher overall levels of BPD severity scores. The results of the current study support the importance of parental interactions in adolescent BPD.

The results did not provide support regarding our second hypothesis: No significant relations were found between support or negative interactions with a best

friend and BPD. In contrast to research findings about the relation with parental factors, the role of peer support in problem behaviour and psychopathology is less well understood. Peer support has been found to show different relations with various forms of psychopathology that co-occur with BPD, for example depression, substance abuse and non-suicidal self-harm (NSSI). Adrian, Zeman, Erdley, Lisa, & Sim (2011) found in a clinical sample of adolescents with NSSI that, when both family and peer relationships were characterized by conflict and lack of support in managing emotions, adolescents reported more dysregulated emotion processes.

The results showed no support for our third hypothesis. No interactional effect between support or negative interactions with parents and support and negative interactions with a best friend was found. A possible explanation for this could be the lack of support for the second hypotheses, indicating that no significant relations were found in the first place between support and negative interaction with a best friend and BPD. This finding could imply that relations with parents, both support and negative interactions, have a much more profound role for patients with BPD. Perhaps these adolescents are less engaged in friendship relations and are less influenced by support of a friend or caught up in negative interactions with a friend. Interpersonal conflict may make it more difficult for young people with BPD to maintain satisfying relations with peers, which may cause them to be more dependent on the support and contact with family members (Johnson et al., 2004). Although several studies have confirmed links between friendship experiences and certain aspects of psychological adjustment, there is little research on how the experienced quality of friendships may relate to BPD. Young et al. (2005) found that anticipated peer support may be protective among adolescents with higher parental support, but may act as a risk factor for depression in adolescents with low parental support. Parental support was found to be inversely related to substance abuse and peer support was positively related to substance abuse, as a suppression effect (Wills et al., 2004). As family interactions set the stage for young people to separate from the family and to develop the capacity for social functioning outside the family, these processes appear more complicated in young people with BPD. Another explanation for the lack of interaction effects could be our relatively small sample size for detecting interaction effects. Consequently, our findings, both significant and non-significant, should be regarded with some caution.

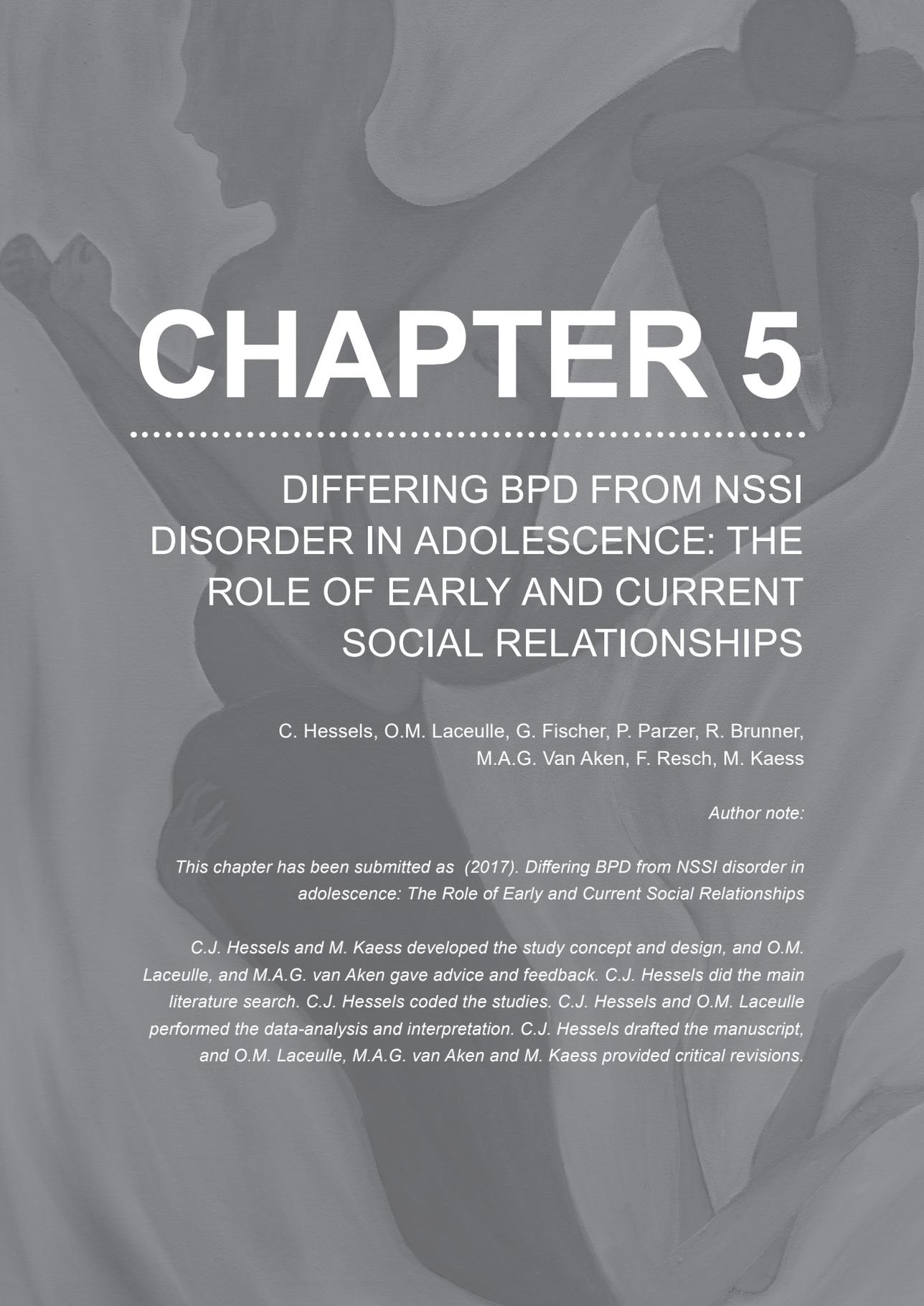
There are two other important limitations to this study. First, the data in this study were obtained from a single informant: the adolescents themselves, and relied exclusively on the use of questionnaires. Although questionnaires are the most common method used in personality assessment research and adolescents appear to be the most valid reporters of their own personality pathology, the use of questionnaires can have disadvantages with regards to the validity of personality

pathology measures, especially when used with young people (Magallón-Neri et al., 2014). In future studies, data from multiple informants or the use of structured clinical interviews could contribute to gaining a more valid picture. A second limitation is the use of a cross-sectional design in the present study. Long term follow-ups of the adolescents would make it possible to investigate whether social relations should indeed be seen as (precursor) factors contributing to the development of BPD or if the relations are the other way around.

Despite these limitations there are important implications from this study. A unique and strong point is that this study makes use of the construct BPD based on the new DSM-5 proposed personality pathology domains. It is the first empirical study that has investigated the BPD construct based on the PID-5 domains in relation to the social relationships in a clinical population. A second strong point is the reliance on a clinical sample of adolescents, which allows the findings to be both generalizable and applicable to a vulnerable group of individuals with (emerging) personality pathology. Lastly, an important feature of the current study is the use of the NRI-BSV, considering that participants use the same set of items to describe their relationships with different members of their social networks (e.g., mother, father, friend). Similar support and negative interaction scale scores were derived for the different relationships, making it possible to compare the associations of the different relationships with BPD.

The findings from the present study may also have noteworthy clinical implications. It confirms the need for specific attention for parental support and conflict in adolescents and young adults both in research and clinical work. Interventions that encourage social functioning and independent functioning, should incorporate also the promotion of healthy family functioning.

In conclusion, the present study has shown that negative interactions with parents play an important role in BPD in adolescents and young adults. This role does not seem to be moderated by best friend support or negative interactions with a best friend. The current findings highlight the importance of negative interactions with parents in BPD in adolescents.



CHAPTER 5

DIFFERING BPD FROM NSSI DISORDER IN ADOLESCENCE: THE ROLE OF EARLY AND CURRENT SOCIAL RELATIONSHIPS

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C.J. Hessels and M. Kaess developed the study concept and design, and O.M. Laceulle, and M.A.G. van Aken gave advice and feedback. C.J. Hessels did the main literature search. C.J. Hessels coded the studies. C.J. Hessels and O.M. Laceulle performed the data-analysis and interpretation. C.J. Hessels drafted the manuscript, and O.M. Laceulle, M.A.G. van Aken and M. Kaess provided critical revisions.

Abstract

As borderline personality disorder (BPD) is more and more considered to be a lifespan developmental disorder, we need to distinguish risk factors and precursors within the developmental pathways to BPD, in order to enable early detection and intervention. In such pathways, relational factors such as adverse childhood experiences and current relational problems may be considered important. In a clinical sample of 166 adolescents engaging in nonsuicidal self-injury (NSSI) disorder referred to mental healthcare in Germany, this study investigated whether we can predict who has BPD from 1) adverse childhood experiences; and 2) the quality of current relationships, both with parents and peers. More adverse childhood experiences, but not low quality current social relationships, were related to more BPD symptoms and an increased risk for full BPD. In the dimensional model, current social relationship quality with parent and peers did not show a moderating (protecting or aggravating) effect on the association between adverse childhood experiences and BPD. Using a categorical approach, however, the association between childhood adversity and full BPD was even higher in individuals reporting higher quality of current parent-child relationship. These results highlight adverse childhood experiences as risk factors of BPD, while the role of current social relationships seems more complex.

Adolescent borderline personality disorder and nonsuicidal self-injury

Over the last decades, reluctance and ambivalence in assessing and diagnosing borderline personality disorder (BPD) in young people has shifted to a view in which personality disorders are being considered lifespan developmental disorders. This new view has several implications: First of all, the shift towards a lifespan view promotes the integration of research on BPD with developmental research which traditionally focuses more on personality dimensions (DeClerq, De Fruyt, & Widiger, 2009). A dimensional perspective, such as described in DSM-5, section 3 (APA, 2013), may better account for developmental fluctuations and increased heterogeneity that have been reported especially in younger samples (Sharp et al., 2012). Within recent literature, a categorical perspective (BPD described as 5 or more diagnostic criteria in DSM-IV and DSM-5), a dimensional perspective based on the five-dimensional model (Negative Affectivity, Detachment, Antagonism, Disinhibition, and Psychoticism), and a dimensional perspective based on the number of diagnostic criteria according to DSM, are all used for studying BPD in young people (Chanen et al., 2004). Second, it has paved the way to consider personality disorders from a developmental psychopathology perspective. Although we still have limited data available on the developmental mechanisms specifically associated with BPD (Fonagy et al., 2014), this developmental view focuses on the identification of risk factors and precursors that play a role in the developmental pathways or mechanisms leading to BPD (Chanen & Kaess, 2012). Third, the developmental pathways can be understood by examining the dynamic interaction of normal and abnormal biological, psychological, and sociocultural factors and systems over critical developmental periods across the life course (Chanen & Kaess, 2012). This means that within these pathways, the role of environmental factors that can influence the course of the disorder are highlighted. Particularly early relational experiences and the quality of current social relations are important factors to consider at a time when key precursors can be detected, such as self-harm in adolescence (Chanen & Kaess, 2012). The expanding research on this topic is necessary to inform the development of prevention, early detection, and timely intervention for BPD (Chanen et al., 2008; Chanen & Thompson, 2014).

Self-harm is highly associated with BPD, both in adults (Chapman et al., 2005) and in adolescents (Ayodeji et al., 2015), and is defined in terms of both suicidal behaviour and nonsuicidal self-injury (NSSI). While rates of self-harm tend to decline in individuals with BPD towards adulthood (Nakar et al., 2016; Zanarini et al., 2010), the BPD criterion 'self-harm and suicidal behaviour' is the one that is most frequently met in adolescents with BPD (Zanarini et al., 2008), and that therefore can be considered to be a key precursor for BPD (Chanen & Kaess, 2012). Self-harm

in general (Hawton, Saunders, & O'Connor, 2012), and NSSI in particular (Hawton, Saunders, & O'Connor, 2012), are serious health problems (Muehlenkamp, Claes, Havertape, & Plener, 2012). However, roughly 50% of adolescent and adult patients with NSSI do not meet the diagnostic criteria for BPD (e.g., Glenn & Klonsky, 2009). This has led to a discussion whether NSSI should be considered as a distinct and clinically significant diagnostic entity (Glenn & Klonsky, 2013), and to the inclusion of the newly diagnostic entity of non-suicidal self-injury (NSSI) disorder in Section III of DSM-5 (APA, 2015). Especially in adolescence, the relation between BPD and NSSI is complex. Although NSSI is common among adolescents and young adults and is associated with a range of clinical syndromes, there is evidence that particularly repetitive and long-lasting NSSI might be a precursor for BPD (Groschwitz et al., 2015). Furthermore, within the aetiology of both NSSI and BPD, adverse childhood experiences, such as parental antipathy or neglect as well as sexual abuse are found to be risk factors (Chanen & Thompson, 2014; Kaess et al., 2013; Infurna et al., 2016).

Overall and at least, adolescents with NSSI can be considered an important group at-risk for developing or already suffering from BPD. Thus, understanding the association between adverse childhood experiences, social relationships and BPD is highly relevant, specifically within the context of adolescents with NSSI-disorder as part of the developmental pathway of BPD.

Adverse childhood experiences and BPD

BPD can be seen as developing against the background of profoundly disturbed interpersonal relationships (Fonagy et al., 2015). Adverse childhood experiences can be considered a risk factor for BPD as well as for NSSI and suicidal behaviour (Infurna et al., 2016; Kaess et al., 2013). There is substantial evidence that adverse childhood experiences, in particular emotional neglect and sexual abuse, are associated with BPD (Infurna et al., 2016; Zanarini et al., 2000; Zanarini et al., 2002). For example, the Children in the Community Study found that documented childhood maltreatment was prospectively associated with a highly increased risk for BPD in young adulthood, even when controlling for symptoms of other personality disorders, age, parental education and parental psychiatric disorders (Johnson, Cohen, Brown, Smailes, & Bernstein, 1999). Lyons-Ruth et al. (2013) suggested that to best account for borderline symptoms, models need to include both abuse experiences and aspects of early parent-infant interactions and that repeated parent-child assessments are needed to fully account for the emergence of BPD.

The precise role of adverse childhood experiences in the etiology of BPD seems not clear, because putative risk factors, such as childhood maltreatment, parental

bonding difficulties, and adverse familial environment, might all contribute to the development of BPD and are often highly intercorrelated. Infurna et al. (2016) found that, although highly correlated among each other, sexual abuse, low care from the mother and negative general functioning remained significant predictors that all independently contributed to BPD development. In addition to the highly correlated adverse childhood experiences, within the literature less attention is paid to the interaction with current social relations. Especially in adolescents, it seems important to not only study specific childhood adversities, but also study these adversities in the context of adolescents' current family and social relations.

Social relations, adverse experiences and BPD

Both inside and outside the family, social interactions and social support are important for the development of personality in young people (Laursen & Collins, 1994). Problems in social functioning and social relations are considered key elements for understanding the course of personality disorders (Paris, 2014). Moreover, Chanen and Kaess (2012) stated that in contrast to the relatively unstable nature of the diagnosis BPD, both in adolescents and in adults, problems in social functioning seem to be relatively stable and may have long-lasting consequences for the individual's functioning.

Findings about whether the social environment, i.e. social support, plays a role in the development of subsequent problems for maltreated children are heterogeneous and contradictory (Infurna et al. 2015) and as far as we know less focused on emerging BPD. Perceived social support is conceptualized as a mediating variable in the relation between childhood physical abuse, sexual abuse, and neglect and developmental achievement (Pepin & Banyard, 2006), posttraumatic stress disorder (Hobfoll & Johnson, 2007) and depression (Seeds, Harkness, & Quilty, 2010). In addition, social relationships seem so be a protective factor for NSSI. In a recent review, Mummé, Mildred and Knight (2016) found that interpersonal factors, such as family support and social connectedness and intrapersonal factors, such as self-esteem and emotional regulation, facilitated the cessation of NSSI, with family support being the predominant interpersonal factor in influencing NSSI cessation.

During adolescence, the source of social support changes: adolescent's feelings of support, closeness, and intimacy with parents decline and at the same time friendships with peers become more intimate, disclosing and supportive (Furman & Buhrmester, 1992). Therefore, we broaden our research question to not only parental support, but also to peer support and the buffering role the two types of support can play. As far as we know, the relation between adverse child experiences

and BPD and the buffering effect of social support has not been studied yet. It is important to be able to distinguish within adolescents with NSSI, those who are at risk for developing BPD, so we will be able to think of appropriate intervention for both these groups of adolescents.

Current Study

The current study aims at increasing our understanding of adverse childhood experiences, current relational functioning and BPD in a sample of self-harming adolescents. Specifically, within a clinical sample of 166 adolescents with NSSI-disorder referred to mental healthcare in Germany, the following research questions will be answered:

1. How are adverse childhood experiences related to BPD in this at-risk group?
2. How is the quality of current relationships with parents and peers related to BPD in this at-risk group?
3. Is the link between adverse childhood experiences and BPD moderated by the quality of current relationships to both parents and peers?

It is hypothesized that more adverse childhood experiences and/or lower quality of current relationships are related to more BPD in self-harming adolescents. Whether the quality of current relationships moderates the link between adverse childhood experiences and BPD will be explored. However, based on previous literature on the buffering effects of social relations it is expected that individuals who report more adverse experiences have less BPD if they report a higher quality of current relationships. Additionally, given the recent shift in the BPD literature from a DSM oriented, categorical approach to a more dimensional, continuous approach, special attention will be paid to the possible additive value of the dimensional, to the traditional categorical approach.

Method

Participants

This study is part of an ongoing clinical cohort study within AtR!Sk (*“Ambulanz für Risikoverhalten und Selbstschädigung”*), an outpatient program for early identification and intervention of BPD at the Department of Child and Adolescent Psychiatry of the University Hospital Heidelberg. The measures for the study were part of the structured clinical assessment at entry to AtR!Sk. Participants seeking help for any

risk-taking and self-harm behaviour within AtR!Sk were recruited consecutively into the AtR!Sk cohort study. Participating in the research meant giving informed consent from both patients and caregivers that the data could be used anonymously for research purposes. The study was approved by the respective Ethics Committee of the Faculty of Medicine. Risk-taking and self-harm was defined as; NSSI; suicidal behaviour, binge drinking, substance misuse, excessive internet or media use, sexual risk-behaviour, as well as impulsive high-risk and delinquent behaviour. The only exclusion criterion was lack of language comprehension. A total of 221 individuals participated in the ATR!Sk cohort study. The mean age of participants was 15 years ($M = 15.07$; $SD = 1.4$, range 11-17), and they were mostly girls (184 girls, 83,3%; 37 boys, 16,7%). For the current study, we included all participants who had injured themselves without suicidal intent on 5 or more days in the last 12 months and therefore, met the criteria of NSSI disorder. This resulted in a sample of 166. However, because of missing data, the sample for the different research variables was 152 (see statistical analyses).

Measures

Nonsuicidal self-injury.

NSSI was operationalized with the German translation of Self-Injurious Thoughts and Behaviors Interview (SITBI; Nock et al., 2007), a structured interview which assesses the presence, frequency, severity, age-of-onset, and other characteristics of NSSI, suicidal ideation, suicide plans, suicide gestures, and suicide attempts. Fischer et al. (2014) found good psychometric properties of the SITBI-G, which were comparable to the original SITBI interview. The interrater reliability was very good (average $k_s = .77-1.00$). Construct validity ranged from moderate to good agreements. For this study, the SITBI was modified in accordance with the DSM-5 criteria. We used the total number of days of engagement in NSSI in the past year. Participants who had injured themselves on 5 or more days met the criteria of NSSI-disorder according to DSM-5 and were included in the further analysis ($N=166$).

Borderline Personality Disorder.

BPD was operationalized according to the BPD scale of the German translation of the SCID-II interview (Wittchen et al., 1997). Interview items are coded using codes of 1=absent or false (a criterion symptom for disorder clearly absent), 2= subthreshold (criterion threshold almost, but not quite met), 3= threshold or true (criterion threshold is met). In the analyses both a dichotomized score for full BPD was used, which reflects 5 or more criteria which met criterion threshold (score 3) and a dimensional scale, which reflected the number of criteria which met the threshold.

Finally, in the multinomial regression we used 3 groups; no BPD (0-2 criteria above threshold); subthreshold BPD (3-4 criteria above threshold) and full BPD (≥ 5 criteria above threshold).

Adverse Childhood Experiences.

Adverse Childhood Experiences were reported retrospectively with a German translation of the Childhood Experiences of Care and Abuse Questionnaire (CECA.Q), which measures adverse childhood experiences in the period prior to age 17 (Bilfucio et al., 1994; translation: Kaess et al., 2011). Physical and sexual abuse are assessed with screening questions, while antipathy and neglect are measured by scales repeated for mother and father independently. We aggregated the scores on parental loss due to death of a parent and separation over a year under the age of 17 years to the factor parental loss. The scores on antipathy, neglect, parental loss, physical abuse by a parent, and sexual abuse were aggregated to one dimension 'Adverse Childhood Experiences', by computing the mean score of the dichotomized variables, when at least 3 items had scores. The German translation of the CECA.Q showed good internal consistency (Cronbach's alpha from 0.86 to 0.93) and adequate test-retest reliability (Cohen's k from 0.78 to 0.93) (Kaess et al, 2011).

Quality of current relationships with parents and peers.

Quality of current relationships with parents and peers were measured with two dimensions from the German translation of the KIDSCREEN-52 (The KIDSCREEN Group Europe, 2006; Gesundheitsfragebogen für Kinder und Jugendliche): Parent relation and home life (examples of questions about the perception of the last week were: 'Have your parents had enough time for you?'; 'Have you been able to talk to your parents when you wanted to?'; Cronbach's alpha: 0.90); and Social Support and Peers (examples of questions were: 'Have you had fun with your friends?'; 'Have you been able to rely on your friends?'; Cronbach's alpha: 0.86). A European survey involving 12 countries (i.e., Austria, Switzerland, Czech Republic, Germany, Greece, Spain, France, Hungary, The Netherlands, Poland, Sweden and the UK) and 22,110 children and adolescents aged between 8 and 18 years of age, showed that this questionnaire is a good cross-cultural measure of health-related quality-of-life assessment for children and adolescents in Europe (Ravens-Sieberer et al., 2005).

Statistical analyses

First, several descriptive statistics will be presented. More specifically, type, severity and frequency of self harm, as well as gender, BPD diagnostic criteria and adverse childhood experiences, age, mean adverse childhood experiences and quality of current relationships with parents and peers, will be presented for the full sample of

patients with NSSI disorder, the subgroup who met the full criteria for BPD and the subgroup who did not meet the full criteria for BPD. Finally, bivariate correlations (using pairwise deletion) were calculated between gender, age, BPD (both categorical, differentiating syndromal BPD (≥ 5 DSM-5 BPD criteria) from subsyndromal (< 5 DSM-5 BPD criteria) BPD, and continuous), adverse childhood experiences, parent relations and social support.

Second, logistic regression was used to predict the dichotomized score for BPD (1 = full BPD, $N=82$; 0 = subsyndromal BPD, $N=70$) by adverse childhood experiences and quality of current relationships in individuals with NSSI disorder ($N = 152$). In this analysis, BPD was regressed in separate blocks. In block 1, adverse childhood experiences were added, in block 2 quality of current relationships with parents and peers, and in block 3 the interaction terms of adverse childhood experiences and respectively quality of current relationships with parents, and with peers. To prevent effects of multicollinearity, one interaction term was added at a time (i.e., first: adverse experiences \times parent relations, second: adverse experiences \times peer relations). Gender and age were taken into account as confounding variables in all analyses prior to adding any of the other variables (block 0).

Third, hierarchical regression analyses were used to examine the link with the same variables as the logistical regression models, but this time regressing the continuous score of BPD criteria. That is, this continuous score was again regressed on gender, age, mean adverse childhood experiences, quality of parent relations, quality of peer relations and the interaction terms (one at a time).

Fourth, post hoc multinomial regression analyses were used to examine whether the same variables as in the previous regression analyses could predict variability in the full BPD group (≥ 5 DSM-5 criteria) versus the group of no BPD (1-2 DSM-5 criteria) or the subthreshold group (3-4 DSM-5 criteria).

Results

Descriptive statistics

Descriptive statistics of age, gender differences and the various research variables as well as the type, severity and frequency of self-harm for the group with BPD and the group who did not meet the criteria for full threshold BPD are shown in Table 5.1. Correlation coefficients for the full sample are reported in Table 5.2. Most important for our research questions, adverse childhood experiences were related to more BPD symptoms (both continuous ($r=.30$, $p<.05$) and categorical ($r=.27$, $p<.05$), whereas quality of current parent and peer relations were not related to either operationalization of BPD.

TABLE 5.1. Descriptives of research variables for the total NSSI disorder sample, BPD and no-BPD Group, respectively.

Research variable	Total sample NSSI disorder (N=166)		BPD (N=93)		No BPD (N=73)	
	N	%	N	%	N	%
Gender (N, % = Female)	151	91.0	90	96.8	61	83.6
	M	SD	M	SD	M	SD
Age	15.04	1.34	15.29	1.29	14.73	1.35
Number of BPD criteria	4.72	2.00	6.16	1.22	2.89	1.10
BPD diagnostic criteria	N	%	N	%	N	%
Fear of abandonment	57	34.3	47	50.5	10	13.7
Unstable relationships	96	57.8	77	82.8	19	26.0
Identity disturbances	64	38.6	55	59.1	9	12.3
Impulsivity	42	25.3	35	37.6	7	9.6
Self harm/Suicidality	164	98.8	93	100.0	71	97.3
Affective instability	118	71.1	88	94.6	30	41.1
Inner emptiness	103	62.0	70	75.3	33	45.2
Inappropriate anger	74	44.6	58	62.4	16	21.9
Paranoia/Dissociation	66	39.8	50	53.8	16	21.9
Adverse Childhood Experiences	N	%	N	%	N	%
Antipathy Mother	64	38.6	43	46.2	21	28.8
Antipathy Father	68	41.0	44	47.3	24	32.9
Neglect Mother	36	21.7	20	21.5	16	21.9
Neglect Father	56	33.7	37	39.8	19	26.0
Parental Loss	54	32.5	33	35.5	21	28.8
Physical Abuse	42	25.3	29	31.2	13	17.8
Sexual Abuse	43	25.9	33	35.5	10	13.7
Current social functioning	M	SD	M	SD	M	SD
Parent Relationship Quality	2.91	1.04	2.82	1.01	3.02	1.08
Peer Relationship Quality	3.10	.94	3.15	.92	3.04	.96
Type of non suicidal self harm	N	%	N	%	N	%
Cut or carve skin	165	99.4	92	98.9	73	100.0
Skin scraping	91	54.8	52	55.9	39	53.4
Wound picking	82	49.4	47	50.5	35	47.9
Skin burning	65	39.2	43	46.2	22	30.1
Deliberate self hitting	54	32.5	33	35.5	21	28.8
Biting	51	30.7	30	32.3	21	28.8
Severity of Self harm	N	%	N	%	N	%
In need for treatment after self harm	44	26.5	31	33.3	13	17.8
Frequency of Self harm	M	SD	M	SD	M	SD
Thoughts on self harm last month	22.35	45.66	26.43	58.97	17.11	16.55
Self harming behaviours last month	9.22	12.71	9.80	14.79	8.49	9.46
Reported reason for self harm	N	%	N	%	N	%
Mental State	138	83.1	77	82.8	61	83.6
Dispute with parents or family	114	68.7	47	50.5	48	65.8
School distress	78	47.0	42	45.2	36	49.3
Dispute with friends	74	44.6	47	50.5	27	37.0
Dispute with best friend	42	25.3	28	30.1	14	19.2
Bullied/eviction	46	27.7	26	28.0	20	27.4

TABLE 5.2. Pearson Correlations between Borderline Personality Disorder and Predictor Variables (N=166).

	1	2	3	4	5	6
1 Gender	-					
2 Age	.05	-				
3 BPD (dimension)	-.23	.29	-			
4 BPD (diagnosis \geq 5 criteria)	-.23	.21	.81	-		
5 Childhood Adverse Experiences	-.09	.06	.30	.27	-	
6 Parent Relationship Quality	.11	-.02	-.15	-.10	-.68	-
7 Peer Relationship Quality	.01	.18	-.06	.06	-.18	.17

Note: **bold** values are significant $p < .01$, *italic* values are significant $p < .05$. N ranges between 148-166.

Main analyses

Categorical approach. A logistic regression was conducted to predict the dichotomized score of BPD (1 = full BPD, 0 = subsyndromal) by adverse childhood experiences and the interpersonal factors (quality of parent and peer relations) as well as the interaction variables as predictors. Model statistics and path estimates are reported in Table 5.3.

Gender and age were taken into account in the first step of the analyses. Findings showed that males were less likely to have BPD than females ($EXP(B) = .15$), and older individuals more likely than younger individuals ($EXP(B) = 1.50$). Results also showed that adolescents who reported more adverse childhood experiences had an increased chance of full BPD, compared to adolescents who experienced less childhood adversity ($EXP(B) = 2.42$). Specifically, with each standard deviation increase in the number of childhood experiences, an individual is 2.42 times more likely to develop full BPD. Together, this model explained 22% of the explained variance (Nagelkerkes $R^2 = .22$). Parent and peer relations were not related to the likelihood of having BPD, and as such, did not significantly contribute to the model (Nagelkerkes $R^2 = .24$). However, the link between adverse childhood experiences and BPD was moderated by parent relations (but not peer relations). That is, adverse childhood experiences showed a slightly stronger association with BPD in the presence of *good* relations with parents ($EXP(B) = 1.81$; Nagelkerkes $R^2 = .24$). This suggests that good parent relations aggravate (in contrast to buffer) the effect of adverse childhood experiences on the likelihood of having full BPD. The strong inverse correlation ($r = -.68$) between childhood adversity and parent relations, however suggests that individuals who experienced more childhood adversity also report low quality of current relations with parents.

TABLE 5.3. Summary of Logistic Regression Analysis for (the cumulative effect of) Adverse Childhood Experiences and Parent as well as Peer Relationship Quality Predicting Categorical Borderline personality disorder (BPD >4 criteria) and Hierarchical Regression Coefficients of the Relationship Between the predicting variables, and Dimensional Borderline Personality Disorder (N=152)

	Categorical BPD				Dimensional BPD			
	B	SE B	EXP(B)	p	B	SE B	β	p
Step 1								
Age	.41	.13	1.50	.002	.47	.11	.31	.000
Gender	-1.87	.69	.15	.006	-1.66	.52	-.24	.002
Step 2								
Age	.41	.14	1.50	.003	.45	.11	.30	.000
Gender	-1.84	.71	.16	.009	-1.50	.50	-.22	.003
Adverse Childhood Experiences	.89	.31	2.42	.004	.85	.24	.26	.001
Step 3								
Age	.39	.14	1.48	.005	.47	.11	.31	.000
Gender	-1.93	.73	.15	.008	-1.55	.50	-.23	.003
Adverse Childhood Experiences	1.37	.44	3.95	.002	1.03	.33	.31	.002
Parent Relationship Quality	.37	.24	1.45	.124	.21	.20	.11	.293
Peer Relationship Quality	.13	.21	1.14	.540	-.16	.17	-.07	.354
Step 4a								
Age	.39	.14	1.48	.005	.48	.11	.32	.000
Gender	-1.93	.73	.15	.008	-1.61	.51	-.24	.002
Adverse Childhood Experiences	1.37	.44	3.95	.002	1.10	.33	.33	.001
Parent Relationship Quality	.37	.25	1.45	.130	.25	.20	.13	.208
Peer Relationship Quality	.13	.21	1.13	.541	-.14	.17	-.06	.410
ACE X Parent Relationship Quality	.59	.30	1.81	.048	.34	.24	.11	.157
Step 4b								
ACE X Peer Relationship Quality	-.01	.35	.99	.971	-.13	.27	-.04	.639

Note: **bold** values are significant $p < .05$. Nagelkerkes $R^2 = .15$ for Step 1; Nagelkerkes $R^2 = .22$ for Step 2; Nagelkerkes $R^2 = .24$ for Step 3; Nagelkerkes $R^2 = .24$ for Step 4; $R^2 = .150$ for Step 1; $R^2 = .214$ for Step 2; $R^2 = .224$ for Step 3; $R^2 = .235$ for Step 4.

Dimensional approach. The hierarchical regression analysis predicting the number of BPD symptoms largely confirmed the findings of the logistic regression analysis. Results showed significant contributions of the confounders gender and age ($F(2, 149) = 13.10, p < .001; R^2 = .150$) and adverse childhood experiences: ($F(3, 148) = 13.47, p < .001; R^2 = .214$), but not of parent and/or peer relations ($F(3, 148) = 13.47, p < .001; R^2 = .214$). Thus, individuals who reported more adverse childhood experiences had more BPD symptoms compared to those with less adverse childhood experiences. Adding the interaction terms to the model did not result in significantly more explained variance. Path estimates are reported in Table 5.3.

The lack of interaction with parent relations seems to contradict the logistic regression analysis demonstrating a moderating effect of parent relations. To clarify this difference, a multinomial regression analysis was conducted to investigate whether the main differences could be explained by the variability in the full BPD

group (≥ 5 DSM-5 criteria) versus the subthreshold group (3-4 DSM-5 criteria) or the no BPD group (1-2 DSM-5 criteria). We compared the three groups within a multinomial regression analyses. Results showed significant effects of age ($\chi^2(2) = 11.89, p = .003$), sex ($\chi^2(2) = 12.72, p = .002$), adverse childhood experiences ($\chi^2(2) = 13.34, p = .001$) and quality of peer relations ($\chi^2(2) = 10.86, p = .004$). No significant effect of quality of parental relations ($\chi^2(2) = 3.73, p = .155$) was found. Also, no effects of the interactions between adverse childhood experiences and quality of parent relations ($\chi^2(2) = 4.82, p = .090$) or between adverse childhood experiences and quality of peer relations ($\chi^2(2) = .54, p = .762$) were found.

The difference between full BPD and subthreshold BPD was predicted by age ($b = -.35$, Wald $\chi^2(1) = 4.78, p = .027$), sex ($b = -1.72$, Wald $\chi^2(1) = 4.60, p = .032$), adverse childhood experiences ($b = -1.42$, Wald $\chi^2(1) = 8.13, p = .004$) and the interaction between adverse childhood experiences and quality of parent relations ($b = -.74$, Wald $\chi^2(1) = 4.77, p = .029$), whereas the differences between full BPD and no BPD were predicted only by sex ($b = -2.95$, Wald $\chi^2(1) = 10.58, p = .001$), age ($b = -.69$, Wald $\chi^2(1) = 8.93, p = .003$) and adverse childhood experiences ($b = -1.88$, Wald $\chi^2(1) = 0.70, p = .007$) and not by the interaction between adverse childhood experiences and quality of parent relations. This suggests that parent relations are of particular importance in the link between childhood adversity and BPD only for those adolescents with full BPD (i.e., ≥ 5 symptoms). A graphic presentation of the interactions between adverse childhood experiences and parent relations in the prediction of the number of BPD criteria (Figure 5.1) again shows that it is particularly the combination of high adversity and *good* parent relations which is related to full BPD compared to subthreshold BPD.

TABLE 5.4 Summary of multinomial regression comparing Adverse Childhood Experiences and Parental as well as Peer Relationship Quality between no BPD (0-2 criteria; N=22), subthreshold BPD (3-4 criteria, N=48 with full BPD (≥ 5 criteria; N=82)

	95% CI for Odds Ratio					
	B	SE B	Lower	Odds Ratio	Upper	p
No versus Full BPD						
Sex	-2.95	0.91	.01	.05	.31	.001
Age	-.69	0.23	.32	.50	.79	.003
Adverse Childhood Experiences	-1.88	0.70	.04	.15	.59	.007
Parent Relationship Quality	-.57	0.38	.27	.56	1.19	.134
Peer Relationship Quality	.66	0.36	.95	1.93	3.92	.067
ACE X Parent Relationship Quality	-.31	0.51	.27	.73	2.00	.544
ACE X Peer Relationship Quality	.29	0.63	.39	1.33	4.57	.647
Subthreshold versus Full BPD						
Sex	-1.72	0.80	.04	.18	.86	.032
Age	-0.35	0.16	.52	.71	.96	.027
Adverse Childhood Experiences	-1.42	0.50	.09	.24	.64	.004
Parent Relationship Quality	-.44	0.28	.37	.65	1.12	.122
Peer Relationship Quality	-.45	0.24	.40	.64	1.02	.059
ACE X Parent Relationship Quality	-.74	0.34	.25	.48	.93	.029
ACE X Peer Relationship Quality	.26	0.39	.61	1.30	2.78	.501

Note: $R^2 = .20$ (Cox & Snell), $.23$ (Nagelkerke). Model $\chi^2(14) = 33.27$, $p = .003$. **Bold** values are significant $p < .05$.

In sum, results suggest that more adverse childhood experiences are related to more BPD. These effects hold both for the logistic regression analysis differentiating between individuals with subsyndromal and full BPD, and for the dimensional approach in which the BPD score reflects the number of BPD symptoms a participant reports. The quality of current relations with parents and peers, and the interaction between adversity and relations with peers were not related to BPD, neither in the logistic nor in the hierarchical regression analysis. However, the quality of current relations with parents moderated the link between adverse childhood experiences and BPD. This effect did not hold in the hierarchical regression analyses, but in follow-up analyses proved to be present only at full BPD compared to subthreshold BPD, showing that the combined effect of adversity and parent relations is particularly relevant in those adolescents with full BPD.

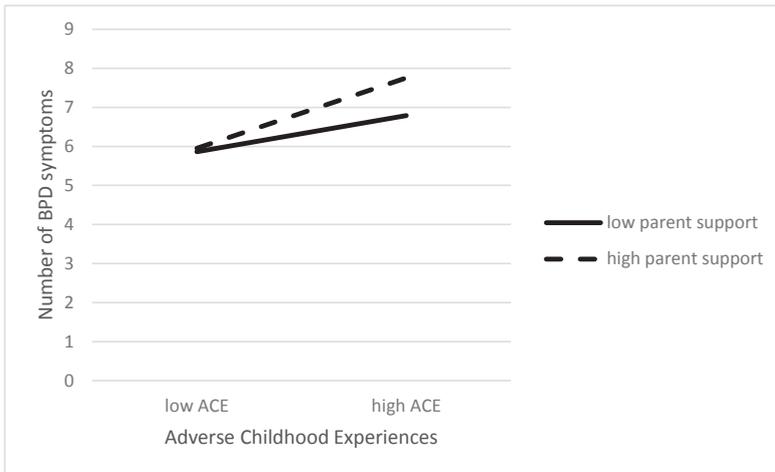


FIGURE 5.1. Interaction between adverse childhood experiences and parent relations in the prediction of the number of BPD criteria.

Discussion

The purpose of this study was to evaluate, in adolescents with nonsuicidal self-injury (NSSI)-disorder, whether (a) adverse childhood experiences were related to BPD, (b) current social relationships with both parents and peers were related to BPD, and (c) a possible relation between the adverse childhood experiences and BPD was moderated (either buffered or aggravated) by current social relations.

Overall, the results provide support for our first hypothesis concerning the relation of adverse childhood experiences and BPD: Adolescents with NSSI-disorder who reported more adverse childhood experiences showed significantly more BPD criteria and more often had full BPD. Our findings were consistent with earlier evidence that adverse childhood experiences were associated with key features of BPD (Infurna et al., 2016; Zanarini et al., 2000; Zanarini et al., 2002). In addition, the findings extend previous research by providing evidence for a link between adverse childhood experiences and BPD in adolescents with NSSI-disorder. Previous findings (Kaess et al., 2013) showed that NSSI per se was linked to some *specific* childhood adversities, but not to be closely linked to adverse childhood experiences *in general*. Our findings demonstrated that adverse childhood adversities in general differentiated BPD from NSSI in adolescents.

The results do not provide support for our second hypothesis concerning associations between current relationships and BPD: no significant relations were found between current parental relationships and peer support and BPD. This is

a somewhat remarkable finding that seems in contrast to the literature (Chanen & Kaess, 2012). The absence of significant associations between BPD and current quality of relations can be interpreted in different ways. First, this might be related to the dominance of specific diagnostic criteria at certain stages of the development (Kaess et al., 2014). More specifically, previous evidence showed that *adults* with BPD frequently report unstable relationships (Kaess et al., 2014), while BPD in *adolescents* is predominantly characterized by impulsive and self-damaging symptoms, such as recurrent self harm and suicidal behaviour (Lawrence, Allen & Chanen, 2011). However, in our sample of adolescents with NSSI disorder, unstable relations as specified criterion in DSM-5 was reported by 82,8% of the full BPD group (versus 26,0% in the no BPD group). Therefore, an alternative explanation could be that quality of parental relations and quality of peer support do not really objectify the criterion unstable relations. It could be the quality of parent relations and peer support do not take fluctuations in perception of the relation into account sufficiently. Second, the lack of link between current parental relationships and peer support and BPD could be interpreted as attachment figures having a greater role in socialization of emotional regulation during the first years of life compared to later developmental periods (Denham, 1998). This is in line with object relations theory, which describes the internalization of early interpersonal experiences forming the building blocks for later reflective and therefore relational functioning (Fonagy & Target, 1997). Third, the instability in relationships of individuals with BPD is characterized by fluctuations between extremes of idealization and devaluation (APA, 2000; APA 2013), which could mean that especially adolescents with BPD might not accurately self-report, and in fact, might report an idealized interpretation of their current peer relationships.

Considering the third hypothesis, the moderating role of current social relations in the link between adverse childhood experiences and BPD, the results show a more differentiated picture. Parent relations, but not peer relations moderated the link between adverse childhood experiences and full vs subthreshold BPD, with particularly the combination of high adversity and *good* parent relationships being related to BPD. This matches the findings that specific childhood adversities mostly take place within a complex context and occur interrelatedly rather than independently (Dong et al., 2004). For example, patients with BPD were found to be more likely than axis II controls to report different kinds of abuse by their caretakers and to report having caretakers deny the validity of their thoughts and feelings, fail to provide them with needed protection, neglect their physical care, withdraw from them emotionally, and treat them inconsistently (Zanarini et al., 2000). Our findings showed that adverse childhood experiences were associated with less quality of parent relations. This implies that adversities might be interpreted as 'the

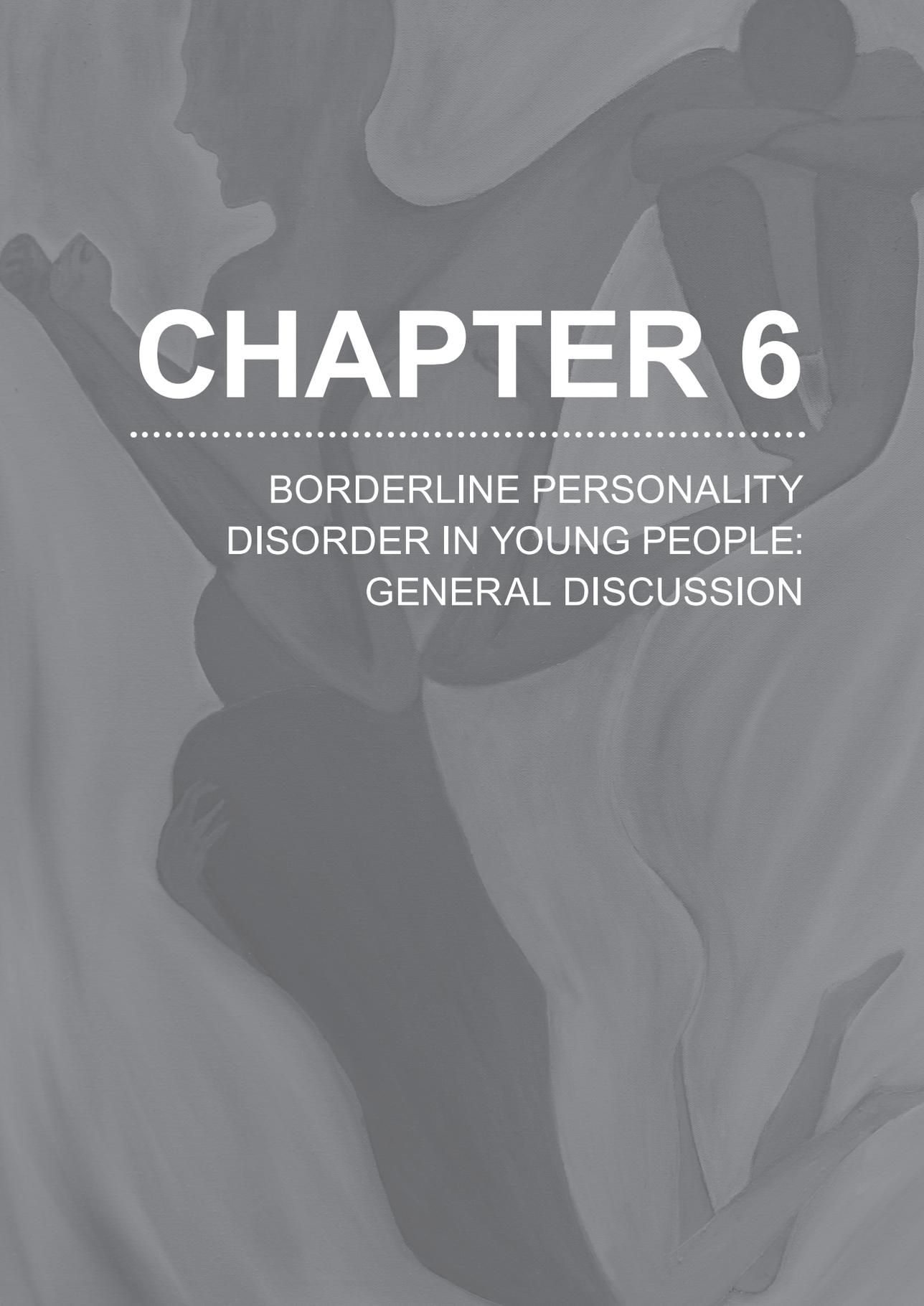
tip of the iceberg' (Lyons-Ruth et al., 2013) indicating a complex context of more pervasive difficulties and other childhood adversities in ongoing family interactions (Bradley et al., 2005; Fassler et al., 2005). However, we found that it is particularly the combination of high adversity and *good* parent relations that was related to BPD. This seems counterintuitive and could be interpreted in different ways. First, in line with the strong negative association between quality of parental relations and adverse childhood experiences, there seemed to be only few participants who were either low on childhood adversity and low on parent relationship quality or high on childhood adversity and high on parent relationship quality. As such these findings should be interpreted with caution. Second, the moderation effect could be interpreted in light of the difficulties in the psychosocial development of adolescents with BPD. Specifically adolescents with BPD, seem to be more dependent of their parents, even when this relationships are more conflicted (Johnson et al., 2004). Therefore, particularly adolescents with BPD might rate the quality of these relations as more positive than they really are. Especially in case of adverse child experiences, adolescents at risk for BPD might develop less autonomy and stay in a more dependent relationship with their parents.

Based on these results we can conclude that in predicting BPD in adolescents with NSSI disorder, childhood adverse experiences have a more profound role compared to current relations. Most likely, this can be explained by early life being the central phase when object relationships are formed (Fonagy & Target, 1997). Additionally, findings suggest that more adverse childhood experiences are related to lower quality of current relations with parents. Current relations were not related to BPD. However, when looking at the link with BPD, *higher* rather than low quality of parental relations seems to be associated with a more negative effect of adverse childhood experiences, instead of the hypothesized buffering effect. These conclusions highlight the need for extending advancements in the developmental trajectories of BPD.

There are two important limitations to this study. A first limitation is the cross-sectional design of the current study, which means that childhood adversity was measured based on retrospective self-report. This can specifically be a problem because the questionnaire we used to measure adverse childhood experiences, focuses on the period prior to age 17. In a sample of adolescents of 12-17 of age, it is difficult to differentiate whether this questionnaire really focuses on *early* childhood experiences or whether the adversities actually overlap with the current relational disturbances. Especially the role of childhood adversities would be important to study in long term follow-up to further investigate how such adversities contribute to long-term outcome with a developmental pathway. The second limitation is the self-report on the quality of relations, which could be biased by the unstable nature

of relationships and fluctuations between idealization and devaluation of their current peer relationships. Multi-informant report on quality of relations, for example also based on parent-report, might contribute to a more valid assessment of the quality of current relations. Despite these limitations, there are several strengths from the findings of the present study. A unique and strong point is the reliance on a consecutive clinical sample of adolescents with NSSI disorder, which allows the findings to be generalized to adolescents being at high-risk for BPD. Furthermore, the thorough assessment of the BPD criteria using semi-structured clinical interview, enabled assessing BPD both dimensionally and categorically, and both as full BPD and subthreshold BPD.

From a clinical perspective, the findings underscore the importance of improving our efforts to prevent childhood adversities, such as abuse and promote healthy family functioning. In addition, it confirms the need for attending to childhood adversities earlier within the developmental course by special attention to early warning signs that may arise from childhood adversities and treatment for the negative outcome of early adversities, such as childhood trauma.



CHAPTER 6

BORDERLINE PERSONALITY
DISORDER IN YOUNG PEOPLE:
GENERAL DISCUSSION

Introduction

In the last two decades, research on borderline personality disorder (BPD) in adolescents has expanded increasingly, reflecting a change within the field from reluctance and avoidance towards making the diagnose under the age of 18 years (Kernberg, 2000), through the discussion about whether or not to make the diagnosis (Chanen & McCutcheon, 2008; Hessels, Van Aken, & Orobio de Castro, 2008) towards recently a more and more developmental perspective considering personality disorders as life span developmental disorders. Risk factors, precursors and the course of the disorder throughout the life span are investigated (Newton-Howes, Clark, & Chanen, 2015). Within this life span perspective, it is essential to understand how personality traits combine with psychosocial factors to influence behaviour patterns, future choices and eventually personality pathology. Both theory and empirical research emphasize that adolescence is a key developmental period within which to study the onset of BPD (Wright et al., 2016), setting the stage for this thesis.

The objective of this thesis was to extent the knowledge on adolescent BPD by furthering the understanding of two transactional patterns which describe how personality both shapes and gets shaped by the social environment (Caspi & Roberts, 2001). The reactive interaction patterns, which describe how adolescents interpret and react to social situations are reflected in this thesis as mentalizing and more specifically, as social information processing (SIP). The proactive interaction patterns, which describe how adolescents form and seek the social context matching their personality, are reflected in the social relationships with both their parents and peers. Both problems in mentalizing and in social relationships are considered as key problems in BPD (Hopwood et al., 2013) as well as key elements for understanding the course of personality disorders (Paris, 2014).

The introductory Chapter 1 provided a theoretical framework for the studies included in this thesis. Chapter 2 described the contribution of normal personality as well as SIP on cluster B personality pathology, showing how both personality dimensions and SIP separately and in interaction play a role in adolescents' cluster B personality pathology. Chapter 3 extended the previous chapter by studying associations between SIP and both cluster B personality pathology in general, and between SIP and antisocial personality disorder (ASPD) and BPD specifically. The study in Chapter 3 provided evidence for difficulties in SIP in adolescents with more severe cluster B personality pathology, with the results painting a picture of ASPD and BPD having a shared background, but specific problems in SIP. Subsequently, regarding the proactive interaction pattern, social relationships with parents and peers were assessed to gain more understanding of the context in which social and identity development take place and personality disorders can emerge. Chapter 4

investigated social relationships with parents and a best friend in relation to BPD. Chapter 5 examined how social relationships with parents and peers can predict who has BPD within a clinical sample of adolescents with nonsuicidal self-harm (NSSI)-disorder.

In the present chapter, Chapter 6, the findings presented in the preceding chapters will be summarized and integrated. First, a comprehensive evaluation of mentalizing or social information processing in relation to cluster B personality pathology is provided. Second, the social relationships with parents and peers in relation to adolescent BPD are evaluated. Subsequently, an analysis of the strengths, limitations and future directions of this thesis is presented. The final part of this chapter discusses the clinical implications and the general conclusions of the findings.

Reactive Interactions: Social Information Processing and Personality Pathology in Adolescents

The first purpose of this thesis was to further the understanding of the relations between mentalizing capacities, in terms of social information processing in adolescents with traits of cluster B personality pathology. The theory of person-environment transactions (Caspi et al., 2002) may elucidate the role of personality in the risk for personality pathology through different transactions, in which mentalizing can be interpreted as a form of reactive interaction between personality and the social environment. Deficiencies in mentalizing, are considered as the core of personality disorders, most notably BPD (Bateman & Fonagy, 2004). In Chapters 2 and 3 the overlap between mentalizing and social information processing was discussed.

The results in Chapter 2 demonstrated that both personality dimensions and social information processing play a role in adolescents' cluster B personality pathology. In Chapter 2 relations between FFM dimensions and cluster B personality pathology were demonstrated. Within the literature both Neuroticism and Agreeableness were found to be the most prominent FFM factors related to personality pathology (Saulsman & Page, 2004). However, the results presented in Chapter 2 showed adolescent patients with higher levels of cluster B personality pathology in general, as well as with higher scores on BPD specifically, had only lower scores on Agreeableness, stressing the social-interactive nature of cluster B personality pathology and BPD in adolescents.

Various relationships between FFM dimensions and SIP variables and between SIP variables and cluster B personality pathology were presented in Chapter 2. Adolescent patients with more severe cluster B personality pathology, and specifically with more severe BPD, showed higher levels of aggressive responses and higher levels of inadequate coping strategies and reported more memories of past frustrating experiences. Although, there was no direct effect of Neuroticism on cluster

B personality pathology, an indirect effect showed that the effect of Neuroticism on cluster B personality pathology and more specifically on BPD was mediated by memories of past frustrating events. These findings are in line with the mentalizing literature, as adolescents with traits of cluster B personality pathology or BPD specifically, can become overwhelmed by memories of past frustrations or trauma and abandon their mentalizing capacities in the present social situation. These findings seem to match two of the person-environment transactional patterns described by Caspi and Roberts (2001). Considering the evocative interaction pattern, which describes how individuals trigger a certain response from people around them, the findings could imply that highly neurotic adolescents trigger more socially frustrating encounters, for example when a person's frequent expressions of upset or worry, produce negative reactions in others, and therefore reinforcing and increasing the original distress (Gallardo-Pujol & Pereda, 2013). However, also the reverse could be the case; adverse life events may lead to increased neuroticism, which would reflect the reactive interaction pattern in line with the theory of person-environment transactions. Löckenhoff, Terracciano, Patriciu, Eaton, and Costa (2009) found that, compared to other adults, people who reported a recent and extremely adverse life event showed increases in the tendency to experience negative affect (neuroticism), especially anger and frustration, compared to baseline levels, while at the same time, they became less likely to cooperate and deescalate in situations of interpersonal conflict. These effects, which were consistent with previous research, suggest that non-normative changes in neuroticism often have their origins in major interpersonal events, such as loss of a loved one (e.g. Laceulle, Nederhof, Karreman, Ormel, & van Aken, 2012) and can be interpreted in the light of the scar model. The scar model was developed to explain the association between adverse events and depression, but it may also provide a theoretical base for the association between adverse social experiences and personality change. It is argued that, analogous to the scar tissue that will never become like normal skin again, people who have experienced an adverse event, will never be the same as before (Laceulle & van Aken, in press), suggesting that stressful life events have a negative influence not only on emotional well-being and interpersonal relationships, but also on the individuals personality traits. The results presented in Chapter 2 could be interpreted in a way that in adolescents, possibly frustrating social situations might have the same effect and might have an effect not only on personality pathology, but maybe also on personality. This could imply that experiencing frustrating social situations might be related to increased neuroticism in adolescents.

From the perspective of the reactive interaction pattern, which describes how different adolescents can interpret and respond differently to the same situation, these results could imply that, compared to less neurotic adolescents, highly neu-

rotic adolescents are more likely to interpret social situations as frustrating or that they are more likely to remember the frustrating situations. This in turn, could be related to the stronger orientation to negative emotional stimuli, previously found in adolescents with BPD (von Ceumern-Lindenstjerna et al., 2010). Although mostly personality traits are considered quite stable, recent empirical findings show that personality is not perfectly stable but can show small changes with age and time. Therefore, it seems plausible that major social environmental influences, and the way they get mentalized have the ability to transform an individual's personality traits, resulting in personality change (Laceulle & Van Aken, in press). Due to the cross sectional nature of our study, no conclusions can be drawn about causation and more research is needed to provide understanding of the direction of these relations.

As presented in Chapter 2 a moderating effect of Agreeableness was found on the relationship between SIP variables and cluster B personality pathology. For adolescent patients high on Agreeableness, the relationship between the SIP variables aggressive and avoidant response and cluster B personality pathology and more specifically BPD, was smaller, but the effect of proactive responses was bigger. This seems to suggest that agreeable adolescents might have additional social and interactional skills that more or less buffer the effect of their social-cognitive impairments. The contributions of FFM and SIP to personality pathology can be considered partly additive. More specifically, the SIP factor 'memories of past frustrating events' was found mediating the effect of personality trait Neuroticism on cluster B personality pathology and additionally, the personality trait Agreeableness was found moderating the relationship between the different response variables in SIP and cluster B personality pathology.

The results in Chapter 3 provide evidence for difficulties in SIP in adolescents with more severe cluster B personality pathology, as the more severe the pathology, the higher the intensity of reported emotions, the more likely adolescents were to choose inadequate coping strategies and aggressive reactions in social situations, the more positively they evaluated aggressive reactions and the more often they reported memories of past frustrating social situations. Moreover, the results seem to paint a picture of ASPD and BPD having a shared background, but each having specific problems in social information processing, with ASPD being more related to inadequate coping strategies, less reflecting on other's motives, and aggressive responses, and BPD being more related to avoidant or prosocial responses and particularly to memories of past frustrating events. This seems in contrast to findings indicating that BPD criteria predicted increases in reactive relational aggression and proactive relational aggression among girls who evinced heightened physiologi-

cal reactivity to stressful peers interactions, as BPD criteria predicted decreases in proactive physical aggression (Banny, Tseng, Murray-Close, Pitula, & Crick, 2014).

Interestingly, the hypothesized relations between cluster B personality pathology and both the ability to interpret actions of others as meaningful based on mental states and the attribution of intent were not found. This was a remarkable finding, as these were the SIP factors that from a theoretical understanding resembled mentalizing capacities the most. As described in Chapter 3, a possible explanation for these counterintuitive findings, is that when theoretical situations within a structured situation are considered, the ability to mentalize is present in adolescents with cluster B personality pathology, but this ability gets abandoned in actual frustrating social situations, when emotional arousal is high and the attention span is more limited (Bateman & Fonagy, 2004). In this light, the correlation of cluster B personality pathology and specifically BPD with memories of past frustrating events was an interesting finding. As mentioned earlier, this could imply that adolescents with cluster B personality pathology have encountered more social frustrating encounters or experience actual social encounters more often as negative or frustrating, which is in line with findings that adolescents with BPD are more oriented to negative emotions (von Ceumern-Lindenstjerna et al., 2010) but also might be related to difficulties in mentalizing in their actual lives. Mentalizing can act as a buffer when other people's behaviour is unexpected or threatening, or when one experiences distressing internal states (Bleiberg, 2001). When mentalizing is impaired, this could mean individuals lose this buffering capacity, leading to more experiences of unexpected or frustrating social encounters.

Overall, based on the findings in the studies reported in Chapter 2 and 3, we can conclude that understanding the processes around mentalizing capacities, in terms of social information processing, can add to a deeper understanding of BPD. Both personality dimensions and social information processing play a role in adolescents' cluster B personality pathology. These contributions can be considered partly additive, partly SIP mediating the effect of personality on personality pathology, and partly personality moderating the relationship between SIP and personality pathology. SIP seems a promising model in differentiating between different cluster B personality disorders, confirming the general assumption that cluster B personality disorders are considered social disorders. Within the interaction of genetic vulnerability and environmental risk, it is important to understand more of how the social environment, both at risk and supportive, becomes mentalized, in order understand the mechanisms that are important in the development of personality pathology.

Proactive interactions: Early and Current Relations and BPD in Adolescents

In addition to the reactive interaction patterns reflected in SIP, also proactive interactions are likely to play a role in adolescent BPD. As both SIP and personality development take place within the context of social relations, a second purpose of this thesis was to provide more understanding of the social relationships of young people with BPD. Adolescence is a time where important developmental tasks in psychosocial functioning are marked by finding a new balance in relationships with parents and the increasing importance of peers (Laursen & Collins, 1994). BPD in adolescents was found to be related to worse relations with family and peers as compared to adolescents with personality disorders or those with no personality disorder (Chanen, Jovev, & Jackson, 2007). Therefore, the studies in the Chapters 4 and 5 focused on adolescents' relationships both with their parents and with a best friend.

The results described in Chapter 4 highlight the importance of negative interactions with parents in BPD in adolescents, as adolescents with more BPD symptoms reported less parental support and more negative interactions with their parents. No significant relations were found between support or negative interactions with a best friend and BPD, neither did the relation between parental conflict and BPD seem to be moderated by best friend support or negative interactions with a best friend. This finding could imply that relations with parents, both support and negative interactions, have a much more profound role for adolescents with BPD. This is a valuable finding, which is important to consider within the psychosocial development of adolescents with BPD. Possibly, young people with (emerging) BPD experience more difficulties to initiate and maintain satisfying relations with peers, which may cause them to be more dependent of the support and contact with family members (Johnson et al., 2004). As family interactions set the stage for young people to separate from the family and to develop the capacity for social functioning outside the family, these processes might more complicated in young people with BPD.

The study described in Chapter 5 aimed to increase the understanding of both early relational problems or adverse childhood experiences, and the quality of current relations with parents and peers and BPD were studied in a sample of adolescents with NSSI-disorder. The results in this study showed that higher levels of BPD were related to increased adverse childhood experiences, but not to current social relations with parents or peers. Given the relatively large effect sizes, these results confirmed the importance of the early adverse social environment. These results were found both within a categorical approach, differentiating between individuals with subsyndromal and full BPD, and for the dimensional approach in which the BPD score reflected the number of BPD symptoms a participant met. Quality of

current social relationships with parents and peers did not show a protecting or buffering effect in the relation between adverse childhood experiences and BPD, with the exception of adolescents with full BPD (within the categorical approach), where a combined effect of adversity and parent relations was found. This effect was not found in the dimensional perspective and proved to be present only at high levels of BPD, showing that the combined effect of adversity and parent relations is particularly relevant in those adolescents with high levels of BPD. As demonstrated in Chapter 5, a remarkable finding was that particularly the combination of high adversity and *good* parent relations was related to BPD, while the combination high adversity and relatively *low* quality parent relations was not related to BPD.

This finding seems counterintuitive and might be related to the strong relation between the quality of parental relations and adverse childhood experiences, leading to only few participants scoring either low on adversity and low on parent relations or high on adversity and high on parent relations. This could imply that adverse childhood experiences differentiate only when young people feel supported with their parents, as childhood adverse experiences, such as abuse and neglect generally do not occur in isolation, but rather the characteristics of the social environment may affect, in either a positive or negative way, outcomes for maltreated children (Bradley, Jenei, & Westen, 2005, Fassler et al. 2005). However, these findings might also be interpreted in light of the psychosocial difficulties in adolescents with BPD, as they might reflect rating these relations as more positive or idealized than they actually are, because of being more dependant of their parents (Johnson et al., 2004), or from a psychodynamic view, as a defensive adaptation or a dissociative response to trauma (Bleiberg, 2001). Findings about whether the social environment, such as social support plays a role in the development of subsequent problems for maltreated children are highly heterogeneous and contradictory. Infurna et al. (2015) found results that indicated that psychopathological outcome in general was associated with a greater presence of negative environmental factors. In particular, the lack of social support seemed to be the most important predictor for adverse mental health outcomes of individuals with a history of adverse childhood experiences. As far as we know, studies about the role of the social environment in adolescent with adverse childhood experiences have not focused on emerging BPD.

Overall, considering social relations in relation to BPD in adolescents, we can conclude that childhood adverse experiences are associated with BPD in adolescents at risk for BPD, such as adolescents with NSSI-disorder. These adverse childhood experiences have a more profound role, compared to their current relations. Considering the current relations, within the literature the interpersonal style of adults with BPD is characterized by a seemingly contradictory combination of intense need for closeness and attention with equally intense fear of rejection and abandonment

(Gunderson & Lyons-Ruth, 2008). Based on the results in Chapter 4 we can conclude that specifically the relations with parents are of importance in relation to BPD, and the results in Chapter 5 seem to suggest that it is particularly the early relational adversities, which cannot be buffered or compensated for later. This might be in line with the conclusion that people with BPD experience more conflicted interactions with those closest to them. In adults for example, different studies suggest that in particular romance is a social domain that uniquely characterizes interpersonal dysfunction in BPD. Stepp, Pilkonis, Yaggi, Morse and Feske (2016) found that although adults with personality disorders spend the same amount of time in social interactions, they interact with fewer people, suggesting that individuals with personality disorders have fewer people to interact with regularly, therefore spending more time with fewer people they are close to. Based on experience sampling data, their results showed that the interpersonal experiences of adults with BPD were characterized by more disagreements, ambivalence, anger, emptiness, and sadness. These experiences were not uniquely associated with any one type of relationship, such as a romantic partner, but seem to characterize interpersonal experiences across all types of relationships, although differences were found that adults with BPD, in contrast to other personality disorders, reported more negative interpersonal experiences, in both romantic and family relationships, while no differences emerged for the experience of negative interpersonal experiences in friendships between the different groups (Stepp et al., 2009). Although as mentioned before, no conclusions on causation can be made based on the findings from the cross-sectional studies in Chapter 4 and 5, the findings could be interpreted within all three transactional patterns, described by Caspi and Robert (2001). First, from the *evocative interaction pattern*, the results could be interpreted as adolescents with BPD triggering more conflict and less support from their parents; Second, from the *reactive interaction pattern* adolescents with BPD could interpret and react differently in parent-child interactions, leading to (the experiencing of) more conflict and less support; Third, from the *proactive interaction pattern*, adolescents with BPD might enact more behaviours which get them into more conflict and less support with their parents.

The findings in the Chapters 4 and 5 were partly consistent and partly contradictory as they did not confirm research findings indicating that parental support is a protective factor for different manifestations of psychopathology (Wills, Resko, Ainette, & Mendoza, 2004) and also specifically for BPD (Whalen et al., 2014), but did confirm that negative interactions are related to BPD and therefore, might be considered a potential risk factor for BPD. In particular adverse childhood experiences and negative interactions with parents were associated to BPD, while we did not find a protective factor in the current parent-child relationships. Cirasola, Hillman, Fonagy, and Chiesa (2017) concluded that based on their findings of unresolved/

disorganized states of mind at least partly mediated associations between childhood adversity and personality disorder or severity of psychopathology, that a lack of resolution of adverse experiences may be an important factor in shaping the developmental pathway in the direction of long-term negative effects that continue into adulthood.

Although we did not study attachment directly, the findings of the studies in Chapters 4 and 5 are consistent with the different theoretical frameworks that describe how attachment insecurity based or the internalization of negative or adverse early interpersonal experiences is proposed to derail later mentalizing, social functioning and BPD, which is the base of Bowlby's attachment theory (1969), but also to the different theoretical frameworks that lie at the base for the current evidence based psychotherapeutic interventions for BPD, such as Linehan's invalidation model (Linehan, 1993), Young's schema-focused model (Young, Klosko, & Weishaar, 2006); Bateman & Fonagy mentalization-based theory (Bateman & Fonagy, 2004) and the procedural sequence object relations model as used in Cognitive Analytic Therapy (Ryle, 1985). Although the current relationships with peers, did not seem to be associated with BPD, the findings presented in Chapters 2 and 3 indicated a crucial role of memories of past frustration social situations with peers which were stored in the database within the SIP model. This could imply that not the quality of current relations with peers, but the impact of frustrating social encounters with peers is related to BPD in adolescents.

As mentioned in the introduction (Chapter 1), this research was also inspired by the three levels of personality as formulated by McAdams and Pals (2006). We used elements of the first level (personality traits) and the second level (social-cognitive processes in terms of social information processing) to design our studies regarding personality traits, social information processing, and interpersonal relationships. It is obvious that our studies do not address the third level, the narratives. The psychosocial construction of the narrative identity moves personality from dispositional traits and characteristic adaptations to daily life demands, to the challenge of making meaning out of one's life in a complex social world (McAdams & Pals, 2006). However, in particular the narrative identity is a difficult concept to objectify as a persons' identity is not to be found in behaviour, nor in the reactions of others, but as an internalized and evolving story of the reconstructed past and the imagined future that can provide the persons' life with some degree of unity, purpose and meaning (McAdams & Pals, 2006). In particular this sense of unity implies that the narrative identity might be related to the enduring and pervasive social dysfunctioning in BPD. Therefore, the narrative identity could be an important future area of study within developmental pathways towards BPD.

Strengths, Limitations and Future Directions

This thesis contributes to a better understanding of personality pathology and specifically BPD in young people. To our knowledge, it includes the first studies that examine associations of BPD and social information processing and relationships with both parents and peers in clinical samples of young people. This means that the severity of cluster B personality pathology and more specifically BPD were assessed in a sample with both psychiatric and psychosocial comorbidity. This is a strength, because personality pathology and BPD are diagnoses in which comorbidity is more the rule than the exception (Chanen & Kaess, 2012). In addition, the samples in these studies hence included not only adolescent patients with BPD, but also patients who did not meet the criteria of full BPD, but were at risk for BPD. This enables generalisation of the results to the general practice of mental health care of young people.

There are limitations to the studies in this thesis that should be noted. First, some findings in this thesis should be regarded with some caution and need to be replicated given the relatively small sample sizes, especially for analyses of mediation in the study described in Chapter 2 and the interaction effects in the studies in Chapters 4 and 5. Second, a methodological limitation of the present thesis is that in the samples we used in the studies described in Chapters 2, 3 and 4, we were not able to operationalize DSM-5 personality disorder traits and psychiatric comorbidity through a structured clinical interview, like the SCID-II (First, Spitzer, Gibbon, & Williams, 1997). This means that in these studies we had to rely on the assessment of the severity of each criterion according the exact formulations of all DSM-IV criteria for personality disorders by a well-trained clinical psychologist or psychiatrist for the Chapters 2 and 3 and relied on self-report considering BPD in Chapter 4. However, given good internal consistencies of both measures, we think they give a valuable indication.

Third, the cross-sectional design applied to the present studies means that strictly speaking no conclusions on causation can be drawn. Although the results in the different studies in this thesis might reflect the transactional process between personality and social factors, both social information processing and social relations, longitudinal data are needed to differentiate the impacts of specific factors within the developmental pathway. To disentangle transactional models, longitudinal data could be analysed with structural equation modelling techniques, to able to formulate specific steps with the developmental pathway of BPD. Fourth, the distinction between what is a feature, versus what is a risk factor or consequence of BPD can be unclear as some symptoms of BPD are in fact defined by the individual's endorsement of being challenged in various social relations (Ro & Clark, 2013). However, despite of overlap or circularity between BPD and interpersonal

or relational difficulties, BPD and psychosocial functional impairment are not the same construct, in a sense that when BPD remits, psychosocial functioning will improve or vice versa (Wright et al., 2016). This has been confirmed in longitudinal studies in adults, where it was shown that although BPD could remit, the psychosocial functioning remained impaired over 2 years (Skodol et al., 2005), and even over the course of 10 (Gunderson et al., 2011) and 16 years (Zanarini et al., 2012). For adolescents specifically poor outcome, including interpersonal problems and reduced quality of life uniquely predicted by BPD, was found up to 2 decades over time (Crawford et al., 2008; Winograd, Cohen, & Chen, 2008).

Fifth, because of the use of different samples, we were not able to investigate direct associations between SIP and the relationships of adolescents with emergent BPD. We are aware of the fact that, by focussing on SIP and on early and current social relations, we did not take other significant and highly relevant contributors to the pathway of BPD into account. The findings in this thesis therefore, should be interpreted in combination with findings that derive from for example genetic components, neurobiological factors, attachment representations and the ongoing family environment as described by parents in order to get a full overview of the factors in the developmental pathway of BPD. For example, attenuated cortisol responses to acute stress was found in adults with BPD (Nater et al., 2010) and adolescents with repetitive NSSI (Kaess et al., 2012), which indicate a specific vulnerability to acute stress, which might have an adverse impact on the interplay between neurobiological systems and the environment, and also might impact both SIP and social relationships. Furthermore, the role that affective instability and impulsivity may have in shaping the interpersonal hypersensitivity (Gunderson & Lyons-Ruth, 2008) also should be considered within the developmental pathway of BPD. This thesis should be considered in light of these limitations.

Nevertheless, we believe that the present results are informative as they provide a first snapshot of the associations between personality, cluster B personality pathology and psychosocial factors that could provide insights to be tested later on in a longitudinal design. We hope the findings in this thesis stimulate further research on the interface between personality, social information processing and social relations to develop an integrative perspective on the development of BPD. To promote a better understanding of the developmental aspects within the life span developmental disorder, longitudinal studies are necessary, to be able to distinguish both the risk factors and protective factors within mentalizing and psychosocial relational functioning and develop interventions appropriate within the life span of BPD. This means that studies should focus not only at the developmental phase of adolescence, but take the whole life span into account. The shift towards a

more developmental psychology view on the life span of BPD, gives direction for a future research agenda (Chanen, 2015; Chanen, Sharp & Hoffman, 2017).

Future studies on personality disorders may wish to incorporate a multimethod approach considering the assessment of personality pathology, which brings the opportunity to compare interview-based data, which is the golden standard with self-report and informer-report (parents, teachers) questionnaire data, which will promote knowledge about the assessment of the diagnosis.

Implications

The findings presented in this theses have several implications for the clinical practice. First of all, the findings in the thesis call for special attention for childhood adverse experiences in children, as factors such as physical or sexual abuse predict BPD in a sample of adolescents who are at risk of developing the diagnosis and these effects seem not be compensated with current relations with parents or peers.

Second, based on the findings in this thesis some recommendations for the assessment procedures of youth mental health care can be made. The findings confirm the transactional interaction processes between cluster B personality pathology and specifically BPD and SIP and social relationships within clinical samples in general youth mental health care, even when not specifically targeted at BPD. Also in general clinical adolescent samples, these transactional processes might hinder or promote psychosocial development and were found to be related to BPD. This implies that it is important to screen for BPD in youth mental health care to be able to detect and offer intervention for BPD. To be able to detect BPD early in the course of the disorder, short and simple screening measures are needed to be able to screen in large samples of young people at risk. However, in addition, more thorough and careful assessment of the three levels of personality development described by McAdams (McAdams & Pals, 2006) are needed to get insight in both personality, BPD and the characteristic adaptations associated to personality and BPD, such as social information processing and social relations. As changes in personality traits, as defined by the five-factor model, seem to be largely followed by changes in BPD, but not vice versa, Leichsenring et al. (2011) stated that clinicians should focus on personality traits associated with personality pathology. These traits, however were found to be more unstable in adults with BPD than in adults with other personality disorders, indicating “stable instability” (Smideberg, 1959; in: Leichsenring et al. 2011). As these traits are associated with social information processing, this implies that when young people are screened ‘at risk for BPD’, careful assessment is needed to be able to get insight in both the risks as well as the possible strengths of individual adolescents and their families. As aspects of social information processing are found to relate with and contribute to personality pathology, both independent

and in relation with normal personality, as well as mediating the effect of personality on personality pathology, it is important to include assessment of mentalizing capacities in the clinical assessment as well, in order to be able to give direction to interventions to promote both social information processing and psychosocial functioning in an early phase of the disorder.

Third, some recommendations can be made concerning the role of psychosocial functioning within assessment and intervention for BPD in adolescents, as explicit attention seems to be necessary to promote both the psychosocial functioning and decrease psychopathology. Based on the important role of the relationships with parents, it seems crucial to include parents both in the assessment phase and in the further treatment of adolescents with personality pathology. Hereby, it seems especially important to not only enhance support from parents, but first of all to try to extenuate conflict between parents and a young person with emerging BPD. It confirms the need for specific attention for parental support and conflict in adolescents and young adults both in research and clinical work. Interventions should focus on promoting healthy family functioning by increasing support and decreasing conflicts with parents in order to encourage the psychosocial functioning outside of the family, such as the functioning in school, jobs and peer relations.

Fourth, as the results in the studies in this thesis confirm the social cognitive and interpersonal core of BPD, this has implications for reflecting upon the treatment of adolescents with BPD as well. Given the fast expanding research regarding treatment of BPD in young people, the results from this thesis need to be interpreted in light of the current knowledge on this topic. Although we know that BPD in young people forms a severe, but treatable diagnosis, as described in Chapter 1 of this thesis, the diagnosis often is delayed, resulting in undertreatment for adolescents with BPD, leading to worse outcomes. The first wave of randomized controlled trials for BPD in adolescents has shown that psychosocial treatment is effective for adolescent with both subthreshold BPD and full BPD, in which structured intervention (Cognitive Analytic Therapy, Good Clinical Care, Mentalization Based Treatment for Adolescents (MBT-A) and Dialectical Behavioural Therapy for Adolescents (DBT-A)) appear to have better results than nonmanualised care as usual. Treatment as usual might result in potentially harmful effects and therefore can be considered as 'nocebo' (Chanen & Thompson, 2014). Furthermore, systematized intervention programs such as Helping Young People Early (HYPE), MBT-A and DBT-A, contain both individual and family components, which might be necessary elements for the superior treatment outcomes. However, it remains unclear what role specific 'brands' of therapy might play in treatment of young people with BPD (Chanen, 2015). There is absence of evidence for pharmacotherapeutic interventions for young people with BPD, although there is some evidence that long-chain omega-3

polyunsaturated fatty acids (PUFA's; fish oil) should be further investigated as a feasible treatment strategy. Although the promising results of psychosocial interventions, low consent and high dropout rates for all of these treatments suggest that accessing these treatments is especially difficult for the people they are tailored for; young people with BPD. The anguish and rage of young people with BPD, can assail clinicians, as they can excel at defeating the efforts of clinicians to help them (Bleiberg, 2001). Moreover, Chanen (2015) suggests that low access to interventions of young people with BPD, might be due to the severity of suicidal behaviour, the chaotic nature of their lives as opposed to the high levels of commitment that often is required in psychosocial treatment. This would mean that it is actually the insufficiently taking into account of the psychosocial nature of BPD in treatment, which is a hampering factor in the access to treatment in young people. When patients are accused as being unmotivated or difficult, it might be that therapists actually do not have enough information on the challenges in the patients' social information processing or their difficulties forming social relations. Besides including these factors within the assessment of BPD, so they can be better taken into account during treatment, it would also be helpful to have people who are important to the young person with BPD involved in the treatment. Parents and other significant people are the most likely ones to have ideas about the psychosocial challenges within relationships, including the therapeutic relationship, and how to cope with them. In addition, psychosocial interventions that help improve the adolescent current social functioning, such as relations with parents and peers might ultimately contribute to remitting BPD symptoms over time (Wright et al., 2016).

These implications for assessment and intervention, would call for describing a clinical-staging model for BPD (Chanen, Berk, & Thompson, 2016), which aids differentiation of early or milder clinical phenomena from those that accompany illness progression and chronicity, and offers guidance in the application of appropriate and proportionate interventions. This would mean that choice of a specific intervention would be based on the severity and persistence of symptoms, the need for care, and the proportionality of any intervention, instead of diagnostic categories. More specifically, this could imply that more simple screening and low entry interventions would be offered for people in the early stages of the disorder, while in later stages of the disorder more thorough assessment and specialised treatment would be offered. This clinical-staging model gives direction to both research, assessment and intervention, which enables early detection of risk factors and more detailed assessment of the developmental aspects which can help to influence the personality development in an adaptive direction in young people. This means that within the life span model, specific attention for the transition from childhood to adulthood is necessary to promote adaptations, such as mentalizing capacities and

healthy relational functioning both within and outside the family, and that arbitrary age restrictions need to be abrogated.

General Conclusions

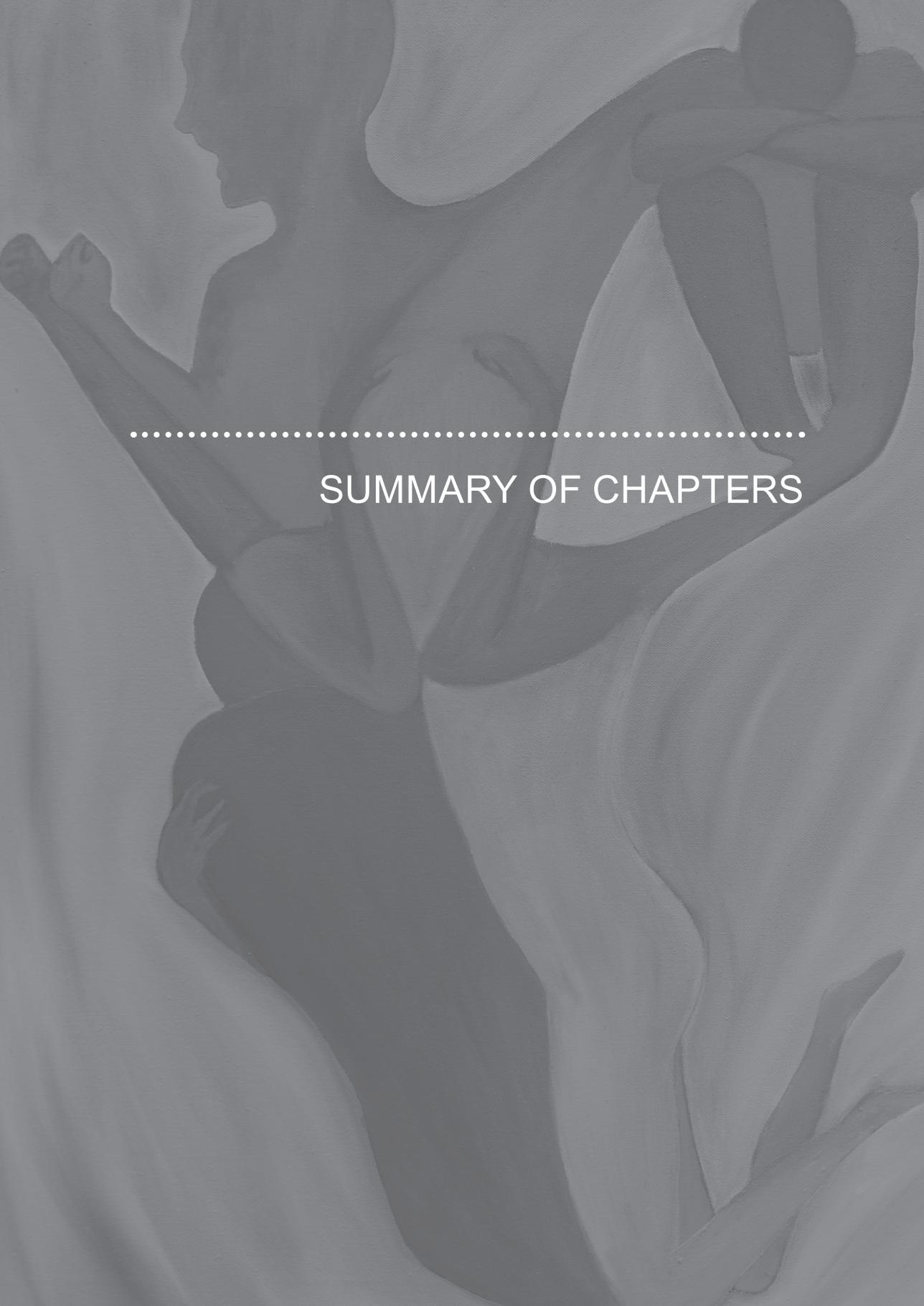
The main conclusion that can be derived from this theses is that both personality and psychosocial factors are important to consider in the understanding of cluster B personality pathology and more specifically BPD. Concerning the *reactive interaction patterns*, the results showed that both personality dimensions and social information processing independently and in interaction with each other play a role in adolescents' cluster B personality pathology, with SIP mediating the effect of personality on personality pathology, and personality moderating the relationship between SIP and personality pathology. Adolescents with more severe cluster B personality pathology showed more difficulties in SIP. Moreover, the results seem to paint a picture of ASPD and BPD having a shared background, but specific problems in SIP, with ASPD being more related to inadequate coping strategies, less reflecting on other's motives, and aggressive responses, and BPD being more related to avoidant or prosocial responses and particularly to memories of past frustrating events.

The ability to interpret actions of others as meaningful based on mental states and the attribution of intent could not be related to cluster B personality pathology within the interview based on theoretical social situations, while memories of actual frustrating social situations was related to cluster B personality pathology and specifically BPD. This could imply that the ability to mentalize although theoretically present in adolescents with cluster B personality pathology, gets abandoned in actual frustrating social situations, when emotional arousal is high and the attention span is more limited (Bateman & Fonagy, 2004). The results could imply that through less adequate SIP, adolescents with more severe cluster B personality pathology and BPD specifically, could get into more maladaptive transactional interaction patterns which then shape their personality pathology further, because they tend to respond with more intense emotions (reactive interaction pattern) and less adequate their coping and responses, which could result in more negative responses from others (evocative interaction pattern). High levels of agreeableness seem to be a protective factor in this.

In addition, considering the *proactive reaction patterns*, the results in this thesis highlight specifically the importance of negative interactions with parents in BPD in adolescents. This could imply that relationships with parents, both support and negative interactions, have a much more profound role for young people with BPD than relations with peers and that negative interactions with parents specifically could form a risk factor for BPD. In adolescents with NSSI-disorder childhood adverse experiences have a more profound role compared to current relations, as this

is the central phase when object relationships are formed and that later relationships have a less profound influence in their development. Quality of current social relationships with parents and peers did not show a protecting or buffering effect in the relation between adverse childhood experiences and BPD, with the exception of adolescents with full BPD. Adverse childhood experiences were strongly related to low quality of relations with parents, which implies that to best account for borderline symptoms, models need to include both abuse experiences and aspects of early parent-infant interactions and that repeated parent-child assessments are needed to fully account for the emergence of BPD (Lyons-Ruth et al., 2013).

Concluding, the results of this thesis add to the understanding of BPD, confirming the interpersonal core of the disorder in adolescence. As adolescence is a crucial phase in psychosocial development, it therefore can be considered as a critical phase for intervention aiming to improve the psychosocial functioning both in their families and the broader context. In order to make optimal use of this critical phase for intervention, in addition to low access screening and intervention in general youth mental health care, a more sophisticated assessment and specialized treatment for those at risk for BPD is necessary. Problems in mentalizing and in social relational functioning need to be explicitly taken into account in the assessment of personality pathology, as well as be a target for intervention within the treatment BPD in young people.



SUMMARY OF CHAPTERS

Summary

Borderline Personality Disorder in Young People: Complexities in Understanding of and Relating to Others

Borderline personality disorder (BPD) is a severe mental disorder that is characterized by a pervasive pattern of instability in affect regulation, impulse control, interpersonal relationships, and self-image. In the past two decades, the research on adolescent personality pathology in general, and BPD specifically, has expanded increasingly, confirming continuity in personality disorders from adolescence to adulthood, in terms of phenomenology, structure, stability, validity and morbidity (Chanen & Thompson, 2014). This knowledge has led to a change within the research and clinical field from reluctance and avoidance of making the diagnose under the age of 18 years (Kernberg, 2000) to a more developmental perspective. Within this developmental perspective BPD is considered as a life span developmental disorder, describing risk factors, precursors and the course of the disorder throughout the life span (Newton-Howes, Clark, & Chanen, 2015). Problems in mentalizing and social relations are considered key problems in BPD (Hopwood et al., 2013) as well as key elements for understanding the course of personality disorders (Paris, 2014). Compared to healthy peers, adolescents with BPD were found to have substantial impairments in their psychosocial functioning (Chanen, Jovev, & Jackson, 2007; Kaess et al., 2013). These impairments seem to be stable over longer time, as BPD in adolescents was found to uniquely predict poor outcomes up to 2 decades into the future, such as BPD diagnosis, increased risk for other mental disorders, interpersonal problems, distress, and reduced quality of life (Crawford et al., 2008; Winograd, Cohen, & Chen, 2008) and have been shown in adults to be remarkably stable and more severe compared with major depression (Gunderson et al., 2011).

However, the underlying mechanisms of BPD in adolescents still remain unclear (Fonagy et al., 2015). The objective of this thesis is to contribute to the understanding of the developmental pathway of BPD by furthering the understanding of the associations between cluster B personality pathology, and more specifically BPD, and the interpersonal functioning during adolescence and young adulthood, as developmental crucial phases for social development. This thesis focuses specifically on mentalizing capacities reflected in social information processing in relation to cluster B personality pathology and the social relationships with parents and peers in relation to BPD.

Social Information Processing and Cluster B personality pathology in adolescents

Chapter 2

The study in Chapter 2 seeks to integrate two research traditions that lie at the base of the understanding of personality pathology in adolescents. The first research tradition refers to normal personality according to the Five Factor Model (FFM). The second tradition specifies the key feature of personality disorders as the capacity to mentalize, which can be reflected in Social Information Processing (SIP). The SIP model (Crick & Dodge, 1994) reflects how children process and respond to social encounters in six steps: encoding and interpreting stimuli, clarifying one's goals, generating ways of responding to cues, and evaluating alternative responses across various domains. For all of these steps, they make use of a 'database' of biologically determined capabilities and past experiences.

In a clinical sample of 96 adolescents, the authors investigated response generation, coping strategy, and memories of past frustrating experiences as part of SIP, as mediator in the relationship between personality and cluster B personality pathology, and a possible moderating role of personality on the relationship between SIP and cluster B personality pathology. The hypothesized mediation, by which the effects of personality dimensions on personality pathology was expected to be mediated by SIP variables, was found only for the effect of Neuroticism, most specifically on BPD, which appeared to be mediated by memories the patients had about past frustrating conflict situations with peers. Some moderating effects of personality on the relationship between SIP variables and personality pathology were found, suggesting that high Agreeableness and sometimes low Neuroticism can buffer this relationship. These results suggest that personality dimensions and social cognitions both independently and together play a role in adolescents' personality pathology.

Chapter 3

The study in Chapter 3 aims to further the understanding of associations between cluster B personality pathology and mentalizing capacities reflected in SIP of adolescents by studying associations between SIP and cluster B personality pathology in general, and in addition by differentiating between severity of specifically BPD and antisocial personality disorder (ASPD). In a clinical sample of 96 adolescent outpatients SIP was assessed with a structured interview and the clinicians completed a checklist based on the DSM-IV, assessing severity of cluster B personality pathology. Significant associations were found between severity of cluster B personality pathology and SIP: the more severe the cluster B personality pathology, the higher the intensity of reported emotions; the more likely adolescents were to choose

inadequate coping strategies and aggressive reactions in social situations; and the more positively they evaluated aggressive reactions. Severity of traits of antisocial personality disorder (ASPD) and BPD had unique associations with distinctive SIP-variables: ASPD being more related to inadequate coping strategies, less reflection on other's motives, and aggressive responses; and BPD being more related to avoidant or prosocial responses and in particular to memories of frustrating events. The results in Chapter 3 provide evidence for difficulties in SIP among adolescents with more severe cluster B personality pathology, and seem to paint a picture of ASPD and BPD having a shared background, but their own specific problems concerning social information processing.

Social relations with parents and peers in young people with BPD

Chapter 4

As psychological mechanisms such as the development of mentalizing capacities develop within the context of social relationships, Chapter 4 aims to contribute to the understanding of the associations between social relationships and BPD in young people. In adolescents, the emergence of BPD can interfere with developmental tasks within social relationships. In turn, social relationships can influence the development of BPD. Within a clinical sample of 123 adolescents and young adults relations between BPD symptoms and both support and negative interactions with parents and best friends were investigated. Findings showed that adolescents with more BPD symptoms experienced less parental support and more negative interactions with parents. Multiple regression analyses demonstrated that, experienced negative interactions with parents - but not with best friends - are related to symptoms of BPD. Relationships with best friends did not buffer or reinforce the effect of negative interactions with parents. These findings highlight the importance of parental relationships in adolescents with BPD. The absence of significant associations between BPD and relational factors with a best friend are discussed in Chapter 4.

Chapter 5

As BPD is progressively considered to be a lifespan developmental disorder, we need to distinguish the risk factors and precursors within the developmental pathways to BPD in order to be able to develop early detection and intervention. In this pathway, both early relational factors such as adverse childhood experiences and current relational problems are considered important. Because nonsuicidal self-harm (NSSI) seems to be a key precursor of BPD, the study in Chapter 5 used a clinical sample of 166 adolescents with NSSI disorder referred to mental health care in Germany.

It was investigated whether we can predict who has BPD based on two relational factors; 1) adverse childhood experiences; and 2) the quality of current relations, both in parents and peers. Among adolescents with NSSI disorder, higher levels of BPD were related to increased adverse childhood experiences, but not to current social relations. Current social relationships with parent and peers did not show a protecting or buffering effect in the relation between adverse childhood experiences and BPD, with the exception of adolescents with full BPD, where a combined effect of adversity and parent relations was found. These results highlight the need for extending advancements in the developmental trajectories of BPD.

Chapter 6: Conclusions and Implications

The closing chapter provides a comprehensive evaluation of (1) the associations between social information processing and cluster B personality pathology in general and BPD in specific and (2) the associations between social relationships and BPD. In view of the objectives of this thesis, the results of the previous chapters and the current literature are integrated, indicating that several aspects of social information processing seem to contribute to the understanding of cluster B personality pathology in general and BPD specifically. In addition, the relations with parents, and more specifically negative interactions with parents have a profound role in adolescents with BPD. These relations with parents cannot be compensated for nor buffered by relations with a best friend, indicating that parental relations set the stage for psychosocial relations more in general. This was also found in the associations between BPD and adverse childhood experiences, which however adverse childhood experiences were highly correlated with current relations with parents, they could not be compensated for by current relations with parents and peers. The strengths and limitations of the thesis are discussed, as well as its implications for clinical practice and future research. Possible directions for future studies are highlighted, including the need for longitudinal research studying the developmental trajectories of personality traits in interaction with the social environment, into borderline personality disorder.



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SAMENVATTING
(SUMMARY IN DUTCH)

Samenvatting

Borderline Persoonlijkheidsstoornissen bij Jongeren; Problemen in het Begrijpen van en Omgaan met Anderen

Borderline persoonlijkheidsstoornis (BPS) is een ernstige psychische stoornis die wordt gekenmerkt door een pervasief patroon van instabiliteit in de affect regulatie, de impuls controle, de interpersoonlijke relaties en het zelfbeeld. Adolescenten met een BPS hebben veelal last van hevige emoties die sterk kunnen wisselen. Ze kunnen impulsief en soms zelfdestructief gedrag laten zien, zoals excessief alcohol of drugs gebruik, seksueel risicovol gedrag, automutilatie of suïcidepogingen. Soms kunnen ze zich op grond van intense verlatingsangst enorm vastklampen aan anderen, intense relaties aangaan, welke ook weer plotseling kunnen eindigen. BPS bij adolescenten vormt een stoornis waarover lange tijd controverse en terughoudendheid heeft bestaan. In de afgelopen twee decennia heeft het wetenschappelijk onderzoek gericht op persoonlijkheidspathologie bij adolescenten in het algemeen en BPS in het bijzonder een enorme vlucht genomen. Dit heeft geleid tot een aantal belangrijke bevindingen. Zo weten we inmiddels dat persoonlijkheidsstoornissen onder het achttiende levensjaar net zo betrouwbaar en valide vast te stellen zijn als in de volwassenheid. Daarnaast weten we dat BPS ook in een vroeg stadium van het verloop van de stoornis betrouwbaar gediagnosticeerd kan worden (Chanen & McCutcheon, 2013). Verder laten onderzoeksresultaten flexibiliteit en beïnvloedbaarheid zien van BPS trekken bij jongeren, wat maakt dat de adolescentie en jonge volwassenheid de belangrijke momenten zijn om te interveniëren. Om dit goed te kunnen doen, is het belangrijk BPS te signaleren en te diagnosticeren. Het niet stellen van de diagnose, kan leiden tot overbehandeling met psychotropische medicatie, overmatige opnames of crisisinterventies (Beckwith, Moran en Reilly, 2014), waarmee er een risico op iatrogene schade door behandeling bestaat.

De toegenomen kennis heeft bij zowel wetenschappers als klinici geleid tot een verandering van de eerdere terughoudendheid en vermijding van het diagnosticeren van BPS onder het achttiende levensjaar (Kernberg, 2000) naar een meer ontwikkelingsperspectief. Binnen dit ontwikkelingsperspectief worden persoonlijkheidsstoornissen gezien als stoornissen die zich ontwikkelen binnen de levensloop, waarbij risicofactoren, precursors en het beloop van de stoornis door de levensloop heen beschreven worden (Newton-Howes, Clark, & Chanen, 2015).

Binnen de levensloop van BPS heeft de interactie tussen persoonskenmerken en de sociale omgeving een belangrijke rol. Vergeleken met gezonde leeftijdgenoten, hebben adolescenten met BPS substantiële tekortkomingen in hun psychosociaal functioneren (Chanen, Jovev, & Jackson, 2007; Kaess et al., 2013). Deze tekortkomingen lijken stabiel te zijn over langere tijd. Zo werd gevonden dat BPS

bij adolescenten een unieke voorspeller was voor een slechtere prognose tot 20 jaar later, zoals bleek uit een verhoogd risico op een diagnose BPS of andere psychische stoornissen, maar ook op interpersoonlijke problemen, lijdenslast en een verminderde kwaliteit van leven (Crawford et al., 2008; Winograd, Cohen, & Chen, 2008). Zeker tijdens de adolescentie, waarin de sociale ontwikkeling zo centraal staat, is de wederkerige beïnvloeding tussen persoonlijkheid en sociale context van belang. Deze wederkerigheid bestaat eruit dat de sociale context de persoonlijkheidsontwikkeling van de adolescent beïnvloedt, maar daartegenover staat dat adolescenten zelf een belangrijke rol spelen in het kiezen en vormen van hun sociale omgeving. In dit proefschrift wordt stilgestaan bij twee processen die van belang zijn in de wederkerige relatie tussen persoonlijkheid en omgeving, namelijk mentaliseren en sociale relaties, bij cluster B persoonlijkheidspathologie en meer specifiek borderline persoonlijkheidsstoornis bij adolescenten.

Mentaliseren of sociale informatieverwerking

Problemen in mentaliseren en in sociale relaties worden als kernproblemen in BPS gezien (Hopwood et al., 2013), en daarnaast worden zij als cruciaal beschouwd voor het begrijpen van het beloop van persoonlijkheidsstoornissen (Paris, 2014). Mentaliseren kan omschreven worden als het vermogen om het eigen doen en laten én dat van anderen te begrijpen vanuit mentale fenomenen, zoals gevoelens, gedachten, verlangens, bedoelingen. Binnen de theorievorming van mentaliseren (Bateman & Fonagy, 2004) wordt er vanuit gegaan dat mensen met BPS dit vermogen onder hoge spanning sneller verliezen en hierdoor terugvallen in primitievere ervaringswijzen, zoals bijvoorbeeld zwart-wit denken. Specifiek bij adolescenten werden problemen door overinterpreteren (*hypermentalizing*) in plaats van tekorten of afname van mentaliseren gevonden (Sharp en anderen, 2011). Hoewel het begrip mentaliseren een centrale rol inneemt in de klinische praktijk en theorievorming, is het een moeilijk begrip om te objectiveren en specificeren (Choi-Kain & Gunderson, 2008). In de onderzoeken die worden gepresenteerd in de Hoofdstukken 2 en 3 wordt getracht mentaliseren te objectiveren met het sociale informatieverwerkingsmodel (*Social Information Processing* (SIP); Crick & Dodge, 1994) en zijn de associaties van SIP met persoonlijkheidsfactoren en cluster B persoonlijkheidspathologie en meer specifiek BPS onderzocht.

Sociale Relaties

Processen als mentaliseren vinden plaats binnen de context van sociale relaties. Zowel binnen als buiten de context van het gezin, zijn sociale interacties en relaties belangrijk voor de persoonlijkheidsontwikkeling van jonge mensen, aangezien veel van de ontwikkelingstaken van de adolescentie plaatsvinden binnen sociale

relaties. Hierbij kan men denken aan het leren vormgeven van vriendschappen en relaties, een nieuw evenwicht in de relatie met ouders bereiken en meer zelfstandig keuzes maken op het gebied van school, werk en wonen. Bij adolescenten, kan de ontwikkeling van BPS deze ontwikkelingstaken binnen sociale relaties in de weg staan, maar ook het omgekeerde is voorstelbaar: sociale relaties kunnen de ontwikkeling van BPS beïnvloeden. In de onderzoeken gepresenteerd in de Hoofdstukken 4 en 5 zijn associaties tussen BPS en de relaties met ouders en vrienden onderzocht.

Doel van dit proefschrift

Ondanks de toegenomen kennis, is er nog veel onduidelijk over de onderliggende mechanismen bij BPS bij adolescenten (Fonagy et al., 2015). De doelstelling van dit proefschrift is om bij te dragen aan het begrip van het ontwikkelingsverloop van BPS door de relatie tussen cluster B persoonlijkheidspathologie in het algemeen en BPS in het bijzonder met het interpersoonlijk functioneren tijdens de adolescentie en jonge volwassenheid te onderzoeken. Hierbij gaat dit proefschrift ten eerste specifiek in op het vermogen te mentaliseren en ten tweede op de sociale relaties met ouders en vrienden. Een eerste doel van dit proefschrift is dan ook het beter begrijpen welke facetten van mentaliseren een rol spelen bij cluster B persoonlijkheidspathologie bij adolescenten. Om verschillende facetten van mentaliseren te onderscheiden en te objectiveren, is hierbij gebruik gemaakt van het sociale informatieverwerkingsmodel van Crick en Dodge (1994). Een tweede doel van dit proefschrift is het beter begrijpen van de verbanden tussen BPS en de sociale relaties met ouders en met vrienden of vriendinnen.

In Hoofdstuk 1 wordt een theoretische inleiding op het onderwerp van dit proefschrift geboden, waarbij meer specifiek de wederkerige transacties tussen persoonlijkheid en sociale context die relevant zijn voor de ontwikkeling van cluster B persoonlijkheidspathologie en meer specifiek BPS bij adolescenten wordt beschreven. In Hoofdstuk 2 en 3 wordt de sociale informatieverwerking bij adolescenten in de leeftijd 12 tot 18 jaar die zijn aangemeld in de specialistische jeugd-GGZ onderzocht. In Hoofdstuk 4 en 5 worden de sociale relaties van adolescenten en jongvolwassenen met symptomen van BPS onderzocht. Tenslotte, worden in Hoofdstuk 6 op basis van de inzichten verkregen uit de eerdere hoofdstukken antwoorden gegeven op de onderzoeksvragen uit het eerste hoofdstuk.

Sociale Informatieverwerking en Cluster B persoonlijkheidspathologie bij adolescenten

Het onderzoek beschreven in Hoofdstuk 2 heeft als doel om twee onderzoekstradities te integreren die beide van belang zijn voor het begrijpen van persoonlijkheidspathologie bij adolescenten. De eerste onderzoekstraditie richt zich op de normale persoonlijkheid, zoals beschreven in het '*Five Factor Model*' (FFM). De tweede onder-

zoekstraditie richt zich op het vermogen tot mentaliseren, zoals beschreven in het sociale informatieverwerkingsmodel (SIP). In dit SIP-model (Crick & Dodge, 1994) wordt beschreven hoe kinderen sociale situaties verwerken en hierop reageren. Dit gebeurt in 6 stappen; het opmerken en vervolgens interpreteren van sociale stimuli, het ontwikkelen van mogelijke responsen voor de situatie, het wegen en selecteren van een respons en deze omzetten naar concreet gedrag. Al deze stappen hangen samen met een database van mogelijkheden en eerdere ervaringen en daarnaast met de emoties die een rol spelen tijdens de sociale situatie. In een klinische steekproef van 96 adolescenten werden verschillende facetten binnen het SIP-model door middel van een gestructureerd interview onderzocht, zoals respons generatie, coping strategie en de herinnering aan eerdere frustrerende sociale situaties. Deze facetten werden onderzocht als mediator in de relatie tussen persoonlijkheid en cluster B persoonlijkheidspathologie. Daarnaast werd de mogelijk modererende rol van persoonlijkheid op de associatie tussen SIP en persoonlijkheidspathologie onderzocht. De verwachte mediatie, waarvan het effect van persoonlijkheidsdimensies op cluster B persoonlijkheidspathologie werd gemedieerd door SIP variabelen, werd alleen gevonden voor het effect van Neuroticisme, vooral voor BPS dat werd gemedieerd door herinneringen aan eerder frustrerende sociale situaties met leeftijdgenoten. Er zijn enkele modererende effecten van persoonlijkheid op de relatie tussen SIP variabelen en cluster B persoonlijkheidspathologie gevonden, die wijzen dat een hoge mate van Vriendelijkheid en in sommige gevallen een lage mate van Neuroticisme deze relatie kan verzachten of compenseren. De resultaten in Hoofdstuk 2 suggereren dat persoonlijkheidsdimensies en sociale informatieverwerking zowel onafhankelijk als samen een rol spelen in cluster B persoonlijkheidspathologie bij adolescenten.

De studie beschreven in Hoofdstuk 3 is gericht op de verdere verdieping van het begrip van de associaties tussen cluster B persoonlijkheidspathologie en mentaliseren zoals beschreven in sociale informatieverwerking. In deze studie is gekeken naar de associaties tussen SIP en cluster B persoonlijkheidspathologie in het algemeen en daarnaast is er meer specifiek gekeken naar het onderscheid tussen de ernst van BPS en antisociale persoonlijkheidsstoornis (ASPS). In een klinische steekproef van 96 adolescenten werd SIP vastgesteld met een gestructureerd interview. Daarnaast rapporteerde de psychiater of klinisch psycholoog die verantwoordelijk was voor de diagnostiek, de ernst van de cluster B persoonlijkheidspathologie op een checklist op basis van de DSM-IV kenmerken. De ernst van cluster B persoonlijkheidspathologie bleek significant samen te hangen met SIP; hoe ernstiger de cluster B persoonlijkheidspathologie, des te hoger de intensiteit van de gerapporteerde emoties, des te waarschijnlijker adolescenten een inadequate coping strategie en agressieve response kozen in sociale situaties en hoe positiever zij agressieve reac-

ties evalueerden. Daarbij hadden ASPS en BPS elk unieke associaties met specifieke SIP variabelen. ASPS was meer gerelateerd aan inadequate coping strategieën, verminderde reflectie op de beweegredenen van een ander en agressieve reacties. BPS daarentegen was meer gerelateerd aan vermijdende en prosociale reacties en vooral aan herinneringen aan eerdere frustrerende sociale situaties met leeftijdgenoten. De resultaten zoals beschreven in Hoofdstuk 3 bieden ondersteuning van problemen in SIP bij adolescenten met meer ernstige cluster B persoonlijkheidspathologie en impliceren een gezamenlijke achtergrond voor ASPS en BPS, waarin beide stoornissen elk hun specifieke problemen in sociale informatieverwerking hebben.

Sociale relaties en Borderline persoonlijkheidsstoornissen bij jonge mensen

De studie beschreven in Hoofdstuk 4 richt zich op de associaties tussen symptomen van BPS en zowel steun als negatieve interacties met ouders en met een beste vriend of vriendin binnen een klinische steekproef van 123 adolescenten en jongvolwassenen in de specialistische GGZ. De resultaten laten zien dat adolescenten met meer kenmerken van BPS, minder ouderlijke steun en meer negatieve interacties met hun ouders rapporteerden. Met multiple regressie analyses werd een relatie aangetoond tussen het ervaren van negatieve interacties met ouders en symptomen van BPS. Deze relatie met BPS werd niet gevonden voor negatieve interacties met een beste vriend of vriendin. Daarbij werd gevonden dat relaties met een beste vriend of vriendin geen buffer of bekrachtigend effect hadden op de associatie tussen BPS en negatieve interacties met ouders. Deze bevindingen ondersteunen het belang van ouderlijke relaties voor adolescenten met symptomen van BPS.

Binnen de ontwikkelingspsychologische visie op BPS zijn zowel vroege relationele aspecten, zoals negatieve jeugdervaringen als de huidige relaties van belang om vroege detectie en interventie mogelijk te maken. Automutilatie wordt beschreven als een vroege voorloper in het beloop van BPS. Omdat er een duidelijke overlap is tussen automutilatie en BPS, maar er tegelijkertijd veel jonge mensen zijn die wel regelmatig automutileren, terwijl ze niet voldoen aan de diagnostische criteria van BPS, is er in de DSM-5 een nieuwe stoornis opgenomen die regelmatige automutilatie beschrijft; *nonsuicidal self harm (NSSI) disorder*. In hoofdstuk 5 wordt een studie beschreven naar de relationele aspecten bij 166 adolescenten met NSSI-disorder verwezen naar de jeugd GGZ in Duitsland. Onderzocht werd of het mogelijk was binnen deze doelgroep te voorspellen wie er aan de criteria BPS voldeed op basis van twee relationele factoren; 1) negatieve jeugdervaringen; en 2) de kwaliteit van huidige relaties, zowel met ouders als met leeftijdgenoten. Binnen de steekproef van adolescenten met NSSI-disorder, waren hogere niveaus van BPS gerelateerd aan meer negatieve jeugdervaringen, maar niet aan de kwaliteit van huidige re-

laties. Huidige relaties met ouders en leeftijdgenoten boden geen beschermend of buffer effect voor de associaties tussen negatieve jeugdervaringen en BPS, met uitzondering van adolescenten die voldeden aan de volledige classificatie BPS, bij wie een gecombineerd effect van negatieve jeugdervaringen en relaties met ouders werd gevonden.

De bevindingen beschreven in Hoofdstuk 4 en 5 onderstrepen het belang van ouderlijke relaties, waarbij vooral sociale negatieve jeugdervaringen een rol lijken te spelen bij adolescenten met BPS. Voor een meer volledig begrip van het ontwikkelingsverloop van BPS is longitudinaal onderzoek nodig, dat zich richt op hoe BPS zich in relatie tot vroege en huidige sociale relaties ontwikkeld.

Conclusies

Dit proefschrift draagt bij aan de kennis over cluster B persoonlijkheidspathologie in het algemeen en borderline persoonlijkheidsstoornis in het bijzonder. Diverse aspecten van sociale informatieverwerking spelen een rol bij cluster B persoonlijkheidspathologie, zoals de intensiteit van de gerapporteerde emoties, inadequate coping strategieën en (het positief evalueren van) agressieve responsen. Specifiek voor BPS lijken vermijdende en prosociale reacties en vooral herinneringen aan eerdere frustrerende sociale situaties met leeftijdgenoten een rol te spelen. Daarnaast wordt bevestigd hoe belangrijk de relaties met ouders zijn in de samenhang tot BPS. Hierbij is met name de rol van negatieve interacties met ouders van belang, een effect dat niet kan worden gecompenseerd of verminderd door relaties met een beste vriend of vriendin. Dit lijkt te bevestigen dat de relaties met ouders de basis vormen voor het aangaan van sociale relaties in het algemeen. Dit vonden we ook terug in de associaties tussen BPS en negatieve jeugdervaringen, zoals misbruik, mishandeling en verwaarlozing. Hoewel deze negatieve jeugdervaringen sterk samenhangen met de huidige kwaliteit van relaties met ouders, konden deze niet gecompenseerd worden door de huidige relaties zowel met ouders als met leeftijdgenoten.

Implicaties

Voor toekomstig onderzoek, kan op basis van dit proefschrift de aanbeveling gedaan worden voor longitudinaal onderzoek dat zich niet alleen beperkt tot de leeftijdsfase van de adolescentie, maar het ontwikkelingsverloop onderzoekt waarin persoonlijkheidskenmerken in interactie met de sociale omgeving zich kan ontwikkelen tot een borderline persoonlijkheidsstoornis. Daarnaast zou het voor toekomstig onderzoek waardevol zijn om van meerdere informanten gebruik te maken, zoals behalve de adolescenten zelf, ook ouders en leerkrachten. Dit zou kunnen leiden tot een meer compleet begrip van het ontwikkelingsverloop en

daarmee ingang bieden voor interventies passend bij de ontwikkelingsfase van de adolescent evenals de fase van de stoornis op dat specifieke moment.

Voor de klinische praktijk heeft dit proefschrift verschillende implicaties. Allereerst, vormt deze thesis een duidelijke bevestiging van het belang om aandacht te hebben voor het voorkomen van negatieve jeugdervaringen, aangezien deze in een steekproef van adolescenten die regelmatig automutileren voorspellend zijn voor BPS en dat dit effect niet lijkt te kunnen worden gecompenseerd binnen de huidige relaties met ouders of leeftijdgenoten.

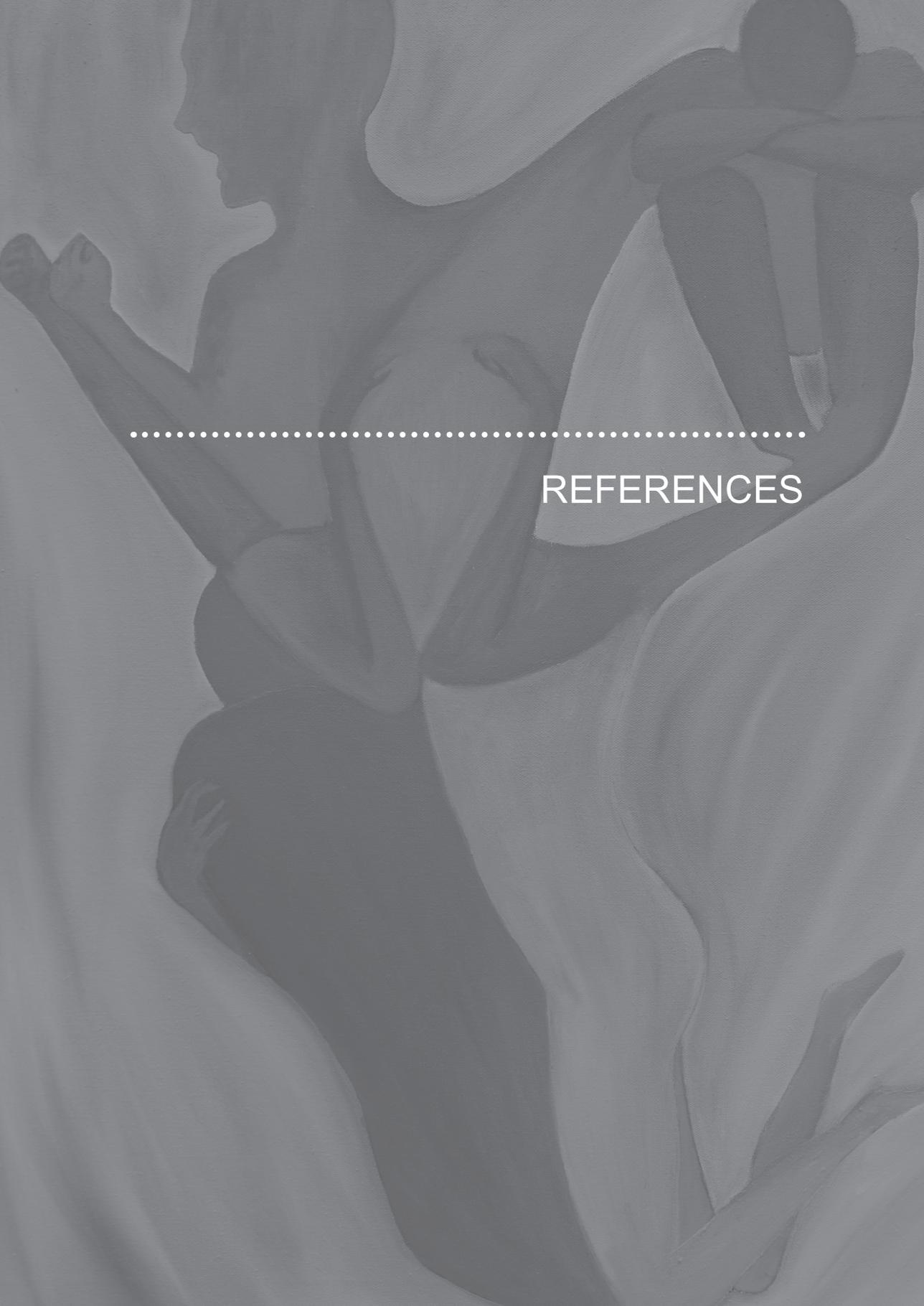
Ten tweede impliceren de gevonden verbanden tussen Cluster B persoonlijkheidspathologie en meer specifiek BPS enerzijds en de sociale informatieverwerking en sociale relaties anderzijds binnen de brede specialistische GGZ, dat het van cruciaal belang is om aandacht te hebben voor de screening van BPS. Daarnaast is van het belang om specifiek bij adolescenten met risico op BPS specialistische diagnostiek te doen, waarin aandacht is voor de sociale informatieverwerking en de sociale relaties, zodat gerichte interventies kunnen worden ingezet ter bevordering van het psychosociaal functioneren.

Ten derde, lijken de bevindingen de noodzaak van specifieke aandacht voor het psychosociaal functioneren van adolescenten behalve in diagnostiek, ook in behandeling te onderstrepen. Gezien de bevestiging van het belang van ouderlijke relationele factoren, en de wijdverbreide inzichten dat de relaties met ouders de basis vormen voor de verdere psychosociale ontwikkeling van jongeren met kenmerken van BPS, is het van groot belang om ouders actief te betrekken in zowel de diagnostiek als de behandeling. Op deze manier kan er meer gericht aandacht zijn om een gezond psychosociaal functioneren in het gezin te bevorderen, en kunnen ouders begeleid worden in het ondersteunen van het functioneren van de adolescent buiten het gezin, zoals op school, werk of relaties met leeftijdgenoten.

Een vierde implicatie is dat de bevindingen in dit proefschrift aandacht vragen voor de sociale factoren die een rol spelen bij het aangaan en volhouden van behandeling. Ondanks dat de resultaten van wetenschappelijk onderzochte behandelingen veelbelovend zijn, lijkt het dat deze juist voor jongeren met BPS moeilijk toegankelijk zijn, waardoor zij vaak de specialistische GGZ niet bereiken, maar ook vroegtijdig hun behandeling stoppen zonder voldoende resultaat. Dit lijkt samen te hangen met de chaotische en impulsieve aspecten passend bij BPS, die in contrast staan tot de hoge eisen die gesteld worden aan behandeling, waarbij bijvoorbeeld wekelijks op een afspraak komen en het hanteren van afstand/nabijheid in de therapeutische relatie veel gevraagd kan zijn. Wanneer patiënten als moeilijk of ongemotiveerd worden gezien, zou het ook zo kunnen zijn dat er onvoldoende rekening gehouden wordt met hun problemen in de sociale informatieverwerking of in het relationeel functioneren.

Door de wederkerige interactie tussen de adolescent en de sociale omgeving gedurende het beloop van BPS in kaart te brengen, kan er binnen de verschillende fases in het beloop van de stoornis zicht gekregen worden op welke interventies nodig zijn om het beloop van de stoornis eerder te kunnen beïnvloeden. Hierbij zou een model van *clinical staging* richting kunnen geven aan de keuze en intensiteit van interventies in de klinische praktijk, maar ook de toegang tot psychotherapeutische behandeling voor adolescenten met BPS kan verbeteren.

Concluderend, de resultaten beschreven in deze thesis dragen bij aan de kennis van BPS, en onderstrepen het interpersoonlijke karakter van de stoornis. Omdat adolescentie een cruciale fase is in de psychosociale ontwikkeling, lijkt de adolescentie een kritieke fase voor interventies gericht op het bevorderen van de psychosociale ontwikkeling. Om optimaal gebruik te kunnen maken van deze cruciale fase voor interventie, zijn zowel eenvoudige screening en laagdrempelige interventie, als meer specifieke diagnostiek en specialistische behandeling voor adolescenten met risico op BPS noodzakelijk. Problemen in mentaliseren en in de sociale relaties zullen zowel een aspect van de diagnostiek als een doel in de behandeling van jonge mensen met BPS moeten zijn.



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In 2014 ben ik naast mijn klinische taken op het gebied van vroege interventie en HYPE, gestart als P-opleider bij GGz Centraal. Toos van Polanen heeft zich vanaf deze start enorm ingezet om al mijn verschillende taken in de agenda te balanceren,

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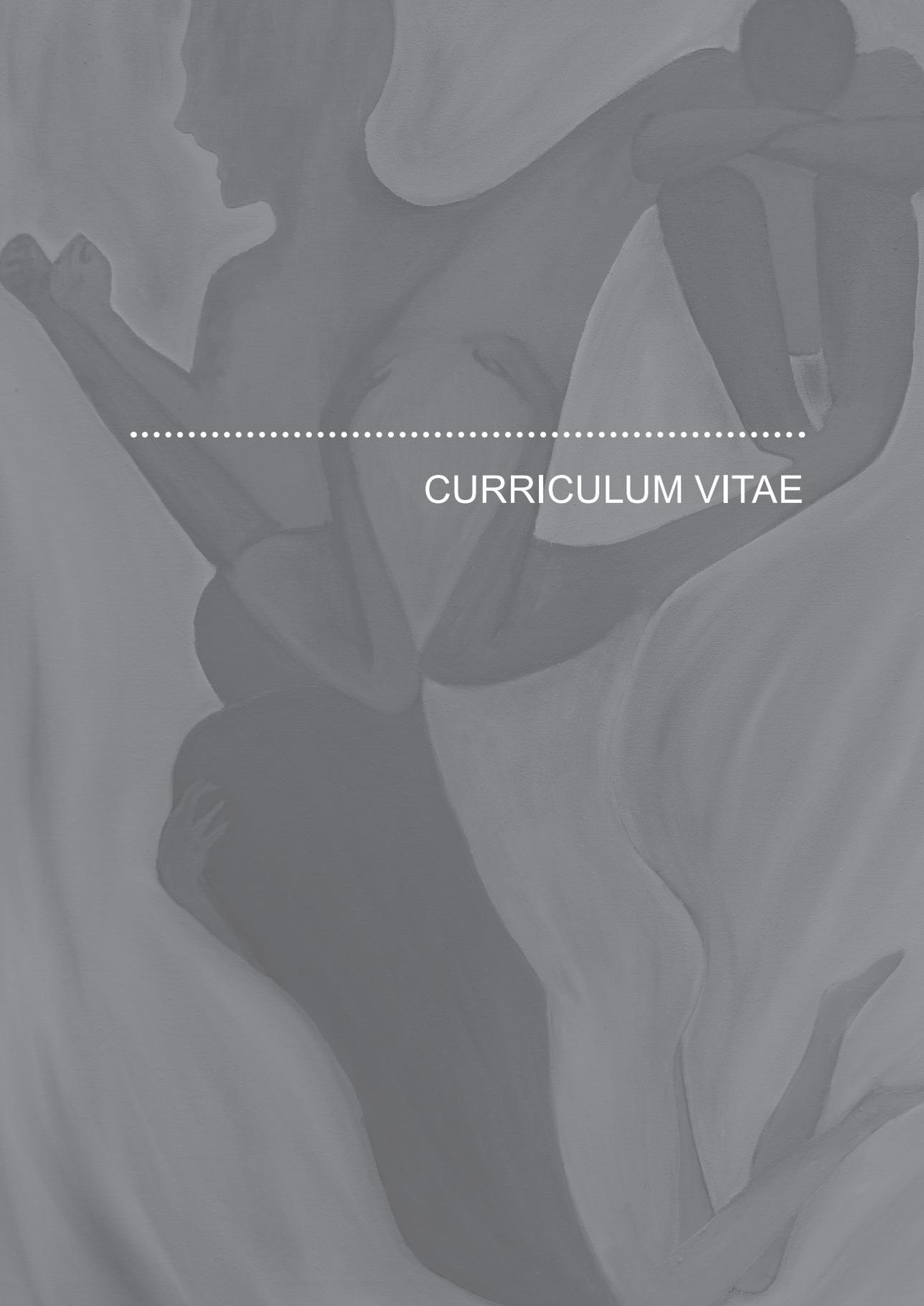
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CURRICULUM VITAE

Christel Hessels was born on 16 December 1975 in Sittard. She graduated from high school in 1994 at the Bisschoppelijk College in Echt. In the same year she started her psychology study at Catholic University Nijmegen, where she graduated in 1999. After working for several years as a psychologist at Mondriaan Zorggroep and RIAGG Maastricht, she finished the postmaster training health psychology at the RIAGG Maastricht in 2004. Subsequently, she continued her career with the postmaster training clinical psychologist at Fornhese Amersfoort, GGz Centraal. During this training she began her specialisation in the field of adolescents with personality disorders, both in her clinical work and her research. After graduating, she worked until 2011 as a clinical psychologist at Fornhese Amersfoort, primarily at the inpatient treatment for adolescents with personality pathology. "In the period 2011-2014 she worked for the Centre for Adolescent Psychiatry of Reinier van Arkelgroep. Here she started with the implementation of early intervention for young people with borderline personality pathology, according to the model 'Helping Young People Early' (HYPE) in close collaboration with prof. Andrew Chanen and dr. Louise Mc-Cutcheon from Orygen Youth Health in Melbourne, Australia, with whom Christel trained and was accredited as CAT practitioner. From 2014 Christel is working at GGz Centraal again, where she combines her clinical work in early intervention for young people with BPD with research and her tasks in education. Besides working as a supervisor and teacher within the mental health psychology training and clinical psychology training, is she head of the post master psychology training within GGz Centraal.

Christel Hessels werd op 16 december 1975 geboren in Sittard. Zij behaalde haar VWO diploma in 1994 aan het Bisschoppelijk College Echt. In hetzelfde jaar begon zij haar studie psychologie aan de Katholieke Universiteit Nijmegen, die ze in 1999 afrondde. Na een aantal jaar werkzaam te zijn geweest als basispsycholoog bij de Mondriaan zorggroep (destijds RIAGG OZL) en de RIAGG Maastricht, volgde zij in de periode 2002-2004 de opleiding tot gezondheidszorgpsycholoog bij de RIAGG Maastricht. Aansluitend vervolgde zij haar loopbaan binnen de opleiding tot klinisch psycholoog bij Fornhese Amersfoort, GGz Centraal (destijds Symfona groep). Tijdens deze opleiding begon zij met haar specialisatie op het gebied van adolescenten met persoonlijkheidsproblematiek, zowel in haar klinisch werk als in haar wetenschappelijk onderzoek. Na het afronden van haar opleiding, bleef zij tot 2011 werkzaam voor Fornhese Amersfoort, vooral binnen de klinische behandeling voor adolescenten met persoonlijkheidspathologie. In de periode 2011-2014 werkte zij voor het Centrum Adolescentenpsychiatrie van de Reinier van Arkelgroep. Hier begon zij met de implementatie van vroege interventie voor jonge mensen met Borderline persoonlijkheidsstoornis volgens het model 'Helping Young People Early' (HYPE) in nauwe samenwerking met prof. Andrew Chanen en dr. Louise McCutcheon van Orygen Youth Health te Melbourne, Australië, bij wie Christel opgeleid en geaccrediteerd is als CAT practitioner. Vanaf 2014 is Christel weer werkzaam voor GGz Centraal, waar zij haar klinisch werk op het gebied van vroege interventie voor jonge mensen met BPS combineert met haar onderzoekswerk en haar taken op het gebied van onderwijs. Naast dat zij als supervisor en docent in de opleiding tot GZ-psycholoog en klinisch psycholoog werkzaam is, is zij hoofd van de postmaster opleidingen voor psychologen van GGz Centraal.



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