Borderline Features in Vietnamese Adolescence:

The Roles of Childhood Trauma, Parental Bonding, and Family Functioning

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Dedication

This dissertation is dedicated to all persons living with Borderline Personality Disorder and adolescents with borderline features in Vietnam, who suffer physically and mentally with the symptoms of Borderline Personality Disorder, accompanied with struggles with intimate relationships, social stigmatization, moral judgments, and marginalization.

Abstract

Childhood trauma and parental bonding have been found to be among the risk factors for the development of Borderline Personality Disorder (BPD) in individualist cultures. Whether these outcomes are universal or culture-specific remains a question. Although mounting evidence has been reported about the important roles of parental care and control in the development of BPD, not much has been done to investigate the effects of care and control on BPD at the family level. To bridge these gaps of knowledge, an investigation of the independent and collective effects of childhood trauma, parental bonding and family functioning variables on borderline personality features (BPF) in Vietnam, a collectivist culture, was conducted for the current study. A cross sectional design employing hierarchical regression analyses was used with a sample of 500 Vietnamese adolescents. Findings revealed both convergent and divergent results from extant literature. Among the independent variables, Emotional Abuse and Neglect, Physical Abuse, Sexual Abuse (childhood trauma), Maternal Overprotection (parental bonding), and Rigid (family functioning) were found to be significant predictors of BPF. Family functioning accounted for a statistically significant additional amount of variances in BPF beyond and above what could be explained by childhood trauma and parental bonding. The uniqueness of the Vietnamese culture and Confucianism was analyzed in relation to research outcomes. Implications for clinical practice and future research within the context of the Vietnamese and Confucian culture were discussed.

Key words: Borderline Personality Disorder, Borderline Personality features, childhood trauma, family adaptability, family cohesion, family functioning, parental bonding, parental care, parental overprotection.

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1. Chapter 1: Introduction and Theoretical Background

Borderline Personality Disorder (BPD) is a mental health disorder characterized by frantic efforts to avoid abandonment, unstable relationships, identity disturbances, self-harming behaviors, affective instability, chronic feelings of emptiness, inappropriate and intense anger, and transient, stress-related paranoid ideations or severe dissociative symptoms (American Psychological Association, APA, 2013). No medication has been found for the treatment of BPD specifically (National Institute of Health and Care Excellence, NICE, 2009), which accounts for 20% of psychiatric hospitalization every year (APA, 2013). With the high costs associated with this illness, such as hospitalization due to suicidal and self-mutilating behaviors (Olfson et al., 2005), unstable employment, and difficult relationships, BPD is a public health problem and a burden to individuals, families and communities. In addition, the frequent co-morbidity with Axis I and Axis II disorders such as substance use disorders, eating disorders, anxiety disorders, mood disorders, somatoform pain disorder, antisocial personality disorder, histrionic personality disorder, narcissistic personality disorder, and sadistic personality disorder (Zanarini et al., 2009) adds to poorer short and long-term outcomes (Skodol et al., 2002). This heavy impact calls for the establishment of comprehensive clinical interventions for BPD based on empirical studies. However, although BPD is considered among the most complex and difficult mental health problems to understand and to treat (Fruzzetti et al., 2005), it has been understudied (Beauchain et al., 2009; Crick et al., 2005).

Research on the etiology of BPD using different cultural twin samples reported that additive genetic influences explain about 42% (Distell et al., 2008) to 69% (Torgersen et al., 2000) of the variation in borderline personality disorder features and

unique environmental influences explain the remaining 31% (Torgersen et al., 2000) to 58% of the variance (Distell et al., 2008). Among the environmental influences, childhood trauma and family relationships have been identified among the most salient risk factors of BPD in existing literature (Armelius & Granberg, 2000; Bandelow et al., 2005; Barone, 2003; Cheavens et al., 2005; Crawford et al., 2009; Fruzzetti, Shenk, & Hoffman, 2005; Liotti et al., 2000; Nickell et al., 2002).

1.1. Rationale of the Study

While genetic influences may be hard to change, environmental influences such as family relationships can be altered for optimal development of children. However, there are theoretical and methodological limitations in research on family relationships as risk factors of BPD. First, current research has focused primarily on the mother-child/parent-child relationship, which captures only part of the picture of family influences. Second, it was mostly conducted in individualistic cultures. Third, since difficulty in interpersonal relationships, especially family relationships, is a cardinal feature in BPD, this disorder can be seen as a relational problem. Nevertheless, it has never been studied from a family system perspective, which can offer a relational lens to look at the problems with strong roots and heavy implications on interpersonal relationships. Previous studies of environmental impacts on BPD that have been conducted in other research fields such as Psychology (Amerlius & Granberg, 2000; Cheavens et al., 2005; Nickell et al., 2002), Psychiatry and Neuroscience (Allen et al., 2005; Siever et al., 2002; Skodol et al., 2002; New, Goodman, Triebwasser, & Siever, 2008), have all looked at risk factors of BPD using individual-based lens.

To this researcher's knowledge, there has not been any study of BPD among the Vietnamese population, although there are reasons to believe that research in this area is important. Personally, the stigmatization suffered by patients living with BPD that this researcher observed in her clinical settings and her witness of the detrimental moral judgment passed on people with BPF among the Vietnamese and Vietnamese Americans drew her to this research project. Confucianism, the main philosophical foundation that guides social relationship ethics in the Vietnamese culture, has much stronger influences than any religious and philosophical systems in East Asia (Jum, 1988). Four of the five principles of Confucianism deal directly with interpersonal relationships. This makes interpersonal relationships the core of social values in the Vietnamese society. Within the ethics of Confucianism, harmony in relationships is considered the most important value in the Vietnamese culture and expected to be lived at all costs - even at the cost of other values such as justice and progress (Cauquelin et al., 2000; Cheung et al., 2007). Because of such a strong emphasis on harmony, it is not uncommon for people with BPD to face social rejection due to the difficulty in interpersonal relationships with which they always struggle. Furthermore, within the Confucian doctrine, there is an overlap between personal and public relationships (Jum, 1988). For this reason, failure or success in personal relationships mean failure or success in public relationships. Because negative relationships make a cardinal feature of BPD (APA, 2013), those living with BPD suffer greatly from moral condemnation, marginalization and failures in all aspects of their lives within that culture. With the serious consequences that BPD brings to its victims' lives, it is important to understanding its risk factors to plan preventive measures because

diagnosis of Axis II disorders is not practiced in Vietnam and there has been no treatment particularly developed to target this disorder.

To contribute to addressing this problem, the current study examined childhood traumas experienced early in the family, parenting bonding, and family functioning as predictors of Borderline Personality features using a Vietnamese adolescent sample. The target independent variables were parental bonding and family function variables. Childhood trauma variables were included primarily as covariates given the increasing evidence of their roles in the development of BPD. Besides investigating parental bonding variables as predictors of BPF controlling for childhood trauma, this study sought to expand existing theoretical frameworks by using the family system perspective to examine family cohesion and family adaptability along with two concepts of family functioning, as risk factors for the development of BPF.

Study findings have the potential of contributing to our current understanding of whether and how much parental bonding and family functioning contribute to BPF in a collectivist culture like Vietnam beyond and above what childhood trauma can explain. The outcomes of this research may also inform clinicians of familial risk factors of BPF and set a foundation for planning preventive measures.

1.2 Theoretical Background

Elaborations of Theory of Self-Psychology, Separation-Individuation Theory, and the Circumplex Model are presented in the first part of this section as the overarching theoretical frameworks guiding the research questions of this study. The second part introduces developmental psychopathology theories developed from overarching

frameworks to link the familial factors under study and BPF in adolescents. The main concepts of each theory were defined and key assumptions briefly discussed.

1.2.1. Theory of Self-Psychology

The theory of Self-Psychology (Kohut, 1977) seeks to link the quality of parental care to development. This theory contends that the self is the center of reference and selfobjects are objects that the self experiences as part of it. There are two types of selfobjects. The first selfobject responds to and confirms a sense of greatness and perfection of the child in early childhood. The second is the selfobject to whom the child can look up to as an ideal image of calmness, infallibility and omnipotence. In a normal setting, the mother acts as the first type of selfobject and the father as the second type of selfobject in early childhood. Optimal interactions between the child and his/her important selfobjects help the child to build a healthy self. Poor interactions between the child and his/her selfobjects result in a damaged self and psychopathology (Kohut, 1977). Parents' ability to respond appropriately, both affectively and cognitively, or empathize with their children, is the key foundation for the child's healthy development. The lack of this ability in parenting is the early root of psychopathology because children either adapt-or maladapt-to parental treatment. Repeated empathic failures or unresponsivity by the parents and the child's repeated responses to these failures are the root of most psychopathology.

1.2.2. Separation-Individuation Theory

Founded on the key propositions about the dual primary caregiver-child attachment as vital to child development, Mahler (1975) examined how the mother's reactions to the child's effort toward separation-individuation lead to development of the

child's pathology. In her Separation-Individuation Theory, Mahler posited that child development takes place in three phases: (1) normal autistic phase (marked by the child's detachment and self-absorption), (2) normal symbiotic phase (marked by the child's illusion of perfect unity with the mother and lack of sense of individuation), and (3) separation-individuation phase (which emphasizes the development of differentiation between an infant and the caregiver and also the development of the infant's ego, sense of identity, and cognitive abilities). Positive development requires the mother's acceptance and support of the child's individuation and separation from her.

The libidinal availability of the primary caregiver (typically the mother) is necessary for the child to form positive internalization of her, which gives the child the images of the caregiver's proper guiding support and comfort in the fundamental process of separation-individuation. During this critical phase, this guiding support and comfort provides a foundation for healthy development of the child characterized by a sense of security and a reliable sense of individual identity in adulthood. Therefore, maternal libidinal unavailability in face of the child's effort towards separation-individuation causes deficits in the child's ability to form positive internalization of the mother, which leads to a sense of insecurity and pathological individual identity in adulthood (Mahler, 1975).

1.2.3. Circumplex Model

The Circumplex Model, originally developed by Olson and colleagues (Olson, Sprenkle, and Russel, 1976a; 1976b, cited in Sprenkle & Olson, 1979), provided a useful framework to look at the impact of family dynamics on BPD from a family perspective. Although the creators of this model did not name any specific theory on which the model

was built, they mentioned the family systems perspective as the foundation. The Circumplex Model encompasses three main concepts.

The first concept is cohesion, conceptualized as the emotional bonding between family members. Its focus is on how the family balances togetherness and separateness. There are four levels of cohesion, ranging from disengaged (very low), separate, connected and enmeshed (very high). Extreme levels of cohesion (either too low or too high) are considered problematic for family relationships. The second concept is flexibility or adaptability, defined as the dynamics of leadership and organization, role relationships, and relationships rules and negotiations in the family. Four levels of flexibility include rigid (too little flexibility), structured, flexible, and chaotic (too much flexibility). Either too much or too little flexibility is detrimental to family relationship and development. The third concept is communication, defined as the positive communication skills used in the family system to facilitate change in levels of family cohesion and family flexibility (Olson et al., 1979).

The Family Cohesion and Adaptability Scales (FACES) is an instrument developed to measure the concepts of the model. Since it was first developed, the FACES have gone through multiple revisions and improvement. The latest version of the instrument, FACES IV, which was described in detail in the methods section, is the result of validation and refining of the constructs through a history of empirical research and practice (Olson, 2011).

1.2.4. Theories Developed from Overarching Frameworks to Explain the Development of BPD

This section summarizes two theories developed from overarching frameworks to explain the development of BPF as the consequence of malfunctioning parent-child and family interactions.

1.2.4.1. Theories that link parental care and BPD

The overarching Theory of Self Psychology (Kolhut, 1977) provides a helpful framework to understand the vital role of primary caregiver-child relationship in optimal child development and child pathology in general. It does not explain how disruption in early parent-child relationship is linked with each specific developmental psychopathology, however. In the effort to explain the roots and pathways of BPD founded on the Theory of Self-Psychology, Adler and Buie (1979) built a theory that explains how the absence of a positive relationship between the child and the mother (the most important selfobject) leads to BPD. This theory holds that a healthy relationship with the key selfobject helps the child to develop what is called "evocative memory" (Adler and Buie, 1979, p. 85). This type of memory is the mental image the child forms of a selfobject when the selfobject is not present or has not been recently present. The ability to have evocative memory of caring, loving and supporting selfobjects helps the child to retrieve memory of caring, loving mother in time of distress to attain soothing comfort and maintain a firm self without having to turn to the visible, present mother. In people with BPD, this type of memory seems to be absent (Adler & Buie, 1979).

Contrary to evocative memory, "recognition memory" (Adler and Buie, 1979, p. 85), a more primitive form of memory, requires the selfobject to be present or recently

present for the child to remember. Mental images from recognition memory cannot be evoked without aids. The mother's misunderstanding of the child's needs and consequent inappropriate responses to these needs (maternal care) lead to the child's failure to achieve solid evocative memory and consequent regression to the primitive form of recognition memory when faced with distress are exactly what can be seen in borderline adults in the area of affective object relationships. BPD patients often idealize other people when these people are present and give immediate support, yet are hostile to them when other people cannot be present and provide to their needs when they are in distress. This happens because borderline adults can only resort to cognition memory and cannot retrieve memory of other people as loving and supporting when they are not present (evocative memory). This fuels the rage and hostility against friends, family members and colleagues, who used to be idealized before. These are the typical symptoms seen in BPD patients (Adler & Buie, 1979).

1.2.4.2. Theories that link parental overprotection and BPD

Building their theory on Separation-Individuation Theory (Mahler, 1975), Masterson and Rinsley (1977) explained the pathway that links parental overprotection and BPD by examining the impact of the caregiver's withdrawal of love as a reaction to the child's normal attempt to separate from her. This theory was first developed to study narcissism, a personality disorder related to BPD and was used later to explain the impact of parental overprotection on BPD. In toddlerhood, the mother's inability to tolerate her child's ambivalence, curiosity and assertiveness leads to the failure of the child to develop the essential characteristics of healthy individuation. The mother withdraws if the child attempts to separate or individuate and is only available if the child clings to her

and behaves regressively. While the child needs the supplies (love and care) provided by the mother to grow up, these supplies will be withdrawn from him/her if s/he grows up (separation and individuation). The child introjects these images of the two mothers, one who gives love and care and one who withdraws love and care, as part-object representation together with the opposite affects and self-representations associated with this representation (sense of self-worth versus sense of worthlessness). This process creates the split object relations unit, a term referring to the phenomenon of seeing things and people at extremities, either idealizing or devaluing them. This phenomenon forms the very important part of intrapsychic structure of BPD, referred to as splitting. Splitting is the major mechanism observed in people with borderline features, who cannot integrate good and bad in an object as a whole unit, but splitting them into either totally good or totally bad (Masterson & Rinsley, 1977, p.170).

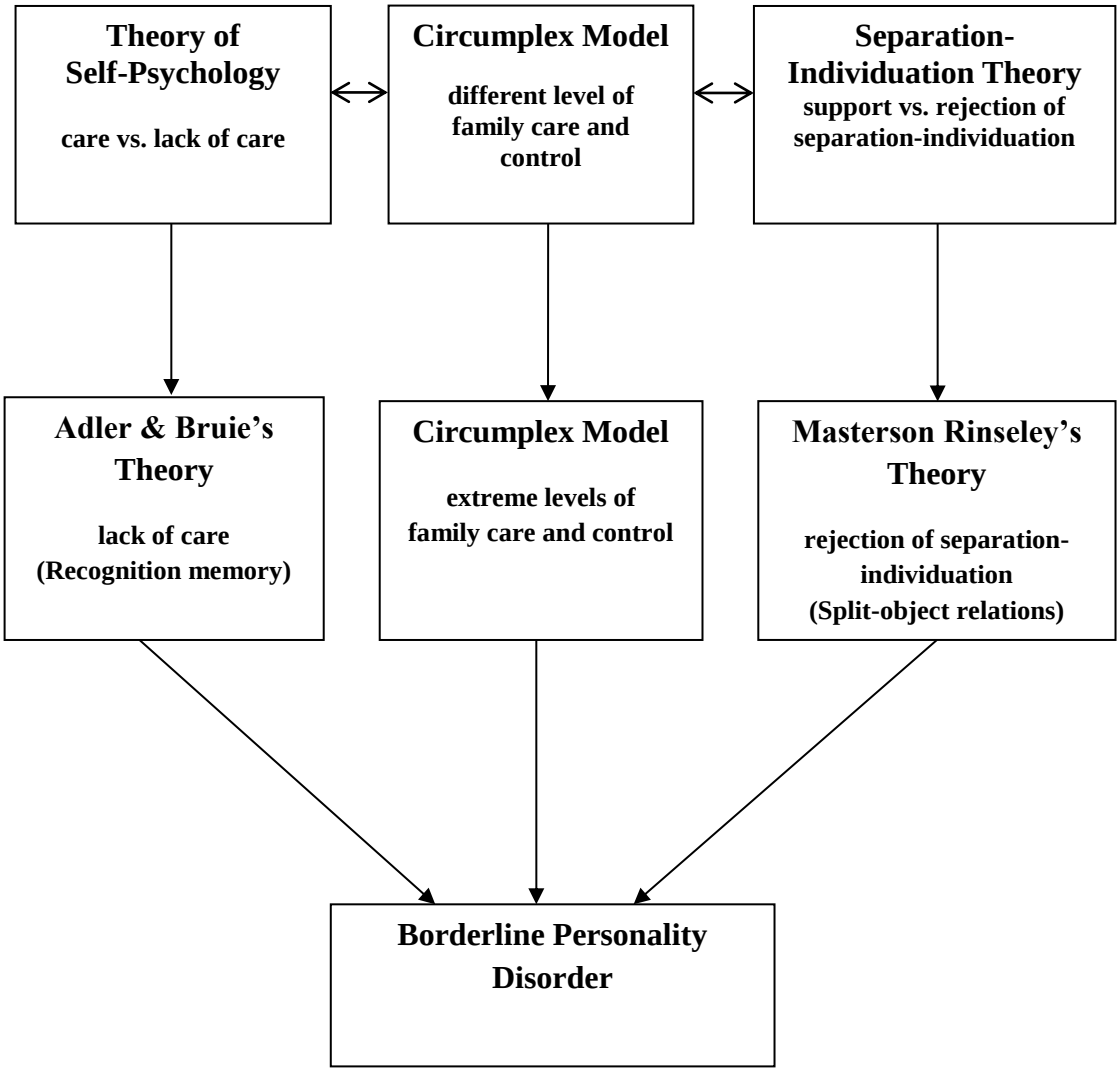
1.2.4.3. Family Cohesion, Family Adaptability and BPD

Family functioning is examined in this study because families of BPD patients have often been found to be chaotic, with family members being either not affectionately related or too controlling (Golomb et al., 1994; Laporte & Guttman, 2007). This means that not only parent-child interactions but also the atmosphere or environment of the family as a whole have important implications on BPD. Since parental bonding (parental care and overprotection) and family functioning measured in the FACES IV (family cohesion and adaptability) refer to similar concepts of care and control in the family context, the former at dyadic (parent-child) level and the latter at the family system level, this study includes care and control at both levels to examine their roles in the development of borderline features in the Vietnamese setting as a collectivist culture. In

such a culture, other adult family members such as grandparents, aunts, uncles, and older siblings, who may also have close relationship and authority to guide or control children exert important influences on the development of children and adolescents (Galanti, 2000).

According to Dekovic et al. (2003), both the parents and the adolescents are part of the family system as a larger system, and their dyadic relationship occurs within a context of other family relationships. Therefore, developmental psychopathology needs to be understood in its developmental context and nowhere is this belief more important than in BPD because the core deficits of BPD lie in the dysfunction of the self and relationships with others. Dysfunction typically emerges in the lack of nurturing attachment relationships and stable family systems. These scholars believed that the failure to examine overall family context such as family chaos and affective instability among family members made it hard to understand the impact that other contributors may have on the development of BPD. This belief was shared by Bradley and Western (2005), who maintained that an unstable, non-nurturing family environment played a great part as early risk factors of BPD. Figure 1 summarizes the theoretical framework that explains the relationships between care and control at the dyadic and family levels and the development of BPD.

Figure 1. Conceptual Framework



Chapter 2: Review of Literature

This section of the literature review includes five parts: (1) childhood trauma as a risk factor of BPD, (2) parental bonding as a risk factor of BPD, (3) family functioning and BPD, (4) research in borderline features versus BPD, and (5) the Vietnamese culture and research in BPD.

2.1. Childhood Trauma and BPD

Empirical studies in the extant literature have repeatedly found childhood and adolescent trauma to be a strong predictor of BPD. According to Trull (2001a), who studied the impact of both parental factors and childhood abuse on BPD, childhood abuse explained the unique variance in borderline features that cannot be accounted for by parental factors and personality traits. One important feature to be noted is that most if not all childhood trauma associated with BPD was related to interpersonal relationships that happened in the context of the family.

2.1.1. Sexual abuse

Among the traumatic experiences found to be a risk factor of BPD, sexual abuse came out as the strongest predictor both in clinical and nonclinical populations. Sexual abuse rates were significantly higher in clinical samples with BPD diagnosis or borderline features, both among inpatients (Zanarini et al., 2002) and outpatients (McLean & Gallop, 2003), than comparative groups. When included in regression models together with familial factors, sexual abuse contributed to the prediction of BPD symptoms over and above family environment (Bradley, Jenei, &Westen, 2005). Trull (2001b), who may be considered one of the rare cases, did not find sexual abuse in childhood as significantly associated with BPD in adulthood, attributed this insignificant

relationship to the low base rate of sexual abuse among the sample of his study, which was exclusively recruited from college students.

Three important factors were found in the literature about sexual abuse and BPD. First, it was not just the presence or absence of sexual abuse that mattered. There was a significant relationship between the severity of sexual abuse and the severity of all four features of borderline personal disorder (emotional dysregulation, cognitive problem, impulsivity, and disturbed interpersonal relationships) as well as of the overall severity of borderline personality disorder for their sample of inpatients (Zanarini et al., 2002). The second important factor is the onset of sexual abuse. McLean and Gallop, (2003) found that early-onset of abuse and paternal incest was significantly more predictive of borderline personality disorder than late-onset abuse in female outpatients. Third, although sexual abuse strongly predicted BPD, this relation was true only with sexual abuse by family members, not by nonfamily members (Huang et al., 2012; Timmerman & Emmelkamp, 2001).

2.1.2. Physical abuse

Physical abuse is the second most important type of childhood abuse that was commonly associated with BPD in adulthood and borderline features in childhood. Physical abuse was reported as a significant predictor of BPD in both clinical samples (Golier et al., 2003) and nonclinical samples (Trull, 2001a; 2001b; Huang et al., 2012). Trull (2001a) found physical abuse to be significantly predictive of borderline features even when its rate was low among his sample of college students. Childhood physical abuse was also found to be significantly associated with borderline features in children (Guzder, Paris, Zelkowitz, & Marchessault, 1996; Guzder, Paris, Zelkowitz, & Feldman,

1999). Finally, cultural differences may play a role in the impact of physical abuse on BPD. Unique findings, which came from a study of Chinese outpatients and not replicated in North America, revealed that maternal physical abuse predicted BPD as strongly as sexual abuse did (Huang et al., 2012).

2.1.3. Emotional and verbal abuse

Other types of childhood trauma include emotional abuse and neglect and verbal abuse. Childhood emotional abuse was repeatedly documented to have a significant impact on the severity of borderline symptomatology in adulthood (Huang et al., 2012; Laporte et al., 2011; Philipsen et al., 2008; Zanarini et al., 2000). Verbal abuse, which was studied much less than other types of abuse, probably due to the absence of this construct in the majority of existing measures, was also revealed as a significant predictor of BPD (Johnson et al., 2001; Zanarini et al., 2000).

2.1.4. Physical neglect

Among all types of childhood traumatic experiences, physical neglect may be a weaker predictor of BPD. Mixed findings have been documented regarding the impact of physical neglect on BPD. For example, Zanarini et al (2002) and Zanarini et al (2000) were among the studies that revealed the severity of childhood neglect to be significantly associated with the overall severity of borderline personality symptoms but did not link it with any single cardinal features of BPD particularly. However, Laporte et al (2011) found significant impact of emotional abuse and physical abuse, but not physical neglect, on BPD. Similarly, only emotional abuse, not physical neglect, was found to predict BPD in their Chinese sample (Huang et al., 2012).

2.2. Parental Bonding as a Risk Factor of BPD and Borderline Personality Features

Parental bonding, defined as parental care and control, has been found as a developmental precursor of BPD in many studies. Since the emotional bond between child and parents is expressed differently across different developmental stages (Allen & Land, 2008), it has been operationalized and measured differently according to the child's age. Given that development in adolescence is characterized by the task of identity searching and assertion (Erikson, 1956), parent-child relationship in this developmental stage is characterized by parent-child affectionate bonding in the context of the child's moving toward autonomy and independence. Therefore, two fundamental aspects have been targeted in research when looking at the quality of parental characteristics of parental bonding when the child reaches this stage. The first aspect indicates parental warmth, acceptance, affection, closeness, and responsivity and the other denotes the amount of control, structure over the child's independent behaviors (Allen & Land, 2008).

These parental characteristics of emotional bond were well-captured by Parker and his colleagues (1979) in their conceptualization of parent-child relationships in adolescence. Parental bonding was conceptualized and operationalized as a latent construct that encompasses two dimensions: parental care and parental overprotection. Parental care refers to the presence or absence of behaviors reflecting affection, warmth, empathy, understanding and closeness. Parental overprotection refers to the extent of control of the child's development and moving toward autonomy (Parker, Tupling, & Brown, 1979).

Different studies that looked at the relationships between parent-child emotional bond and BPD reported different findings. These findings were not always convergent,

however. For example, Laporte and Guttman (2007) found significant group differences when comparing women with BPD and non-clinical women, with BPD women reporting significantly less maternal and paternal care and more paternal denial of psychological autonomy than non-clinical women. Similar results were reported by Zweig-Frank and Parris (1991) and Machizawa-Summers (2007), who studied clinical samples of BPD patients and Nickell et al. (2002), who examined a nonclinical sample of college students. All three studies found parental care and parental overprotection to be significantly related to BPD and borderline features after childhood trauma, even after controlling for Axis I and non-BPD Axis II disorder pathology. However, inconsistent with the findings discussed above, Paris and Frank (1989) and Hayashi and colleagues (1995) found maternal care to be significantly associated with BPD while only Hayashi, Suzuki and Yamamoto (1995) found parental care to be significantly lower among BPD patients. However, in all three studies, parental overprotection was not a significant risk factor for BPD.

Although previous findings have greatly contributed to the understanding of parental bonding as a risk factor of BPD, there are theoretical and methodological gaps that need to be addressed. Regarding the use of theories, the central role of psychoanalysis in the study of BPD etiology in the past was well articulated and its dominance in today's literature is still advocated (Bradley & Westen, 2005). Historically, the majority of BPD studies were conducted by researchers in Medicine and Psychology-related disciplines, who relied exclusively on individual theoretical perspectives and primarily on a psychoanalytic lens to investigate the interpersonal foundations of BPD.

Although a psychodynamic perspective provided a strong framework to look at the problem in depth, this perspective did not go beyond parent-child or mother-child interactions to take into account the influence of the family as a system. Depending on the structure of the family and the culture in which the family was embedded, the family as a whole may have a vital role in child development, to the extent that it can even counterbalance the negative effect created by parental factors. Although the family environment as a system has a great influence on the development of BPD, we know little about how the family contributes to BPD. Moreover, in psychoanalytic theories, the role of the mother as the primary caregiver and her unique influence on child development and psychopathology were established from the view of White European middle class families in a stage of history when gender roles were viewed differently (Downey & Friedman, 1998).

Regarding research methods, although culture has an important role in interpersonal relationships, studies of parental bonding as a risk factor of BPD were primarily conducted among Western cultures. As a result, little is known about what role parental bonding plays in the development of BPD in collectivist cultures. Furthermore, there was the limitation of focusing primarily on clinical samples of adults with full diagnosis of BPD in the studies of parental risk factors and BPD, which could not capture the essence of BPD as a developmental mental health disorder. From a developmental psychopathology perspective, it is critical to study early symptoms of BPD before they develop into the full range of symptoms to meet the clinical DSM-V diagnostic criteria for BPD. These theoretical and methodological gaps were addressed in this proposed study by taking the following steps: (1) examining the impact of the family as a whole on

BPD by using the Circumplex Model, (2) examining borderline symptoms in adolescents before they develop into BPD full diagnosis, and (3) using a sample from Vietnam as a collectivist culture.

2.3. Family Functioning and BPD

Using the Circumplex Model, extant research has linked unbalanced level of family cohesion and flexibility to different types of mental health problems in family members. For example, Smets and Hartup (1988) found that families with unbalanced levels of cohesion and flexibility reported having children with more symptoms on the Child Behavioral Checklist (CBCL; Achenbach & Edelbrock, 1983) than did midrange or balanced families. In addition, families who were enmeshed or chaotic reported having children with lower self-esteem than balanced families. In studies of adolescents, family cohesion was correlated with loneliness for both male and female adolescents (Johnson et al., 2001), antisocial behaviors in adolescents (Dekovic et al., 2003), and sexual and assaultive behaviors among father-absent adolescent boys (Blaske et al., 1989). Furthermore, family functioning was also associated with mental health symptoms at a clinical level. For example, Fendrich et al. (1990) documented that children from families of low cohesion were more likely to be diagnosed with major depressive disorder.

Although much has been studied that has linked family cohesion and flexibility to mental health problems, not much has been done on the association between family cohesion, family flexibility and borderline features. Despite the lack of literature that has reported family functioning as a risk factor of BPD, parental bonding, a kin construct of family functioning, has been well-documented as such. The question of whether family functioning is also associated with borderline features in adolescents was raised because

both parental bonding and family functioning refer to similar components. Parental care, the first dimension of parental bonding, refers to the affectionate bond between parents and child (Masia & Morris, 1998; Rubin et al. 2002), and family cohesion, the first dimension of family functioning, also refers to the affectionate bond between family members (Olson, 2000). Similarly, parental overprotection, the second dimension of parental bonding, refers to levels of parental control (Masia & Morris, 1998; Rubin et al., 2002) and family adaptability, the second dimension of family functioning, also refers to the level of control in the family (Olson, 2000). Thus the two dimensions of parental bonding (parental care and overprotection) are conceptually similar to the two dimensions of family functioning (family cohesion and adaptability), the former at a dyadic level and the latter at the family level.

Since studying the impact of the family environment is important to understand child developmental psychopathology (Bradley, Jenei, & Westen, 2005), and since family is not only composed of mother and child or parents and child, it is important to look at family functioning as a risk factor of borderline features. This construct helps to examine the role of the whole family as a system in the development of borderline features in adolescents.

2.4. Research Regarding Borderline Personality Disorder versus Borderline Features

The studies that examined borderline features rather than BPD full diagnosis cited many good reasons for doing so. First, since the range of borderline personality symptoms keeps developing across different developmental stages with fewer clusters of symptoms in childhood, more symptoms in adolescence, and full range of symptoms in

adulthood (Rogosch & Ciccetti, 2005), examining borderline features or BPD depends on the developmental stage the study targets. This is strongly supported by developmental psychopathologists, who pointed to the wrong practice of treating adolescents as miniature adults rather than as growing beings in research (Swanson et al., 2003). From a developmental perspective, personality disorders do not suddenly appear from nothing. Since identification of precursors that could later develop into BPD would contribute to the early identification of BPD and pave the way for earlier interventions, more research on the stages earlier than adulthood is needed (Rogosch & Cicchetti, 2005).

In adulthood, BPD has already developed its full range of symptoms that can be diagnosed according to DSM-V standards. An increasing number of studies have started to adopt a developmental perspective by investigating borderline personality features using nonclinical samples of children or adolescents. Borderline features refer to a range of borderline personality symptoms that has not yet developed into full range of symptoms that can meet DSM-V clinical diagnostic criteria. They also refer to the range of symptoms in adulthood at a subclinical level, for instance, fewer than five symptoms (APA, 2013).

Bemporad and colleagues (1980) are among the early researchers who focused on children's borderline features. They suggested a diagnosis of borderline features in latency-age children that includes the following general clusters: fluctuation of functioning, nature and extent of anxiety, thought content and processes, relationships to others, and lack of control. It is clear that the symptoms noticed in the full range of BPD diagnosis such as suicidal behaviors and unstable employment cannot be found among these clusters and this age. The development and validation of the Borderline Personality

Features Scale for Children (BPFS-C) is a response to the need for an instrument to assess borderline features in children (Crick et al., 2005). This instrument, used for 4th to 6th graders, measures the following borderline features: (1) hostile, paranoid world view or cognitive sensitivity, (2) intense, unstable, inappropriate emotion or emotional sensitivity, (3) overly close relationships manifested in exclusivity with a best friend, and (4) impulsivity manifested in relational and physical aggression. Using this measure, Crick et al (2005) found that children's scores on the BPFS-C were uniquely related to indicators of borderline personality pathology above and beyond their Children's Depression Inventory scores.

2.5. Vietnamese Culture and Research in BPD

Because family relationships are culture-specific, it is important to understand the culture in which family interactions happen. This section explains why emic research is important and highlights the key features that help to understand the context within which family interactions were investigated in this study.

2.5.1. Emic and etic approaches to studying developmental psychopathology

Historically, the characteristics of Whites were viewed as the normative standards by which all non-White groups were judged (Swanson et al., 2003). As a multicultural lens is increasingly adopted, maladaptation is viewed more as a function of the fit between individuals and the demands of the majority in the dominant culture (Coll et al., 2000). However, to date, the majority of theories and research in developmental psychopathology have been generated from studies conducted in Western cultures (Coll et al., 2000). Useful as it is, the etic approach (culture-general exogenous approach) fails to elucidate the culture-specific risk aspects and the unique pathways of developmental

psychopathology (Cicchetti & Toth, 1999), blurring the distinction between the problems that are culture-specific (emic) and those that are culture-general (etic) (Canino & Guanarccia, 1997).

However, very early in the history of research in developmental psychopathology, it was noticed that explanations of the etiology of mental disorders should vary according to the social construction of personality and the way social behaviors were accepted or tolerated across and within cultures (Meekel, 1935). This view is increasingly gaining its position in the study of child development and developmental psychopathology. In his review of the literature in cross cultures and development, LeVin (1970) identified substantial cross-cultural differences in several areas, including mother-child contact, contact with the father, child-rearing environment, caretaking patterns, use of punishment, and early discipline. Despite this growing trend in using an emic approach (culture-specific endogenous approach), Coll et al. (2000) asserted that our understanding of how culture influences development is still in its infancy. They posited that it is essential to test the cross-cultural validity of developmental maladaptation phenomenon to bring insight into what aspects of developmental psychopathology are universal and what aspects are subject to cultural influences.

One can argue that a lot of empirical work has been done on non-Western cultures using diverse participants living in the United States and other Western countries who represent different ethnic and racial groups such as Asian Americans, Latino Americans, African Americans and Native Americans. Coll et al. (2000) argued the opposite. According to these scholars, the cultural impacts that explain maladaptive development usually differ if maladaptive phenomena are studied using groups residing in the United

States and its territories such as different groups of immigrants as compared to groups living in their home countries. Despite the diversity across different racial or ethnic groups, immigrants living in the United States are influenced by the social setting and environment with its lifestyle, norms and values, which may be very different from their original countries where their compatriots are living. Sharing the same view with these authors, this study adopts an emic approach using a non-Western sample residing in their own country to look at parental bonding and family functioning as risk factors of borderline features in adolescents.

2.5.2. Collectivist cultures, family relationships and mental health outcomes

There are basic differences between individualist cultures, typically referred as Western cultures, and collectivist cultures, often referred to as Eastern cultures (Triandis et al., 1988). Wager and Moch (1986) made a distinction between individualist and collectivist cultures, saying that while individualist cultures emphasize self-reliance, autonomy, and personal goals that may or may not fit with group goals, collectivist cultures capitalize on subordination of personal interests to the goals of their groups, cooperation, group welfare, and in-group harmony. Unlike individuals in individualist cultures, who strive for their own accomplishment and take pleasure in their own achievements, those in collectivist cultures derive satisfaction from group accomplishments.

The difference between the two cultures in parental bonding has been well-documented in the research literature. Parental overprotection as a construct is seen as being similar to authoritarian parenting because both refer to parents' control over child behaviors (Laporte & Guttman, 2005). Authoritarian parenting was often found to be

associated with negative mental health outcomes for middle-class children of European background (Steinberg & Silk, 2002). However, research on parental control and child outcomes has reported cultural differences in different areas of child outcomes. For example, authoritarian parenting was reported in a host of studies to negatively affect academic achievement among European-American adolescents, but not their Asian-American peers (Dornbusch et al., 1987).

The implications of parental control over their children in child health outcomes should not be viewed as being isolated from other important factors, which may be highly culture-bound. Darling and Steinberg (1993) reasoned that to understand these implications, three aspects must be entangled: (1) the goals toward which socialization is directed, (2) parental practices to help children attain these goals, and (3) the emotional climate in which socialization occurs. It is the emotional bond that determines the outcome of parental control, not the control per se. This position can help to explain the differences in research findings in the study by Rudy and Grusec (2006; 2001) about authoritarian parenting and child mental health outcomes in individualist and collectivist groups. Three important findings from this study evidenced the relative inapplicability of Western-based theories about family relationships in collectivist cultures: (1) collectivist mothers used authoritarian parenting more than individualist mothers, yet did not feel or think more negatively about their children; (2) collectivist children's self-esteem was not lower as a result of authoritarian parenting style; and (3) maternal authoritarianism was associated with maternal negative emotion and cognition only in the individualist group, not collectivist groups.

2.5.3. The Vietnamese as a collectivist culture

Being among the collectivist Southeast Asian cultures (Cheung & Nguyen, 2001; Jum, 1988; Phan, 2001), the Vietnamese culture is collectivist by legacy. Moreover, dominated by the Chinese for roughly 1000 years, Vietnam adopted Confucianism from the Chinese in the eleventh century as its primary philosophy and ethics (Lam, 2005; Phan & Silove, 1997; Phan, 2001). Indeed, Vietnam is the only country in Southeast Asia that is much more deeply influenced by the Chinese culture than any other dominant cultures in the area (Jum, 1988). In the research literature, the Chinese were often chosen as a comparison group of choice in studies that contrast individualist and collectivist cultures because Chinese culture is seen as highly collectivist (Wang & Ollendick, 2001). The high level of collectivism among the Chinese culture has been evidenced by empirical studies that found the Chinese to be the most collectivist as compared to other European and Asian groups (Doherty et al., 1994). Thus, on one hand, the Vietnamese culture is seen as a very collectivist society because it was founded primarily on Confucianism (Phan & Silove, 1997; Phan, 2001), on which the Chinese culture was founded (Lam, 2005; Lieber, Fung, & Leung, 2006; Phan, 2001). On the other hand, the Vietnamese culture also has its own history and cultural heritage that makes it stand out as a unique culture among other collectivist, Southeast Asian, Chinese-influenced cultures (Phan, 2001). For this reason, it may be elucidating to look into parental bonding and family relationships in a collectivist culture using a Vietnamese sample.

Literature has documented the collectivist dimension of the Vietnamese culture in family and parent-child relationships. Studies on Vietnamese families suggested three characteristics of parenting among Vietnamese parents: (1) adherence to traditional values, (2) high parental expectations, and (3) emphasis on obedience in parent-child

relationships (Pomerleau et al., 1991). According to Cheung and Nguyen (2001), the Vietnamese culture emphasizes submission of children to parents, which holds true even after children have reached adulthood. These scholars stated that no matter what style of parenting is taken, it is common for Vietnamese parents to command obedience. Parental control, overprotection, or oversheltered, as worded by Western language, is common practice in Vietnamese parent-child relationships (Galanti, 2000).

2.6. Statement of the Problem

Given that care and control, which are culture-bound aspects of family relationship (Cheung et al., 2007; Rugy & Grusec, 2001; Wang & Ollendick, 2001), have been found to be risk factors of BPD predominantly in individualist cultures, this study examines care and control both at dyadic and family levels as predictors of borderline features in a sample of Vietnamese adolescents. Because childhood trauma has been consistently found to be a significant predictor of BPD, this study will also investigate childhood trauma experienced in the family as a predictor of borderline features. The focus on adolescents and borderline features is based on the developmental perspective that opts for early identification of BPD for early interventions (Rogosch & Cicchetti, 2005).

To bridge the theoretical gap inherent in using only a psychodynamic perspective to study family reality, this study aims to investigate the impact of family relationships on Borderline Personality features (BPF) at a family level. Guided by Attachment Theory, Separation-Individuation Theory, the Circumplex Model and related theories to explain the development of BPD, it seeks to answer the following research questions:

1. Is childhood trauma experienced in interpersonal relationships predictive of borderline features among Vietnamese adolescents?
2. Are parental care and parental overprotection predictors of borderline features among Vietnamese adolescents?
3. Does parental bonding account for a significant additional amount of variance in Borderline Personality features after controlling for the effect of childhood trauma?
4. Are family cohesion and family adaptability predictors of borderline features among Vietnamese adolescents?
5. Does family functioning account for a significant additional amount of variance in Borderline Personality features after controlling for the effects of childhood trauma and parental bonding?

2.7. Hypotheses

Founded on extant literature reporting that childhood trauma is predictive of BPD (Afifi et al, 2011; Elzy, 2011; Gratz, Latzman, Tull, Reynolds, & Lejuez, 2011; Hernander, Arntz, Gaviria, Labd, & Gutiérrez-Zotes, 2012; Huang et al, 2012; Igarashi et al, 2010; Jovev et al, 2013; Sansone, Hahn, Dittoe, & Wiederman, 2011), the first hypothesis of this study was that childhood trauma would predict BPF in Vietnamese adolescents. Regarding parental bonding, this study expected that both parental care and parental overprotection would predict BPF. Specifically, both maternal care and paternal care would be negatively associated with BPF and both maternal overprotection and paternal overprotection would be positively associated with BPF in this sample.

Consistent with the conceptual framework of the Circumplex Model, which assumes that cohesion and adaptability are only healthy at central levels and that extreme levels of cohesion and adaptability on both ends are unhealthy, Balanced Cohesion and Balanced Adaptability were hypothesized to be negatively associated with BPF. To the contrary, Disengaged, Enmeshed, Rigid, and Chaotic were hypothesized to be positively associated with BPF score. Finally, it was hypothesized that parental bonding would account for a significant additional amount of variance in BPF after controlling for the effect of childhood trauma and that family functioning would significantly account for the variance in BPF beyond and above the collective effect of childhood trauma and parental bonding on BPF.

2.8. Significance

This study is the first phase of a larger research project that is composed of three phases: (1) a preliminary study using a modest sample of Vietnamese college, high school and special education program students to explore the relationships between childhood trauma, parental bonding, family functioning, and borderline features in adolescents, (2) validation of the assessment tools that will be used in the final study, including the Vietnamese version of the Parental Bonding Instrument (Parker & Tupling, 1978), the revised and culturally adapted version (Hoang, 2013) of the Family Adaptability and Cohesion Scales IV (FACES IV, Olson, 2011), the adapted version of the Childhood Trauma Questionnaire, and the adapted version of the McLean Screening Instrument for Borderline Disorder, and (3) a subsequent study that will use a larger sample and validated and culturally adapted measures from Phase 2 to examine parental

bonding, family functioning, and childhood trauma as predictors of borderline features in the Vietnamese adolescents.

The initial phase, which is the focus of this study, is significant because its results will provide an empirically-based foundation for the development and implementation of the next two phases. First, preliminary data from this study will inform the researcher in the process of revision, adaptation, and validation of the instruments that have been pilot tested in this study and will be used in the final study. Second, the narrow scope of this study will inform the researcher of solid and appropriate research methods and strategies to plan for the final study, which will be aimed at a much wider scope using a larger sample and standardized instruments. The methods section that follows exclusively describes the research approach that was used in the preliminary or the first phase of this larger research project.

3. Chapter 3: Method

3.1. Research Design

The initial phase of this research project constituted designing a cross sectional study that used Hierarchical Regression Analyses to explore the relationships between childhood trauma, parental bonding, and family functioning as predictors of borderline features in adolescents. Specifically, the hierarchical regression models investigated Emotional Abuse and Neglect, Verbal Abuse, Physical Abuse, Physical Neglect, Sexual Abuse, Maternal Care, Maternal Overprotection, Parental Care, Paternal Overprotection, Balanced Cohesion, Balanced Adaptability, Disengaged, Enmeshed, Rigid, and Chaotic to determine which variables significantly account for the variance in borderline features in adolescents.

3.2. Participants

3.2.1. Power analysis

No study has reported a cumulative effect size for childhood trauma, parental bonding and family functioning. Medium effect sizes have been reported for sexual abuse alone (Elzy, 2011; Fossati, Madeddu, & Maffei, 1999). Based on extant literature, this study expected a medium cumulative effect size for childhood trauma and family factors. Cohen (1992) suggested a sample size of 107 for 8 independent variables, .05 Type I error probability and 8.0 power. For Regression Models with maximum 15 independent variables, .05 Type I error probability, 8.0 power and moderate effect size, sample size was estimated to be about 2 times larger, which would suggest 214 participants for normal data. Because non-normality of distribution was expected in reality, this study followed Westland's (2010) recommendation to have a sample size of at least 2

magnitudes of this lower bound or more for data with non-normal distribution. This means a minimum sample size of 428 individual participants for the Multiple Regression Models. In anticipation of collecting possible invalid data, a sample size of 500 adolescents was planned for this study.

3.2.2. Recruitment

Five hundred adolescents were recruited from college, high schools and special education programs in Ho Chi Minh City. Colleges and high schools were randomly selected from a list of high schools and colleges provided by the Vietnam Board of Education. Late education programs were selected from the list of Special Education Centers in Ho Chi Minh City (Hoi Trai Tim Yeu Thuong, 2011). This study focused on adolescents from 15-18 years of age because borderline features change across developmental stages (Crick et al., 2005). Demographic information about research participants, their primary parental figures, and their family structures is summarized in Table 1.

3.3. Measures

3.3.1. Family Cohesion and Adaptability Scales IV (FACES IV) Revised

This is a researcher-revised and culturally-adapted version of the FACES IV. The FACES IV (Olson, 2011) is a 60-item, pencil-and-paper, self-report developed to measure family functioning based on the Circumplex Model. This instrument measures include four scales to measure family cohesion and family adaptability as the two major concepts of family functioning and family communication and satisfaction as other two related concepts. The Cohesion Scale is composed of three subscales: Balanced

Cohesion, Disengaged, and Enmeshed. The Adaptability Scale is composed of three subscales: Balanced flexibility, Rigid and Chaotic.

The FACES IV has been translated into Vietnamese and validated using 308 Vietnamese families, each with an adolescent and two parental figures. It has been revised based on the key concepts and assumptions of the Circumplex Model to address the problem of low reliability reported in the validation study (Hoang, 2012). The revision integrated literature about the Vietnamese culture to better reflect the Vietnamese cultural characteristics in assessing family cohesion and adaptability. Specifically, the two subscales Enmeshed and Rigid have been revised with most of the items in the original version of the FACES replaced.

Internal reliability (Cronbach's Alpha) of the revised version of FACES was .95 for Balanced Cohesion, .92 for Balanced Flexibility, .79 for Disengaged, .81 for Enmeshed, .80 for Rigid, and .70 for Chaotic. Concurrent and discriminant validity of the revised version were not examined for the revised version of the FACES IV. However, a validation study of the original FACES IV (correlations with the Family Assessment Device; Epstein, Baldwin, & Bishop, 1983) revealed good concurrent validity for four subscales of FACES IV ($r = .95$ for both balanced scales, -.71 for Chaotic, -.93 for Disengaged), but not very good for the other two subscales ($r = -.31$ for Enmeshed and -.25 for Rigid). Similar findings were reported for discriminant validity. Correlations with the Family Satisfaction Scale of FACES IV were relatively high, ranging from .89 to .91 for the 2 balanced scales, -.67 for Chaotic, and relatively low for Enmeshed ($r = - .20$) and Rigid ($r = -.17$) (Olson, 2011).

Table 1. Demographic Information of Participants (N = 500)

	n	Mean	SD	Percentage
Age		17.85	1.32	
Sex				
Male	213			46
Female	287			5
Participant's education				
Secondary school				5
High school				12
College				83
Caregiver 2's education				
≤ Primary school				14
Secondary school				29
High school				35
College				20
Graduate education				2
Caregiver 1's education				
≤ Primary school				18
Secondary school				34
High school				33
College				12
Graduate education				3
Family income				
Very low				6
Low				20
Average				25
Above average				21
High				25
Very high				3
Primary caregiver's marital status				
Single, never married				1
Single, divorced				2
Single, widowed				4
Married, first marriage				58
Married, not first married				32
Partnership				2
Separated				1
Family structure				
Two parents (biological)				85
Biological father and step mother				2
Biological mother and step father				2
Two parents (adoptive)				.5
Single parent				8
No parents, only relatives				2.5

3.3.2. Parental Bonding Instrument.

The PBI (PBI; Parker, Tupling, & Brown, 1979) is a 25-item self-report that measures recollection of parental behaviors during the first 16 years of a child's life. Responses are based on a 4-point Likert scale ranging from very unlike (0) to very like (3) for each parent separately. A high value indicates more care or more overprotection. Care and affection scores of each parent are summed from 12 items, with 0 indicating total parental neglect and rejection to 36 indicating high level of parental affection and nurturance; overprotection and control scores are summarized from 13 items, ranging from 0 for encouraging autonomy to 39 for excessive control. Sample items include "*My father/mother tried to control everything I did," "My father/mother seemed emotionally cold to me.*" Internal reliability (Cronbach's Alpha) of the Vietnamese version of was reported at .70 for Mother Care and.78 for Mother Overprotection, .80 for Father Care and .90 for Father Overprotection.

3.3.4. McLean Screening Instrument for Borderline Personality Disorder Adapted

This is a 16-item instrument rated on a 5-point scale (0 = Never true, 1 = Rarely true, 2 = Sometimes true, 3 = Often true, 4 = Very often true), which was adapted from McLean's Screening Instrument for Borderline Personality Disorder (SIBPD, Zanarini et al., 2003). It measures five features that characterize Borderline Personality Disorder: affective instability, identity problems, negative interpersonal relationships, impulsivity, and self-harm behaviors. Test-retest reliability of the original instrument was reported at 0.72 (Zanarini et al., 2003).

All questions in the original version were converted into statements and 4 items (3, 5, 6, 7) were further revised with explanation or details added for better clarity (see

Appendix 2). Six items (11-16) were added based on DSM-IV TR (APA, 2013) diagnostic criteria for BPD that assessed the characteristics not adequately tapped by the McLean SIBPD. Sample items include *"I chronically feel empty and often try to find something to do so that I feel less empty," "I am extremely moody," "I often have a lot of arguments or repeated breakups in my closest relationships," "I have deliberately hurt myself physically (e.g., punched myself, cut myself, burned myself) or made a suicide attempt."* Internal consistency (Cronbach's Alpha) for this adapted version was 0.85.

3.3.5. Childhood Trauma Questionnaire Adapted

This instrument was adapted from the Childhood Trauma Questionnaire (Bernstein et al., 1994) to make it more culturally appropriate. The original CTQ is a retrospective self-administered inventory that assesses child abuse and neglect (Bernstein et al., 1994). It is a 5-point, Likert scale instrument with 70 items and response ranging from 0 (Never True) to 4 (Very Often True). Five clinical scales assessed by the CTQ include physical abuse, sexual abuse, emotional abuse, physical neglect, and emotional neglect.

Many questions in all subscales were revised based on the definitions of each dimension in the original CTQ (see Bernstein et al., 2003 for the definition of each dimension of CTQ) in consultation with professionals in Psychology and Sociology to better reflect the concepts in the Vietnamese cultural social context (see Appendix 3). The revised version has five subscales: (1) Emotional neglect and abuse (r = .77), (2) Verbal abuse (r = .78), (3) Physical abuse (r = .75), (4) Physical neglect (r = 66), and (5) Sexual abuse (r = .60). For example, related to physical abuse, beating children is considered a proper way to correct them for their wrong doings by parents and teachers in

the Vietnamese culture (Vietnamnet, 2012). This view is reflected in a very common saying known to every parent "*Loving parents use rod, hating parents use sweet words*." (Nguyen, 2007, pp. 184). The use of corporal punishment may have different implications on child outcome in different cultures. In discipline situations, the negative effects of parenting on child outcome were associated with parenting correlates such as overall emotional context (positive or negative parental affect), manifestation of perceived dispositional characteristics of the child, whether it is a conscious strategy pursued for the child's benefit, rather than the authoritarian parenting itself (Rudy & Grusec, 2001). Therefore, items such as "*I got hit or beaten so badly that it was noticed by someone like a teacher, neighbor, or doctor*" were either revised or replaced by another question that reflects the severity of corporal punishment according to the normative practice in the Vietnamese context and its correlates ("*I believed that people in my family hit me to vent their fury, not to correct me for my wrong doing," "I was beaten for any trivial thing I did that displeased adults in my family*"). Internal reliability for this entire instrument in this sample was .79.

3.4. Procedures

3.4.1. Training the research team

The first step in recruitment was training the research team in Vietnam, two of whom were involved as research assistants in most of the data collection and management process. The research team was composed of two collaborators with Master degrees in Psychology, hereafter referred to as two research assistants, and two others with Bachelor degrees in Psychology, hereafter referred to as the reserve team members. Training of the research team included three parts: (1) Collaborative Institutional

Training Initiative (CITI) and Institutional Review Board (IRB) training, (2) training in recruitment, data collection and management following the standards upheld by the University of Minnesota, and (3) training in problem solving (potential clinical issues that may occur during the process of recruitment and data collection). The two research assistants had been trained and passed all CITI and IRB tests in part 1 before the principal investigator provided further training in parts 2 and 3. The reserve team joined the research assistants only in parts 2 and 3 (see Appendix 3 for further information of the research team training protocol).

3.4.2. Recruitment

First, the principal investigator sent a letter explaining the purpose and procedures of the study was sent to the principals of high schools, colleges, and special education programs in Ho Chi Minh City asking their permission to recruit their students for the study. Permission was obtained from 2 high schools, 5 colleges and 3 late education programs.

3.4.2.1. Recruitment of high school and late education program students

High schools and late education programs that granted permission were further contacted by the two research assistants for schedules of teacher-parent meetings to introduce this research project to parents at the end of teacher-parent meetings. Flyers with the researcher's and research assistants' contact information were distributed in the meetings with parents so that they could contact the researcher or the research assistants directly for better understanding of the study. The research assistants introduced the consent form and explained to parents that if they agreed to let their children participate, they would need to fill the consent form when children brought them home. For

recruitment of students in high school and late education programs, the research assistants contacted students three times at every high school and late education program following student block meetings for each grade.

3.4.2.2. Recruitment of college students

To recruit first year college students, with the help of the Office of Student Affairs and the research assistants, a flyer was posted at the information board of the office explaining the purpose and general procedure of the study. The researcher's and research assistants' contact information was given in the flyer for potential participants to contact the team if they had further questions about the study. The flyer explained clearly that participation in the study would be totally voluntary, have nothing related to any activities of the school and would not add any credit to the students' records. The flyer simply explained the benefit that research findings could have in helping therapists understand their patients better and for educators in supporting families and planning preventive measures. Students who were interested in the study contacted the research assistants directly for participation. The research assistants also visited college students in department meetings to welcome first year students and to introduce the study. The same procedures were used with all groups of students. The research assistants introduced the purpose and procedures of the research project, distributed and walked students through the assessment package, which included the FACES IV, the PBI, the Childhood Trauma Instrument, and the Borderline Screening Instrument.

Students who were interested visited the Research Center of the Division for Applied Psychology and Research (RCAPR) in Ho Chi Minh City to participate in the study. Students under 18 years of age took the consent form to have their parents sign to

be able to participate in the study. After the two research assistants explained the informed consent and checked participants' understanding, adult participants signed their consent forms. Participants who were younger than eighteen years old signed their assent form and handed in the consent forms signed by their parents. All participants answered the questionnaire after this informed consent process.

3.4.2.3. Data entry and management

Completed questionnaires were kept in a safety-protected cabinet in the research suite at the RCAPR. Data was entered every week by two research assistants encrypted and immediately after it was entered. All questionnaires were checked for missing data when participants returned the completed questionnaires. Five percent of data were entered by myself, the other 95% by the two research assistants. All data entered by me and 30% of data entered by each of the two research assistants were cross-checked. Except for a few mistakes in the data entered by myself, which were corrected by the two research assistants, no mistakes were found in data cross-checking in other parts of the data set. Assessment packages in paper form were shredded after two months.

3.5. Data Analysis

3.5.1. Preliminary Data Analysis

Data analyses for this study were conducted using the software program SPSS 19.0 and R. Prior to examining data analysis for hierarchical regression, basic data checking was performed on all variables. Missing data were reported at .01 %. Given this small amount of missing data, multiple imputations were performed for this data set. Exploration of demographic information (household income, number of children, parent's education, and parents' marital status) did not reveal any special pattern for the

reported missing data. Data were further examined for outliers and normality. Most variables measured in the current study had normal distribution except BPF and all childhood trauma variables, which were all skewed right. Since this was a nonclinical sample, positive skewness was expected for both BPF and childhood trauma variables. Collinearity and assumptions of normal distribution of errors and equal variances were assessed for linear regression. The histogram and normal P-P plot of regression standardized residuals showed normal distribution for the errors of the outcome variable. The scatterplot for regression standardized predicted values and regression standardized residuals of BPF did not show noticeable unequal variance of residuals of the dependent variable.

3.5.2. Data Analysis

Descriptive statistics (mean, median, range, and standard deviation) were explored for all variables under study. Since this study aimed to examine the effect of family factors controlling for the effect of childhood trauma, childhood trauma variables were the first independent variables to be entered in the hierarchical regression model. The second set of variables to be entered included mother care, mother overprotection, father care, and father overprotection. Family cohesion, Family Cohesion, Disengaged, Enmeshed, Rigid, and Chaotic were entered last because they were the main focus of this study.

4. Chapter 4: Results

Table 2 shows the descriptive statistics of 15 independent variables and the outcome variable. Table 3 presents the correlations between all variables under study. Moderate to high correlations between independent variables revealed multicollinearity that needs to be taken into consideration in interpretation of findings.

Table 2. Descriptive statistics of variables under study (N = 500)

	Mean	Median	SD	Minimum	Maximum
BPF	23.64	22.00	10.52	2	61
EA/N	1.89	1.00	1.22	0	16
VA	1.69	1.00	1.11	0	18
PA	2.10	1.00	1.27	0	18
PN	1.49	0.00	1.00	0	13
SA	5.48	7.00	1.79	0	12
M-care	27.83	28.00	6.91	1	64
M-protection	18.18	18.00	7.83	0	60
P-care	25.90	26.00	8.28	1	47
P-protection	20.49	17.00	12.61	0	53
Bal-cohesion	22.03	26.00	9.22	0	35
Bal-adapt	18.85	22.00	8.70	0	35
Disengaged	11.45	11.00	4.71	0	30
Enmeshed	12.30	13.00	5.49	1	30
Rigid	12.30	13.00	5.24	1	31
Chaotic	12.38	12.00	4.22	1	34

Note. BPF: Borderline Personality features, CT: Childhood trauma, M-care: Maternal Care, M-protection: Maternal Overprotection, P-care: Paternal Care, P-protection: Paternal Overprotection, Bal-cohesion: Balanced Cohesion, Bal-adapt: Balanced Adaptability.

Table 3. Adolescent reports of Childhood trauma, Parental Bonding, and Family Functioning: Correlations (N=500)

	BPF	EA/N	VA	PA	PN	SA	M-care	M-overp	P-care	P-overp	BC	BA	Diseng	Enmes	Rigid	Chaot
BPF	1															
EA/N	.368**	1														
VA	.304**	.569**	1													
PA	.285**	.279**	.425**	1												
PN	.278**	.408**	.354**	.613**	1											
SA	-.087	-.290**	-.162**	.169**	.139**	1										
M-care	-.18**	-.392**	-.318**	-.100*	-.098*	.564**	1									
M-overp	.09*	-.075	-.013	.339**	.295**	.640**	.321**	1								
P-care	-.15**	-.348**	-.323**	-.014	-.009	.692**	.656**	.496**	1							
P-overp	-.09*	-.274**	-.172**	.127**	.089*	.867**	.565**	.687**	.718**	1						
Bal-coh	.09*	.197**	.077	-.321**	-.256**	-.818**	-.358**	-.647**	-.491**	-.735**	1					
Bal-ada	.13**	.230**	.082	-.257**	-.168**	-.832**	-.377**	-.624**	-.522**	-.768**	.922**	1				
Diseng	.25**	.439**	.347**	-.061	-.041	-.617**	-.561**	-.403**	-.603**	-.573**	.523**	.534**	1			
Enmes	.24**	.359**	.257**	-.120**	-.076	-.759**	-.462**	-.451**	-.584**	-.653**	.740**	.779**	.711**	1		
Rigid	.22**	.345**	.235**	-.192*	-.149**	-.692**	-.412**	-.467**	-.460**	-.588**	.709**	.687**	.639**	.724**	1	
Chaot	.15**	.337**	.232**	-.169**	-.126**	-.345**	-.226**	-.254**	-.267**	-.310**	.446**	.410**	.517**	.510**	.463**	1

Note. EA.N = Emotional abuse/neglect, VA = Verbal abuse, PA = Physical abuse, PN = Physical neglect, SA = Sexual abuse, M-care: = Maternal care, M-overp = Maternal overprotection, P-care = Paternal care, P-overp = Paternal overprotection, BC = Balanced cohesion, BA = Balanced adaptability, Diseng = Disengaged, Enmes = Enmeshed.
$^{*}p < .05$. $^{**}p < .01$. $^{***}p < .001$

The Hierarchical Regression Analyses with 15 predictors revealed the following predictors to be significant: Emotional Abuse and Neglect, Physical Abuse, Maternal Overprotection, and Rigid. To select a parsimonious regression model, both forward selection and criterion-based approach were used. First, the insignificant variable with the highest partial regression coefficient and t-value was selected to be added to the model with five significant predictors reported in Hierarchical Regression analyses. This model of 6 variables was compared to the model of 5 significant predictors. This process was repeated with the remaining variables, one added at a time, until R square change was no longer significant. The final result was a model with six variables: Emotional Abuse and Neglect, Physical Abuse, Sexual Abuse, Maternal Overprotection, Enmeshed, and Rigid. This result was endorsed using criterion-based approach, which identified these 6 predictors for the best reduced model. The reduced model with these 6 predictors that account for the most part of variance in BPF was compared to the full model with 15 predictors. Table 4 summarizes the results of model comparison between the reduced model of 6 predictors and the full model of 15 predictors.

Table 4. Model comparison of reduced and full regression model (N = 500)

	R	R^2	R^2 change	F change
Reduced Model	.49	.24		
Full Model	.50	.25	.015	1.60

Note. * p <.05, ** p<.01, *** p<.001

As shown in Table 4, R square change was insignificant ($\Delta R2 = .015$, $p > .05$) when moving from the reduced model with 6 independent variables to the full model with 15 independent variables included. Thus, there was evidence in favor of the reduced

model. Therefore, adopting the principle of parsimony, this study opted for the reduced model that included only six predictors of BPF to reduce errors of estimation. All regression analyses related to the effects of independent variables from this point onward include only six predictors in the reduced model. Discussion and conclusions of this study were drawn from the results of the reduced model of 6 predictors of BPF.

4.1. Childhood Trauma as Predictor of BPF

The first hypothesis, that childhood trauma would be positively associated with BPF, was supported. Table 5 shows the results of the linear regression with 6 significant predictors of BPF. In line with the rationale for the reduced model, only 6 predictors were included in this analysis. Emotional Abuse/Neglect, Physical Abuse, and Sexual Abuse were entered in model 1. Maternal Overprotection was entered in model 2. Enmeshed and Rigid were entered in model 3 of the Hierarchical Regression.

In model 1 with only childhood trauma variables, Emotional Abuse/Neglect (β = .30, $t(496) = 6.60$, $p < .001$) and Physical Abuse (β = .21, $t(496) = 4.67$, $p < .001$) had significant positive relationships with BPF. These two variables remained significant in model 2 when parental bonding variables were added and model 3 when family functioning variables were added. However, after all parental bonding and family functioning variables were added in model 3, Sexual Abuse (β = .18, $t(493) = 2.48$, p = .01) was found to be a significant predictor beside Emotional and Physical Abuse. Childhood trauma variables significantly predicted BPF and collectively explained 17% of variance in BPF scores ($R^2 = .17$, $F(3, 496) = 34.41$, $p < .001$) as shown in model 1, Table 5.

To compute the unique variance in BPF explained by Emotional Abuse/Neglect, the R square change from the model with 5 predictors (Physical Abuse, Sexual Abuse, Maternal Overprotection, Enmeshed, and Rigid) and the model with 6 predictors (Emotional Abuse/Neglect, Physical Abuse, Sexual Abuse, Maternal Overprotection, Enmeshed, and Rigid) was computed. Similar process was used to compute the unique variance in BPF of each of the other 5 predictors. Table 6 presents the unique variance in BPF explained by each of the six individual predictors. Physical Abuse uniquely accounted for 4% of variance in BPF, followed by Emotional Abuse and neglect (3%) and Sexual Abuse (1%).

To find the unique variance in BPF explained by Childhood trauma, the model with Maternal Overprotection, Enmeshed, and Rigid was compared to the model with Emotional Abuse/Neglect, Physical Abuse, Sexual Abuse, Maternal Overprotection, Enmeshed, and Rigid. The R square change from these two model comparison was reported as the unique variance in BPF explained by Childhood trauma. Similar steps were taken to compute the unique variance in BPF explained by Parental Bonding and Family Functioning. In agreement with the selection of the reduced model summarized in Table 2, childhood trauma variables includes Emotional Abuse and Neglect, Physical Abuse, and Sexual Abuse; parental bonding variables includes Maternal Overprotection; family functioning variables includes Enmeshed and Rigid. Table 7 summarizes the variance in BPD scores that each group of predictors accounts for. Childhood trauma uniquely explained 11% of variance in BPF out of 24% of variance explained by the model with 6 predictors included, which is the largest amount of variance in BPF among the three sets of variables.

Table 5. Results of hierarchical regression analyses with 6 predictors (N = 500)

	Intercept	Unstandard β	SE	Standard β	t-value	R	R^2	ΔR^2	F	F change
Model 1	19.71		.90		21.97	.42	.17		34.41	
Emotional abuse		1.18***	.18	.30	6.60					
Physical abuse		.78***	.17	.21	4.67					
Sexual abuse		-.09	.12	-.04	-.78					
Model 2	17.18		1.42			.43	.18	.01	27.37	5.32*
Emotional abuse		1.16**	.18	.30	6.50					
Physical abuse		.67***	.17	.18	3.89					
Sexual abuse		-.30*	.15	-.11	-2.03					
M-overprotection		.18*	.08	.13	2.31					
Model 3	4 .60		2.46			.49	.24	.06	25.88	18.94***
Emotional abuse		.84***	.18	.21	4.64					
Physical abuse		.84**	.17	.22	4.91					
Sexual abuse		.48*	.20	.18	2.48					
M-overprotection		.17*	.08	.12	2.25					
Enmeshed		.49***	.14	.24	3.58					
Rigid		.41**	.14	.20	3.21					

Note. M-overprotection = Maternal Overprotection, P-overprotection = Paternal Overprotection, B-cohesion = Balanced Ccohesion, B-adaptability = Balanced Adaptability
* p <.05, ** p<.01, *** p<.001

4.2. Parental Bonding as Predictor of BPF

The second hypothesis, that Parental Care would be negatively associated with BPF and that Parental Overprotection would be positively associated with BPF, was partially supported. When Maternal Care, Maternal Overprotection, Paternal Care, and Paternal Overprotection were added to the regression model, Maternal Overprotection was the only variable among parenting bonding variables to show significant positive relationship with BPF (β = .13, t(495) = 2.31, p = .02). This partial coefficient remained significant in model 3 when family functioning variables were added (β = .12, t(493) = 2.25, p = .03).

The third hypothesis, that parental bonding would account for a significant additional amount of variance in BPF, was supported. When adding the parenting

bonding variables in model 2, childhood trauma and parental bonding collectively accounted for 18% of variance in BPF score, $R^2 = .18$, $F(4, 495) = 27.37$, $p = .02$, with parental bonding variables uniquely explaining 1% of variance in BPF.

Table 6. Unique variance in BDF accounted for by each predictor variable in the reduced model.

Variable	ΔR^2	F
Emotional Abuse	0.030	21.51***
Physical Abuse	0.040	24.10***
Sexual Abuse	0.010	6.16*
Maternal Overprotection	0.008	5.08*
Enmeshed	0.020	5.08*
Rigid	0.016	10.31**

Note. *p<0.05, **p<0.01, ***p<0.001

4.3. Family Functioning and BPF

The fourth hypothesis, that family functioning variables would predict BPF in adolescents, was partially supported. Particularly, it was expected that the scores of the two balanced subscales (Family Cohesion and Family Adaptability) would be negatively associated with BP and that the scores of the four extreme subscales (Disengaged, Enmeshed, Rigid, and Chaotic) would be positively associated with BPF. Among the family functioning variables added to the regression model, Enmeshed ($\beta = .24$, $t(493) = 3.58$, $p < .001$) and Rigid ($\beta = .20$, $t(493) = 3.21$, $p < .01$) were shown to be significantly

predictive of BPF. Childhood trauma, Parental Bonding, and Family Functioning collectively accounted for 24% of variance in BPF, $R^2 = .24$, $F(6, 493) = 25.88$, $p < .001$.

Table 7. Unique effects of childhood trauma, parental bonding, and family functioning on BPF (N = 500)

	ΔR^2	F-change
Childhood trauma	.11	24.47***
Parental Bonding	.008	5.08*
Family functioning	.06	18.94***

Note. * p <.05, ** p<.01, *** p<.001

The fifth hypothesis, that family functioning would account for a significant additional amount of variance in BPF, was supported. R^2 change and F change were significant when moving from model 2 to model 3. Adding the family functioning variables explained a significant additional amount of variance of BPF in the model with six predictors over and above the variance explained by childhood trauma and parental bonding. Family functioning variables uniquely explained 6% of variance in BPF.

Among the 6 significant independent variables, Physical Abuse was found to be the strongest predictor, uniquely explaining 4% of variance in BPF, followed by Emotional Abuse, which accounted for 3% of variance in BPF. Maternal Overprotection, although its effect was significant, explained only 0.8% of variance in BPF, which is much smaller than Enmeshed (2%) and Rigid (1.6%). The six predictors together account for 24% of the variance in BPF. However, the unique amounts of variance explained by each individual predictor sum to 12.4%, therefore the six variables accounted for a shared amount of 11.6% of the variance in BPF. This result, together with the noticeable

correlations between the six predictors, indicates the interconnections among the different factors that are related to BPF.

5. Chapter 5: Discussion

The goal of this study was twofold: (1) to explore the relationships between childhood trauma, parental bonding and family functioning with BPF in adolescents, and (2) to examine the unique effect of each set of variable on BPF. Although several studies have examined the impact of childhood trauma, parental bonding and familial factors on the development of BPF, up to date, very little, if any, has been done to examine the role of family cohesion and family adaptability in BPF, especially in collectivist cultures. To this researcher's knowledge, the impact of childhood trauma, parent-child relationship, and family functioning on BPF has never been investigated among the Vietnamese population. This study addressed this gap of knowledge by examining the role of childhood trauma and family relationships in adolescent BPF at both dyadic (parent-child) and family level (interactions between all family members).

5.1. Childhood Trauma and BPF

The study's first hypothesis was supported. Childhood trauma was a significant predictor of BPF. Among the three sets of independent variables, childhood trauma was always found to be the most influential factor that accounted for the largest amount of variance in BPF. Moreover, as other independent variables were added, the partial associations of childhood trauma variables and BPF not only remained significant (Emotional Abuse), but also became more obvious (Physical Abuse and Sexual Abuse).

Findings in this study were both convergent to and divergent from previous research. Although literature on the developmental consequences of childhood trauma documented increasing evidence of the deleterious impact that abuse and neglect had on victims both in their childhood and adulthood (Cicchetti & Manly, 2001), results across

studies did not converge due to many factors in research methods. The first factor is related to sampling method. The likelihood of finding significant relationships between childhood trauma and BPD/BPF could be influenced by whether the target sample was clinical or nonclinical. Since both childhood trauma and BPD/BPF are higher in clinical samples (APA, 2013), it was much more likely to detect significant relationship between these two variables even with modest sample sizes (Hayashi et al, 1995). Evidence of childhood trauma as risk factor of BPD/BPF was less consistent in clinical population because of the low rate of childhood trauma and BPD/BPF in the nonclinical population (APA, 2013). Even among nonclinical populations, the prevalence of trauma types varies across samples. For this reason, comparing findings to previous research that used samples of similar characteristics would cast better light on interpretations of research findings than comparing samples from both clinical and nonclinical populations.

Another factor that could explain the divergence of this study outcome from literature relates to the difference in measurement and data analytic procedures. Whether a significant relationship between childhood trauma variables and BPD/BPF were found may also be affected by how each variable is measured and aggregated. For example, researchers may measure childhood abuse by asking one question (Timmerman & Emmelkamp, 2001; Bradley, Jenei, & Westen, 2005, Sansone, Hahn, & Dittoe, 1011) or aggregating more than one type of abuse into one latent variable (e.g., physical and sexual abuse, Trull, 2001; all types of abuse, Guzder, Paris, Zelkowitz, & Feldman, 1999). Aggregating more than one type of abuse may make it more likely to detect a significant relationship between childhood trauma and BPD/BPF because low rate in one type of abuse may be offset by higher rate in others, which increases the overall

prevalence of childhood trauma in the measured variable. This analysis strategy could make a significant relationship more likely to be detected. For a single indicator measure, low reliability of the measure may bias research findings, rendering it more inconsistent by magnifying errors of measurement. This study investigated each type of trauma separately using the adapted version of CTQ. Physical neglect was not aggregated with other types of neglect or abuse, which could explain the lesser strength of effect it could have had on BPF.

5.1.1. Emotional abuse, physical abuse and sexual abuse

Within the focus on nonclinical samples, many previous studies supported the significant relationship between BPF and Emotional Abuse (Afifi et al., 2011, Igarashi et al, 2010; Carr & Francis, 2009; Gratz, Latzman, Tull, Reynolds, & Lejuez , 2011), Physical Abuse (Afifi et al., 2011; Widom, Czaja, & Paris, 2009), and Sexual Abuse (Afifi et al., 2011; Carr & Francis, 2009; Gratz et al, 2011; Elzy, 2011; Widom, Czaja, & Paris, 2009).

Emotional abuse and Physical Abuse were found to be significantly and positively associated with BPF across three models before and after parental bonding and family functioning were introduced to the prediction models. However, the partial regression coefficients of Sexual Abuse was inconsistent between models. Sexual Abuse was significantly and positively associated with BPF only when all variables were added. This unstable estimated partial coefficient of Sexual Abuse may be due to many possible factors including multicollinearity, which will be discussed later in this section, and low internal consistency of the instrument that measured Sexual Abuse (Alpha = 6.0). Among five scales of the Childhood Trauma Questionnaire Adapted, Sexual Abuse had the

lowest internal consistency. This may raise the issue of validity of findings related to Sexual Abuse and BPF.

Findings about the impact of Emotional Abuse and Physical Abuse leave much space for contextual factors to be explained. Physical Abuse may be operationalized very differently for Western and non-Western cultures, particularly for the Vietnamese culture, where corporal punishment is considered a normal way of disciplining children and adolescents (Nguyen, 2012). Since abuse and neglect happen in interpersonal relationships, wherein culture plays an important role, cultural norms and perception of what is going on need to be considered in assessing and interpreting these concepts. Corporal punishment and neglect would probably have more negative impacts on child outcomes if the child and the culture in which the child lives perceive it as abuse and nelgect. Within collectivist cultures and in discipline situations, the negative effects of corporal punishment on child outcomes would not be expected the same way as they are if these are conscious strategies pursued for the child's benefit and if negative parental affect for the child is not an issue (Rudy & Grusec, 2001). This perspective was reflected in the revised version of the Physical Abuse Scale used for this study. It is possible that Physical Abuse was found to have significant impact on BPF because the scale used to measure Physical Abuse was revised to reflect the cultural differences in this study (see the method section for a detailed discussion of this revision). For this reason, it is not clear whether Physical Abuse would be found to be a significant predictor of BPF if it had been measured using the original scale CTQ, which reflects Western perspectives of Physical Abuse.

5.1.2. Verbal Abuse and Physical Neglect

Compared to research in other types of trauma, literature on Verbal Abuse and BPF is scant, probably due to the absence of this construct in the majority of existing measures. Within that limited source of literature, findings about Verbal Abuse in this study refuted Johnson and colleagues (2001), who examined an American sample and supported Igarashi et al (2010), who studied a Japanese sample. No significant relationship between BPD and scolding was found among the Japanese sample, which is close to verbal abuse in this study. Given that communication is a culture-bound interaction, what type of verbal communication should be considered verbal abuse may not be the same across cultures. For instance, although parental criticism was found to predict child mental health outcome in Western families (Wedig & Nock, 2007), it does not work that way in Southeast Asian cultures where people typically do not focus on the positive (Mesquita & Walker, 2003). While individualist cultures encourage strengthening good qualities to become autonomous and unique, collectivist cultures emphasize living up to obligations and responsibilities and focus on the prevention of bad outcomes (Mesquita & Walker, 2003). Therefore, in the Vietnamese context, criticism may be part of the normal process of education to prevent bad outcomes and thus may not be considered verbal abuse.

Because literature on Vietnamese families is scant, this researcher relied on research that examined parent-child relationships in Southeast Asian cultures, especially Chinese culture, to interpret research findings in this study given their shared cultural legacy of Confucianism. Within this shared framework of ethics, parental beliefs about their responsibility of criticizing and shaming children in parenting practice (Chao, 1994; Lieber et al., 2006) could explain why criticizing and verbally putting children to shame

might not have as strong effect as they do in other cultures. In Confucian cultures, it is a common believe that when children disobey rules, parents should criticize and put them to shame to help them learn to behave. This practice is done for the benefit of the children, who are expected to understand their parent's purpose (Lieber et al., 2006).

With regard to Physical Neglect, results from this study diverged from a larger number of studies (Afifi et al., 2011; Jovev et al., 2013; Widom, Czaja, & Paris, 2009) that documented physical neglect as a predictor of BPD traits, but supported Igarashi and colleagues (2010) who found the impact of neglect on BPD negligible. Two hypotheses could be advanced to explain the non-significant relationship between physical neglect and BPF in this study. First, as mentioned above, physical neglect would probably have powerful detrimental effect on child outcome if the child views it as such. In a developing country such as Vietnam, where many children are still living in conditions that are considered "neglectful" by the West, adolescents may not perceive the conditions in which they are living as such because many of their peers are in the same situation.

This may cause resentment around the world, in 2013, the government of Vietnam officially made it legal for business to hire children under 15 years of age as paid workers, which means children under 15 had been found in this situation long before the law was passed (Nhan Quyen va Tu Do, 2013). Regretfully, a deeper discussion of the negative impact of this condition and this law on children and adolescents' physical health, academic performance, and many other aspects is beyond the scope of this paper. While the instruments that measure child neglect focus mainly on whether children have enough food to eat and clean clothes to wear, whether someone takes care of them when they are sick, and whether they have to labor to earn a living, the United Nations

Children's Emergency Fund (UNICEF) documented one third of Vietnamese children living in these conditions, having to help their parents to earn a living, struggling to have enough food to eat, and taking care of themselves and their younger siblings while their parents work hard to make ends meet (UNICEF, 2014). While UNICEF reports this condition to be alarming, it is unknown whether children and adolescents perceive it as neglectful and whether they harbor any negative feelings on the belief that they are abandoned, neglected or abused.

A look back at Table 3 suggests another explanation from a statistical point of view. Given the strong correlations between Verbal Abuse and Emotional Abuse and between Physical Neglect and Physical Abuse, it is possible that Emotional Abuse and Physical Abuse shared a great amount of variability with Verbal Abuse and Physical Neglect, which left little variance in BPF for Verbal Abuse and Physical Neglect to account for when they were entered together with Emotional Abuse and Physical Abuse in the same model. With regards to Sexual Abuse, multicollinearity tells a complex story. While Sexual Abuse has significant negative correlations with Emotional Abuse and Verbal Abuse, it has significant positive correlations with Physical Abuse and Physical Neglect. Moreover, the bivariate correlation between Sexual Abuse and BPF is very low and negative ($r = -.089$). It should be also noticed that the correlations between Sexual Abuse and all parental bonding variables and family functioning variables are high, actually they includes the highest bivariate correlations in the correlation matrix. However, the bivariate correlations between Sexual Abuse and many predictors are unexpected in their directions. For example, Sexual Abuse had significant positive high correlations with all four parental bonding variables ($r = 5.64$ to 8.67). To the contrary, it

has significant negative correlations with all family functioning and high negative correlations with 5 out of six family functioning predictors (r ranges from -6.17 to -8.32). This may explain why the partial regression coefficient of Sexual Abuse was found to be highly unstable across the three models. When only childhood trauma variables were included in the model, Sexual Abuse has an insignificant negative relationship with BPF. When added in the same model with Parental bonding variables, it has a significant negative relationship with BPF. When all family functioning variables were added, this significant negative relationships turned to significant positive relationship. This unstable partial regression coefficient points to the complex effect of multicollinearity on findings about Sexual Abuse and BPF.

Recently, researchers examining the impact of childhood trauma on BPD using a discordant twin design and biometric modeling argued against the common academic belief that childhood trauma is an important etiological factor of BPD (Bornovalova et al., 2013). However, to close the discussion on the impact of childhood trauma on BPF, consistent findings about the unique impact of childhood trauma on BPD/BPF among nonclinical sample, which was supported in this study, added evidence to existing the literature that endorsed childhood trauma as an important predictor that should be specified in the regression model even if it may not be an etiological factor in BPD.

5.2. Parental Bonding and BPF

Related to the second hypothesis, Maternal Overprotection was significantly associated with BPF, but not Paternal Overprotection. Both Maternal Care and Paternal Care had non-significant effects on BPF.

First, these results added evidence to the reported ambiguity in existing literature with regard to Parental Bonding and BPD. Particularly, findings of this study partially supported early studies by Paris and Frank (1994) and Hayashi and colleagues (1995), who found Paternal Overprotection to have an insignificant effect on BPD. However, contrary to the hypothesis and to findings of all previous studies, neither Maternal Care nor Paternal Care had significant effects on BPF in this study. These reported insignificant relationships were consistent before and after family functioning variables were added to the prediction model. These non-significant relationships could be explained from both conceptual and measurement perspectives.

Operationally, within the shared framework based on Confucian values and philosophy, parental love and care are expressed very differently from the ways they are in individualist cultures (Cauquelin et al., 2000, Jum, 1988). Two important constructs under parental love and care in the Confucian framework that are not conceptualized in individualist cultures are Training (Chao, 1994) and Shame (Lieber et al., 2006). Child-rearing beliefs include the benefit of close monitoring, correcting children's behaviors, sacrificing for children's education benefit, training children as early as possible to work hard, reminding them of conduct rules, using harsh discipline sometimes for children's own good, shaming them when they disobey rules to help them learn to behave, and making them afraid sometimes to get them to listen, all aiming to help children understand that their parents love them unconditionally (Chao, 1994; Lieber et al., 2006).

None of the constructs mentioned above have any place in the PBI, which operationalized parental care as showing warm emotions typically shown by Western people: speaking to the child in a warm and friendly voice, being affectionate and not

emotionally cold, smiling with the child, making the child feel better when s/he is upset, making the child feel s/he is wanted, talking with him/her a lot, and praising her/him often. People in Confucian cultures do not express emotions to others in the same ways that Western people do (Mesquita & Walker, 2003). This also holds true in the way parents express affect to their children (Lieber et al., 2006). It is likely that the ways Parental Care is operationalized in the PBI, which is very different from the way it is expressed in Confucian cultures, rendered its impact on BPF insignificant.

Why Maternal Overprotection was a significant predictor of BPF and Paternal Overprotection was not is an interesting question. It could be that the Vietnamese fathers tend to exert control over their children while mothers tend to ally with their children to gain control, although the overall goal for both was to enforce absolute obedience from their children (Cheung & Nguyen, 2001). For this reason, children may view paternal control over them as normal and expected while maternal control may be conceived more negatively.

From the measurement perspective, multicollinearity may play a role in the insignificant partial associations between Maternal Care, Paternal Care, and Paternal Overprotection with BPF. As seen in Table 2, Maternal Overprotection has strong correlations with Maternal Care ($r = 3.21$, $p < .01$), Paternal Care ($r = 50$, $p < .01$), and Paternal Overprotection ($r = .69$, $p < .01$). It is possible that the shared variability of Maternal Overprotection and the three variables above explained the fact that when Maternal Overprotection accounted for a significant amount of variance in BPF, there was not much variance left for the other three variables to explain.

The fact that Parental bonding explained a significant additional amount of variance in BPF suggests that Parent-child interaction is a factor that needs to be considered in examination of risk factors of BPF. However, the effect size of Parental bonding was the smallest compared to childhood trauma and family functioning. As an individual independent variable, Maternal Overprotection was also found to be the least powerful predictor of BPF. This indicates that parental factor exerts weaker impact on child BPF relative to adversities in childhood and family dynamics.

5.3. Family Functioning and BPF

5.3.1. Family Cohesion and Adaptability as predictors of BPF

Among the family functioning variables, Enmeshed and Rigid were found to be significantly and negatively associated with BPF. The negative relationship between Rigid and BPF was concordant with the significant relationship between Maternal Overprotection and BPF discussed above. As mentioned before, the family functioning variables, which were the main focus of this study, were specified in the regression model to bridge the gap in literature that mostly investigated the impact of care and control at the dyadic, parent-child level. While parental excessive control was repeatedly found to predict BPD/BPF, this is one of the first findings of the impact of control at the family level on BPF. Interestingly, the unique variance in BPF explained by care and control at the family level was revealed to be much bigger than that at the dyadic level. This finding means that the family as an entire system plays an important role in child BPF, although this role has been neglected in the literature on family dynamics and BPD/BPF.

The fact that Enmeshed is significantly and negatively associated with BPF but Maternal Care, Paternal Care, and Balanced Cohesion have no significant relationships

with BPF is consistent with findings about Paternal Care and Maternal Care. Similar interpretations can be made about the way care is conceptualized and operationalized at family level that does not reflect the expression of care in the Vietnamese culture. It should be noticed that the healthy levels of care at both family system and dyadic level in this study were not revealed as protective factors while the unhealthy level of care in the intrusive direction (Enmeshed but not Disengaged) was found to be a risk factor of PBF. Whether this is due to the limitation in operationalizing functional level of care or other possible factors remains a question for further research to explore.

Recall that Enmeshed and Rigid are the two scales of the FACES that were substantially revised to better reflect the concept of cohesion and control in the Vietnamese culture. The operationalization of the revised scale of Rigid did not only describe the inflexibility of roles, rules, and expectations but also reflected the unreasonable level of rigidity, which may have played an important role in making Rigid a negative concept as it was originally defined. Similarly, the revised scale of Enmeshed also took into consideration the excessive level of care that implies family members' dissatisfaction with the issue of over-involvement in their families.

In the history of continual revision of the FACES to respond to criticisms of the limitations of this instrument, Olson (2000) reminded researchers and clinicians of the sensitivity of the Enmeshed and Rigid scales in collectivist cultures, singling out Southeast Asian culture as a specific example. Taking this reminder into consideration, the scale Enmeshed and Rigid were thoroughly revised with change made to all 7 items for Rigid and most of the items for Enmeshed to make Enmeshed adequately enmeshed and Rigid adequately rigid according to the Vietnamese culture. This re-

operationalization of the concepts is important because it helped to reduce the confusion caused by the unanswered question: Do unreasonable excessive involvement and control have significant negative impacts on child outcomes or family members' mental health in collectivist cultures? The answer is yes from the research findings of this study. Enmeshed and Rigidity or unreasonably excessive involvement and control at family level do have negative impact on mental health outcome even in a collectivist culture if these concepts are culturally properly operationalized and measured.

The issue of multicollinearity that was discussed with regards to the relationships between Childhood trauma and Parental bonding variables with BPF may also hold true for family functioning variables. As shown in Table 2, Rigid has strong correlations with Balanced Cohesion ($r = .71$, $p < .01$), Balanced Adaptability ($r = .69$, $p < .01$), Disengaged ($r = .64$, $p < .01$), and Enmeshed ($r = .72$, $p < .01$). Multicollinearity in this case may render estimation of partial regression coefficients less stable. The fact that Enmeshed and Rigid share a great amount of variability with Balanced Cohesion, Balanced Adaptability, and Disengaged may explain why little variance in BPF was left for Balanced Cohesion, Balanced Adaptability, and Disengaged to account for in the model when they were all entered together with Enmeshed and Rigid.

Finally, the supported hypothesis that family functioning explained a significant additional effect on childhood trauma and parental bonding showed the essential impact of family interactions as a system on family members' mental health outcome above and beyond the influence of childhood trauma and parent-child dynamics.

With regards to the unique effects of six predictors, Physical Abuse was revealed to have the strongest effects on BPF, followed by Emotional Abuse. It should be noticed

that Physical Abuse and Emotional Abuse in this study were conceptualized and operationalized as harmful interactions within the family and involving the family as an entire system, not outsiders and not just parents. In that perspective that emphasizes the strength of family interactions, it is not surprising that Enmeshed and Rigid, the two family functioning factors, came next as the third and fourth strongest predictors. The effect of the mother as an individual on BPF is the smallest.

At a conceptual level, Physical Abuse could be seen as control using physical violence. Emotional Abuse could be seen psychological control while emotional neglect is the absence of care and emotional bond. Thus, to some extent, this study examined different levels of care and control across different family dynamics. Within that shared conceptualization, unhealthy control using physical violence at the family level (Physial Abuse) exerts the strongest impact on BPF, followed by psychological control in the absence of care at the family level (Emotional Abuse and Neglect). The next strongest were the unhealthy level of care in the direction of over-involvement and intrusiveness, followed by excessive, inflexible and unreasonable control at the family level. The effect of excessive, unreasonable control by an individual, the mother, ranks last in the list of risk factors of BPF.

6. Chapter 6: Implications and recommendations

This study investigated different types of childhood trauma, parental care and overprotection, and balanced and extreme levels of family cohesion and adaptability as predictors of BPF in the Vietnamese adolescents. Research findings have various implications both for clinical practice in the Vietnamese context and future research.

6.1. Implications for Clinical Practice

Given the strong emphasis on social relationships, most clients who seek counseling in Vietnam need help with couple and family issues. Although training in Family Therapy is not provided as a formal program by any institution in Vietnam, family counseling has become more common since 2000 with the return of counselors trained in the United States, European and other Asian countries such as the Philippines, Singapore and Thailand. However, these helping professionals hardly adapt the theories learned from Western cultures in clinical practice with Vietnamese families. Therefore, research findings of this study can be helpful to both Vietnamese counselors and clients. A discussion of clinical implications of this research did not target a number of practicing counselors who are practicing without any formal training in counseling, but at professionals who have been trained to work with couples and families.

Four implications can be made from the key findings of this study. First, among the childhood trauma variables, Emotional Abuse, Physical Abuse, and Sexual Abuse predicted BPF, but Physical Neglect and Verbal Abuse did not. Although the results of this study supported research findings in previous studies, they may not have the same implications in a Vietnamese context given its cultural differences. For instance, family interventions aiming at physical abuse should not only consider the level of severity of

physical abuse but also the meaning of corporal punishment in the overall context of parental affect, parental training intention, and the adolescent's perception of corporal punishment as an approach to correcting their wrong behaviors. Simply applying the criteria set by the West and clinical intervention strategies or preventive measures from individualist cultures may not be helpful.

Second, the result about the impact of maternal and paternal overprotection on BPF pointed to the unique gender roles in the Vietnamese parenting. Without pathologizing the mother, clinicians should be aware of the mother's distinctive role of allying with her children in parenting, which may be related to children's expectations of her as a nurturing but not controlling adult. The traditional Dialectical Behavioral Therapy (Linehan, 1993a; 1993b) intervention approach that aims at changing individuals with BPF may explore mother-child expectations and interactions in the third and fourth modules that address problems in interpersonal relationships and distress tolerance. By doing so, the important factor of maternal overprotection can be directly targeted within a treatment model that has been empirically tested and proved to be effective.

With regard to family functioning, since family functioning has an important impact on child outcomes above and beyond the influence of parent-child relationships, interventions to facilitate change at the entire system level is recommended in lieu of just addressing relational problems at parent-child level. Because family interactions have important impact on BPF, it is recommended that family therapy be used for interventions to target the less optimal family dynamics. Family therapists may explore the level of over-involvement, unreasonable excessive control, and inflexibility in family dynamics when targeting the family as a system. This would be highly relevant if one or

two parents do not function well mentally or practice parenting in a way that causes deleterious effect on their children but are not accessible to therapy. Family interventions that aim to change the ways the entire system functions may represent a solid approach to intervention.

Given the unique characteristics of the culture, family members' perceptions of the family dynamics should be taken into consideration when doing family therapy. What is regarded as malfunctioning in an individualist culture may not be malfunctioning if people in the family do not perceive it as such. For this reason, a non-directive approach to family therapy is recommended to get family members involved as co-therapists. This approach needs to integrate input from family members on the assumption that they know their reality, that they can attribute the best meanings to their realities and make the best choices for themselves that fit their values. This approach can also help professional therapists to explore the meanings of each family dynamics in the Vietnamese context that has never been investigated empirically.

6.2. Implications for Future Research

The following recommendations can be made for future research based on the outcomes of this study. First, since physical neglect had the lowest rates among all childhood trauma variables under study, the insignificant relationship between this variable and BPF may be due to its small prevalence in the current sample. Future research may examine the relationships between physical neglect and BPF using a Vietnamese clinical sample to shed light on the impact of physical neglect when there is enough power and base-line rate of neglect to detect the significant influence of this variable.

Second, with Maternal Overprotection revealed to have significant influence on BPF, targeting parenting in the family as an important channel of change is recommended. However, what particular dimension makes the biggest difference in child outcome within this dimension of overprotection has much room for future research to explore. According to Barber's Theory of Parental Control (1996), the important aspects in parenting practice associated with child mental health outcomes are intrusiveness and low parental support. However, the concept of intrusiveness is often nested within either or both of the constructs care and control, making these two constructs overlap. Baumrind (2005) pointed to the challenge in research on parental care and control if this overlap was not addressed. It would be useful for future research to separate intrusiveness from the overall concepts of care and control to give clearer directions to clinical interventions. Parental care and parental control may interact with parental intrusiveness differently to create different impacts. Knowing what factor primarily explains child mental health outcome would help clinicians to target the right goal for interventions.

As a pilot study that aimed partially to cast light on how the instruments used in this study can be culturally adapted, findings of the current study may provide empirical foundation on which these measures can be revised to better capture the core concepts of physical neglect, verbal abuse, parental care, family disengaged, family chaotic, balanced cohesion, and balanced adaptability before conclusions can be drawn about the effects of these variables on BPF.

Given the importance of emotional bond conceptualized in Attachment Theory, which has been proven to apply across cultures, it is highly recommended that this concept be re-operationalized in collectivist cultures in general and Vietnamese culture in

particular. This may be done in several steps. First, the dimensionality of the PBI and FSCES IV can be assessed using Item Response Theory by comparing fit statistics of the Unidimensional and Multidimensional Graded Models. By determining which model is plausible, this step can provide useful information to group items into factors in the optimal way. Next, analyses of item information and test information using Item Response Theory can help to select the items with good discrimination power to distinguish high and low level of care and control in reconstructing the instruments. Having valid and reliable assessment tools to measure such important concepts of parent-child and family relationships would contribute greatly to future research in parental bonding, family interactions and mental health outcome.

Finally, qualitative research is recommended, which may help in the exploration of unknown dimensions under care and control at both dyadic and family levels in the process of re-operationalizing care and control in both the PBI and the FACES. Two steps can be taken to make this happen. First, the Delphi method can be used to elicit opinions from experts like Psychologists, education professionals and sociologists regarding how care and control is expressed in the Vietnamese culture. Second, input from focus groups of parents can be used as important foundations on which care and control can be re-operationalized.

6.3. Limitations

The first limitation of this study relates to its sampling method. Since the majority of participants were college students, the sample may not be representative of the Vietnamese adolescent population. Adolescents who dropped out of school or never had a chance to go to school were not included. This subsample may have unique

characteristics that were not shared by the sample in this study. Specifically, they may come from families with very low social economic status that may have higher child abuse rates. The results of this study may not have been the same if this group had been recruited. For example, the impact of sexual abuse and physical neglect may be easier to detect with higher base rates of abuse among this excluded population.

Another limitation is the small sample size, which may also have made it difficult to detect significant relationships between BPF and independent variables. Although power analyses were conducted and non-normality of distribution anticipated, the criteria for estimating and magnifying the sample size was not very clear. This study estimated a sample size that was roughly based on Cohen's (1992) suggestions and also on the scope and time amount allowed for this research project. Hence, findings from this study should be interpreted with care.

Because comparative groups with other Axis II disorders were not included, it was hard to know whether the punitive factors found in this study were unique to BPF or shared by people with other Axis II mental health disorders. Including clinical groups with other Axis II diagnoses would help clear this confusion. However, diagnosis and treatment of Axis II disorders is not a common practice in Vietnam, which makes recruitment and assessment a big challenge in the Vietnamese setting. In that context, it was reasonable to start with a non-clinical population.

Besides sampling method, limitations were also due to unstandardized measures. One aim of this study is to explore the use of employed assessment tools in a Vietnamese sample to set an empirical foundation on which they can be revised and culturally adapted. The low internal reliability of the two scales Physical Neglect and Sexual Abuse

may have affected the reliability and validity of research findings related to these two variables. Therefore, although the results of this study are useful to the next phase of the study, which aims to validate and standardize these instruments to be used with the Vietnamese samples, the meaningful implications of research findings about the relationships of the variables and BPF in this study may be compromised.

Given the moderate to high correlations between many independent variables, there was a concern of how multicollinearity affected the estimation of partial regression coefficients and standard errors. Although collinearity typically does not affect the power of prediction of the entire model, it can render estimation of partial coefficients unstable and inflate standard errors. For this reason, findings of this study should be interpreted with care.

Finally, there was the limitation in research design. Since research on BPD/BPF is no longer at the explorative stage, strong designs that help to draw conclusions about causal relationships should be needed. A cross sectional design and regression analyses are not the optimal design to meet this criterium. With validated and reliable instruments available, future research can look at the effects of childhood trauma, parental bonding and family functioning on the trajectories of BPD/BPF using longitudinal design to examine the roles of these risk factors from a developmental and etiological perspective.

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Appendix 1. The McLean Screening Instrument for Borderline Personality Disorder Adapted

No.		Never true	Rarely true	Sometimes true	Often true	Very often true
1	I often have a lot of arguments or repeated breakups in my closest relationships.	0	1	2	3	4
2	I have deliberately hurt myself physically (e.g., punched myself, cut myself, burned myself) or made a suicide attempt.	0	1	2	3	4
3	I have had two or more problems with impulsivity (eating binges and spending sprees, drinking too much, having angry outbursts, driving recklessly, having promiscuous sex, using drugs).	0	1	2	3	4
4	I am extremely moody.	0	1	2	3	4
5	When I believe that my loved ones abandon me or do not care about me, I often get angry, sarcastic or resentful and lose control, and then I feel guilty.	0	1	2	3	4
6	I am often distrustful of other people.	0	1	2	3	4
7	There have been moments when I felt that I was unreal, or that things around me were unreal.	0	1	2	3	4
8	I chronically feel empty and often try to find something to do so that I feel less empty.	0	1	2	3	4
9	I often feel that I have no idea of who I am or that I have no identity.	0	1	2	3	4
10	I have made desperate efforts to avoid feeling abandoned or being abandoned (e.g., repeatedly called someone to reassure myself that he or she still cared, begged them not to leave me, clung to them physically).	0	1	2	3	4
11	My relationships with other people often change from very positive feelings to very negative feelings after a short time. I often idealize them when I first meet them, but I get disillusioned and devalue them when I know them better.	0	1	2	3	4

12	I have hurt myself, or threatened to hurt myself, when I believed that my loved ones had rejected me, abandoned me, or would leave me.	0	1	2	3	4
13	I often find everything in my life meaningless.	0	1	2	3	4
14	I feel close to many people after just a short time, and I want to spend more time or share my personal life with them. However, I quickly become disillusioned when I realize that they do not care much about me, and that they receive a lot but give very little.	0	1	2	3	4
15	Over and over, I have changed my life objectives, values, career interests, or the types of people with whom I want to be friends.	0	1	2	3	4
16	I look after other people's needs, but I expect them to look after my needs in return. I am often resentful because most of them do not.	0	1	2	3	4

Appendix 2. The Childhood Trauma Questionnaire Adapted

When I was growing up…

No.		Never true	Rarely true	Sometimes true	Often true	Very often true
1	People in my family despised me.	0	1	2	3	4
2	I was often harshly criticized or accused in my family.	0	1	2	3	4
3	I was tortured many times by people in my family for unexpected reasons or no reason at all.	0	1	2	3	4
4	I did not have enough to eat.	0	1	2	3	4
5	My existence was not important to anyone in my family.	0	1	2	3	4
6	I was humiliated by my family members.	0	1	2	3	4
7	Just to vent their anger, people in my family hit me so hard that it left me with bruises or marks.	0	1	2	3	4
8	I had to wear dirty, tattered clothes.	0	1	2	3	4
9	People in my family believed that I would definitely be a failure or a good-for-nothing.	0	1	2	3	4
10	I was insulted by my family members	0	1	2	3	4
11	I was beaten for any trivial thing I did that displeased adults in my family.	0	1	2	3	4
12	I was homeless or lived in slums.	0	1	2	3	4
13	People in my family did not care whether I succeeded or failed.	0	1	2	3	4
14	People in my family said things that deeply hurt my human dignity.	0	1	2	3	4
15	I was attacked by family members with a belt, board, cord, table, chair, knife, pair of scissors, or some hard or sharp object.	0	1	2	3	4
16	I had to work hard to earn my living before I was fifteen.	0	1	2	3	4
17	No one in my family cared when I felt sad or discouraged	0	1	2	3	4
18	People in my family ridiculed and derided me.	0	1	2	3	4

19	People in my family hit me cruelly to vent their fury, not to correct me for wrongdoing or make me a better person.	0	1	2	3	4
20	I was not taken care of when I was sick.	0	1	2	3	4
21	Someone unclothed me against my will to abuse me sexually.	0	1	2	3	4
22	Someone touched one of my sexual organs against my will.	0	1	2	3	4
23	Someone forced me or fooled me into watching pornographic material.	0	1	2	3	4
24	I was forced to have sex with someone who threatened to harm me or my loved ones if I refused.	0	1	2	3	4
25	I was raped.	0	1	2	3	4

Appendix 3. Training Protocol: Data Collection and Management

Training Protocol

Data Collection and Management

Project: "Borderline Features in Adolescence:

The Roles Childhood Trauma, Parental Bonding, and Family Functioning"

To Nga M. Hoang

Family Social Science

Purpose of the protocol

This training protocol serves as the guidelines in the process of training the personnel in recruiting participants and collecting and managing data for the dissertation research project conducted by To Nga Minh Hoang as partial fulfilment of the required written examination by the Department of Family Social Science, University of Minnesota.

The research project related to this training protocol aims to answer the following questions:

1. Is childhood trauma experienced in interpersonal relationships predictive of borderline features among Vietnamese adolescents?
2. Are parental care and parental overprotection predictors of borderline features among Vietnamese adolescents?
3. Does parental bonding account for a significant additional amount of variance in borderline features after controlling for the effect of childhood trauma?
4. Are family cohesion and family adaptability predictors of borderline features among Vietnamese adolescents?
5. Does family functioning account for a significant additional amount of variance in borderline features after controlling for the effect of childhood trauma and parental bonding?

Hierarchical Regression Analyses will be used to explore the relationships between childhood trauma (physical neglect, physical abuse, emotional neglect and abuse, verbal abuse, sexual abuse), parental bonding (parental care and parental overprotection), family functioning (balanced cohesion, balanced flexibility, disengaged,

enmeshed, rigid, chaotic) and borderline personality features in adolescents. Fifteen independent variables (physical neglect, physical abuse, emotional neglect and abuse, verbal abuse, sexual abuse, paternal care, maternal care, paternal overprotection, maternal overprotection, balanced cohesion, balanced flexibility, disengaged, enmeshed, rigid, and chaotic) will be examined as predictors of BPD features.

Personnel

This protocol will be used to train four collaborators in the research team, who will be involved in the recruitment and data collection and management process for the research project described above. Two members of this team, hereafter referred to as two research assistants, have Master degrees in Psychology. Two others with Bachelor degrees in Psychology, who will replace the research assistants if any of them drops out, will form the reserve team.

The research assistants will have have been trained and passed all the tests in CITI and IRB training modules delivered by the University of Minnesota before they participate as collaborators of this project. Training in this protocol is the last step before they can work as research assistants in the research project, which requires close supervision to check on strategies and process in data collection, data management, and adverse event management.

Recruitment Approach

Recruiting Procedures

The current study will utilize data collected from a sample of 500 students from colleges, high schools and late education programs in Ho Chi Minh City, Vietnam. Participants will be recruited in Fall semester and Winter Break 2013. First, the

researcher will send letters to principals of colleges, high schools and late education programs from which she hopes to recruit students to explain the purpose of the study. These letters ask permission to introduce the study to parents who attend parent-teacher meetings in December and to students in semester-end block meetings to recruit students for this study.

In the next step, the two research assistants will visit the schools/colleges that give permission for recruitment, bringing the researcher's letter to advisory faculty members (for colleges) and teachers in charge of each block (for high school and late education programs). This letter will explain the purpose of the study and ask for permission to briefly introduce the study and distribute letters of recruitment and questionnaires to parents who will attend parent-teacher meetings or students who will attend student block meetings.

The letter of recruitment to parents will explain the purpose and procedure of the study and the potential risks involved in participating. It will also have contact information of the researcher and two research assistants (email addresses and telephone numbers) so that parents who are interested can contact them by email or telephone for more information before deciding whether to allow their children to participate.

The letter of recruitment to students will explain the purpose and procedure of the study as well as the potential risks of participating in the study. It will also have the contact information of the researcher and two research assistants (emails, telephone numbers and postal addresses) so that students who are interested can contact the researcher or the research assistants for further information about the study.

Both letters to parents and students will state clearly that participation in the study is voluntary, has nothing related to any activities of the school, and will not add any credit to students' grade or records. However, it will state the benefit of advancing knowledge of the role of family relationships and childhood experience in personality development, which will be helpful for therapists and researchers who study or work with families having family members with Borderline Personality features.

The two research assistants will come to parent-teacher meetings and semester-end block meetings at high schools and late education programs that allow recruitment of students in their schools. First, the research assistants will distribute the assessment packages that include the recruitment letters, the questionnaires, and the consent/assent forms. The research assistants will introduce the study to parents and students, explain the purpose and the procedure of the study, and the risks and benefits involved in participating in the study. Parents/students will have recruitment letters and questionnaires at hand to check the information they may miss during the presentation and follow up with questions after the presentation. Next, the research assistants will walk parents/students through the informed consent by reading it aloud and explaining sentence by sentence, checking their understanding, asking questions and answering any questions they may have regarding informed consent. Parents and students will have consent/assent forms at hand to follow the presentation closely and ask questions after the presentation.

Inclusion criteria

Any adolescent within 15-18 years of age who is a student of one of the colleges, high schools, or late education programs where permission for

recruitment is obtained is qualified to participate in this study. In Vietnam, late education programs are schools for students who, for some reason (e.g. low social economic status, families constantly moving from one city to another, having to work early to earn a living), can only start school when they have passed the age limit to be admitted to regular schools.

Exclusion criteria

Students from colleges, high schools and late education programs whose principals do not give permission to recruit their students will not be included. Since this study targets college, high schools and late education programs for recruitment, adolescents who do not attend colleges, high school or late education programs will not be included. In addition, given that the target respondents of the instrument are adolescents from 15-18, those who are not within this age range will be excluded.

Acceptability of sample

A sample is determined to be acceptable if:

a. Participants are from schools and colleges where permission has been obtained for recruitment

b. Participants' age ranges from 15-18

c. Informed consent and/or assent have been obtained

d. There is no evidence of coercion that violates the agreement between the researchers and school officers and/or parents related to informed

consent and assent in participation (such as request from school that participant student bring proof of participation for any type of credits).

Timing of Recruitment

Recruitment will start after the research assistants have completed training in CITI and IRB and this protocol and when IRB application has been approved by the IRB of the University of Minnesota**.**

Data collection

Students who are interested in participating will pick up an envelope with a recruitment letter to participants and another letter of recruitment for their parental figures (parents or guardians) and a consent form for participants under 18 years of age. Students will be informed of the three places where they can pick up this recruitment envelop, which include: (1) Office of Student Affairs of their schools, (2) the Counseling Office of their schools if there is one, and (3) Research Center of the Division for Applied Psychology and Research in Ho Chi Minh City (RCAPR). The recruitment envelope will be put in open boxes in the hallway, where brochures of other information are put, to which they can access any time when schools and the Division are open. All students will be informed of the address where they will visit to complete the questionnaire, namely the RCAPR, if they want to participate. All students who are interested in participating will complete the questionnaires at this office.

Participants under 18 years old will ask permission from their parents/guardians to participate. They also need to ask their parents/guardians to sign a consent form if their parents/guardians agree to allow them to be in the study. Parents/guardians will give the

consent form back to participants to bring to the research center when they come to complete the questionnaires.

When participants visit the RCAPR, a research assistant will walk each of them through the consent/assent form again. They will be asked to sign the consent/assent form before they completing the questionnaires if they agree to be in the study. Participants will have another chance to ask any question before they sign their consent/assent forms. All participants under 18 years of age must give the research assistant the envelope with their parental figures' signed consent forms before they can sign their assent form and complete the questionnaires.

Protection of individual's privacy

To protect individuals' privacy, students who are interested in the study can pick questionnaire packages at one of the three places mentioned previously (Office of Student Affairs, School Counseling Office, or the RCAPR). The address of the RCAPR and contact information of the researcher and two research assistants will be posted at the Bulletin Board of the Office of Student Affairs. Students who do not want to get the assessment package at their school can get one at the RCAPR, where people can visit for life skill and management skill training, research, and counseling. Students who want to contact the researcher and the research assistants for more information about the study can get their contact information from the recruitment letters, the consent forms and/or the assent forms. Those who contact the researcher and the research assistants regarding this study will have their contact information (either emails or telephone numbers) deleted right after information is given to them. An ID number will be assigned to each participant in the questionnaire package to distinguish one participant from another.

No information that identifies the participants will be asked in the questionnaires. Data will be protected following University-recommended procedures (Backing up all data and storing backups in a location separate from the original, securing all computers and storage devices with locks, protecting all computers and electronic media with "sign-on" passwords, using encryption software to encode patient data, installing the latest updates for Microsoft Windows). All paper documents will be securely stored in a locker to which only the researcher and research assistants have access and will be shredded 2 months after information is entered into electronic files. The electronic data file will be encrypted for further protection of confidentiality and securely stored in a password-protected computer.

Adverse event management and interferences

Missing data

To reduce missing data, the research assistants will ask participants to double check their completed questionnaires before they hand them in. The research assistants will double check these completed questionnaires again when participants hand them in and ask them to complete the omitted items before they leave.

Participants in need of urgent help

Student who need help for emotional problems that come up while working on the questionnaires will be provided information to get help in the counseling department at the RCAPR. Information about the rooms where they can get help will be provided on a piece of paper attached to the top of the questionnaires. The research assistants will explain this information to participants after introducing them to the study and walking them through informed consent/assent.

Research assistants dropping out of the project

The two reserve team members will replace any research assistant who drops out of the project.

Training and supervision of the research assistants in data collection and data management

Training in CITI

Preliminary training

To facilitate the research assistants' online training in CITI and IRB, the researcher will walk them through the English version of CITI and IRB online training material before they register and start their online training in CITI. In this preliminary training, the following steps will be taken:

- The research assistants explain the material to the researcher sentence by sentence in Vietnamese.
- The researcher answers questions raised by the research assistants as they read through the material.
- The researcher asks questions to check the research assistants' understanding of the material, where problems in understanding may occur. Explanation and re-checking of understanding will be done in response to each problem that occurs.

Online training

- The two research assistants will register for CITI and IRB online training, go through the training by themselves and take the tests at the end of each training module.

- The researcher will revisit the material online with the research assistants if one or both of them fail any test and ask questions to double check and discuss the training content with them further to deepen their understanding. This step will be done until the research assistants pass all CITI quizzes.

Training in the protocol

Training in Recruitment Approach

- The researcher will go through the process of recruitment described in Section 1-8 of the IRB application with the research assistants and explain each step.
- The researcher will role play introducing the study to the research assistants using the scripts written in the IRB application. The research assistants will be asked to role play parents and students by asking clarification questions.
- The research assistants will take turn to role play introducing the study and answering questions asked by the researcher, who will role play parents and students
- The researcher will adjust the introduction based on feedback from these role plays to make it easier for parents and students to understand and will report to the IRB for approval if significant change needs to be made in this part.

Training in Data Collection Process

- The researcher will go through the process of data collection described in Section 9 of the IRB application with the research assistants and explain each step.
- The researcher will send the questionnaires to the research assistants and allow them 2 weeks to read and note down any questions they may have about the questionnaires.

- The researcher and research assistants will have three meetings to go over the questionnaires. In the first meeting, the researcher will go over the questionnaires and check the research assistants' understanding of each question in the questionnaires. The researcher will answer all questions that the research assistants have about the questionnaires.
- In the second meeting, the researcher will role play participants asking questions and the research assistants practice answering the questions.
- A list of frequently asked questions and answers will be composed based on the pilot testing of the questionnaires among 20 teenagers, the research assistants and the reserve team members. In the third meeting, the researcher will role play asking these commonly asked questions. The research assistants and reserve team members will take turn to practice answering these questions. The researcher will give feedback as needed.

Training in Data Management Process

- The researcher will go through the process of recruitment, data collection and data management described in the IRB application with the research assistants and will explain each step.
- The researcher will discuss with the research assistants the plan to store, enter, double check and transfer data as follow:
    - ✓ After being collected, data will be stored in a secured place as described in the IRB application at the RCAPR, as described in Section 9 and 10 of the IRB application.

- ✓ Data will be divided into two parts to be entered at the end of each week by the two research assistants.
- ✓ Data will be entered with numbers chosen by participants for each item as they appear on the questionnaires. Missing data will be coded as 99.
- ✓ 30% of data from each research assistant's data file will be randomly chosen to be cross-double-checked by the other research assistant.
- ✓ If mistakes are found, the two research assistants will go over the data set together to correct the mistakes.
- ✓ If more than 3% of mistakes are found, cross-double-checking will be done for the entire data set.

Training in adverse event management

The researcher will discuss with the research assistants possible situations where problems can happen and have plans for problem solving:

- Many students coming at the same time to take the questionnaires: The research assistants will introduce the study to the group as a whole. After that, participants will be spread out to different corners of the two research suites to complete the questionnaires. The two research assistants will make themselves available to answer questions and solve problems that may occur.
- Students who need help for emotional problems that come up while working on the questionnaires will be provided information to get help in the counseling department at the same center. Information about the walk-in counseling rooms where they can get help will be provided on a piece of paper attached to the top of the questionnaires. The research assistants will explain to participants this

information about seeking counseling after introducing them to the study and walking them through informed consent/assent.

- Missing data: To reduce missing data, the research assistants will ask participants to double check their completed questionnaires before they hand them in. The research assistants will double check again each questionnaire and ask respondents to answer the omitted items before they leave.

Supervision

Supervision meeting is scheduled on Saturday every week. The researcher will meet with the research assistants and the reserve team to go over data collection work for the week. In this meeting, the research assistants will update the researcher with information related to:

(1) The number of participants who have completed the questionnaires

(2) Problems that have occurred and how they were solved

(3) New questions that come up in data collection and management