

Published in final edited form as:

Compr Psychiatry. 2012 August ; 53(6): 829–836. doi:10.1016/j.comppsy.2011.10.004.

The Role of Childhood Traumatic Experience in Personality Disorders in China

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Abstract

Background—There has been no large-scale examination of the association between types of childhood abuse and personality disorders (PDs) in China using standardised assessment tools and the DSM-IV diagnostic criteria. Hence, this study aimed to explore the relationship between retrospective reports of various types of childhood maltreatments and current DSM-IV PDs in a clinical population in China, Shanghai.

Method—1402 subjects were randomly sampled from the Shanghai Psychological Counselling Centre. PDs were assessed using the Personality Diagnostic Questionnaire (PDQ⁴⁺). Participants were also interviewed using the Structured Clinical Interview (SCID-II). The Child Trauma Questionnaire (CTQ) was used to assess childhood maltreatment in five domains (emotional abuse, physical abuse, sexual abuse, emotional neglect, and physical neglect).

Results—According to Pearson's correlations, childhood maltreatment had a strong association with most PDs. Subsequently using partial correlations, significant relationships were also demonstrated between Cluster-B PDs and all the traumatic factors except physical neglect. A strongest positive correlation was found between Cluster-B PD and CTQ total scores ($r=.312, p < .01$). Using the Kruskal-Wallis rank sum test, significant differences in 4 groups of subjects (Cluster-A PD, Cluster-B PD, Cluster-C PD and Non-PD) in terms of emotional abuse ($\chi^2 = 34.864, p < .01$), physical abuse ($\chi^2 = 14.996, p < .05$), sex abuse ($\chi^2 = 9.211, p < .05$), and emotional neglect ($\chi^2 = 17.987, p < .01$) were found. Stepwise regression analysis indicated that emotional abuse and emotional neglect were predictive for Cluster-A PD and Cluster-B PD, and sexual abuse was highly predictive for Cluster-B PD, only emotional neglect was predictive for Cluster-C PD.

Conclusion—Early traumatic experiences are strongly related to the development of PDs. The effects of childhood maltreatment in the three clusters of PDs are different. Childhood trauma has the most significant impact on Cluster-B PD.

Keywords

Personality disorder; Childhood traumatic experience; China; Outpatient; Abuse; Neglect

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1. Introduction

To date, the pathology of personality disorders (PDs) is still poorly understood. While past literature puts forward the interaction of genetic and environmental factors [1-3], increasing attention is being paid to the contribution of early experiences, particularly childhood abuse, to adult PD. It is now widely accepted that the experience of childhood trauma may have long-term damaging effects on adulthood [4, 5]. In particular, the negative psychological impacts that these traumatic experiences have on the individuals are detrimental [6-8]. Past research suggests the links between childhood traumatic experience (in terms of abuse and neglect) with alcohol and drug dependence [9], post-traumatic stress disorder [10], depression [11, 12], and positive symptoms of schizophrenia [13]. The role of childhood traumatic experiences contributing to various types of PDs, such as avoidant PD [14], borderline PD [15-17], and antisocial PD [18] has been remarkable.

Unfortunately, there are a number of limitations in the previous papers on the traumatic impacts of childhood abuse that should be highlighted. It is too simplistic to attribute one specific type of abuse to any negative adult outcomes. For example, children who suffer from one form of abuse are likely to have also experienced other types of abuse (e.g., emotional abuse is often considered inherent to other forms of abuse). Besides, childhood abuse cannot be solely isolated from familial, socio-economic, relational contexts [19]. Though a myriad of environmental factors such as adoption, divorced or mentally ill parents, poverty, and other traumatic events that occurred in childhood can have consequential impacts, it has been argued that they do not have a direct influence on adult mental health [20, 21]. Therefore, unique contributions of childhood abuse to later adverse adult outcomes are still not widely accepted today.

Although many papers [22-24] have indicated that a variety of genetic, temperamental and childhood experiences contribute to the development of personality dysfunction, studies which aim to explain the differences of childhood traumatic experience among various clusters of PD, as well as all forms of PD are notably lacking. Taking into consideration the limitations from the previous studies, as well as the important clinical ramifications that PD brings about, we seek to explore the relationship between retrospective reports of different types of childhood trauma (sexual abuse, physical abuse, emotional abuse, physical neglect and emotional neglect) and current DSM-IV PDs. As such, we hypothesise that: (a) there is a relationship between childhood maltreatment and PD; (b) different types of childhood abuse develop into different PDs; and (c) in particular, childhood trauma will have the most significant impact on Cluster-B PD.

2. Method

2.1. Sample Characteristics

1,402 participants were randomly sampled from the Shanghai Psychological Counselling Centre. Subjects were required to have at least attended junior middle school, and be aged between 18 and 60 years old. Subjects were excluded from the study based on the following

criteria: (a) presence of serious or acute psychotic symptoms; (b) a documented organic mental disorder; and (c) mental retardation.

Of the 1,402 participants, only 986 (70.3%) clients' self-rated PDQ⁴⁺ score met some form of DMS-IV PD, and subsequently completed the SCID-II interview. The 986 patients (460 men, 526 women) had a mean age of 29.1 years ($SD = 8.94$).

Nearly 38.4% of the outpatients ($N=539$) met a diagnosis of at least one PD according to the SCID-II clinical interview. The most prevalent PDs were avoidant (10.4%), followed by obsessive-compulsive (8.6%) and borderline subtypes (7.0%), while antisocial PD (1.1%) was significantly less common. Other less common PDs include dependent (2.9%) and histrionic (3.3%) subtypes. The prevalence rates of other PDs (narcissistic, passive-aggressive, schizoid, schizotypal, depressive and paranoid PD) were similar: (4.0% - 5.3%). Of the 539 PD patients, 29.9% ($N = 161$) met criteria for two PDs; and 13% ($N = 70$) met criteria for three or more PDs.

2.2. Measures

2.2.1. Demographic Details—A Demographic and Personal Details Questionnaire was used to collect participant details, which included: (a) demographics; (b) family and social background; and (c) physical and mental health conditions.

2.2.2. Assessment of Personality Disorders—Personality Diagnostic Questionnaire fourth edition plus (PDQ⁴⁺): The PDQ⁴⁺ is a concise structured self-report questionnaire that contains 107 true-false items and screens for 12 Axis II DSM-IV Personality Disorders. Furthermore, the PDQ⁴⁺ seeks to discriminate between subjects with and without characteristics of PD [25-27]. It takes approximately 20 – 30 minutes to complete. This questionnaire requires respondents to reflect upon their thoughts, emotions, and actions within the last few years [28]. The PDQ⁴⁺ has been previously used to screen for DSM-IV PD in the Chinese psychiatric populations[29], college student populations[30]. Excellent test-retest reliability of .92 was found in the Chinese populations. Furthermore, the PDQ⁴⁺ is considered highly sensitive (.89), and is also a relatively specific (.65) test [31].

Structured Clinical Interview for DSM-IV Axis II (SCID-II): The Structured Clinical Interview for DSM-IV Axis II (SCID-II) is used to diagnose for PD in accordance to the DSM-IV criteria. PDs are considered more severe when more number of areas is marked positive during the interview. The final score is assigned to one of the following four categories (0 = inadequate information, 1 = absence of Axis II disorders, 2 = score under threshold (subliminal), 3 = score over the threshold (presence of Axis II disorder). A minimum of four to five areas must be rated 3 before a PD is formally diagnosed. The SCID-II has a relatively strong test-retest reliability of .70, with a median of coefficient for internal consistency of .70, and is highly consistent (.90) with the clinical diagnosis [32, 33].

2.2.3. Assessment of Childhood Maltreatment—Child Trauma Questionnaire (CTQ): The Child Trauma Questionnaire (CTQ) consists of 28 self-report items that assesses childhood maltreatment in five subscales: emotional abuse, physical abuse, sexual abuse, emotional neglect, and physical neglect. These 4 subscales range from 5 (low level of

childhood maltreatment) to 25 (high level of childhood maltreatment) and provide a quantitative index of the severity of abuse. Subjects rate statements about childhood experiences (defined as prior to age 18) on a five-point Likert scale (1 = never true, to 5 = very often true). Most items are phrased in objective terms (e.g. "When I was growing up, someone touched me in a sexual way or made me touch them"), while other items require some degree of subjective evaluation (e.g. "When I was growing up, I believe I was sexually abused"). Bernstein and Fink (1998) reported reliability coefficients of CTQ's 5 scales as satisfactory, but a particularly strong Cronbach's α coefficient of .92 for the sexual abuse subscale.

2.3. Procedures

The Research Ethics Committee at the Shanghai Mental Health Centre approved the study in 2006. A two-stage design was employed. Firstly, 1402 outpatients were randomly selected from the Shanghai Psychological Counselling Centre and invited to participate in the study. Written informed consent was obtained. Subjects were first asked to complete the Demographic and Personal Details Questionnaire, and was subsequently administered the PDQ⁴⁺ by a trained psychiatrist to screen for the presence of PD. Only 986 individuals met the criteria for DSM-IV PD and were recruited into the second stage of the study, which comprised of the SCID-II interview and CTQ. The PD diagnosis of the patient was confirmed through the SCID-II interview, which was conducted by two trained psychiatrists in the hospital grounds. Both psychiatrists received prior SCID-II training with an experienced psychiatrist before the commencement of this study. The CTQ, used to measure childhood maltreatment, was administered to each participant shortly after the SCID-II interview.

These subjects were interviewed over a period of 5 months in 2006, with no financial remuneration. Furthermore, the psychiatrists were not aware of the participants' responses to the CTQ during the SCID-II interview so as to reduce potential subjective deviation on the PDQ⁴⁺ results. The interviewer reliability for all three assessments (PDQ⁴⁺, SCID-II, and CTQ) was satisfactory. The range of the kappa value for the diagnosis of PD among the psychiatrists fell between .78 and .98.

2.4. Statistical analysis

Statistical analyses were conducted using the SPSS Version 13.0. A series of Pearson's correlations and partial correlations were computed to determine the relationship between childhood traumatic experiences and PD. Correlation analyses were conducted using SCID-II PD and CTQ childhood trauma/abuse scores as continuous variables. Instead of using dichotomous indicators, the various dimensions on the SCID-II PD scales took into account the number of traits exhibited for each personality disorder. Kruskal-Wallis rank sum test was used to compare CTQ subscale scores (i.e. emotional abuse, physical abuse, sexual abuse, emotional neglect, and physical neglect) with various clusters of PD and various PDs within Cluster B. We excluded subjects who were diagnosed with at least 2 types of comorbid PD not belonging to the same cluster for comparisons amongst different clusters of PD, and excluded subjects who were diagnosed with at least 2 types of comorbid PD belonging to the cluster B PDs for comparisons within Cluster B PDs. Lastly, stepwise

regression was performed using each cluster of PD as dependent variables (those multi-PD patients who did not belong to the same cluster were excluded), and forms of childhood maltreatment as independent variables. All statistical differences were considered significant at $p < .05$.

3. Results

3.1. Personality disorder in adulthood related to abuse in childhood

A series of Pearson's correlations and partial correlations were computed to determine the relationship between childhood traumatic experiences and PD. An alpha level of .05 was set for the tests. Table 1 summarises the correlations between the CTQ and SCID-II scores, as well as the partial correlations between childhood maltreatment and PD, while controlling for possible interactions with other childhood traumatic factors.

The Pearson's correlations in Table 1 showed a significant correlation between most types of childhood abuse and PD in adulthood. All clusters (A, B and C) of PD were significantly related to the total CTQ score. The strongest positive correlation was found between Cluster-B PD and CTQ scores ($r = .312, p < .01$). It appears that Cluster-B PD was positively correlated to every childhood trauma factor except physical neglect. Despite controlling for other types of childhood abuse, a positive correlation was found between Cluster-A PD and emotional abuse ($r = .139, p < .01$). Also reflected in Table 2, Cluster-C PD did not appear to be related to early life experiences. Lastly, there was a weak relationship between avoidant PD and emotional abuse, physical abuse, and emotional neglect. On the other hand, a strongest positive relationship was found between borderline PD and emotional abuse, sexual abuse, and emotional neglect. In particular, the total CTQ scores correlated more significantly with borderline PD than other types of PD. In addition, both bivariate and partial correlations showed significant links between antisocial PD and physical abuse.

3.2. Differences in childhood abuse between 3 clusters of PD and the non-PD group

The Kruskal-Wallis rank sum test was used to compare 815 subjects (excluding 171 subjects who were diagnosed with at least 2 types of comorbid PD not belonging to the same cluster). These subjects were divided into 4 groups based on their SCID-II diagnoses. The mean score for each childhood abuse factor is reflected in Table 2.

In general, there were more significant differences between all 4 groups when comparing the scores against the non-PD group. Considerable differences between the 3 clusters of PD in terms of emotional abuse and sexual abuse ($p < .05$) were also found. The mean score was higher in Cluster-B group than in Clusters-A and C. In the Cluster-B PD group, the mean score of emotional abuse, physical abuse, sexual abuse and the total score of CTQ were higher than in the other groups. The mean score for emotional neglect was similar in all PD groups, and was significantly higher than the non-PD group.

3.3. Differences in childhood abuse within cluster B PDs

In order to further validate the different effects of childhood traumatic experiences on particular PDs within cluster B, 162 subjects of cluster B PD patients (excluding 26 subjects who were diagnosed with at least 2 types of comorbid PD belonging to the cluster B PDs) were compared using the Kruskal-Wallis rank sum test. These subjects were divided into 4 groups (4 kinds of cluster B PD).

Except for reports of sexual abuse, there were significant differences in the self-reports of histories of childhood traumatic experiences among the 4 groups. In the Borderline PD group, the mean score of emotional abuse, emotional neglect, physical neglect and the total score of CTQ were higher than those in other Cluster B PDs. The mean score of physical abuse was higher in antisocial PD group compared to other groups.

3.4. Stepwise regression analyses

Stepwise regression analyses were conducted to identify which childhood abuse factors were the most strongly related to each PD cluster. Each cluster of PD was identified as dependent variables, while the 5 types of childhood maltreatment were classified as predictors. It was performed in this fashion so that the predictors with the strongest explanatory power would be included first in the model. Only statistically significant relationships were reported in Table 4.

As evident in Table 4, emotional neglect was entered in the regression models for all 3 Clusters. Emotional abuse was entered as a first step in the regression model for both Clusters A and B. Sexual abuse subsequently entered as a second step in the regression model for Cluster-B PD. Only emotional neglect was entered into the regression model for Cluster-C PD.

4. Discussion

The primary aim of this study was to explore the relationship between childhood traumatic experiences and PD in China. The results from the present study largely paralleled the findings from previous studies and provided empirical evidence to the existing literature that examined the association between childhood trauma and PD. Firstly, results revealed that childhood traumatic experiences might increase susceptibility to PD. The associations between various types of childhood trauma and the 3 clusters of PD are different. In particular, it appears that childhood trauma has the most significant impact on Cluster-B PD.

Our findings extend the existing literature results supporting that childhood traumatic experience is strongly related to PD[34-36]. The correlation analyses showed that each cluster of PD was significantly related to a wide variety of childhood abuse; particularly, there was a strongest positive relationship between childhood maltreatment and Cluster-B PD. This result was also replicated in previous recent studies. For example, Spataro et al. (2004) examined the association between sexual abuse in childhood and mental disorder in adulthood and reported that the victims of abuse were nearly five times more susceptible to PD than did the general healthy population[37]. Parallel with earlier research, regardless of prospective [38] or retrospective [39, 40] studies, results indicated that childhood abuse

could elevate risk for adulthood PD. Some research, which focused on the comparison between Cluster-B PD and other PD, showed relatively stronger links with childhood maltreatment [41, 42].

In regards to the relationship between each type of PD and self-reported child abuse, research has shown that greater levels of emotional abuse, sexual abuse, and emotional neglect are most significantly related to higher levels of borderline PD traits. Also, greater levels of childhood physical abuse positively correlate with elevated degrees of antisocial PD traits instead of other forms of PD. Several previous studies consistently revealed that individuals clinically diagnosed with borderline PD has uncommonly high rates of incidence of childhood sexual abuse[43-45], while persons with antisocial traits reported a higher incidence of physical abuse[18, 46]. Fonagy and colleagues (2000) argued that secure attachment offers a child the opportunity to explore the mind of the caregiver; and subsequently learn about minds, how people think, feel, and make decisions. Maltreatment and early trauma may inhibit the secure attachment and result in symptoms of borderline PD [47, 48]. As hypothesised, insecure attachment is a catalyst that may result in any forms of childhood abuse, which subsequently leads to borderline PD. This may also explain why so many types of childhood abuse are related to borderline PD. Scarpa et al. (2002) provided more extensive reviews on the most commonly observed effects of childhood physical abuse [49, 50]. These effects include aggressive behaviour, as well as cognitive patterns, skills, and deficits associated with aggressive behaviour (e.g., social withdrawal, and social skills deficits). Clearly, these negative effects reflect antisocial personality traits.

Next, several significant maltreatment effects were found when we used Kruskal-Wallis rank sum test to examine the specific interrelationships between different types of abuse and PD clusters. As hypothesised, elevated degrees of abuse (e.g., emotional abuse, physical abuse, sexual abuse) were related to greater level of Cluster-B PD. Several unexpected findings created a paradox. Firstly, a higher level of Appendix B (depressive and passive-aggressive) PD traits was particularly related to emotional abuse and neglect (e.g., emotional abuse, emotional neglect). This may suggest that emotional trauma may be a risk factor for depressive and passive-aggressive PD. Furthermore, when compared to Cluster-B PD, Cluster-A PD showed relatively weaker correlations with child abuse. Thus, our findings complement previous papers [51, 52], which suggest that Cluster- A PD may be largely influenced by genetic aspects of the individual. In addition, the correlation between Cluster-C PD and childhood trauma was weaker than the relationship between Cluster-B PD and childhood abuse. This may be due to the fact that contextual factors, including familial and social environment, play a larger role in the development of Cluster-C PD. Our findings are congruent with previous literature that argued the strong relationship between the environment and Cluster- C PD [53, 54].

Finally, we also note that emotional and physical abuse and neglect elevate susceptibility to all clusters of PD. Emotional abuse and neglect, defined as “soul murder”, consists of recurrent parental critical attacks, rejection, devaluation, contempt, and ignoring the child. Finzi-Dottan and Karu (2006) recently argued that the immature defensive organisation and injured self-esteem mediate the process that leads from the experience of childhood emotional abuse to psychopathological personality in adulthood [55]. An implication of this

perspective is that emotional maltreatment should have broad consequences for personality development [56], impacting not only on the defensive organisation but also on the individual's self-esteem.

Various factors will influence the definition of childhood trauma. These include cultural traditions, regional cultural features, change of life styles, and mass media. Today, some Chinese families still follow the traditional beliefs of "*Spare the rod spoil the child*". Thus many children have experienced some form of physical abuse, as delineated by Item 12 of the CTQ, which states that, "*I was often punished with some hard objects*". Such form of abuse has been largely taken for granted by both parents and children, and has been recognised as a form of permissible authoritative punishment. Therefore, some forms of trauma are collectively considered as normal practices in the Chinese culture, making it difficult to clearly define and differentiate between regular parenting akin to the average Chinese standards, and what is then deemed as physical childhood abuse. However, it is the individual's early subjective experience of trauma that is more crucial in helping us determine the development of PD in later life. In other words, it is important to ascertain whether the individual perceives the physical beatings as a traumatic experience.

In this study, there is less emphasis on the objective validation of childhood abuse from medical records or abuse reports, but a stronger emphasis on the subjective reports of childhood traumatic experiences in order to help us understand the consequential impacts of these events. Besides, there are no existing documents that record abuse incidences in China either. Nonetheless, our findings suggest that even within the accepted limits of the cultural norms, childhood traumatic experiences no doubt play a part in developing deviated personality types. Interestingly, despite the dramatic differences in social beliefs and mass culture, and even though the descriptions of childhood traumatic experience and assessment of PD were based on the Western culture, our findings were similar to that reported in Western societies. Therefore, childhood traumatic experience may appear to be different in terms of form of expressions between cultures, but still seems to essentially threaten the development of personality, especially having an impact on the stability of certain traits.

Assessment of childhood abuse is complex and can be compounded by several factors. For example, the present study examined early life experiences retrospectively, and was based entirely on the subjective self-reports of the participants. Although subjective self-reports may be questionable in terms of accuracy, they do sometimes allow the disclosure of sensitive materials. Furthermore, the CTQ evaluates childhood maltreatment before 18 years, which excludes potential links of maltreatment that occurred during other developmental periods (e.g. early childhood, preadolescence, and adolescence). Also, our findings were based on outpatients who were seeking treatment at a psychological counselling centre. Thus, the results may not be generalised to the inpatient unit or the wider community populations. Neither adverse environmental nor familial factors were taken into account in our study. Finally, we were not able to empirically examine the psychodynamic processes that underline PD in adults who were previously victims of childhood abuse. This is important because childhood traumatic experiences are more likely to have a stronger indirect (instead of direct) impact on adult mental health. Nevertheless, our study highlights the need for further investigations of emotional maltreatment, of which has inadequate

existing literature today. Future research also needs to establish the unique contributions of genetic and environmental risk factors for the trans-generational cycle of childhood trauma. Research also needs to consider the developmental period of the maltreatment in relation to subsequent potential PD occurrence. Lastly, research also needs to further examine the relationship between various forms of childhood abuse and PD types.

Acknowledgments

This study was supported by the funds from National High Technology Research and Development Program of China (2007AA02Z420) and by an NIH Fogarty International Center grant (5D43TW05809) awarded to Byron J. Good, P.I., in the Department of Global Health and Social Medicine, Harvard Medical School.

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Table 1
Correlations between level of DSM-IV personality traits with childhood abuse factors

PD (N=986)	Emotional Abuse		Physical Abuse		Sexual Abuse		Emotional Neglect		Physical Neglect		Total Abuse	
	Pe-C ^a	Pa-C ^b	Pe-C	Pa-C	Pe-C	Pa-C	Pe-C	Pa-C	Pe-C	Pa-C	Pe-C	Pa-C
Cluster A	0.264**	0.139**	0.186**	0.050	0.108**	0.028	0.181**	0.055	0.175**	0.061	0.277**	
Paranoid	0.269**	0.153**	0.203**	0.072*	0.066*	-0.017	0.182**	0.064*	0.140**	0.020	0.265**	
Schizoid	0.091**	0.036	0.053	-0.002	0.022	-0.006	0.106**	0.047	0.113**	0.064*	0.125**	
Schizotypal	0.203**	0.106**	0.142**	0.039	0.134**	0.071*	0.101**	0.009	0.118**	0.039	0.199**	
Cluster B	0.325**	0.175**	0.225**	0.065*	0.227**	0.142**	0.178**	0.064*	0.133**	-0.013	0.312**	
Histrionic	0.090**	0.065*	0.044	-0.001	0.107**	0.081*	0.002	-0.016	-0.004	-0.034	0.056	
Narcissistic	0.229**	0.111**	0.159**	0.043	0.155**	0.095**	0.150**	0.069*	0.104**	-0.007	0.233**	
Borderline	0.339**	0.192**	0.213**	0.038	0.196**	0.109**	0.229**	0.114**	0.144**	-0.021	0.335**	
Antisocial	0.108**	0.023	0.151**	0.109**	0.084**	0.042	0.015	-0.053	0.088**	0.060	0.114**	
Cluster C	0.096**	0.058	0.004	-0.062	0.052	0.028	0.110**	0.062	0.100**	0.047	0.120**	
Avoidant	0.093**	0.072*	-0.013	-0.080*	0.025	0.001	0.113**	0.068*	0.089**	0.038	0.108**	
Dependent	0.045	0.021	-0.020	-0.056	0.083**	0.076*	0.048	0.032	0.051	0.024	0.060	
Obsessive-C	0.046	0.015	0.045	0.021	-0.004	-0.019	0.048	0.016	0.052	0.030	0.061	
Appendix B												
Depressive	0.163**	0.085**	0.081*	-0.013	0.055	0.012	0.169**	0.099**	0.115**	0.024	0.189**	
Passive-A	0.255**	0.147**	0.136**	-0.006	0.106**	0.033	0.202**	0.088**	0.169**	0.049	0.270**	

* $p < .05$ (2-tailed)

** $p < .01$ (2-tailed).

^a Pe-C, Pearson Correlation

^b Pa-C, Partial Correlation.

Obsessive-C, Obsessive-Compulsive PD; Passive-A, Passive-Aggressive PD

Table 2

Mean scores for the CTQ scales and χ^2 values for comparisons among different clusters of PD.

CTQ Scale Scores	Non-PD ^a			Rank Sum Test (χ^2 value)		
	Cluster A PD N=80 Mean±SD	Cluster B PD N=109 Mean±SD	Cluster C PD N=179 Mean±SD	Cluster A vs. B vs. C	Cluster A vs. B vs. C vs. Non-PD	Cluster A vs. B vs. C vs. Non-PD
Emotional Abuse	8.09±3.315	8.83±4.007	7.63±2.912	6.588*	34.864***	34.864***
Physical Abuse	6.25±2.548	6.71±2.945	5.96±1.919	5.575	14.996*	14.996*
Sexual Abuse	5.89±2.413	6.15±2.567	5.52±1.355	6.967*	9.211*	9.211*
Emotional Neglect	13.12±4.835	13.14±5.147	13.03±4.725	0.044	17.987***	17.987***
Physical Neglect	8.91±3.147	8.49±2.940	8.73±2.956	1.033	6.100	6.100
Total Score	42.26±11.355	43.30±11.898	40.87±9.644	2.116	26.902***	26.902***

^aNon-PD, without any diagnosis of PD.

* $p < .05$

*** $p < .01$.

Table 3

Mean scores for the CTQ scales and χ^2 values for comparisons within cluster B PDs.

CTQ Scale Scores	Borderline PD		Narcissistic PD		Histrionic PD		Antisocial PD		Rank Sum Test χ^2 value
	N=80	Mean±SD	N=38	Mean±SD	N=30	Mean±SD	N=14	Mean±SD	
Emotional Abuse	9.94±3.921		8.79±4.041		7.03±2.710		8.43±2.311		16.286**
Physical Abuse	7.29±3.376		6.97±3.568		5.80±1.919		8.07±3.970		11.696**
Sexual Abuse	6.19±2.001		6.16±3.499		5.80±2.455		6.07±2.165		2.720
Emotional Neglect	15.08±5.281		12.76±5.222		11.53±4.447		10.93±3.583		15.407**
Physical Neglect	9.41±3.499		8.82±2.740		7.43±2.329		8.64±2.898		8.014*
Total Score	47.90±12.442		43.50±12.116		37.60±8.807		42.14±9.223		18.534**

* $p < .05$

** $p < .01$.

Table 4
Stepwise regression analyses for childhood abuse variables predicting clusters of PD (N = 815)

Cluster	Predictor	B	SE	β	t	p
Cluster-A	Emotional abuse	0.251	0.069	0.135	3.621	0.000
	Emotional neglect	0.146	0.046	0.119	3.205	0.001
Cluster-B	Emotional abuse	0.474	0.092	0.200	5.160	0.000
	Sexual abuse	0.560	0.151	0.133	3.714	0.000
	Emotional neglect	0.131	0.057	0.084	2.304	0.021
Cluster-C	Emotional neglect	0.141	0.048	0.103	2.957	0.003