Personality Pathology among Adults with History of Childhood Sexual Abuse: Study of the Relevance of DSM-5 Proposed Traits and Psychobiological Features of Temperament and Character

Azad Hemmati[1], Giles Newton-Howes[2], Shafea Falahi[1], Sattar Mostafavi[1], Calvin A. Colarusso[3], Saeid Komasi[4,5]

ABSTRACT

Background: The main aim of this study was to determine whether childhood sexual abuse (CSA) is reflected in the pathological traits of the alternative model of personality disorders (AMPD) in section-III of DSM-5 and Cloninger's temperament and character profiles.

Methods: The Persian versions of Personality Inventory for DSM-5 (PID-5), Temperament and Character Inventory (TCI-125), and Structured Clinical Inventory for DSM-IV-TR-Axis II-Screening Questionnaire (SCID-II-SQ) were administered to 43 Iranian college students who reported a history of CSA and 390 participants who did not. Bivariate Pearson correlations and general linear model repeated measures (GLMRM) were used to compare results.

Results: Bivariate correlations indicated that both the PID-5 and TCI-125 were significantly associated with their relevant personality disorders. Profile analysis showed that the pathological trait domains of the PID-5, except for negative affectivity, were significantly greater in those with an experience of CSA. Of the seven dimensions of TCI-125, novelty seeking and persistence were higher in those with an experience of CSA, but reward dependence, self-directedness, and cooperativeness were lower.

Conclusions: These results confirmed a correlation between CSA and personality dysfunction. The pattern of dysfunction was complex and somewhat different from the two facet measures used.

Keywords: Childhood sexual abuse, temperament and character, pathological traits, personality disorders, AMPD

Key Messages: Pathological personality traits, abnormal temperaments, and dysfunctional characters are more common and associated with personality disorders among adult victims of childhood sexual abuse.

Some scholars describe personality development as largely biologically driven.[1–3] In contrast, others focus on environmental processes, in particular, negative developmental processes that may provide serious challenges to healthy personality development.[4] These environmental impacts appear to occur across the life course.[5–8] It has been postulated that these elements are separable. The psychobiological model of Cloninger et al.[9] considers temperamental dimensions to be a result of biological maturation, while linking the character dimensions to environmental processes.[10] On balance, it is likely that biology and environment interact in the development of personality.

1Dept of Psychology, University of Kurdistan, Sanandaj, Iran. 2Dept of Psychological Medicine, University of Otago, Wellington, New Zealand. 3Dept of Psychiatry, University of California, San Diego, USA. 4Student Research Committee, Kurdistan University of Medical Sciences, Sanandaj, Iran. 5Neurosciences Research Center, Research Institute for Health Development, Kurdistan University of Medical Sciences, Sanandaj, Iran

Childhood sexual abuse (CSA) has been identified as a significant etiologic factor in several major psychiatric disorders in the DSM-5.[11] Repeated CSA, affecting up to 10% of adults,[12] profoundly impacts the normal development of personality.[7] Battle et al.[13] found that more than 50% of individuals with personality disorders (PDs) report being sexually abused as children. Chen et al.[14] supported this finding. CSA directly increases the risk of development of PDs.[15–17] Notably, however, not all of those who experienced CSA develop PD,[18–20] suggesting that resilience moderates the impact of such adverse experiences. As Masten et al.[21] identify, psychological development is "highly buffered," and long-lasting sequelae of adversity may relate to organic damage and/or severe interference in the normative protective processes.

Dimensional conceptualizations of personality acknowledge the developmental and life-course trajectories to personality and psychopathology.[22,23] Tackett et al.[24] highlight the advantages in a dimensional approach, with maladaptive traits[25] being the possible mediators by which childhood abuse may relate to later psychopathology.[11,26] Recent findings[27–29] confirm these associations, linking the emotional trauma of CSA with maladaptive personality traits (especially neurotic ones) in the adulthood.

Individual differences in personality traits may be useful in the prediction of differential outcomes among CSA victims. Several studies have explored the personality profile of CSA victims based on dimensional models such as the five-factor model or Cloninger's psychobiological model. They indicate higher levels of neuroticism,[7,27] psychoticism, openness, impulsivity, and risk-taking;[30,31] and lower levels of agreeableness,[29,32] self-directedness, and cooperativeness[33] correlated with CSA. However, to the authors' knowledge, no study has explored CSA victims' personality based on both the psychobiological model (measured by Temperament and Character Inventory; TCI-125) and pathological traits of the alternative model of DSM-5 (measured by Personality Inventory for DSM-5; PID-5) simultaneously. For this reason, the main aim of the current study was to determine whether PID-5 and TCI-125 profiles can represent an informative description of personality in CSA victims. Regarding dimensions of TCI-125 and PID-5, two hypotheses were made: (a) pathological traits in the profile of CSA victims will be greater than that in non-CSA peers, and (b) CSA grouping will differentially be predicted by temperaments and characters (T/C) profile.

Materials and Methods

Participants

The sample included 447 volunteer college students selected from 654 clients of psychological services center at the University of Kurdistan (Western Iran) during the autumn of 2018. These students had responded to three questions about having CSA experience or not, before they were 16 years old (i.e., two years before the stabilizing of personality patterns and diagnosis of PDs; see **Box 1**). Forty-six people answered "yes" to all three items. On this basis, they were considered as participants with a history of CSA. Four hundred and one students answered "no" to all three items. Hence, they were regarded as a group that has no history of CSA.

Procedures

The paper and pencil format of the Persian versions of the PID-5,[34] TCI-125,[35] and Structured Clinical Inventory for DSM-IV-TR- Axis II-Screening Questionnaire (SCID-II-SQ)[36] were administered to both groups. The opening interviews and tests were conducted by two of the authors (*SF & SM*) who are experienced in these fields. After a preliminary data screening, invalid responses (e.g., similar responses to all items, not responding to one of the measures) and those that included more than 10% nonresponse items were eliminated

to avoid biased statistical analyses.[37] The responses of three participants of the CSA group and eleven of the non-CSA group were invalid due to incomplete test scores and had to be omitted. Finally, a total of 433 responses (43 participants with CSA history and 390 without this history) were determined to be valid for the final analysis.

The Ethical Committee approved this study and all respondents provided written informed consent.

Measures

Identification of Childhood Sexual Abuse (CSA)

For the determination of childhood sexual abuse, a "yes" or "no" three-item self-report questionnaire was used. The questions were derived from the six-items questionnaire of Kendler and Prescott.[38] A "yes" response to all these three items were considered as the most severe form of CSA (**Box 1**).

Personality Inventory for DSM-5(PID-5)[34]—Persian Version

PID-5 is a 220-item self-report inventory that assesses pathological personality traits based on DSM-5-Section-III. The Inventory has a 4-point response scale (0 = very false or often false, to 3 = very true or often true). The PID-5 has 25 primary scales for trait facets that load onto five domains. A complete list can be found in **Table 2**. In this study, we used the Krueger et al.[34] algorithm for scoring PID-5 domains and facets. We attempted to adhere to the original meaning of the items as much as possible. First, the PID-5 was translated into Persian. The translation to Persian was completed by a four-member team that included two English language specialists, a psychologist who was fluent in English, and a psychometrics specialist (AH). Then, the final Persian version was translated back into English by a professional translator who had not read the original English version. This version was sent to the authors of the PID-5 for review. Finally, 10 items (2, 19, 25, 51, 73, 86, 129, 152, 165, 200) of the final version were different from the original English version. They were modified with assistance from the original authors of the PID-5. A similar procedure was previously followed by other

Iranian researchers for the Persian translations of the other measures used in this study. Cronbach's alpha and average inter-item correlations (IICs) in the current study for each domain scale were respectively 0.87 and 0.22 (negative affectivity), 0.83 and 0.17 (detachment), 0.84 and 0.21 (antagonism), 0.86 and 0.22 (disinhibition), and 0.94 and 0.34 (psychoticism). At the facet level, Cronbach's alphas and average IICs were also acceptable from 0.70 and 0.29 (grandiosity) to 0.92 and 0.47 (eccentricity). Restricted affectivity (0.66 and 0.22), submissiveness (0.49 and 0.20), anhedonia (0.46 and 0.10), intimacy avoidance (0.28 and 0.07), suspiciousness (0.50 and 0.14), manipulativeness (0.61 and 0.24), irresponsibility (0.55 and 0.16), and impulsivity (0.63 and 0.21) had acceptable Cronbach's alpha below the conventional cutoff of 0.70. IICs for risk-taking were not acceptable.

Temperament and Character Inventory (TCI-125)[35]—Persian Version

This is a self-report measure that assesses four temperaments—novelty seeking (NS), harm avoidance (HA), reward dependence (RD), and persistence (Ps)—and three character types—self-directedness (SD), cooperativeness (Co), and self-transcendence (ST). In this study, the 125-item version was used. Each item is rated by a "yes = 1" or "no = 0". The TCI-125 had been previously translated into Persian and then back-translated.[39,40] In this study, Cronbach's alpha coefficients, as an internal consistency index, were 0.80 (HA), 0.72 (NS), 0.73 (RD), 0.55 (Ps), 0.77 (Co), 0.84 (SD), and 0.72 (ST).

Structured Clinical Interview for DSM-IV-TR-Axis II-Screening Questionnaire (SCID-II-SQ)[36]—Persian Version

This is a contained questionnaire with 119 closed questions that match the main questions in the SCID-II interview.[36] All items assess the presence ("yes") or absence ("no") of specific symptoms across the spectrum of PDs. The utility of this measure in the assessment of DSM PDs has been confirmed.[41] In Iran, both the SCID-II and SCID-II-PQ have been translated into Persian and adapted.[42,43] Cronbach's alpha and average IIC in this study for each personality disorder scale were respectively 0.69 and 0.21

(paranoid), 0.73 and 0.20 (schizotypal), 0.47 and 0.13 (schizoid), 0.61 and 0.18 (histrionic), 0.73 and 0.14 (narcissistic), 0.81 and 0.23 (borderline), 0.86 and 0.29 (antisocial) 0.60 and 0.18 (avoidant), 0.65 and 0.19 (dependent) and 0.50 and 0.10, (obsessive-compulsive).

Data Analysis

A preliminary data analysis was done to explore the assumptions. First, it was figured out, by the boxplot method, that there were no outlier values. The majority of the variables' distribution was normal, except SCID-II subscale scores. The linearity of the correlation was also confirmed before calculating the bivariate correlations. The zero-order bivariate correlations of personality traits and T/C dimensions with the 10 PDs were calculated for the 43 CSA cases (**Table 2**).

General linear model repeated measures (GLMRM) was used for differential profile analysis[44] between CSA and non-CSA groups, based on T scores (mean = 50, SD = 10) in the 5 domains, 25 facets, 4 temperaments, 3 characters, and 10 PDs (**Table 3, Figures 1–4**). The first aim of this analysis was to assess whether the two groups have parallel profiles in any of the trait domains and facets as well as T/C dimensions. The test of parallelism, when using the profile approach to GLMRM-ANOVA, is a test of interaction.[44] Thus, the parallelism of profile in trait domains, trait facets, T/C, and PDs (*see section Differential Profile Analysis of CSA and Non-CSA Groups in the Results*) of CSA and non-CSA groups were tested by examining the interactions of any of the 5 domains, 25 facets, T/C dimensions, and PDs with the groups. The second aim of this section of analysis was to examine which group (CSA or non-CSA), on average, had higher rates on the 5 domains, 25 facets, 7 T/C dimensions, and 10 PDs, regarding parallel profiles. For this purpose, overall difference among the 5 domains, 25 facets, 7 T/C dimensions, and 10 PDs of CSA or non-CSA profiles were explored by analyzing the between-subjects main effects in GLMRM-ANOVA. However, profile analysis requires all measures with the same scaling of scores.[44] For this reason, the standardized values of all the variables were transformed to the T scale (M = 50, SD = 10). Version 24 of the IBM-SPSS software was utilized for all the statistical analyses.

Results

Sample Characteristics

The mean (±SD) age of the final sample of 390 non-CSA participants was 27.15 years (±7.19), and the range was from 18 to 56 years. In that group, 31% were female. The mean age of the 43 CSA victims was 24.30 years (±4.77), and the range was from 18 to 42 years. In that group, 53.5% were female. Information on marital status and educational levels are reported in **Table 1**.

Bivariate Correlations in CSA Group

The zero-order bivariate correlations between the PDs and the pathological traits regarding facets and domains are reported for the CSA group (**Table 2**). All the PDs had positive correlations with negative affectivity (0.12 to 0.57), detachment (0.19 to 0.54), antagonism (0.14 to 0.63), disinhibition (0.18 to 0.51), and psychoticism (0.19 to 0.56). Only, histrionic PD did not show a positive correlation with detachment (r = 0.04). The majority of the 25 facets had significant correlations with all the PDs. Likewise, the correlations between the PDs and the T/C dimensions are reported for the CSA group (**Table 2**). HA had positive correlations with all the PDs (0.24 to 0.48) except histrionic and antisocial. All PDs had positive correlations with Ps (0.19 to 0.40) and NS (0.18 to 0.40). RD had negative correlation with six of the PDs including paranoid, schizotypal, schizoid, antisocial, avoidant, and obsessive-compulsive (−0.18 to −0.27), and a positive correlation with histrionic PD (0.10). All the PDs had negative correlation with SD (−0.28 to −0.63) and Co (−0.13 to −0.63) and positive correlation with ST (0.10 to 0.50).

Differential Profile Analysis of CSA and Non-CSA Groups

Pathological Traits Profile: Five Domains

GLMRM-ANOVA showed that the result of the domains–group interaction within-subjects effects analysis is not significant (P = 0.20). This shows that

TABLE 1.

Demographic Characteristics, Descriptive Statistics: Comparison between CSA and Non-CSA

	Characteristics	CSA group (n = 43)	Non-CSA group (n = 390)	Statistic	P Value
Sex[a]	Female (%)	23 (53.5)	121 (31)	7.54	0.006
	Male (%)	20 (46.5)	265 (67.9)		
	Missing (%)	0 (0)	4 (1.1)		
Age	year (M±SD)[b]	24.30±4.77	27.15±7.19	2.53	0.01
	Missing (%)	0 (0)	11		
	Minimum	18	18		
	Maximum	42	56		
Marital status[a]	Married (%)	3 (7)	92 (23.6)	5.38	0.02
	Single (%)	37 (86)	272 (69.7)		
	Missing (%)	3 (7)	26 (6.7)		
Educational level[a]	Undergraduate (%)	24 (55.8)	217 (55.6)	0.247	0.88
	Graduate; M.Sc. (%)	13 (30.2)	132 (33.8)		
	Graduate; Ph.D. (%)	1 (2.3)	14 (3.6)		
	Missing (%)	5 (11.6)	27 (6.9)		

CSA: childhood sexual abuse. [a]The results of the Chi-square test. [b]The results of independent T-test.

TABLE 2.

Zero-Order Bivariate Correlations Between Personality Domains/Facets and T/C with the PDs (n = 43 CSA Cases)

Personality Traits		Cluster A			Cluster B				Cluster C		
		PPD	STPD	SPD	HPD	NPD	BPD	APD	AvPD	DPD	OCPD
Domains[a]											
Negative affectivity		0.53*	0.21	0.22	0.23	0.44**	0.48**	0.12	0.35***	0.57*	0.41**
Detachment		0.37***	0.21	0.51**	0.04	0.26	0.54*	0.19	0.47**	0.32***	0.23
Antagonism		0.63*	0.40**	0.14	0.38***	0.61*	0.46**	0.28	0.33***	0.56*	0.28
Disinhibition		0.51**	0.22	0.40**	0.28	0.38***	0.49**	0.18	0.33***	0.47**	0.27
Psychoticism		0.47**	0.39**	0.27	0.27	0.40**	0.56*	0.19	0.45**	0.39***	0.36***
Facets											
Negative affectivity	Anxiousness	0.50**	0.09	0.20	0.25	0.35***	0.40**	0.06	0.28	0.44**	0.35***
	Emotional lability	0.43**	0.22	0.28	0.08	0.34***	0.54*	0.04	0.34***	0.37***	0.41**
	Separation insecurity	0.35***	0.22	0.07	0.22	0.38***	0.25	0.19	0.25	0.57*	0.24
Detachment	Anhedonia	0.27	0.09	0.56*	-0.01	0.22	0.46**	0.14	0.31***	0.29	0.14
	Intimacy avoidance	0.20	0.10	0.30***	−0.05	0.03	0.24	0.18	0.27	0.10	0.22
	Withdrawal	0.39***	0.27	0.39**	0.11	0.32***	0.56*	0.16	0.51*	0.34***	0.21
Antagonism	Deceitfulness	0.54*	0.41**	0.13	0.44**	0.58*	0.48**	0.24	0.33***	0.54*	0.26
	Manipulativeness	0.62*	0.33***	0.12	0.28	0.50**	0.38***	0.34***	0.25	0.56*	0.26
	Grandiosity	0.46**	0.25	0.12	0.20	0.45**	0.29	0.15	0.23	0.34***	0.19
Disinhibition	Distractibility	0.36***	0.19	0.35***	0.22	0.35***	0.35***	0.08	0.24	0.44**	0.33***
	Irresponsibility	0.47**	0.19	0.36***	0.22	0.39***	0.50**	0.23	0.25	0.44**	0.16
	Impulsivity	0.46**	0.18	0.29	0.26	0.22	0.41**	0.18	0.36***	0.29	0.14
Psychoticism	Eccentricity	0.42**	0.41**	0.22	0.28	0.40**	0.55*	0.26	0.45**	0.24	0.26
	Perceptual dysregulation	0.43**	0.33***	0.32***	0.22	0.36***	0.55*	0.11	0.40**	0.44**	0.41**
	Unusual beliefs and experiences	0.38***	0.28	0.17	0.22	0.29	0.36***	0.10	0.33***	0.41**	0.32***

CSA and non-CSA groups have produced parallel profiles in the five pathological trait domains (**Table 3**). Also, the main effect of the between-subjects analysis is significant (P = 0.003). In other words, the two groups, on average, do not have significant overall difference in the five domains of pathological traits. In more detail, the CSA group had significantly higher mean scores in the antagonism (55.27±10.82) and psychoticism (55.60±9.65) domains (**Figure 1**).

Pathological Traits Profile: 25 Facets

GLMRM-ANOVA showed that the result of the facets–group interaction within-subjects effects analysis is significant (P < 0.001). This meant that CSA and non-CSA groups had produced non-parallel profiles in the 25 pathological trait facets (**Table 3**). Also, the main effect in the between-subjects analysis is not significant (P = 0.008). In other words, the

Personality Traits		Cluster A			Cluster B				Cluster C		
		PPD	STPD	SPD	HPD	NPD	BPD	APD	AvPD	DPD	OCPD
Other facets	Hostility	0.70*	0.36***	0.30***	0.34***	0.48**	0.53*	0.27	0.41**	0.45**	0.12
	Perseveration	0.29	0.05	0.26	0.16	0.27	0.40**	−0.09	0.15	0.42**	0.09
	Restricted affect [b]	0.21	−0.04	0.17	−0.02	0.13	0.26	0.08	0.11	0.23	0.23
	Submissiveness	0.18	0.06	0.02	0.11	−0.03	0.02	−0.02	0.10	0.28	0.08
	Suspiciousness	0.55*	0.23	0.24	0.22	0.42**	0.32***	0.11	0.33***	0.19	0.22
	Depressivity	0.30***	0.12	0.46**	0.03	0.17	0.51*	0.14	0.31***	0.49**	0.30***
	Callousness	0.50**	0.26	0.30***	0.13	0.42**	0.34***	0.26	0.29	0.45**	0.29
	Attention seeking	0.61*	0.35***	0.19	0.40**	0.50**	0.39**	0.23	0.30***	0.48**	0.25
	Risk taking	0.22	0.17	−0.21	0.21	0.17	0.06	0.17	0.07	0.06	0.19
	Rigid perfectionism [b]	0.33***	−0.01	0.17	0.10	0.10	0.14	0.08	0.24	0.29	0.12
Temperament											
Harm avoidance		0.31***	0.23	0.29	−0.08	0.24	0.27	0.07	0.48**	0.26	0.38***
Novelty seeking		0.29	0.22	0.20	0.32***	0.40**	0.32**	0.22	0.18	0.31***	0.18
Reward dependence		−0.19	−0.20	−0.22	0.10	−0.05	0.03	−0.27	−0.26	−0.02	−0.18
Persistence		0.40**	0.36***	0.19	0.34***	0.31***	0.29	0.21	0.30***	0.31***	0.26
Character											
Self-directedness		−0.55**	−0.45**	−0.42**	−0.47**	−0.51**	−0.62**	-0.28	−0.62**	−0.63**	−0.43**
Cooperativeness		−0.52**	−0.33***	−0.26	−0.23	−0.63**	−0.41**	−0.32***	−0.47**	−0.36***	−0.13
Self-transcendence		0.25	0.48**	0.12	0.50**	0.26	0.33***	0.32*	0.22	0.44**	0.10

CSA: childhood sexual abuse, PDs: personality disorders, T/C: temperament and character, PPD: paranoid personality disorder, STPD: schizotypal personality disorder, SPD: schizoid personality disorder, HPD: histrionic personality disorder, NPD: narcissistic personality disorder, BPD: borderline personality disorder, APD: antisocial personality disorder, AvPD: avoidant personality disorder, DPD: dependent personality disorder, OCPD: obsessive-compulsive personality disorder. [a]The five domains were computed on the basis of the average of the three primary facets of any domain. [b]Lower scores ("lack of") indicate higher domain scores. *P < 0.001, **P < 0.01, ***P < 0.05.

TABLE 3.

GLMRM-ANOVA Summary Results for Differential Profile Analysis on the Basis of T Scores in the 5 Domains, 25 Facets, T/C, and PDs between CSA and Non-CSA Groups

Test	Profile	F	Sig.	η²
Parallelism	5 domains–groups	1.53[a]	0.20	0.02
	25 facets–groups	2.68[b]	<.001**	0.03
	T/C–groups	2.71[c]	0.02*	0.03
	PDs–groups	1.79[d]	0.08	0.02
Overall difference	5 domains	9.41	0.003**	0.10
	25 facets	7.27	0.008**	0.08
	T/C	1.32	0.25	0.02
	PDs	3.80	0.06	0.04

CSA: childhood sexual abuse, PDs: personality disorders, T/C: temperament and character. [a]The alternative test was Huynh-Feldt with adjusted d.f. for not assumed sphericity (Mauchly's W = 0.67; approx. chi-square = 32.62; P < 0.001). [b]The alternative test was Huynh-Feldt with adjusted d.f. for not assumed sphericity (Mauchly's W = 0.00; approx. chi-square = 824.76; P < 0.001). [c]The alternative test was Huynh-Feldt with adjusted d.f. for not assumed sphericity (Mauchly's W = 0.57; approx. chi-square = 824.76; P < 0.01). [d]The alternative test was Huynh-Feldt with adjusted d.f. for not assumed sphericity (Mauchly's W = 0.35; approx. chi-square = 85.84; P < 0.001). *P < 0.05, **P < 0.01.

two groups do not have a significant overall difference among the 25 facets of pathological traits, on average. However, the CSA group had significantly higher emotion lability (53.96±10.53), suspiciousness (53.94±9.94), restricted affect (54.15±10.08), deceitfulness (55.07±9.60), callousness (54.25±10.01), irresponsibility (53.70,±9.65), eccentricity,

(55.34±10.08), perceptual dysregulation (54.98±9.58), and unusual belief (54.61±8.95) traits than those in the non-CSA group (**Figure 2**).

Temperaments/Characters (T/C) Profile

GLMRM-ANOVA demonstrated that the result of the T/C–group interaction within-subjects effects analysis is significant

(P = 0.02). This means that the CSA and non-CSA groups have produced non-parallel profiles in the seven T/C dimensions (**Table 3**). GLMRM-ANOVA also showed that the main effect in the between-subjects analysis is not significant (P = 0.25). In other words, the two groups did not show a significant overall difference among the seven T/C dimensions, on average (**Figure 3**).

Personality Disorders Profile

GLMRM-ANOVA showed that PDs–group interaction in the within-subjects effects analysis is not significant (P = 0.08). The CSA and non-CSA groups produced parallel profiles in the ten PDs (**Table 3**). GLMRM-ANOVA also showed that the main effect in the between-subjects analysis is not significant (P = 0.06). In other words, the two groups did not show a significant overall difference among the ten PDs, on average. But, in the CSA group, mean scores of the antisocial PD (54.41±11.32) and borderline PD (55.77±14.47) were significantly higher than that in the non-CSA group (**Figure 4**).

FIGURE 1.

The Five Domain of Pathological Traits' Estimated Marginal Means and 95% Confidence Intervals of T Scores for CSA vs Non-CSA Group
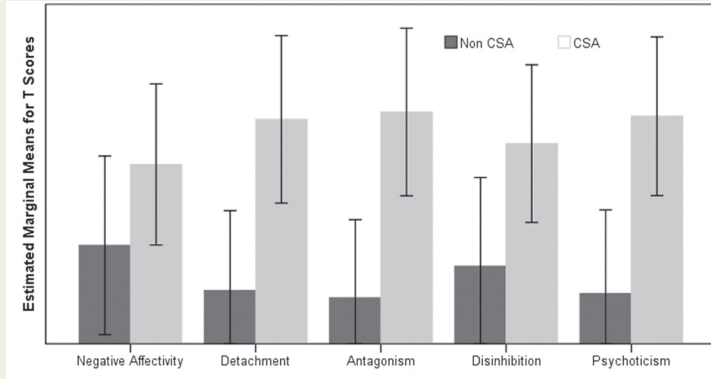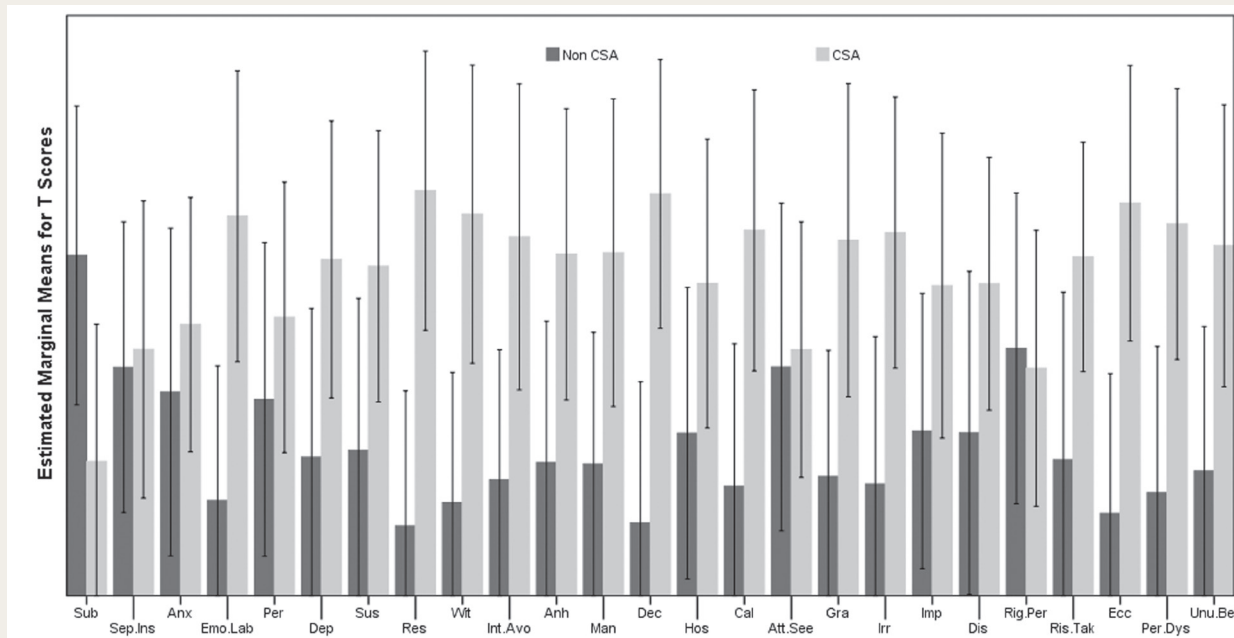

CSA: childhood sexual abuse.

somewhat unusual.[31,46] Prior studies have not indicated that CSA victims have higher detachment and disinhibition, unlike this sample. On more fine-grained analysis, of the 25 trait facets, 23 were higher in the CSA. Emotional lability, restricted affect, withdrawal, deceitfulness, eccentricity, and perceptual dysregulation were markedly higher, and submissiveness and rigid perfectionism lower, in the CSA group. The reason for this pattern of findings is somewhat unclear. Although significant difference in the sample size of the groups can be one of the reasons, it may be that cultural factors, type of education, and other upbringing factors contributed to the pattern we found.

FIGURE 2.

The 25 Pathological Traits' Estimated Marginal Means and 95% Confidence Intervals of T Scores for CSA vs Non-CSA Group

CSA: childhood sexual abuse.

Discussion

This study shows that the history of CSA correlates with DSM-5 maladaptive personality traits. The T/C features of Cloninger's model are, however, more identical. The main aim of this study was to compare and contrast the PID-5 profile with the TCI in those with CSA compared to those without. This study indicates that the domains and facets of PID-5 have a significant association with

their relevant PDs; this aligns with the findings of previous research.[25,45] In this study, however, the association between the TCI and PDs was in better agreement with previous findings.[9,10]

More specificity could be examined in the PID-5 domains and facets. This research showed that the antagonism domain was significantly higher for the CSA group, unlike negative affectivity. Psychoticism domain was significantly higher for the CSA group, which is

Using the model of Cloninger, NS and Ps were higher, but RD, SD, and Co were lower in the CSA group. HA and ST had no noticeable differences between the two groups. The lower SD of our CSA group is in line with other studies that confirmed the loss of self-regulation in childhood abuse victims,[47] as is the case for the lower level of SD found in nonclinical, childhood emotional/physical abuse samples.[48] Our result of similarity in the ST of the two groups is congruent with
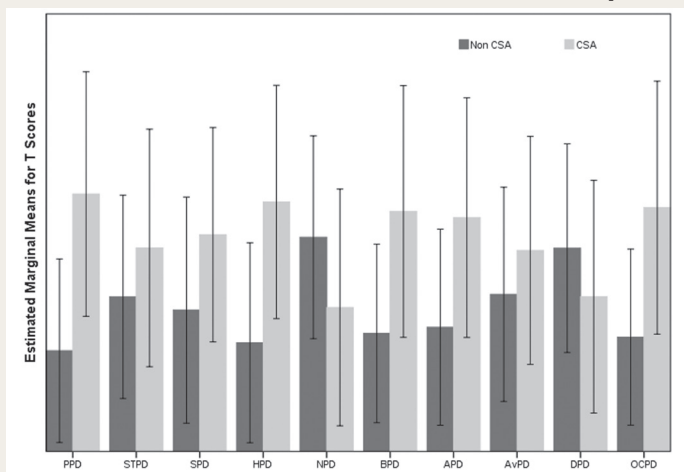
FIGURE 3.

Temperament and Characters' Estimated Marginal Means and 95% Confidence Intervals of T Scores for CSA vs Non-CSA Group
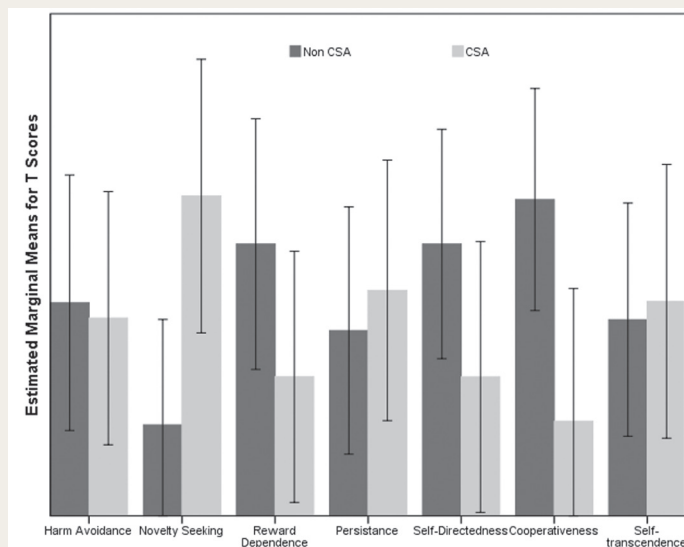
CSA: childhood sexual abuse.

FIGURE 4.

Personality Disorders' Estimated Marginal Means and 95% Confidence Intervals of T Scores for CSA vs Non-CSA Group

CSA: childhood sexual abuse.

Perna et al.[48] Cooperativeness was lower in the CSA group. This is generally consistent with Wilson et al.[49] who showed a lower level of social engagement in victims of childhood adversity. However, the higher level of NS and persistence is not consistent with Perna et al.[48] Our results about temperaments and characters are more convergent with de Carvalho et al.[28] as their study showed higher HA and lower SD in the CSA group and a nonsignificant difference with the non-CSA group in persistence and ST.

Concerning PDs constructs, the failure to differentiate the groups, is most likely due to the inherent weakness that has always been reported about categorical models. There is wide recognition that the categorical personality disorder structure is not fit for purpose, with little science to support it. The failure of this model to differentiate the two groups in this study, unlike the dimensional models used, further suggests that the categorical approach offers little value. There is overwhelming evidence that

CSA is associated with personality development.[16,17]

According to the model of Cloninger et al.,[9] a high level of NS temperament is associated with cluster B of PDs, particularly borderline and antisocial. This study showed that NS was the highest temperament, and borderline and antisocial PDs had the greatest difference between the CSA and non-CSA groups. This is in line with the model. Also, in line with Cloninger et al.,[9] a low level of SD and Co characters was associated with all PDs.

Limitations

Although the tools used in this study are internationally recognized, widely used, and valid, using self-report tools may have hampered the validity of the data. Second, some of the assumptions were not confirmed for some of the used methods of data analysis. Third, no information was available as to whether the sample had sought psychological help for their trauma. Interventions received would have easily improved (or altered) the outcomes, and this may, in part, explain our results. Fourth, the sample was small compared to epidemiological studies of psychopathology. As such, type 2 errors cannot be ruled out. Fifth, causal relationships among factors cannot be made because the study was retrospective and cross-sectional. This is of relatively little importance, however, as causality has been already examined and largely confirmed by existing literature.[13,26] The purpose of this study was not to find a causal association, rather to use multiple tools to examine their utility in these samples. Finally, the possible effect of the differences in age and sex between the two groups to bias the results should also be considered.

Conclusion

This study confirms the presence of more frequent pathological traits and maladaptive dimensions in the victims of CSA. Further, it supports the use of approaches more fine-grained than the unhelpful categorical approach. It supports the view that CSA is an identifiable etiological factor related to the adulthood trait maladaptation and demonstrates that the trauma of CSA likely continues to affect development throughout the adult years.

Although there was very little difference between the CSA group and the non-CSA group on many measures, there was a striking difference regarding pathological traits. This provides additional data and adds to our scientific understanding of the traumatic effects of CSA on development throughout the life cycle. This supports the need for public health measures to minimize and intervene in domestic violence and other environmental situations that may increase the risk of CSA. Understanding the complex connections between historical abuse and adult functioning, within the broader context of maladaptive personality trait development, should be a research focus.

References

1. Costa PT and McCrae RR. *Personality in adulthood: A five-factor theory perspective*. Abingdon: Taylor & Francis; 2013.

2. Hennecke M, Bleidorn W, Denissen JJA, et al. A Three-part framework for self-regulated personality development across adulthood. Eur J Pers 2014; 28(3): 289–299.

3. Neppl TK, Donnellan BM, Scaramella LV, et al. Differential stability of temperament and personality from toddlerhood to middle childhood. J Res Pers 2010; 44(3): 386–396.

4. Cicchetti D. Socioemotional, personality, and biological development: Illustrations from a multilevel developmental psychopathology perspective on child maltreatment. Ann Rev Psychol 2016; 67(1): 187–211.

5. Burt SA. Rethinking environmental contributions to child and adolescent psychopathology: A meta-analysis of shared environmental influences. Psychol Bull 2009; 135(4): 608–637.

6. Josefsson K, Jokela M, Cloninger CR, et al. Maturity and change in personality: Developmental trends of temperament and character in adulthood. Dev Psychopathol 2013; 25(3): 713–727.

7. Moran P, Coffey C, Chanen A, et al. Childhood sexual abuse and abnormal personality: A population-based study. Psychol Med 2010; 41(6): 1311–1318.

8. Specht J, Bleidorn W, Denissen JJA, et al. What drives adult personality development? A comparison of theoretical perspectives and empirical evidence. Eur J Pers 2014; 28(3): 216–230.

9. Cloninger CR, Svrakic DM, and Przybeck TR. A psychobiological model of temperament and character. Arch Gen Psychiatry 1993; 50(12): 975–990.

10. Svrakic DM, Draganic S, Hill K, et al. Temperament, character, and personality disorders: Etiologic, diagnostic, treatment issues. Acta Psychiatr Scand 2002; 106(3): 189–195.

11. Veith AC, Russell TD, and King AR. PID-5 trait mediation of childhood maltreatment effects. Pers Individ Diff 2017; 104: 58–63.

12. Collishaw S, Pickles A, Messer J, et al. Resilience to adult psychopathology following childhood maltreatment: Evidence from a community sample. Child Abuse Negl 2007; 31(3): 211–229.

13. Battle CL, Shea MT, Johnson DM, et al. Childhood maltreatment associated with adult personality disorders: Findings from the collaborative longitudinal personality disorders study. J Pers Disord 2004; 18(2): 193–211.

14. Chen LP, Murad MH, Paras ML, et al. Sexual abuse and lifetime diagnosis of psychiatric disorders: Systematic review and meta-analysis. Mayo Clinic Proceedings 2010; 85(7): 618–629.

15. Bierer LM, Yehuda R, Schmeidler J, et al. Abuse and neglect in childhood: Relationship to personality disorder diagnoses. CNS Spectrums 2014; 8(10): 737–754.

16. Lobbestael J, Arntz A, and Bernstein DP. Disentangling the relationship between different types of childhood maltreatment and personality disorders. J Pers Disord 2010; 24(3): 285–295.

17. Waxman R, Fenton MC, Skodol AE, et al. Childhood maltreatment and personality disorders in the USA: Specificity of effects and the impact of gender. Pers Mental Health 2014; 8(1): 30–41.

18. Bonanno GA. Resilience in the face of potential trauma. Curr Direct Psychol Sci 2005; 14(3): 135–138.

19. Bonanno GA, Noll JG, Putnam FW, et al. Predicting the willingness to disclose childhood sexual abuse from measures of repressive coping and dissociative tendencies. Child Maltreatment 2003; 8(4): 302–318.

20. Walsh K, Fortier MA, and DiLillo D. Adult coping with childhood sexual abuse: A theoretical and empirical review. Aggress Violent Behav 2010; 15(1): 1–13.

21. Masten AS, Best KM, and Garmezy N. Resilience and development: Contributions from the study of children who overcome adversity. Dev Psychopathol 2008; 2(4): 425–444.

22. Caspi A, Roberts BW, and Shiner RL. Personality development: Stability and change. Ann Rev Psychol. 2005; 56(1): 453–484.

23. Clark LA. Temperament as a unifying basis for personality and psychopathology. J Abnorm Psychol 2005; 114(4): 505.

24. Tackett JL, Balsis S, Oltmanns TF, et al. A unifying perspective on personality pathology across the life span: Developmental considerations for the fifth edition of the Diagnostic and Statistical Manual of Mental Disorders. Dev Psychopathol 2009; 21(3): 687–713.

25. Krueger RF and Eaton NR. Personality traits and the classification of mental disorders: Toward a more complete integration in DSM–5 and an empirical model of psychopathology. Pers Disord Theory Res Treat 2010; 1(2): 97–118.

26. Spinhoven P, Elzinga BM, Van Hemert AM, et al. Childhood maltreatment, maladaptive personality types and level and course of psychological distress: A six-year longitudinal study. J Affect Disord 2016; 191: 100–108.

27. Boillat C, Schwab N, Stutz M, et al. Neuroticism as a risk factor for child abuse in victims of childhood sexual abuse. Child Abuse Neglect 2017; 68: 44–54.

28. de Carvalho HW, Pereira R, Frozi J, et al. Childhood trauma is associated with maladaptive personality traits. Child Abuse Negl 2015; 44: 18–25.

29. Lee M-A and Song R. Childhood abuse, personality traits, and depressive symptoms in adulthood. Child Abuse Negl 2017; 65: 194–203.

30. Li X, Wang Z, Hou Y, et al. Effects of childhood trauma on personality in a sample of Chinese adolescents. Child Abuse Negl 2014; 38(4): 788–796.

31. Rosenman S and Rodgers B. Childhood adversity and adult personality. Aust N Z J Psychiatry 2006; 40(5): 482–490.

32. Sujan AC, Humphreys KL, Ray LA, et al. Differential association of child abuse with self-reported versus laboratory-based impulsivity and risk-taking in young adulthood. Child Maltreatment 2014; 19(3–4): 145–155.

33. Rademaker AR, Vermetten E, Geuze E, et al. Self-reported early trauma as a predictor of adult personality: A study in a military sample. J Clin Psychol 2008; 64(7): 863–875.

34. Krueger RF, Derringer J, Markon KE, et al. *The personality inventory for DSM-5 (PID-5)*. Washington, DC: APA, 2013.

35. Cloninger CR, Przybeck TR, Svrakic DM, et al. *The Temperament and Character Inventory (TCI): A guide to its development and use*. St. Louis, MI: Center for the Psychobiology of Personality, Washington University; 1994.

36. First MB, Gibbon M, Spitzer RL, et al. *User's guide for the structured clinical interview for DSM-IV axis II personality disorders: SCID-II*. Washington, DC: American Psychiatric Press, 1997.

37. Bennett DA. How can I deal with missing data in my study? Aust N Z J Public Health 2001; 25(5): 464–469.

38. Kendler KS and Prescott CA. *Genes, environment, and psychopathology: Understanding the causes of psychiatric and substance use disorders*. New York: Guilford Publications, 2007.

39. Kaviani H. Normative data on Temperament and Character Inventory (TCI): Complimentary findings. Tehran Uni Med J 2009; 67(4): 262–266.

40. Poor Naseh M and Kaviani H. Validation of Temperament and Character Inventory (TCI) in Iranian sample: Normative data. Tehran Uni Med J 2005; 63(2): 89–98.

41. Anderson J, Snider S, Sellbom M, et al. A comparison of the DSM-5 Section II and Section III personality disorder structures. Psychiatry Res 2014; 216(3): 363–372.

42. Amini M, Pourshahbaz A, Mohammadkhani P, et al. The relationship between five-factor model and diagnostic and statistical manual of mental disorder-fifth edition personality traits on patients with antisocial personality disorder. J Res Med Sci 2015; 20(5): 470–476.

43. Mohammadkhani P, Jokar M, Jahani-Tabesh O, et al. *Structured clinical interview for DSM-IV Axis II personality disorders (Persian version)*. Tehran: Danjeh, 2011.

44. Tabachnick BG and Fidell LS. *Using multivariate statistics*. London: Pearson Education, 2013.

45. Hopwood CJ, Thomas KM, Markon KE, et al. DSM-5 personality traits and DSM–IV personality disorders. J Abnorm Psychol 2012; 121(2): 424–432.

46. Allen B and Lauterbach D. Personality characteristics of adult survivors of childhood trauma. J Trauma Stress 2007; 20(4): 587–595.

47. Van der Kolk BA and Fisler RE. Childhood abuse and neglect and loss of self-regulation. Bull Menninger Clin 1994; 58(2): 145–168.

48. Perna G, Vanni G, Di Chiaro NV, et al. Childhood trauma, temperament, and character in subjects with major depressive disorder and bipolar disorder. J Nerv Mental Dis 2014; 202(9): 695–698.

49. Wilson RS, Krueger KR, Arnold SE, et al. Childhood adversity and psychosocial adjustment in old age. Am J Geriatr Psych 2006; 14(4): 307–315.