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THE RELATIONSHIP BETWEEN CHILDHOOD TRAUMA AND PARANOID PERSONALITY DISORDER SYMPTOMS

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THE RELATIONSHIP BETWEEN CHILDHOOD TRAUMA AND PARANOID
PERSONALITY DISORDER SYMPTOMS

The Relationship Between Childhood Trauma and Paranoid Personality Disorder

Symptoms

by

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Table of Contents

Abstract.....3

Introduction.....5

Theoretical Background.....5

 Paranoid Personality Disorder.....5

 Childhood Trauma and Paranoid Personality Disorder.....6

 Interpersonal trust and PPD.....8

 Childhood Trauma and Interpersonal Trust.....9

 Childhood Trauma and Emotional Attachment in Adulthood.....10

 Attachment in PPD.....11

Methods.....13

Results.....16

Discussion.....18

Limitations and Future Directions.....20

Conclusion and Clinical Implications.....22

Reference.....23

Abstract

Background: Recent literature consistently shows a relationship between childhood trauma (CT) and personality pathology. History of childhood abuse leads to severe loss of trust. This loss of trust in early years is a strong predictor of the majority of personality disorders and is related to several problems in adulthood such as insecure attachment and distrust in interpersonal relationships. Although distrust is the key diagnostic component of Paranoid PD (PPD), empirical research mostly focused on borderline personality disorder (BPD) yielding limited information about PPD regarding its development and potential risk factors. This study has two aims. First is to examine the CT (i.e., sexual and emotional abuse) and PPD relationship. Second is to explore whether this relationship is mediated by interpersonal trust and insecure attachment.

Methods: One hundred and forty-three college students were assessed using self-report measures to examine PPD symptoms, interpersonal trust, insecure attachment and childhood trauma.

Results: Higher levels of emotional abuse were correlated with more PPD symptoms. Interpersonal trust was not a mediator since there was not a significant correlation with emotional abuse. Contrary to the literature, higher levels of attachment anxiety but not attachment avoidance fully mediated the relationship between higher levels of emotional abuse and more PPD features.

Conclusions: To our knowledge, this is the first study that specifically focused on insecure attachment, childhood trauma and PPD relationship. Findings suggest that people with a history of emotional abuse and higher attachment anxiety tend to have higher PPD symptoms. Despite the limitations of self-report data, findings can shed light

on a comparatively under-researched area by determining its risk factors.

Keywords: paranoid personality disorder; childhood trauma; attachment anxiety;

attachment avoidance, trust

Introduction

Recent literature has shown that having a history of childhood trauma (CT) increases the risk of being diagnosed with a personality disorder (PD) (Tyrka et al., 2009; Lobbestael et al., 2010). To identify the relationship between CT and PDs, the research has commonly focused on sexual abuse and associated emotions such as aggression, and distrust (DiLilo et al., 2009; Gobin & Freyd, 2014). However, several PDs such as Paranoid PD (PPD)— are not represented enough in these studies. The current study aimed to assess one of those neglected areas of PD research by looking at the PPD and CT relationship as well as interpersonal trust and insecure attachment in a sample of college students.

Theoretical Background

Paranoid Personality Disorder

Undoubtedly PPD is the least studied PD in DSM III (1968), although it exists since the beginning of the DSM in 1952. The difficulties such as reaching the patients with PPD (Kaser-Boyd, 2006; Tyrer, Mitchard, Methuen, & Ranger, 2003) limits the research on this disorder. A review of the literature reflects under-diagnosis in inpatient groups (The Quality Assurance Project, 1990). The reason of limitation in PPD research can be explained by characteristic of the disorder. People with PPD tend to reject psychiatric intervention (Tyrer, Mitchard, Methuen, & Ranger, 2003) and being participants in research studies (Kaser-Boyd, 2006) since their lack of trust. Ego-syntonic features of the disorder may help us to understand PPD patients' rejection of treatment and participating in research (Meissner, 1978).

PPD is a mental illness typified by a pattern of suspiciousness and distrust of others (American Psychiatric Association, 2000). Based on the results from National Comorbidity Survey Replication and National Epidemiological Survey, the prevalence of PPD is 2.3% and 4.4% in the general population (Lenzenwenger, Lane, Loranger, & Kessler, 2007; Grant et al., 2004) Literature indicates that a history of childhood trauma (Bierer et al., 2001; Tyrka et al., 2009; Iacovino, Jackson and Oltmans, 2014; Zhang et al., 2012; Lobbestael et al., 2010), being male (Coid, 2003), and a low socioeconomic status (SES) are potential risk factors of PPD.

Childhood Trauma and Paranoid Personality Disorder

The negative effects of CT (e.g., on emotional abuse & neglect, physical abuse & neglect, and sexual abuse) have been well established in many studies. CT is associated with attachment problems (Sheinbaum, Kwapil and Barrantes-Vidal, 2014) and psychological problems in adulthood, such as anxiety (Hovens, Giltay, Spinhoven, van Hemert & Penninx, 2015) and major depressive disorder (Konoï Kossi et al., 2013).

Although there is a limited research, some broad-based studies establish the relationship between all PDs and childhood abuse (Afifi et al., 2011; Lobbestael, Arntz and Bernstein, 2010; Tyrka et al., 2009). Literature shows that different types of childhood maltreatments may be related with specific PDs. PPD was related with mostly emotional abuse, sexual abuse (Lobbestael et al., 2010) and physical abuse (Tyrka et al., 2009; Bierer et al., 2003) but rarely with physical neglect (Cohen et al., 2014) and emotional neglect (Afifi et al., 2011).

Literature on CT shows that traumas especially sexual abuse in childhood related to specific emotions, such as aggression (DiLillo et al., 2009) and distrust (Finkelhor &

Browne, 1985). Since distrust is one of the main symptoms of PPD (APA, 2000), this finding may help us to understand the sexual abuse and PPD relationship.

ta study with 1402 inpatients in China, showed that the total score of CT, emotional abuse/neglect and physical abuse were significantly correlated with all clusters of PDs, while emotional abuse was more strongly related with cluster A PDs than other clusters (Zhang et al., 2012).

In another study, Cohen and colleagues (2014) found that physical abuse was related with paranoid traits. Findings also revealed that a lack of close and intimate relationship with the mother might explain physical abuse and cluster A (schizoid PD, schizotypal PD and PPD) symptoms including social isolation and avoidance of intimacy.

Studies claimed that not only CT but also other childhood adversities, such as stressful family environments might explain the relationship between CT and personality pathology. Afifi and colleagues (2011) examined the relationship between all childhood adversities and PDs. Findings revealed that in addition to all types of childhood abuse and neglect, having a battered mother and parental substance use problems increased the risk of being diagnosed with a cluster A PD, PPD, schizoid PD and mostly schizotypal PD.

In a longitudinal study the paranoid symptoms and the risk factors have been studied in 174 children (9-12 years), who attended a summer camp between the years of 1993 and 2002. Researchers measured peer victimization, bullying, child maltreatments, externalizing problems, peer social behavior and PPD symptoms. Results showed that the prevalence of child maltreatment is higher in moderate and high PPD groups. Also,

children who have high paranoid symptoms are less cooperative, have a lack of leadership and tend to start a fight quickly (Natsuaki, Cicchetti, & Rogosch, 2009).

In addition to the relation between CT and PDs, literature showed that gender is a significant factor that may strengthen the relationship between CT and personality psychopathology. Despite a majority of studies revealed that women tend to report more CT especially sexual abuse—emotional neglect and physical abuse—and are more likely to have personality pathology, some studies failed to show a difference between gender in any of the CT types (Saaddicha et al., 2014; Johnson et al., 2003).

Interpersonal trust and PPD

Interpersonal trust has been studied mostly in industrial and organizational psychology studies to understand employees' attitudes and the performance of an organization in reference to their trust of the people in the organization (Guinot, Chiva and Roca-Puig, 2013; Son, Kim and Kim, 2014). In the recent years, the interest in trust has increased to understand the relationship between trust and internalizing/externalizing psychopathology (Sharp, Ha & Fonagy, 2011) and PDs such as BPD (Miano, Fertuck, Arntz & Stanley, 2013; Elbert, Kolb, Heller, Edel Roser & Brune, 2013).

Recent empirical research on PPD examined minority racial status, which may increase interpersonal distrust toward society (Whaley, 1998). Particularly among African-Americans, more severe PPD symptoms and greater CT as well as low SES have been observed compared to other racial categories, which strengthened the relationship between ethnic identity and PPD symptoms (Iocovino, Jackson & Oltmanns, 2014). Discrimination and social alienation has been assumed as the reason of distrust and more severe PPD symptoms in black individuals (Whaley, 1998).

Childhood Trauma and Interpersonal Trust

Traumagenic Dynamics Model, a trauma model proposed by Finkelhor and Browne (1985), describes the detrimental effects of childhood maltreatment in adolescence and adulthood. This model includes four core psychological injuries: traumatic sexualization, stigmatization, betrayal, and powerlessness. One of the psychological impairments, which is defined as betrayal trauma leads to severe impairment in trust judgment-behavior (Gobin & Freyd, 2009). The betrayal trauma was explained as the child's need to regain the trust and security that was lost due to an abuse by a trusted figure (Freyd, 1996; Finkelhor and Browne, 1985).

Literature of childhood trauma defines that a disruption in trust in childhood may lead problems in interpersonal relationships in adolescence and adulthood.

In support of these findings, DiLillo and colleagues (2009) conducted a longitudinal study with 202 newlywed couples. Results indicated that increased childhood maltreatment was associated with difficulties in marital trust.

In another study with 216 undergraduate students, the relationship between betrayal trauma (sexual abuse, physical abuse or emotional abuse in childhood and adolescence) and general and relational trust have been measured by using both self-report and behavioral measures. Results from self-report data showed that people with high betrayal trauma (HBT) have less trust in people in general and less trust towards their romantic partners. However, according to the behavioral data collected by using the Trust Game—an economic task involving investing money without an interaction to a human partner—groups who have HBT and do not have HBT did not differ in trusting behaviors. The majority of participants reported that their partners are non-human;

therefore, the data may be influenced from that reason according to researchers (Gobin & Freyd, 2014).

In summary, the literature defines that destruction in trust in childhood by a trusted figure –not only as the perpetrator is the trusted figure but also trusted figures were not able or available to protect the victim from the perpetrator—is a strong predictor of interpersonal distrust in adulthood and an indicator of problems in intimate relationships.

Childhood Trauma and Emotional Attachment in Adulthood

There are many categorical models of child and adult attachment that are defined by theorists. For example, Ainsworth (1985) formulated attachment styles in three categories as secure, avoidant and anxious-resistant and Barthelemow (1990) developed four category attachment model for adults as secure, dismissing, preoccupied and fearful attachments in two dimensions: self (dependence) and other (avoidance). Hazan and Shaver (1987) were one of the first researchers who noticed the link between the attachment in childhood and in adulthood and carried the childhood attachment models to adulthood romantic attachment styles. They theorized that attachments in adulthood might be the result of childhood attachment. According to their Three-Category Model, there are three types of adults: secure, ambivalent (preoccupied) and avoidant.

Overall, insecure attachment types in adult relationships generally can be categorized as attachment avoidance and attachment anxiety (Brennan et al., 1998). People with attachment avoidance have been defined as people are uncomfortable with closeness, dependency and have feelings of vulnerability. On the other hand, people with attachment anxiety has been defined as dependent, needing support, and needing to be

accepted according to the attachment scale that has been developed by Brennan and colleagues (1998).

As it was stated above, betrayal trauma theory (Freyd, 1996) has been built on main concepts of trauma theory by explaining effects of trauma by trusted figures. Betrayal trauma has an immense effect on emotional attachment in adulthood (Finkelhor and Browne, 1985). For example, a recent research (Riggs et al., 2011) examining specifically the link between emotional abuse and adult attachment, found a significant relationship between emotional abuse and adult insecure attachment in close relationships (avoidant and anxious attachment).

Recent literature supports both attachment and betrayal trauma theories by finding an association between betrayal history in childhood and problems in romantic relationships such as revictimization of betrayal, sexual aggression, and distrust, which are observed as strong predictors of attachment problems in adulthood. (Zurbriggen et al., 2010; Gobin & Freyd, 2014; Owen, Quirk and Manthos, 2012). In addition to distrust and aggression, insecurely attached people reported less psychological well-being and less perceived respect from the romantic partner (Sandberg, Suess, & Heaton, 2010; Owen, Kelley, & Manthos, 2012).

Attachment in PPD

In attachment theory, Bowlby (1977) linked attachment with dysfunctions in adulthood, such as problems in intimate relationships and personality disorders. He theorized that anxious attachment is associated with dependent and hysterical PDs while avoidant attachment is related to psychopathic PDs.

In the same vein, Sherry and Lyddon (2001) suggest a framework to show the relationship between Bartholomew's (1990) 4-dimensional model of adult attachment: (1) secure, (2) anxious-preoccupied (3) dismissive-avoidant and (4) fearful-avoidant, and all PDs. According to this model, people with PPD are located in the fearful dimension, and while they describe themselves as special, unique and different, they perceive others as untrustworthy.

Recent findings in PD research indicate a significant relationship between attachment anxiety, fearful attachment and personality dysfunction (Hengartner et al., 2015). Until now, PD research mainly focused on borderline pathology and insecure attachment relationship. Findings display a higher association between borderline PD and anxious attachment than avoidant attachment (Fossati, Borroni, Feeney, & Maffei, 2012; Hengartner, et al., 2015). In congruent with Bowlby's theory (1977) and Sherry and Lyddon's (2001) model, a higher correlation has been found between Cluster A PDs and attachment avoidance as well as higher interpersonal aggression and a lower correlation with attachment anxiety (Crawford et al., 2006).

The Present Study

As can be understood from the review, research on the association between PPD and CT is very limited. The majority of PD studies focused on BPD pathology and few studies have examined PPD, which is not enough to fully examine the risk and protective factors of PPD. Moreover, attachment studies give more weight to some specific PDs and findings regarding PPD are from some studies that have observed Cluster A PDs in total (e.g., Crawford et al., 2006). In the present study, all CT types and PPD relationship will be examined as well as other factors that mediated this relationship defined as insecure

attachment types and interpersonal trust. Based on the body of a literature three hypotheses will be evaluated:

- (1) Emotional and sexual abuse will predict PPD.
- (2) Interpersonal trust will mediate the relationship between emotional/sexual abuse and PPD.
- (3) Attachment avoidance and attachment anxiety will mediate the relationship between emotional/sexual abuse and PPD.

Methods

Participants

Participants were undergraduate students from a public university in New York City. The data was collected via the online subject pool system of the university. The inclusion criterion is being between the age of 18 and 35. In total 143 students participated in the study from the subject pool. They received course credit in exchange. After participants signed the consent forms, they completed computer based self-report surveys in a laboratory setting approximately in 1.5 hours.

Measures

Childhood Trauma Questionnaire (CTQ). Participants completed a 28-item version CTQ which was converted from 34-item version (Bernstein et al., 1997). The CTQ is a 5-point likert-type scale that includes five subscales: physical abuse (PA), sexual abuse (SA), emotional abuse (EA), physical neglect (PN) and emotional neglect (EN). The range of the sub-scale scores goes from 5 to 25, and, in total from 25 to 125 with higher scores representing higher frequency of occurrence. The original study found that the scale had a high internal consistency that Cronbach's alphas that ranged from

0.61 to .94 (Bernstein et al., 1994). The scale had a high internal consistency according to Cronbach's alpha scores of each sub-scales,.

Clinical cut-off scores have been defined as 8 or higher for physical abuse, 8 or higher for physical neglect, 8 or higher for sexual abuse, 10 or higher for emotional abuse, and 15 or higher for emotional neglect (Bernstein & Fink, 1998).

Interpersonal Trust Scale (ITS). ITS (Rotter, 1967) is a 25-item likert-type scale with higher scores representing greater interpersonal trust. The scale has a moderate internal consistency (split half $r = 0.76$) and test retest reliability ($r = 0.68$) (Rotter, 1967). In the current study the scale had a moderate internal consistency (Cronbach's alpha is 0.80)

Structured Clinical Interview for DSM-IV TR Axis II PDs, Screen. (SCID-II, Screen). Axis II disorders, were measured by using SCID-II questionnaire version 2.0 (First, Gibbon, Spitzer, Williams, & Benjamin, 1997) which is a self-administered true-false format questionnaire containing all PDs in the DSM-IV. PPD subscale is used to determine paranoid features of the participants,. Additionally all PDs have been controlled to understand their relation with CT. PPD subscale consists of 8 items, for example: "Do you spend a lot of time wondering if you can trust your friends or the people you work with" and "Do you often pick up hidden meanings in what people say or do?" The Cronbach's alpha of the scale is moderate 0.71 (Arntz et al., 2009). For the current study, the overall Cronbach's alpha was 0.96, and the reliability coefficient of the PPD sub-scale specifically has been found as 0.68.

The Experiences in Close Relationships-Revised (ECR-R) Questionnaire. A revised form of the ECR (Fraley, Waller, and Brennan, 1998), ECR-R (Brennan, Clark, &

Shaver, 2000), has been used to assess attachment styles. ECR-R is a 36-item self-report measure that has two 18-item subscales: the Attachment Anxiety sub-scale and the Attachment Avoidance sub-scale. The response format is 7-point likert-type from 1= strongly disagree to 7= strongly agree and higher scale scores represent greater levels of attachment anxiety or avoidance. The Attachment Anxiety sub-scale measures the fear of rejection and concern of abandonment, while the Attachment Avoidance sub-scale assesses concern of intimacy and unease with closeness or dependence. The Cronbach's alpha of the scale has been found as 0.78. The sub-scales of Attachment Avoidance and Attachment Anxiety had a very high internal consistency (respectively; 0.92 and 0.93.)

Statistical analyses

All statistical analyses of the data have been analyzed by using SPSS Statistics 17.0. Bivariate correlations between PPD, CT types, interpersonal trust and insecure attachment styles have been examined using Spearman correlations. Mean group (gender and race) differences in CT, PPD and attachment styles were evaluated using Mann Whitney U nonparametric test and Kruskal-Wallis H Test.

Mediation analyses were conducted with PROCESS (Hayes, 2013) to measure the effect of interpersonal trust and attachment on the relationship between CT and PPD traits. Physical abuse and neglect, emotional abuse and neglect and, sexual abuse were entered as independent variables and mediators (attachment avoidance, attachment anxiety and interpersonal trust) entered concurrently.

Results

Descriptive

(See Table 1 for a summary of the sample demographic and descriptive results.)

Mann Whitney U nonparametric test was run to assess the gender and Kruskal-Wallis H test for racial differences in CT, PPD, The test indicated that women reported significantly more emotional abuse than men ($U=1764, p=.044$) but did not differ in sexual abuse, physical abuse/neglect and emotional neglect compared to men. Kruskal Wallis test showed there was no significant difference in PPD scores between different race groups, $p > .05$. In addition, there was no significant difference in childhood trauma types between different racial groups except physical neglect. Native Hawaiian or Other Pacific Islander group has reported higher physical neglect. However, the sample size of Native Hawaiian or Other Pacific Islander group ($N=2$) is too small to draw conclusions.

Spearman's rank order correlation was run to assess the relationship between interpersonal trust and PPD. There was a small but significant positive correlation between interpersonal trust and PPD, $r_s(136)=.19, p < .05$.

In addition, Spearman's correlation showed a small but significant correlation between emotional abuse and PPD, $r_s(132) = .27, p = .001$; however sexual and physical abuse, physical and emotional neglect were not significantly correlated with PPD. There was no correlation between interpersonal trust and any CT subtypes.

Attachment anxiety significantly correlated with emotional abuse ($r_s = .44, p < .01$) emotional neglect ($r_s = .40, p < .01$) and physical abuse ($r_s = .31, p < .01$) while attachment avoidance significantly correlated with emotional neglect. Furthermore, a weak but significant correlation has been found between attachment anxiety and

interpersonal trust ($r_s = .20, p < .05$). The correlation between PPD and attachment anxiety was stronger ($r_s = 0.43, p < 0.01$) than attachment avoidance ($r_s = 0.25, p < .01$). (see Table 2.)

When it comes to other PDs, emotional abuse was significantly correlated with BPD ($r_s = .27, p < .01$), avoidant PD ($r_s = .31, p < .001$) and dependent PD ($r_s = .22, p < .05$), sexual abuse did not significantly correlate with any PD and physical abuse was significantly correlated with BPD ($r_s = .22, p < .05$). Avoidant PD ($r_s = .26, p < .01$), attachment anxiety significantly correlated with all PDs except histrionic PD, while attachment avoidance was correlated with BPD and avoidant PD.

Mediation Analyses

The mediation analyses were conducted using PROCESS (Hayes, 2013) to assess indirect pathways. . In the mediation model, the independent variable (IV) was PPD, the dependent variable (DV) was emotional abuse, and the mediator (M) was attachment anxiety. Given that the Interpersonal Trust and attachment avoidance did not significantly correlate with emotional abuse, they cannot mediate the relationship between emotional abuse and PPD. As Figure 1 illustrates, attachment anxiety fully mediated the relationship between emotional abuse and PPD since the relationship turned out to be insignificant after the mediation analysis, $c = .16, p < .01$; $c' = .09, p > .05$ (Figure 1.).

In addition, given that BPD and Avoidant PD were significantly correlated with both attachment anxiety and emotional abuse, these two have been analyzed as dependent factors in the same mediation model to see if the attachment anxiety mediates solely PPD. The results showed that attachment anxiety partially mediated both the relationship between Avoidant PD and emotional abuse ($c = .11, p < .001$; $c' = .09, p < .05$) and the

relationship between BPD and emotional abuse ($c = .11, p < .001$; $c' = .22, p < .05$) by making them less significant.

Discussion

This study may shed light on one of the least studied PDs by examining how childhood trauma, adult attachment, and trust affect PPD. First, it was hypothesized that there will be a significant direct relationship between emotional/sexual abuse and PPD. In congruent with the literature, emotional abuse was significantly correlated with PPD (Zhang et al., 2009) but not sexual abuse, physical abuse or emotional/physical neglect. This finding contradicts other studies that show a significant relationship between sexual abuse and PPD (Tyrka et al., 2009; Bierer et al., 2003; Lobbestael et al., 2010). The lack of significant correlation between sexual abuse and PPD might be explained by the severity of sexual abuse, which was very low compared to emotional abuse. Moreover, sexual abuse did not correlate with not only PPD but also all other PD types. The severity of abuse might be related to the sensitivity of the information—participants may hesitate to report their sexual abuse history. In addition, since the participants are college students, the severity of childhood trauma is not expected to be as high in severity as in an inpatient group.

In contrast to prior findings (Coid, 2003), being male did not emerge as a risk factor for PPD in this study. In terms of childhood abuse and gender differences, the present study's findings were partially consistent with Rosen & Martin's (1996) study; women reported more emotional abuse than males. However, unlike previous studies (Rosen & Martin, 1996; Beach et al 2013; Alegria et al, 2013) there was no gender difference in the reporting of physical abuse, sexual abuse or emotional neglect.

Studies on ethnicity demonstrated higher PPD symptoms in the African-American population, which is explained by low SES and higher cultural mistrust (Iacovino, Jackson, & Oltmanns, 2014; Raza, Demarce, Lash and Parker, 2014; Whaley, 2001a). CT particularly has been demonstrated by many studies as a strong predictor of personality pathology (e.g., Afifi et al., 2011; Lobbestael, Arntz, & Bernstein, 2010). However findings contrasted with certain body of literature (Iacovino, Jackson, & Oltmanns, 2014; Raza, Demarce, Lash and Parker, 2014; Whaley, 2001), and show that there was no significant difference in PPD symptoms between racial groups. Although the Hawaiian or other Pacific Islander group differed from all other race groups by reporting higher emotional neglect, the sample size is small (N=3) to draw a conclusion from that finding.

Secondly, it was hypothesized that interpersonal trust will mediate the relationship between emotional/sexual abuse and PPD. There was no significant relationship between interpersonal trust and any of the CT types. This finding is inconsistent with the literature on betrayal trauma (Freyd, 1996) that suggests CT, and in particular sexual abuse, leads to impairments in judgment of others' trustworthiness (Gobin & Freyd, 2009). A possible explanation would be the use of Rotter's Interpersonal Trust Scale (1967) to measure trust. Although it is a valid scale used in many studies, the scale was created to measure the general trust to authority figures (e.g., parents, government officials, teachers), the media, and society rather than close relationships. Indeed, one-dimensional trust conceptualization has been criticized and relational trust differs from general trust (Jones, Couch, & Scott, 1997). The literature shows that distrust in victims of childhood trauma is related to problems in intimate

relationships with sexual partners, spouse, parents and close friends (DiLilo et al., 2009; Gobin & Freyd, 2014). Therefore, the scale may not be adequate in measuring the relational trust in people with emotional abuse.

Thirdly, it was hypothesized that insecure attachment will mediate the relationship between emotional abuse and PPD. Although the findings supported the hypothesis, they were partially inconsistent with research that found PPD to be related to higher attachment avoidance (Bowlby's (1977) Sherry and Lyddon's (2001) and Crawford et al. (2006). Thus, although the literature claims that emotional abuse is related to both attachment avoidance and attachment anxiety (Riggs et al., 2011); findings revealed that only attachment anxiety was related to emotional abuse.

These findings are noteworthy because: (a) to our knowledge, the relationship between PPD and emotional abuse has not been examined by specifically looking into the mediating factors; (b) contrary to attachment theories, attachment anxiety—not attachment avoidance—fully mediated the relationship between emotional abuse and PPD; (3) these findings are specific only to PPD, not other personality disorders.

Limitations and Future Directions

This study has several limitations. First, using self-reported data is a limitation since participants reported very sensitive information about their childhood experiences. Relying on a retrospective reporting method for sensitive information in the past may lead to recall bias. Also, possible reporting bias, such as under-reporting (social desirability) or over-reporting (demand characteristics) of childhood adversities, may change the strength of the relationship between CT and PPD.

Second, ITS (Rotter, 1967) is a scale that measures general trust rather than the trust in close relationships. Since both attachment and CT histories are mostly related to close relationships, ITS might not be a good choice to measure relational trust. Moreover, ITS is a scale that was founded in the 19th century using older concepts of institutions, politics, societal values and problems. Therefore, there might be some problems in adapting the scale to the concepts of the 21st century.

Third, although there is diversity in gender and race since the participants are college students, age is homogeneous in the sample. Homogeneity in age weakens the representativeness of the study and these findings cannot be generalized beyond college students. Furthermore, the sample of individuals is not clinically diagnosed with PPD but they reported symptoms of PPD; thus, we cannot generalize these findings to the clinical population.

For future studies, findings indicate that there is a need to examine CT and PPD relationships over time with a longitudinal study to prevent recall bias. In addition, more comprehensive samples should be used to strengthen the representativeness of the study. This study should be replicated with a clinical sample by detecting PPD with interviews by clinicians and also, another paranoia scale (e.g., PS; Fenigstein & Venable, 1992) is required to measure paranoia as a continuum to differentiate cultural/nonclinical paranoia and clinical paranoia. Furthermore, another scale that measures trust in close relationships, for example the Trust scale that was developed by Rempel, Holmes & Zanna (1985) or a behavioral trust task should be used to understand interpersonal trust and CT relationships in addition to ITS. Lastly, using a social desirability measure may be effective to prevent reporting bias.

Conclusion and Clinical Implications

This study examined CT and PPD relationship and the risk factors that explain this relationship. Emotional abuse and attachment anxiety are found to be risk factors of having symptoms of PPD.. Despite the limitations of this study, findings may help to identify the target of intervention in childhood to effectively prevent PPD.

Moreover, clinicians should be aware of cultural factors that may lead to misunderstanding of the symptoms and misdiagnoses. Although it is studied before in cultural context there is very little known about paranoia in PPD. Particularly, PD research should pay attention to cultural mistrust and perceived racism to prevent misdiagnosis of PPD.

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Table 1. Sample demographic and descriptive

Overall Sample (n=143)	
Demographics	
Male, <i>n</i> (%)	59 (41.3)
Age (years), mean (SD) [range]	21.3 (3.5) [18-35]
Race, <i>n</i> (%)	
African American	28 (19.6)
White/Caucasian	25 (17.5)
Asian	34 (23.8)
Hispanic/Latino	42 (29.4)
Native Hawaiian or Other Pacific Islander	2 (1.4)
Childhood trauma, mean, (SD) [range]	
Sexual abuse	6.44, (3.54) [5-21]
Emotional abuse	8.46 (4.49) [5-25]
Emotional neglect	10.21 (5.01) [5-25]
Physical abuse	7.31 (3.15) [5-23]
Physical neglect	7.29 (3.01) [5-23]

**Table 2. Correlations of CT types, insecure attachment types, interpersonal trust
and PPD**

	PPD	IT	EA	EN	SA	PA	PN	Aanx	Aavo
PPD	1	.189*	.274**	.128	-.80	.028	.071	.429**	.248**
IT		1	.132	.043	-.161	.129	-.033	.197*	.143
EA			1	.535**	.311**	.505**	.370**	.439**	.161
EN				1	.187*	.364**	.516**	.396**	.297**
SA					1	.215*	.079	.060	.099
PA						1	.302**	.306**	.078
PN							1	.165	.154
Aanx								1	.384**
Aavo									1

Note: *p<.05, **p<.01; Paranoid Personality Disorder=PPD; IT=Interpersonal Trust;

EA=Emotional Abuse; SA=Sexual Abuse; PA=Physical Abuse; EN=Emotional Neglect;

PN=Physical Neglect; Aanx=Attachment Anxiety; Aavo=Attachment Avoidance

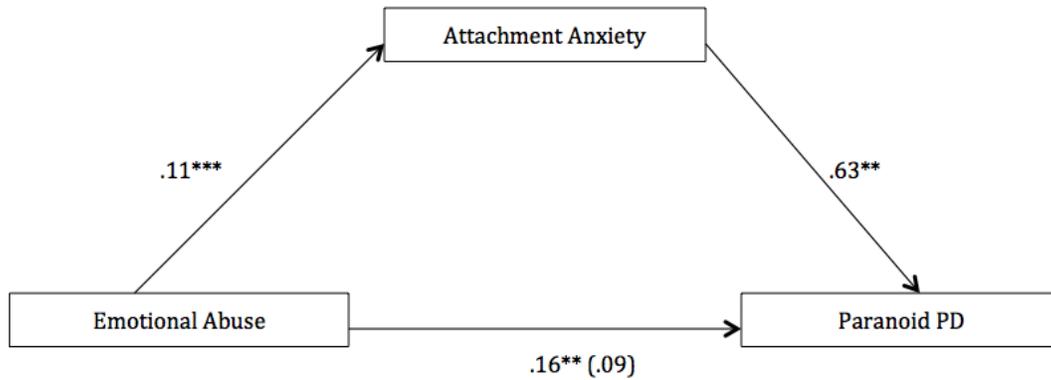


Figure 1. Standardized regression coefficients for the relationship between emotional abuse and PPD are mediated by attachment anxiety. The standardized regression coefficient between emotional abuse and PPD, controlling for attachment anxiety, is in parentheses. ** $p < .01$, *** $p < .001$

Table 3. Standardized direct, indirect and total effects of factors

Path	Direct β (c')	Indirect β (ab)	Total Effect (c)
Emotional abuse- attachment anxiety	.11***	0.00	.11***
Emotional abuse- PPD	.09	.07	.16***
Attachment anxiety- PPD	.63**	0.00	.63**

p<.01, *p<.001