COMPARISONS OF DISSOCIATIVE PATIENTS TO MALTREATED AND NON-

MALTREATED SAMPLES ON THE PERSONALITY ASSESSMENT INVENTORY

By

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THESIS APPROVAL PAGE

This is to certify that the thesis prepared by Ryan Stadnik entitled: "Comparisons of Dissociative Patients to Maltreated and Non-maltreated Samples on the Personality Assessment Inventory." has been approved by the thesis committee as satisfactorily completing the thesis requirements for the Master of Arts in Experimental Psychology.

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Abstract

Patients with dissociative identity disorder and dissociative disorder not otherwise specified (DID/DDNOS) exhibit a wide range of psychological symptoms according to self-report measures such as the Minnesota Multiphasic Personality Inventory-2 (MMPI-2) and the Personality Assessment Inventory (PAI). DID/DDNOS patients are often elevated on validity scales that supposedly measure symptom exaggeration such as the Negative Impression Scale (NIM) on the PAI, which uninformed clinicians may interpret as malingering. However, it has been shown that these elevations are mainly due to dissociative disorder patients' past history of childhood maltreatment. Additionally, it has been shown that traumatized college students experience more difficulties with depression, anxiety, paranoia, aggression, and characteristics of antisocial and borderline personality disorder compared to non-maltreated college students. No research has been conducted to determine how hospitalized maltreated DID/DDNOS patients, maltreated college students, and non-maltreated college students differ on severity of psychological symptoms. The goal of the current study was to determine how these groups differ on PAI scales. It was found that, DID/DDNOS patients had many significant elevations on PAI scales compared to both the maltreated and non-maltreated students and that maltreated students obtained significant elevations on the PAI compared to non-maltreated students. Furthermore, as it has been found in DID/DDNOS patients, it was found that childhood maltreatment and dissociation were significantly associated with NIM in maltreated students. These results add growing evidence that NIM is not a valid measure of symptom exaggeration in trauma survivors and that trauma exposure is related to elevations on many different forms of psychopathology.

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Introduction

According to the Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition, Text Revision (DSM-IV-TR) dissociation is defined as "a disruption of consciousness, memory, identity, or perception" (American Psychiatric Association, 2000, p. 519). The most severe forms of dissociation are known as dissociative identity disorder (DID) and dissociative disorder not otherwise specified (DDNOS). DID occurs when two or more different personalities repeatedly take over the individual's behavior (American Psychiatric Association, 2000). Individuals with a diagnosis of DDNOS do not meet full criteria for DID yet have many of the same features (International Society for the Study of Trauma and Dissociation, 2011). DID and most types of DDNOS are thought to originate from extreme trauma in childhood such as sexual abuse, physical abuse, emotional abuse, and neglect (e.g., Foote, Smolin, Kaplan, Legatt, & Lipschitz, 2008; Marmer & Fink, 1994). Prevalence rates of extreme childhood abuse found in DID patients range from 65% to 96% (e.g., Brand, et al., 2009; Ross et al., 1989). In fact, in a review done by Dalenberg et al., (2012), the authors concluded that dissociation remains strongly related to trauma during childhood even when controlling for fantasy proneness. Dissociation is theorized to protect individuals from negative feelings and physiological reactions associated with the extreme trauma they have experienced (Wright, Crawford, & Del Castillo, 2009). In addition to symptoms of dissociation, severe trauma is associated with a wide range of other complex symptoms such as depression, PTSD symptoms, anxiety, somatic complaints, eating disorders, substance abuse, suicidality, and borderline and avoidant personality symptoms (Ellason, Ross, & Fuchs, 1996; Foote,

Smolin, Neft, & Lipschitz, 2008; Johnson, Cohen, Kasen, & Brook, 2006; Karadag et al., 2005).

Due to the array of symptoms these individuals experience, individuals with DID/DDNOS can be conceptualized as having complex PTSD. Complex PTSD occurs in individuals who have experienced prolonged trauma, such as child abuse, resulting in many complex symptoms (Herman, 1992) and includes difficulties such as dissociation, affective dysregulation, somatization, and chronic personality changes (Wolf, Reinhard, Cozolino, Caldwell, & Asamen, 2009). Trauma and dissociation has received some study in clinical samples, yet are relatively understudied in non-clinical populations.

Research exploring the severity of dissociation and personality variables in different samples such as clinical and non-clinical samples is needed. Some may assume that the severity of dissociative symptoms is lower in non-clinical samples compared to clinical samples. However, there is evidence suggesting that degrees in dissociation vary in non-clinical samples, particularly college samples (Bernstein & Putnam, 1986; Sanders, McRoberts, & Tollefson, 1989). Because dissociative symptoms tend to decline by adulthood in healthy individuals (Ross, Ryan, Anderson, Ross, & Hardy, 1989), continued heightened levels in young adults might suggest a previous history of trauma. Literature on highly dissociative and traumatized clinical samples as well as traumatized non-clinical college samples will be reviewed followed by a discussion of the current study.

Highly Dissociative and Traumatized Clinical Samples

A body of literature has shown that highly dissociative and traumatized clinical samples score high on a variety of subscales measured by personality tests such as the

Minnesota Multiphasic Personality Inventory (MMPI; Hathaway & McKinley, 1943) and the MMPI-2 (Butcher, Dahlstrom, Graham, Tellegen, & Kaemmer, 1989). Coons, Bowman, & Milstein (1988) examined childhood trauma and MMPI profiles in 50 inpatients with DID, 92% of whom were women. Most clinical scales on the MMPI were found to be elevated; however, the three clinical scales with the highest mean elevations were the Schizophrenia scale (Scale 8, Sc), the Psychopathic Deviate scale (Scale 4, Pd), and the Depression scale (Scale 2, D). The Hysteria scale (Scale 3, Hy) and the Paranoia scale (Scale 6, Pa) were also highly elevated. The authors described the ten patients with the most common profile as suicidal, dependent, withdrawn, socially awkward, anxious, and depressed. Eight patients displayed the second most common profile and were described as displaying borderline personality disorder traits. Coons' and colleagues' finding that DID patients score high on the Schizophrenia scale has been replicated and extended by other researchers (e.g., Brand & Chasson, submitted; Welburn, Fraser, Jordan, Cameron, Webb, & Raine, 2003). There is evidence that shows that DID patients score even higher than schizophrenic patients on Schneiderian first rank symptoms, which were initially thought to be indicative only of schizophrenia (Dell, 2006; Kluft, 1987; Ross et al., 1990). Schneiderian symptoms can be conceptualized as positive of symptoms of schizophrenia such as auditory hallucinations, delusions, thought broadcasting, etc. (Schneider, 1959). Fink and Golinkoff (1990) found that DID patients scored significantly higher on the Schizophrenia scale on the MMPI than patients with a diagnosis of schizophrenia. Together these finding suggest that items on the Sc scale, which were considered to be indicative of schizophrenia, may be more strongly associated with some aspects of DID than schizophrenia. In support of that hypothesis,

Elhai, Gold, Mateus, and Astaphan (2001) found that the Lack of Ego Mastery, Cognitive subscale of the Schizophrenia scale on the MMPI-2 was the highest elevation in 79 highly dissociative women who had experienced childhood sexual abuse. The Lack of Ego Mastery, Cognitive subscale supposedly measures symptoms of thought disorder and social detachment. It would appear from these findings that highly dissociative and traumatized patients often experience what have been conceptualized as the negative symptoms of schizophrenia such as social detachment and as opposed to positive or psychotic symptoms of schizophrenia. This emerging evidence suggests that items measuring symptoms of schizophrenia on the MMPI-2 may not be measuring only schizophrenia. This developing literature has led to the proposition that many of the items on the Sc scale of the MMPI-2 are dissociative and or trauma-based in nature (Wolf et al., 2009). In support of this theory, additional studies have provided evidence that survivors of childhood trauma frequently endorse items on the Sc scale of the MMPI (Brand & Chasson, submitted; Engels, Moisan, & Harris, 1994; Korbanka, 1997; Welburn, Fraser, Jordan, Cameron, Webb, & Raine, 2003).

There is also increasing research interest on the association between childhood trauma and elevated "fake bad" validity indicators on personality tests. Researchers have shown that dissociation, as measured by the Dissociative Experiences Scale (DES; Bernstein & Putnam, 1986) is highly correlated with the F scale, a measure of exaggeration of symptoms, on the MMPI-2 in studies of individuals who have experienced childhood trauma (Allen & Coyne, 1995; Brand & Chasson, submitted; Elhai, et al., 2001). Klotz Flitter, Elhai, and Gold (2003) examined whether childhood trauma, depression, or dissociation predicted elevated scores on the F scale in 98 women

who had been sexually abused in childhood. The best predictor of elevated *F* scores was

dissociative symptoms, indicating that elevated *F* scores in this population reflect serious

distress and severe symptoms, particularly dissociation, rather than exaggerated

symptoms. Similarly, while DID patients elevate on "fake bad" validity scales on the

MMPI-2 and other tests (Brand & Chasson, submitted; Brand, McNary, Loewenstein,

Kolos, & Barr, 2006)**,** individuals who have been coached to simulate DID score even

higher on symptom exaggeration scales than individuals with true DID (Brand &

Chasson, submitted; Brand, McNary, Loewenstein, Kolos, & Barr, 2006; Rogers,

Gillard, Wooley, & Ross, 2012). Highly traumatized and dissociative patients have been

studied using the MMPI and the MMPI-2. However, a personality measure known as the

Personality Assessment Inventory (PAI; Morey, 1991) has rarely been studied using this

population.

       The personality assessment inventory (PAI). The PAI consists of 344 items

with 4 validity scales, 11 clinical scales, 5 treatment scales, and 2 interpersonal scales.

The PAI also includes a similar scale to the *F* scale on the MMPI-2 known as the

Negative Impression scale (NIM). Like the *F* scale, NIM is a supposed measure of

symptom exaggeration. One of the first studies to examine an abused clinical sample on

the PAI was done by Cherepon and Prinzhorn (1994). They compared the PAI profiles of

44 women with a reported history of physical, sexual, and/or emotional childhood abuse,

to those of 47 women who denied any history of abuse. The abused patients scored

significantly higher on subscales measuring traumatic stress symptoms, phobic and

obsessive-compulsive tendencies, paranoia, and borderline features such as affective

instability and negative relationships. Abused and non-abused patients did not

significantly differ on levels of depression and general anxiety. These elevations among the abused patients overlap with many of the domains that are described as being characteristic of complex PTSD stemming from chronic, severe early trauma. Unfortunately, this study did not measure dissociation.

The only study to document the complete PAI profile of highly dissociative patients was done by Stadnik, Brand, and Savoca (in press). Stadnik et al. (in press) examined the PAI profiles of 42 highly dissociative and traumatized patients being treated on a trauma disorders inpatient unit. The researchers found that the patients scored highest on the scales measuring Depression, Anxiety, Schizophrenia, Borderline Features, and the Suicidal Ideation scales. The patients were also elevated on the Somatic Complaints and Paranoia scales. They described their sample as severely depressed, anxious, passive, withdrawn, bitter, angry, confused, and socially isolated. This description is similar to the description of the Coons et al. (1988) study. Patients also scored high on the Negative Impression Scale (NIM) and dissociation was found to be a unique predictor of the NIM scale above and beyond Depression and Borderline Features in Stadnik et al's sample. Similar to the *F* scale on the MMPI-2, the NIM scale measures symptom exaggeration. However, the results of the Stadnik et al., (2012) study suggest that the NIM scale may not be a valid measure of symptom exaggeration in DID/DDNOS individuals. In summary, highly dissociative and traumatized inpatients tend to exhibit high levels of symptoms initially considered to be indicative of schizophrenia as well as symptom exaggeration, along with depressive, anxious, and borderline features.

Studies have shown that dissociative symptoms do in fact exist in normal non-clinical populations (Bernstein & Putnam, 1986; Sanders et al., 1989). For example in one study, researchers administered the DES to 309 undergraduate students and found that the degree of dissociation varied, with the majority of the students having normal levels of dissociation, and a minority of students reporting abnormal levels of dissociation (Sanders et al., 1989). Trauma has also been shown to be fairly prevalent in college student samples. For example, it was found that out of 485 Turkish college students, 77.1% of the students reported experiencing some sort of trauma in their lives, with separation from caretaker being the most prevalent form of trauma experienced (Aydin, Atlindag, & Ozkan, 2009). Separation from the caretaker can cause….(REF). It has also been shown that college students who are trauma survivors report a significant amount of depression and anxiety compared to non-trauma exposed college students (Thomas & Hall, 2008).

Recent studies have documented that exposure to multiple traumas is associated with poor adjustment in college students. Zelikovsky and Lynn (2002) found that 35 out of 100 students in their study reported a combination of physical and psychological abuse in their childhood. Those students who reported this combination were more likely to receive an Axis I diagnosis such as major depressive disorder, substance abuse, and generalized anxiety disorder as well as higher levels of dissociation than students who reported psychological abuse alone or no abuse. Also, in a study that examined emotional abuse and emotional neglect in a college sample, it was found that only a past history of emotional neglect predicted dissociation (Wright et al., 2009). There is also evidence suggesting that college students who have experienced trauma have problems

with aggression and substance abuse (Read, Colder, Merrill, Ouimette, White, & Swartout, 2012; Scarpa et al., 2002). In these studies, with the exception of the Wright et al., (2009) study, the majority of the traumatized college students reported experiencing mild traumas such as death of a loved one and motor vehicle accidents rather than traumas that are more severe due to the disruption in attachment and trust that can occur in sexual and physical abuse.

One of the first PAI studies utilizing a trauma exposed non-clinical sample of women with PTSD compared to those without PTSD found that the PTSD group had significantly higher scores on the Anxiety, Anxiety Related Disorders, Depression, Borderline Features, and NIM scale (McDevitt-Murphy, Weathers, Adkins, & Daniels, 2005). In addition to the McDevitt-Murphy, et al. (2005) study, one study examined a traumatized college sample using both the PAI and the MMPI-2 (McDevitt-Murphy, Weathers, Flood, Eakin, & Benson, 2007). The researchers were interested to learn where differences on the PAI and the MMPI-2 would emerge among 132 traumatized college students diagnosed with PTSD, depression, or social phobia. Based on scores on standardized measures, the traumatized students were placed in a PTSD group (n = 30), a depression group (n = 23), a social phobia group (n = 21), or a well-adjusted group (n = 18). There were no differences between the groups on MMPI-2 profiles; however, the groups differed in regards to traumatic, antisocial and manic symptoms on the PAI. The PTSD group scored the highest on the Anxiety Related Disorders-Traumatic Stress scale (ARD) and on two antisocial scales (Antisocial Behaviors and Antisocial-Egocentricity). Additionally, the PTSD group scored lower on the Mania-Grandiosity scale than the depressed group. These studies provide evidence that women in the community with

PTSD have some symptoms that overlap with those among DID/DDNOS patients; albeit

the symptoms of the community sample may not be as high as those found in

DID/DDNOS patients. The studies also suggest that traumatized college students with

PTSD may be more egocentric and exhibit more antisocial items compared to

traumatized college students who develop only depression. Given that the majority of

participants in the McDevitt-Murphy, et al. (2007) study reported a transportation

accident (n = 19) as the trauma they had experienced, these results may only be

generalized to individuals who have experienced single and mild forms of trauma such as

car accidents or major natural disasters. Individuals who are highly dissociative are

thought to have experienced more chronic and severe forms of interpersonal trauma like

sexual abuse (Herman, 1992). Research is needed to determine how college students

who have experienced chronic and severe trauma in childhood score on personality

measures such as the PAI. This research would inform clinicians and researchers about

the types of symptoms common among traumatized college students compared to

severely ill, hospitalized trauma patients. Such data could help identify college students

who are struggling with the aftermath of trauma and inform treatment planning for both

groups. Furthermore, such research could help us understand the impact of childhood

trauma on different populations.

Summary and Goals of the Study

In conclusion, severely traumatized inpatients who are highly dissociative endorse

clinical scales indicating social detachment, thought disorder, and depression, as well as

validity scales that have typically been interpreted as indicative of exaggeration of

symptoms or very high levels of distress (Coons, et al., 1988; Cherepon & Prinzhorn,

1994; Elhai, et al., 2001; Fink & Golinkoff, 1990; Klotz Flitter, et al., 2003; Stadnik, et al., in press). High scores among severely traumatized individuals on scales prompted to measure social detachment and thought disorder most likely reflect extreme childhood trauma rather than symptoms of schizophrenia (Wolf et al., 2009). Dissociative symptoms and a history of trauma in college students are quite common (Aydin, et al., 2009; Bernstein & Putnam, 1986; Sanders et al., 1989 Zelikovsky & Lynn, 2002). Contrary to traumatized clinical samples with older participants, non-clinical samples in the community and traumatized college students display elevated symptoms similar to highly dissociative patients as well as dramatic and antisocial symptoms (McDevitt-Murphy, et al., 2005; McDevitt-Murphy, et al., 2007; Read, et al., 2012; Scarpa, et al., 2012). The results of the studies must be interpreted with caution because the majority of the participants reported milder forms of trauma. It remains to be seen how moderately to severely traumatized college students score on the PAI compared to severely traumatized dissociative samples.

The current study assessed personality traits in highly dissociative, traumatized inpatients and compared them to maltreated (abused and/or neglected) and non-maltreated college samples. PAI and DES data from inpatients diagnosed with DID or DDNOS from the Stadnik et al., (in press) study were compared to data collected on college students. Only interpersonal forms of abuse and neglect were explored rather than non-interpersonal types of trauma because the interpersonal abuse and neglect in childhood is more strongly related to dissociation than is non-interpersonal trauma (Herman, 1992; Marmer & Fink, 1994; Wright, Crawford, & Del Castillo, 2009). It is hypothesized that the inpatient sample will have significantly higher levels of symptoms

on a variety of scales on the PAI than both the maltreated college sample and the non-maltreated college sample. However, because DID/DDNOS individuals have been found to be introverted and unassertive and traumatized college students have been found to be more dramatic and antisocial, it is hypothesized that traumatized college students will have significantly greater levels of antisocial features compared to DID/DDNOS patients. Additionally, based on past research, it was hypothesized that the maltreated student sample will have significantly greater levels of depression, anxiety, paranoia, and borderline symptoms than the non-maltreated students. Lastly, because Stadink et al. (in press) found that dissociation was uniquely related to NIM in DID/DDNOS patients, it was explored whether this was true for maltreated college students as well when including childhood maltreatment scores.

Method

Participants

  Dissociative sample. Data from the Stadnik et al. (in press) study will be used in the current study. This 42 patient unit from that study had a primary diagnosis of either DID or DDNOS and were recruited from a trauma disorders unit at a psychiatric hospital in the Mid-Atlantic region of the United States. Patients were predominantly female (34, 80%) and the mean age of the patients was 37 years old ($SD = 9.82$). The majority of patients identified as Caucasian (38, 90.5 %). In regards to marital status 18 (42.9 %) were single, 15 (35.7 %) were married, and 8 (19 %) were divorced. The mean level of education was 15 years ($SD = 2.44$). Discharge diagnoses were used to determine which patients met criteria for DID or DDNOS. These clinical diagnoses were made by the patients' inpatient treatment team based on their observations of the patients over two or

more weeks of continual observations. Childhood histories of emotional, physical, and sexual abuse among those with a diagnosis of DID/DDNOS is reported in up to 90% of cases (e.g., Brand, et al., 2009; Marmer & Fink, 1994; Ross et al., 1989). Thus, the vast majority of patients admitted to the Trauma Disorders Unit have experienced some type of childhood maltreatment. Additionally, 95% of the patients from the Trauma Disorders Unit were also diagnosed with PTSD.

Maltreated college student sample. Data from 38 college students who reported moderate to severe levels of maltreatment on the Childhood Trauma Questionnaire (CTQ; Bernstein & Fink, 1998) were included in the current study. Originally there were 46 students in the maltreated group; however, 8 of these students' data were deleted from the dataset for the study due to their high scores ($T > 73$) on the Infrequency scale on the PAI. High scores on the Infrequency scale indicate that the participant did not appropriately respond to the PAI items (Morey, 1991). Participants were considered to have experienced maltreatment if they scored in the moderate ranges in at least one form of maltreatment as measured by the CTQ. Of these 38 students, 25 (65.8%) reported emotional abuse, 16 (42.1%) reported physical abuse, 10 (26.3%) reported sexual abuse, 17 (44.7%) reported emotional neglect, 17 (44.7%) reported physical neglect, and 23 (60.5%) reported more than one type of maltreatment, all occurring during the childhood years. Over half of the students were female (25, 65.8%) and the mean age of the students was 20 years old ($SD = 3.04$). The majority of the students were Caucasian (26, 68.4%), and the marital status of all the students was single. The mean education level of the sample was 1 year of college completed ($SD = 1.50$).

Non-maltreated college student sample. Data from 40 college students who reported no to low levels on all forms of maltreatment as measured by the CTQ were included in the current study. Originally there were 43 students in the non-maltreated group; however, 3 of these students' data were deleted from the dataset for the study due to their high scores ($T > 73$) on the Infrequency scale on the PAI. The majority of the students were female (31, 77.5%) and the mean age of the students was 20 years old (*SD* = 2.32). The majority of the students were Caucasian (28, 70.0%), and the marital status of all the students was single. The mean education level of the sample was 1 year of college completed (*SD* = 1.61).

Measures

Personality assessment inventory (PAI-Morey, 1991). The PAI consists of 344 items with 4 validity scales, 11 clinical scales, 5 treatment scales, and 2 interpersonal scales. Each item is rated on a four-point scale (*not at all true, slightly true, mainly true, very true*). The four validity scales are: Inconsistency (ICN), Infrequency (INF), Negative Impression (NIM), and Positive Impression (PIM). The 11 clinical scales are: Somatic Complaints (SOM), Anxiety (ANX), Anxiety-Related Disorders (ARD), Depression (DEP), Mania (MAN), Paranoia (PAR), Schizophrenia (SCZ), Borderline Features (BOR), Antisocial Features (ANT), Alcohol Problems (ALC), and Drug Problems (DRG). The 5 treatment scales are: Aggression (AGG), Suicidal Ideation (SUI), Stress (STR), Nonsupport (NON), and Treatment Rejection (RXR). The two interpersonal scales are: Dominance (DOM) and Warmth (WRM). Total raw scores are converted to *T* scores for each scale on the PAI. For the clinical scales, a *T* score of 70 or above suggests gross impairment at a clinical level.

Dissociative experiences scale-II (**DES-II; Bernstein & Putnam, 1986).** The DES-II is a 28 item self-report measure of dissociative symptoms. Items assess the percentage of the time individuals experience symptoms. A score of 30 or more suggests that the patient may have a dissociative disorder; however, further assessment would be needed to warrant a diagnosis (Carlson & Putnam, 1993) in this study.

Childhood trauma questionnaire (CTQ; Bernstein & Fink, 1998). The CTQ is a 28 item self-report measure that assesses five areas of adverse events in childhood: sexual abuse, physical abuse, physical neglect, emotional abuse, and emotional neglect. These adverse events may have occurred in the first 18 years of life. Statements are rated on a 5-point Likert Scale ("never true" to "very often true"). Psychometric properties such as reliability and validity of the CTQ has been documented elsewhere (Bernstein, Fink, Handelsman, & Foote, 1994). Individuals are classified as none, low, moderate, or severe based on their scores for each of the five areas. The maximum score an individual can receive on each subscale is 25. Moderate elevations for each scale on the CTQ are: 13-15 for emotional abuse, 10-12 for physical abuse, 8-12 for sexual abuse, 15-17 for emotional neglect, and 10-12 for physical neglect. Scores above these ranges are considered severe elevations. For the current study, if the participant was classified as moderate or above for any of the five scales, the participant was placed in the maltreated college group, and, if the participant was classified as low or none, the participant was placed in the non-maltreated college group. The CTQ was only administered to the college sample. Abuse history was not measured for the DID/DDNOS sample at Sheppard Pratt. Patients are admitted to the Trauma Disorders

Unit for treatment of severe post-traumatic stress and dissociative symptoms, related to a history of trauma and abuse.

Demographic questionnaire (see Appendix A). Age, gender, marital status, education level, and race were measured for each sample.

Procedure

Dissociative sample. The patients' inpatient therapist delivered and collected the PAI and DES-II to and from the patients. The PAI and DES-II were part of a standard battery of psychological tests given routinely to patients for assessment and treatment planning purposes. Therapists selected the patients who were stable enough to complete this battery of tests.

College sample. The PAI, DES-II, CTQ, and demographic questionnaires were administered to the participants. Participants signed up to participate in the study through Towson University's human subjects pool. Students taking psychology courses are often required to participate in experiments, for which they receive credit for participating, throughout the semester.

Results

Tables 1 and 2 show the means and standard deviations for the participants on the PAI scales and subscales, dissociation, and total maltreatment scores (only for the maltreated and non-maltreated students). As reported in Stadnik et al. (in press), the DID/DDNOS patients scored in the clinical ranges (T > 70) on the Anxiety, Anxiety Related Disorders, Depression, Schizophrenia, Borderline Features, and Suicidal Ideation. The maltreated college students scored in the moderate ranges ($59T$ to $60T$) on the Anxiety, Anxiety Disorders, Depression, Paranoia, Borderline Features, and

Antisocial Features scales. The maltreated college students did not score in the clinical

ranges on any of the PAI scales or subscales. The non-maltreated college students scored

in the normal ranges on all PAI scales and subscales.

A multivariate analysis of variance (MANOVA) was computed to test the

hypothesis that the DID/DDNOS group will have significantly greater elevations on PAI

scales compared to the maltreated college students and that the maltreated college

students would have significantly greater elevations on many of the PAI scales compared

to the non-maltreated college student group. Because the mean age of the college sample

and the DID/DDNOS patients was significantly different, $t(78) = 9.84$, $p < .05$, age was

entered as a covariate. Additionally, gender was entered as an independent variable in

the analysis to determine if there were any gender by maltreatment status interaction

effects. Preliminary analysis was computed to test the assumptions of a MANOVA.

According to Levene's Test of Equality of Error Variances, none of the variables used

violated the assumptions of a MANOVA. Because the maltreated college students were

moderately elevated on the Anxiety, Anxiety Related Disorders, Depression Paranoia,

Borderline Features, and Antisocial Features scales, only these scales were included as

dependent variables in the analyses. Additionally, Dominance and Warmth were added

as dependent variables in the analyses because the DID/DDNOS group scored

abnormally low on these two scales. The analyses revealed a significant effect of

maltreatment status, Wilk's Lambda = .52, $F(16, 156) = 3.77$, $p < .05$, partial eta squared

= .28, power = 1.00, and a significant effect of gender, Wilk's Lambda = .66, $F(16, 156)$

= 2.27 $p < .05$, partial eta squared = .19, power = .98. There was not a significant effect

Table 1

Mean PAI Scores, Dissociation Scores, and Total Maltreatment Scores

	DID/DDNOS Patients		Maltreated College Students		Non-Maltreated College Students	
Variable	Mean (SD)	N	Mean (SD)	N	Mean	N
Somatic Complaints	67.86 (12.59)	37	55.78 (10.83)	37	50.40 (7.80)	40
Anxiety	77.75 (13.08)	40	62.80 (13.78)	35	55.95 (12.54)	40
Anxiety Disorders	79.70 (13.55)	30	63.09 (14.61)	35	51.59 (9.21)	39
Depression	88.00 (11.82)	40	59.43 (13.01)	37	51.32 (11.53)	40
Mania	49.95 (10.04)	38	57.62 (12.43)	37	53.11 (9.78)	38
Paranoia	62.71 (12.60)	38	61.83 (10.79)	36	51.80 (7.86)	40
Schizophrenia	77.11 (15.94)	38	58.47 (13.95)	36	48.50 (10.18)	40
Borderline Features	73.87 (10.26)	39	62.00 (11.72)	36	53.85 (9.47)	40
Antisocial Features	55.64 (13.18)	36	59.75 (13.83)	36	53.13 (9.47)	39
Alcohol Problems	50.64 (13.03)	39	52.54 (13.27)	37	51.23 (9.94)	40
Drug Problems	59.18 (18.10)	39	53.95 (14.32)	38	51.05 (10.69)	40
Aggression	52.00 (13.74)	38	52.47 (13.03)	38	47.02 (9.11)	40
Suicidal Ideation	91.95 (17.66)	39	58.92 (16.78)	37	50.45 (10.64)	40
Stress	65.41 (11.85)	37	58.00 (10.50)	37	50.72 (7.37)	39
Nonsupport	65.26 (12.92)	39	57.37 (11.08)	38	45.64 (7.94)	39
Treatment Rejection	29.90 (6.86)	40	44.84 (10.11)	37	49.87 (10.93)	39

Dominance	33.75 (10.52)	40	47.84 (11.45)	38	48.38 (10.86)	40
Warmth	36.80 (9.56)	40	48.97 (10.58)	38	53.50 (9.67)	40
Inconsistency	41.86 (6.49)	37	39.61 (5.41)	38	41.35 (5.60)	40
Infrequency	51.08 (7.14)	39	48.95 (7.71)	38	47.80 (7.19)	40
Negative Impression	77.59 (18.72)	39	58.51 (14.14)	37	49.00 (6.62)	40
Positive Impression	37.40 (10.35)	40	43.00 (9.86)	37	47.40 (10.16)	40
Dissociation	40.54 (21.34)	38	25.41 (15.79)	37	15.89 (12.00)	39
Maltreatment	Not Measured		47.55 (14.40)	33	28.56 (4.04)	39

Table 2

Mean PAI Subscale Scores

Variable	DID/DDNOS Patients		Maltreated College Students		Non-Maltreated College Students	
	Mean (SD)	N	Mean (SD)	N	Mean (SD)	N
Somatic-Conversion	66.76 (15.51)	38	55.70 (10.17)	37	50.28 (9.72)	40
Somatic-Somatization	66.63 (12.42)	40	55.00 (11.69)	38	50.42 (9.70)	40
Somatic-Health Concerns	64.40 (12.14)	40	54.19 (11.05)	37	50.18 (7.06)	40
Anxiety-Cognitive	73.30 (13.18)	40	62.17 (13.44)	36	57.37 (13.45)	40
Anxiety-Affective	80.10 (12.43)	40	60.16 (12.55)	38	54.56 (11.67)	40
Anxiety-Physiological	71.73 (14.08)	40	63.97 (15.90)	37	53.80 (11.24)	40
Anxiety Disorder-Obsessive-Compulsive	63.95 (12.75)	39	56.81 (12.43)	37	49.44 (11.55)	39
Anxiety Disorder-Phobias	68.83 (12.63)	40	55.51 (9.62)	35	52.85 (9.41)	40
Anxiety Disorder-Traumatic Stress	82.53 (12.23)	40	66.13 (16.55)	38	51.20 (9.64)	40
Depression-Cognitive	85.05 (11.42)	40	60.19 (14.14)	37	52.00 (12.55)	40
Depression-Affective	86.60 (13.36)	40	58.21 (13.73)	38	50.48 (11.20)	40
Depression-Physiological	75.15 (9.34)	40	56.08 (10.32)	38	51.03 (9.46)	40
Mania-Activity Level	54.67 (11.69)	39	57.38 (12.50)	37	48.79 (11.00)	39
Mania-Grandiosity	40.25 (8.50)	40	52.19 (12.23)	37	53.28 (10.71)	40
Mania-Irritability	56.77 (11.48)	39	58.18 (12.09)	38	53.62 (12.28)	39
Paranoid-Hypervigilance	64.21 (14.92)	39	62.89 (12.56)	38	53.65 (9.59)	40
Paranoid-Persecution	58.49 (13.23)	39	60.72 (11.35)	36	49.65 (6.58)	40

Paranoid-Resentment	59.53 (10.73)	40	56.92 (9.57)	36	50.98 (8.95)	40
Schizophrenia-Psychotic Experiences	57.80 (14.95)	41	54.89 (13.81)	37	48.85 (7.37)	40
Schizophrenia-Social Detachment	73.16 (12.56)	38	54.32 (11.88)	37	46.15 (9.21)	40
Schizophrenia-Thought Disorder	76.63 (15.64)	40	60.92 (16.11)	37	51.95 (12.80)	40
Borderline-Affective Instability	71.23 (11.38)	41	59.29 (13.76)	38	51.53 (9.80)	40
Borderline-Identity Problems	72.14 (10.43)	42	63.03 (11.70)	38	57.08 (11.60)	40
Borderline-Negative Relationships	67.51 (10.57)	41	63.31 (11.08)	36	54.10 (9.43)	40
Borderline-Self Harm	65.48 (15.58)	40	55.97 (14.14)	38	47.68 (10.11)	40
Antisocial-Antisocial Behaviors	52.59 (12.47)	39	57.58 (11.43)	38	50.63 (9.36)	40
Antisocial-Egocentricity	53.34 (12.12)	38	56.56 (12.99)	36	54.45 (10.58)	40
Antisocial-Stimulus Seeking	56.48 (14.38)	40	61.16 (14.68)	37	53.21 (9.15)	39
Aggression-Aggressive Attitude	54.80 (14.58)	41	49.87 (13.43)	38	45.50 (9.72)	40
Aggression-Verbal Aggression	45.48 (10.21)	40	51.82 (10.60)	38	49.80 (10.99)	40
Aggression-Physical Aggression	55.93 (15.70)	40	55.13 (14.62)	38	47.10 (8.06)	40

for the covariate age, and there was not a significant maltreatment status by gender interaction effect. Between subjects effects indicated significant effects for maltreatment status on Anxiety, Anxiety Related Disorders, Depression, Paranoia, Borderline Features, Antisocial Features, Dominance, and Warmth. Details on these effects can be found in Table 3. Between subject effects for gender indicated that only Antisocial Features had an effect, F (2, 85) = 5.74, $p < .05$, partial eta square = .12, power = .86. LSD post hoc tests were calculated to determine differences on the PAI scales for each of the groups. Figure 1 shows that DID/DDNOS patients scored significantly higher than maltreated and non-maltreated students on Anxiety and Anxiety Related Disorders, and that maltreated students scored significantly higher than non-maltreated students on Anxiety Related Disorders. Additionally, Figure 2 shows that DID/DDNOS patients scored significantly higher than maltreated and non-maltreated students on Depression, and that maltreated students scored significantly higher than non-maltreated students on Paranoia. Furthermore, Figure 3 shows that maltreated students scored significantly higher than non-maltreated students on Borderline and Antisocial Features. Finally, Figure 4 shows that maltreated and non-maltreated students scored significantly higher than DID/DDNOS patients on Dominance and Warmth. LSD post hoc tests also revealed that men scored significantly higher than women on the Antisocial Features scale (Figure 5).

Multiple regression analysis was computed to examine whether dissociation and/or childhood maltreatment, measured using the CTQ, would predict NIM on the PAI for the maltreated college students. Preliminary analyses were computed to test for normality for the three variables (NIM, maltreatment, dissociation) in the regression.

Table 3
Between Subject Effects of Maltreatment Status

Variable	F	df	Partial Eta Square	Power
Anxiety	5.78*	2, 85	.12	.86
Anxiety Related Disorders	11.78*	2, 85	.22	.99
Depression	19.02*	2, 85	.31	1.00
Paranoia	7.64*	2, 85	.15	.94
Borderline Features	7.27*	2, 85	.15	.93
Antisocial Features	3.71*	2, 85	.08	.67
Dominance	5.83*	2, 85	.12	.86
Warmth	7.26*	2, 85	.15	.93

Note. * $p < .05$.
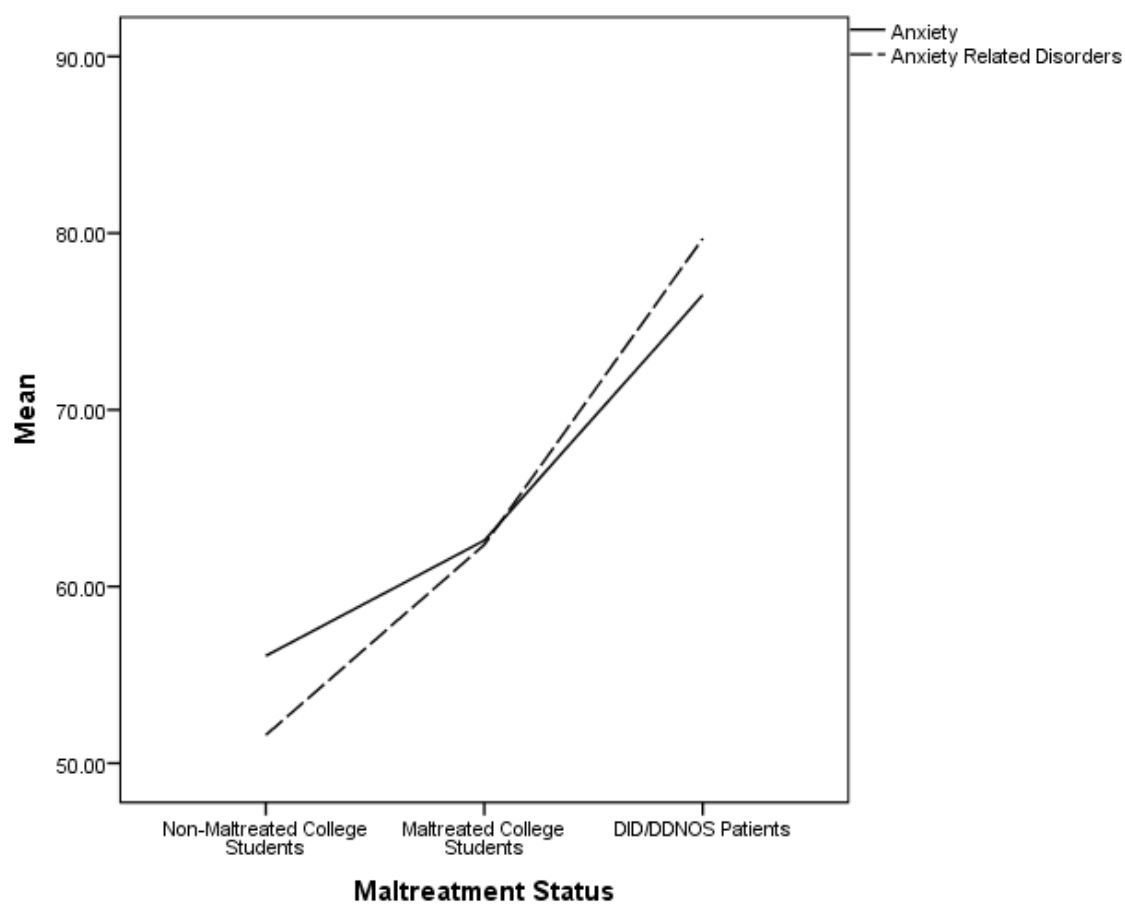
Figure 1. Displays mean Anxiety and Anxiety Related Disorder scores for the three groups.
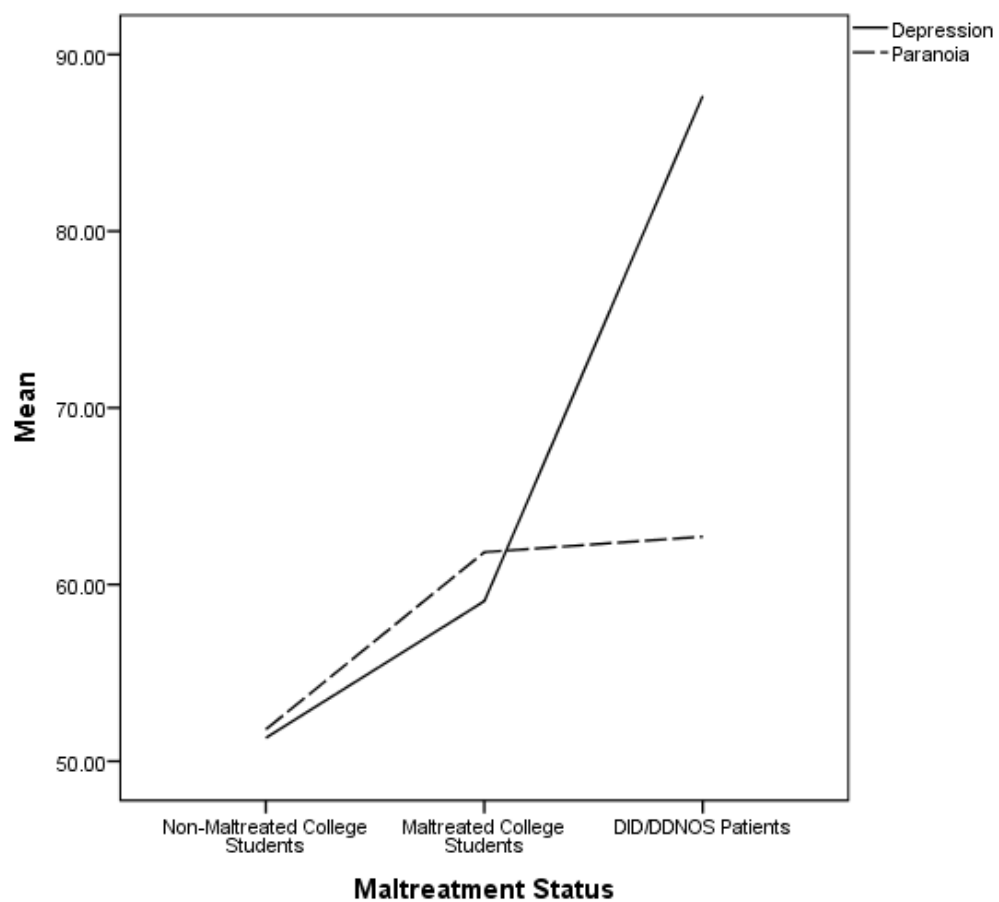
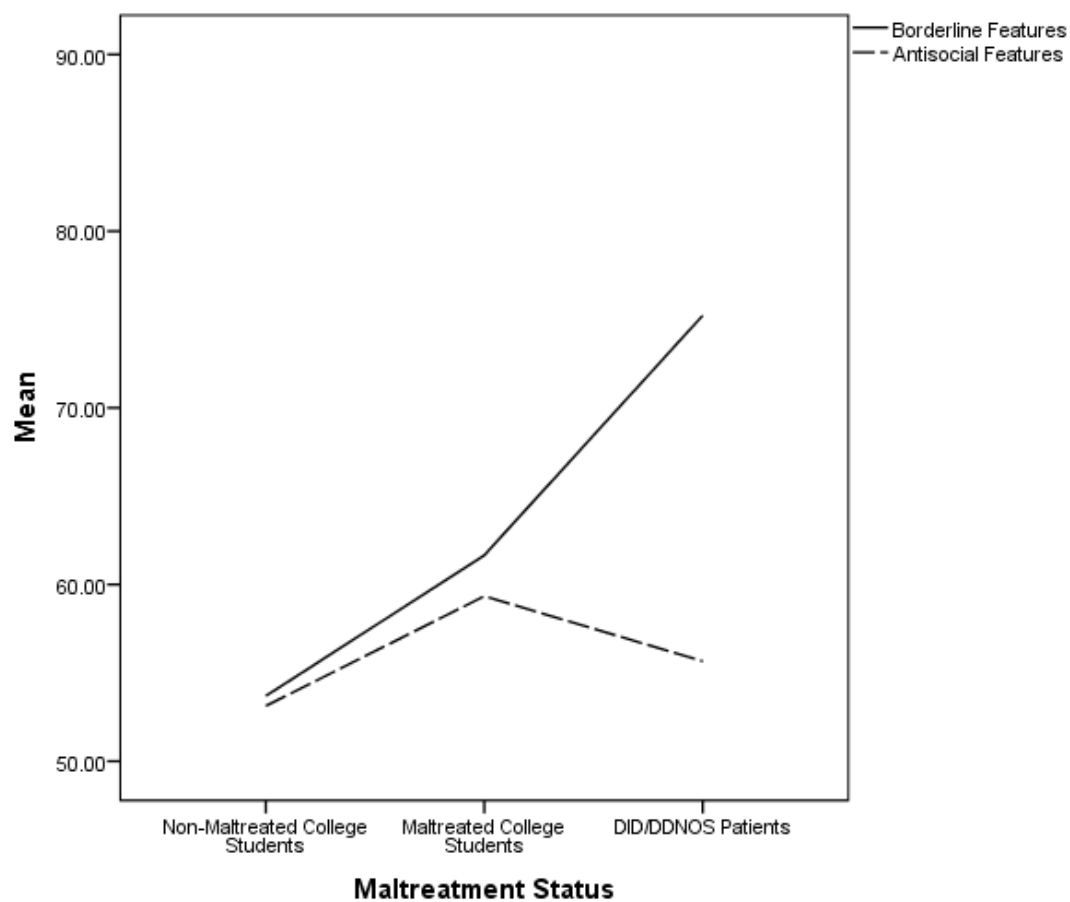*Figure 2.* Displays mean Depression and Paranoia scores for the three groups.

Figure 3. Displays mean Borderline and Antisocial Features scores for the three groups.
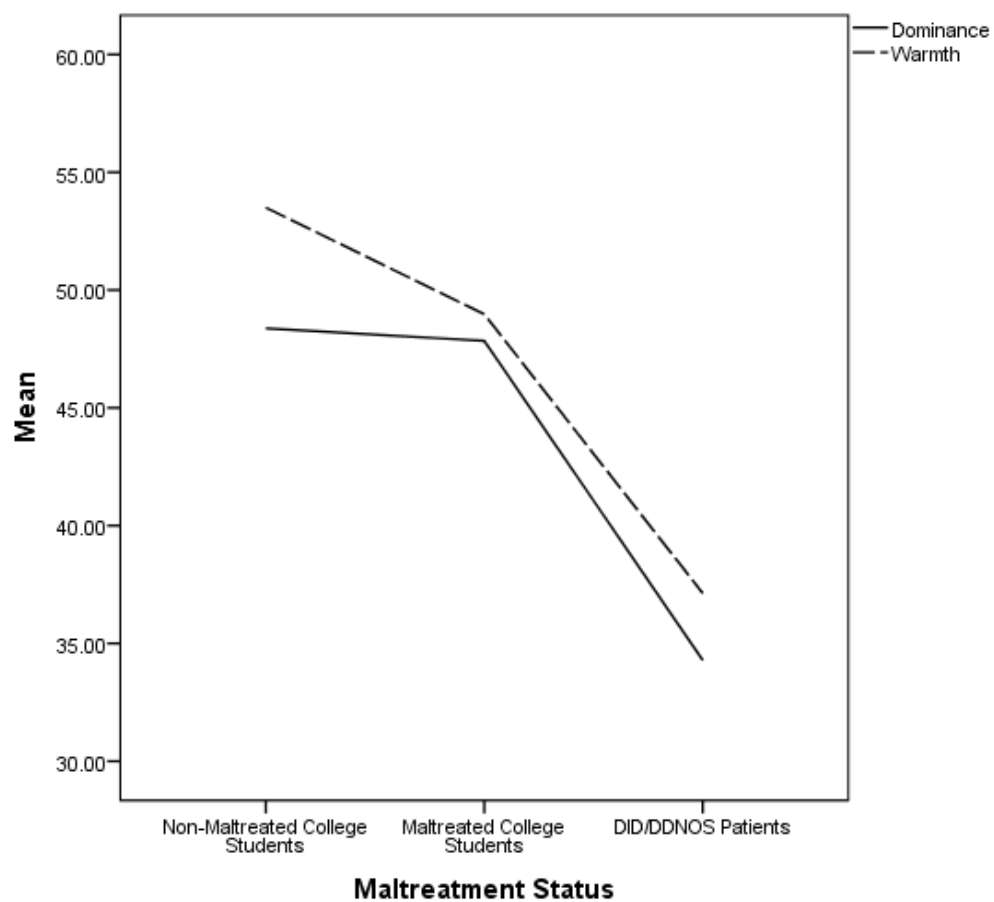
Figure 4. Displays mean Dominance and Warmth scores for the three groups.
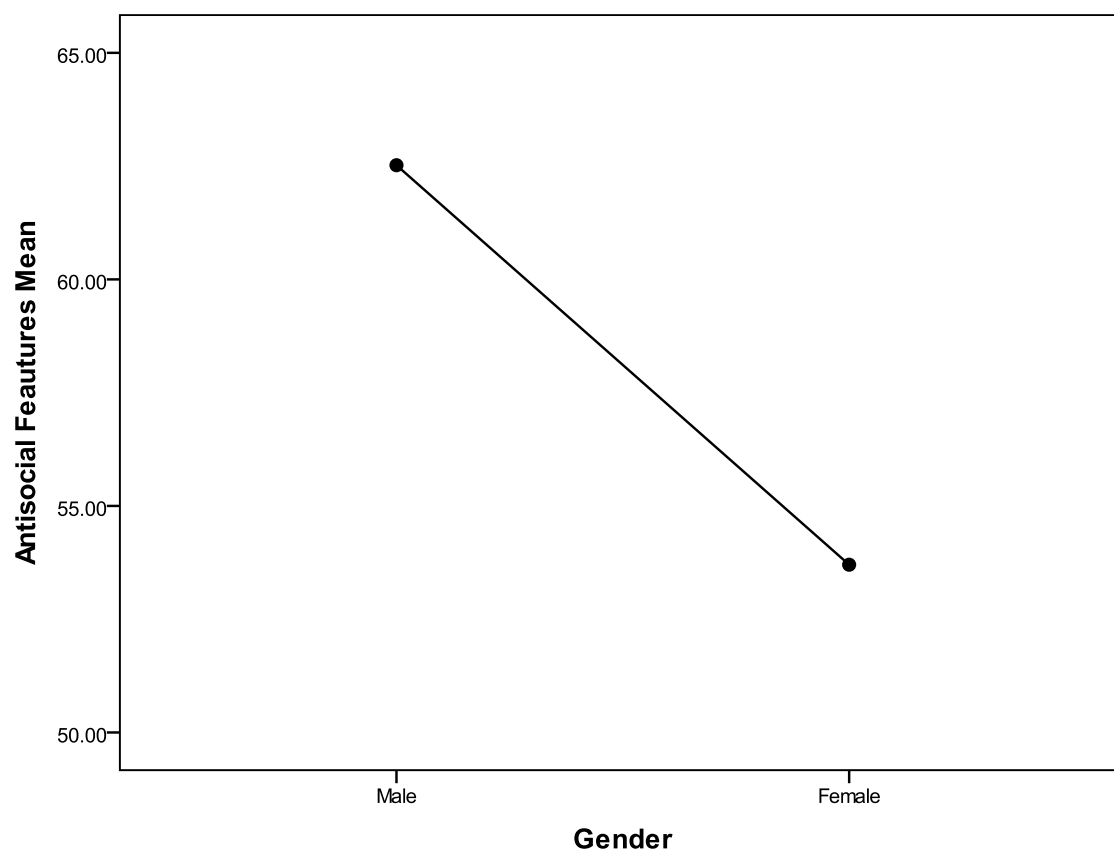
Figure 5. Displays mean Antisocial Features scores for all male and female participants.

Analyses revealed that NIM and childhood maltreatment were not normally distributed. The two variables were corrected by taking the square root of each variable; however when analyses were ran using the corrected and uncorrected variables, identical results were found. Hence, uncorrected variables were used in the final analysis. The analysis yielded a significant model, $F (2, 29) = 13.20$, $p < .05$. The predictor variables accounted for 48% in the variance for NIM. Table 4 shows that both dissociation and trauma were significant predictors of NIM.

Discussion

Description of Samples

To reiterate what was found in Stadnik et al. (in press), the DID/DDNOS patients were clinically elevated on a variety of symptoms including symptoms of dissociation, anxiety, PTSD, depression, schizophrenia, borderline personality disorder, and suicidal ideation. These patients were also moderately elevated on symptoms of somatization and paranoia and scored low on the PAI scales measuring warmth and dominance. It can be inferred from these high levels of symptoms that these patients are profoundly depressed and anxious, withdrawn, aloof, and experience a great deal of suffering and psychological distress most likely due to their past history of trauma (Dell, 2006; Ellason et al., 1996; Ross et al., 1990). The maltreated college students were moderately elevated on symptoms of dissociation, anxiety, depression, paranoia, borderline personality disorder, and antisocial personality disorder, yet were not clinically elevated on any of the scales on the PAI. These maltreated students can be described as emotional, sensitive, pessimistic, skeptical, moody, somewhat impulsive, and lacking self-confidence (Morey, 1991). This profile is similar to that found in a traumatized community sample (Mc-

Table 4

Regression Predicting NIM in Maltreated College Students

Predictor Variable	β	R^2	F	df
Step 1				
		.48	13.20*	2, 29
Dissociation	.57*			
Maltreatment	.32*			

Note. n = 32, *p < .05.

Devitt-Muprhy et al., 2005) as well as a traumatized college sample (Mc-Devitt-Murphy et al., 2007). The non-maltreated students mean scores on all PAI scales including dissociation fell within normal ranges.

Implications of PAI Scale Comparisons

The hypothesis that the DID/DDNOS patients will have significantly more elevated symptoms compared to the maltreated college students and that the maltreated college students would have significantly more elevated scores compared to the non-maltreated college students was supported. DID/DDNOS patients had significantly higher levels of anxiety, depressive, and borderline symptoms compared to both the maltreated college students and the non-maltreated college students. This result was expected as Stadnik et al. (in press) and previous studies have found that DID/DDNOS have extremely high levels of symptomatology to the point it appears that these patients may be exaggerating their symptoms. Furthermore, it was found that both dissociation and trauma as measured by the CTQ uniquely predicted NIM in the maltreated college students. Similarly, Stadnik et al. (in press) reported that dissociation uniquely predicted NIM in the DID/DDNOS patients. This provides further evidence that NIM is not a valid indicator of highly dissociative trauma survivors as well as trauma survivors with only moderate levels of symptomatology. It has been suggested by Rogers et al., (2012) that validity scales based on supposed rare items may over classify highly dissociative and trauma survivors, but validity scales based on elevated patterns rather than elevated items have been shown to be more accurate in classifying dissociative patients as feigning (Stadnik, et al., in press). Higher levels of dissociation and NIM scores in the DID/DDNOS sample compared to maltreated college students are most likely due to the

higher levels of maltreatment that occurred in the DID/DDNOS patients. However, there are a variety of other possible explanations or "third variables" that could be contributing to the DID/DDNOS patients' and maltreated students' elevated symptomatology such as: insecure attachment, a chaotic family environment, temperament, biological abnormalities, etc. (for a review see, Widom, 2012). Unfortunately, maltreatment levels for the dissociative patients in the current study are unknown; however, Brand et al. (2009) reported that out of the 280 DID/DDNOS patients in their sample, 86% of these patients were reported by their therapists to have been sexually abused as a child. Sexual abuse is one of the worst forms of abuse as it results in heightened levels of psychopathology compared to other forms of abuse (e.g. Fitzpatrick et al., 2010; Molnar, Buka, & Kessler, 2001).

An interesting finding is that the maltreated college students scored significantly higher on the Dominance and Warmth scales compared to the DID/DDNOS patients. The maltreated college students scored in the normal ranges on these two scales; however, the DID/DDNOS patients scored in the abnormally low ranges for the scales. This result is similar to studies that have found that dissociative patients are introverted and unassertive (e.g., Armstrong & Loewenstein, 1990) as well as PAI studies that have used trauma samples (Cherepon & Prinzhorn, 1994; Thomas, Hopwood, Orlando, Weathers, & McDevitt-Murphy, 2012); however no study was located that documented lower Dominance and Warmth scales compared to the DID/DDNOS sample used in the current study. Dissociative patients' unassertiveness is likely related to the passivity developed in victims of childhood abuse. In support of this conclusion, albeit the small sample size, in a case study done by Van Buskirk and Cole (1983), it was found that out

of the eight women in their sample who experienced incest as a child, 57% of the women were described as unassertive, and the majority of these women described themselves as undeserving, helpless, and worthless. Additionally, the majority of the women in the study chose lovers and spouses they perceived to be like the men who abused them during their childhood. Many individuals who have gone through extreme forms of trauma such as repeated sexual abuse become submissive to their abuser because they start to believe that they deserve the abuse (Herman, 1992). This pattern of submissiveness continues into adulthood relationships.

Interestingly, mean scores on the Paranoia scale for both the DID/DDNOS patients and the maltreated students were similar. It has been theorized that symptoms of suspiciousness and mistrust found in paranoid personality disorder increase as a result of early childhood trauma (Bierer, et al., 2003; Golier et al., 2003). Furthermore, symptoms of paranoia are often found in other personality disorder diagnoses (e.g., fears of rejection in borderline and avoidant personality disorder, anger and impulsivity in borderline and antisocial personality disorder), and it has been suggested the relationship between trauma and paranoia may influence symptoms of other personality disorder diagnoses (Bierer, et al., 2003). Given that both of these groups experienced trauma, their elevations on paranoia may reflect the mistrust that developed as result of being harmed as children.

The hypothesis that maltreated college students will have significantly higher levels of antisocial features compared to both non-maltreated students and DID/DDNOS patients was partially supported. The maltreated students had significantly greater antisocial symptoms compared to the non-maltreated college students. This was expected

because previous studies have found that maltreated college students have significantly

greater antisocial features and aggression than non-maltreated college students

(McDevitt-Murphy et al., 2007; Read, Colder, Merrill, Ouimette, White, & Swartout,

2012; Scarpa et al., 2002). A surprising result was that the maltreated college students

did not have significantly greater antisocial features than the DID/DDNOS patients. This

result may be due to the low power in the statistical analyses. According to the analysis,

the effect of maltreatment on greater antisocial features had a power of only .67.

Typically, there needs to be 80% (.80) power to detect an effect. It should also be noted

that men scored significantly higher than females on the Antisocial Features scale;

however, there was not a significant gender by maltreatment interaction effect on

Antisocial Features, so we cannot be sure if this effect is due to maltreatment or just

gender and age. Antisocial features are more common in young adults, especially males,

compared to older adults (Morey, 1991). Future researchers should try to replicate this

result using a larger sample size to determine if an interaction exists and if maltreated

college students in fact have significantly greater antisocial features compared to

DID/DDNOS patients.

  Compared to both the DID/DDNOS patients and the maltreated students, the non-

maltreated students appear to be generally symptom free. The maltreated students had

significantly higher scores on the Anxiety Related Disorders, Depression, Paranoia,

Borderline Features, and Antisocial Features scales. This is similar to studies that have

found that maltreated college students have significantly greater symptomatology

compared to non-maltreated college students (McDevitt-Murphy et al., 2007; Thomas &

Hall, 2008).   Higher scores on the Anxiety Related Disorder scale were largely due to the

heightened elevations on the Traumatic Stress Scale. The heightened scores on the

Borderline Features and Antisocial Features scales are consistent with previous research

that has shown that traumatized college students have more difficulty with aggression and

impulsivity (Aydin, et al., 2009; Bernstein & Putnam, 1986; Sanders et al., 1989

Zelikovsky & Lynn, 2002).

Limitations

One limitation of the current study is that due to a small sample size, we were not

able to determine how different forms of abuse affect symptom presentation. Future

researchers may want to determine how different forms and amounts of trauma affect

symptom presentation because it has been found that individuals who have been sexually

abused or have undergone multiple forms of maltreatment have the worst outcome (e.g.

Fitzpatrick et al., 2010; Molnar, Buka, & Kessler, 2001; Zelikovsky and Lynn, 2002).

Another limitation is that we do not have trauma exposure data for the DID/DDNOS

patients underwent greater amounts of trauma compared to the maltreated college

students. Future researchers should measure maltreatment in all groups using a

continuous measure such as the CTQ. The study used a non-experimental cross sectional

survey design so we cannot conclude that maltreatment caused the psychological

symptoms. Additionally, maltreatment was reported using self-report and retrospective.

Future researchers should attempt to study the effects of maltreatment on psychological

functioning using a longitudinal design and other measures of maltreatment besides self-

report such as police reports of maltreatment.

Conclusion

This study found that traumatized DID/DDNOS patients have significantly higher

amount of symptoms than either maltreated or non-maltreated college students.

Maltreated college students have higher levels of anxiety, depression, paranoia, and

symptoms of antisocial and borderline personality disorder compared to non-maltreated

college students. The results are consisted with the conclusion that DID/DDNOS patients

experience more severe and greater amounts of maltreatment, which elevate their

symptoms of dissociation and other forms of psychopathology, compared to the

maltreated college students. The DID/DDNOS patients were less assertive than the

maltreated and the non-maltreated students and were more aggressive than the non-

maltreated students. Additionally, similarly to what was found in the DID/DDNOS

patients, NIM does not seem to be a valid indicator of symptom exaggeration in

maltreated college students but instead reflect responses to past childhood trauma.

Counselors and therapists who see the elevations shown by either maltreated group on

NIM and other PAI scales such as Depression, Paranoia, Anxiety, and Borderline

Features should alert clinicians to the possibility that the client has been traumatized and

should assess carefully for trauma and dissociation.

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Appendix A
Demographic Questionnaire

Directions: For Each Statement, Please Circle The Appropriate Response That Applies to You.

1. Sex:

Male

Female

Transgender

Other: _____

2. Race:

Caucasian

African American

Asian American

Other: _____

3. Education Level:

Less than 1 year of college

1 year of college

2 years of college

3 years of college

4 years of college

4. Marital Status:

Single (never married)

Married

Divorced

Widowed

Ryan D. Stadnik's Curriculum Vita

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EDUCATION:

Master of Arts in Experimental Psychology, May 2013
Towson University, Towson, MD
GPA: 3.93/4.0
Thesis: Comparisons of Dissociative Patients to Maltreated and Non-Maltreated
Samples on the Personality Assessment Inventory
Advisor: Bethany Brand, Ph.D.

Bachelor of Arts with Honors in Psychology, Minor in Criminal Justice, May 2010
Indiana University, Bloomington, IN
GPA: 3.60/4.0
Thesis: Behavioral Adjustment and Peer Relations as Predictors of Rejection Sensitivity
Advisors: John E. Bates, Ph.D. and Amy Holtzworth-Munroe, Ph.D.

EXPERIENCE:

Research Program Assistant, October 2011 to Present
Johns Hopkins University, Department of Psychiatry, Baltimore, MD
• In-person assessment of substance abuse and other psychological disorders using the DSM-IV checklist
• Experience administering the Addiction Severity Index
• Experience in coordinating two clinical trials
• Conduct literacy tests using the WRAT
• Data Management and Analysis in Microsoft Excel and SPSS
• Recruit and schedule potential participants
• Experience in reviewing medical charts for research studies
• Consent participants for research studies
• Train new research assistants in study protocol and assessments
• Test participant urine samples for drugs of abuse such as cocaine and marijuana
• Prepare and present reports at weekly study team meetings on the progress of the study

Graduate Research Assistant, August 2011 to Present
Dr. Bethany Brand's Trauma Disorders Lab, Towson, MD
• Conducted empirical studies in the field of trauma and dissociation
• Conducted preliminary analyses, multiple regression, MANOVA, and logistic regression in SPSS
• Prepared and submitted IRB applications for upcoming studies and thesis
• Managed undergraduate research assistants on data collection and data entry in SPSS

Research Assistant, January 2008 to May 2010
Dr. John E. Bates' Social Development Lab, Bloomington, IN
• Created an affect coding system for a toddler development study
• Coded videos from lab visits for toddler development study
• Assessments of child and parent behaviors during home visits and lab visits
• Data Entry and Data Checking in SPSS
• Developed anxious worrying and hostility scales using the Achenbach Youth Self Report
• Multiple regression analyses using SPSS for honors thesis

Head Teaching Assistant to Dr. Phillip Summers, August 2008 to May 2010

Introduction to Psychology, Indiana University, Bloomington, IN
• Responsible for grading essays, answering emails, and proctoring exams
• Tutored struggling students for exams
• Conducted review sessions before exams

PUBLICATIONS:

• **Stadnik, R**., Brand, B., & Savoca, A. (in press). Personality assessment inventory and predictors of elevations among dissociative disorder patients. *Journal of Trauma and Dissociation*

• Brand, B. & **Stadnik, R.** (in press). What contributes to predicting change in treatment of dissociation: Initial levels of dissociation, PTSD, or overall distress? *Journal of Trauma and Dissociation*

CONFERENCE PRESENTATIONS:

• **Stadnik, R**., Brand, B., & Savoca, A. (2013). *Personality assessment inventory and predictors of elevations among dissociative disorder patients.* Poster presentation at the Association for Psychological Science 25th Annual Convention, Washington D.C., May 2013.

• **Stadnik, R**., Brand, B.L., Engelberg, J., and Avery, T. (2012). *What Contributes to predicting change in treatment of dissociation: Initial dissociation, PTSD, depression, or overall symptoms?* Poster presentation at Eastern Psychological Association Annual Meeting, Pittsburgh, PA. March 2012.

• **Stadnik, R.**, Bates, J. E., Holtzworth-Munroe, A., & Chan, T. (2010). *Behavioral adjustment and peer relations as predictors of rejection sensitivity.* Poster presentation at Society for Research in Child Development Biennial Meeting, Montreal, Canada. April 2011.

AWARDS:

• Robert Weiskopf Award for Outstanding Undergraduate Teaching Assistant, Indiana University, 2010
• Excellence in Research Award, Indiana University, 2010

TECHNICAL SKILLS:

- SPSS
- Data analysis
- Experimental Design
- Conducting assessments using standardized measures
- Proficient in APA style of scientific writing
- Conducting literature reviews
- Writing results in APA format
- Microsoft Office Applications