RELATIONS BETWEEN THE DES AND TWO MMPI-2 DISSOCIATION SCALES

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ABSTRACT

This study examines relationships between two MMPI-2 screening instruments for dissociative symptoms, the North Carolina Dissociation Index (NCDI) and Phillips Dissociation Scale (PDS), and the Dissociative Experiences Scale (DES) in a clinical sample of adult survivors of childhood sexual abuse. The DES and MMPI-2 were completed by 138 women and 22 men. Correlations between the NCDI, PDS, and DES total, factor (amnesia, absorption/imaginative involvement, and derealization/depersonalization), and taxon (DES-T) scores were calculated for men and women. The NCDI and PDS were positively correlated; however, neither correlated with DES among either men or women. The PDS was positively correlated with the DES amnesia factor and DES-T in men; however, internal consistency of the PDS was quite low for men in our sample (.65). No significant correlations were found between the PDS and DES in women. Results do not support the use of either the PDS or NCDI as a screening instrument for dissociative symptomatology in adults with histories of childhood sexual abuse.

Recently, two measures of dissociation have been developed using items from the Minnesota Multiphasic Personality Inventory-2 (MMPI-2; Butcher, Dahlstrom, Graham, Tellegen, & Kaemmer, 1989). The North Carolina Dissociation Index (NCDI) (Mann, 1995) and the Phillips Dissociation Scale (PDS) (Phillips, 1994) were designed to provide a means of screening for dissociative symptomatology in settings where the MMPI-2 is routinely used, often as the primary diagnostic instrument. Although both the PDS and NCDI were constructed from MMPI-2 items, the two scales contain only four common items. To date, no published studies have examined possible relationships between the two scales. In addition, no subsequent investigations have been published that assess their validity, including cross-validation in other populations. The current study was designed to assess the validity of the PDS and NCDI.

The NCDI (Mann, 1995) contains 16 items (see Table 1) from the MMPI-2, ten of which may also be found in the MMPI. NCDI scores correlated significantly with measures of dissociation or related constructs in college students, including the dissociation factor of the Harvard Group Scale of Hypnotic Susceptibility, Form A (HGSHS:A) (Shor & Orne, 1962), the Perceptual Alteration Scale (PAS) (Sanders, 1986), the Tellegen Absorption Scale (TAS) (Tellegen & Atkinson, 1974), the Dissociative Experiences Scale (DES) (Bernstein & Putnam, 1986), and the total dissociation score of the Structured Clinical Interview for *DSM-IV* Dissociative Disorders (SCID-D) (Steinberg, 1993). NCDI scores were significantly higher in college students diagnosed with dissociative disorders than in those with anxiety disorders or with no psychiatric disorder. Additionally, Mann (1995) found significantly higher NCDI scores in young male inmates (mean age 17.9, $SD = 0.8$) diagnosed with post-traumatic stress disorder (PTSD) than inmates without a PTSD diagnosis.

The Phillips Dissociation Scale (Phillips, 1994) contains 20 items (see Table 1), all of which may also be found in the MMPI and MMPI–A. The items assess the following dimensions of dissociation: identity alteration, conversion symptoms, amnesia, passive influence phenomena, hearing voices, absorption in fantasy and trance phenomena, derealization, depersonalization, and the sense that one is possessed. The scale was validated on a population of private practice patients diagnosed with either dissociative disorders (dissociative identity disorder or dissociative disorder not otherwise specified) or other psychiatric (non-dissociative) disorders. The participants were predominantly female, in their mid- to upper-thirties, and from middle to upper socioeconomic levels. PDS scores of patients with dissociative disorders were significantly higher than those of patients with other psychiatric disorders.

Dissociative phenomena involve disturbances in awareness, identity, cognition, and memory (Carlson & Putnam, 1993) and span a continuum from normal dissociative experiences to those that are pathological. The DES was developed as a screen for a range of dissociative experiences. Subscales assess levels of amnesia, absorption, derealization/depersonalization, and severe pathology (Carlson et al., 1991;

TABLE 1

MMPI-2 Items of the North Carolina Dissociation Index and Phillips Dissociation Scale

MMPI-2 #	Item
	North Carolina Dissociation Index
23	At times I have fits of laughing and crying that I cannot control.
48	Most anytime I would rather sit and daydream than do anything else.
112	I like dramatics.
116	Often I can't understand why I have been so cross and grouchy.
140	Most nights I go to sleep without thoughts or ideas bothering me. (R)
168	I have had periods in which I carried on activities without knowing later what I have been doing.
226	Sometimes without any reason or even when things are going wrong I feel excitedly happy, "on top of the world."
229	I have had blank spells in which my activities were interrupted and I did not know what was going on around me.
299	I cannot keep my mind on one thing.
327	Bad words, often terrible words, come into my mind and I cannot get rid of them.
475	Often I get confused and forget what I want to say.
529	At times I can't seem to stop talking.
533	I forget where I leave things.
551	I sometimes seem to hear my thoughts being spoken out loud.
564	I almost never lose self-control. (R)
565	It takes a great deal of effort for me to remember what people tell me these days.
	Phillips Dissociation Scale
23	At times I have fits of laughing and crying that I can not control.
24	Evil spirits possess me at times.
48	Most anytime I would rather sit and daydream than do anything else.
60	When I am with people, I am bothered by hearing very strange things.
72	My soul sometimes leaves my body.
159	I have never had a fainting spell. (R)
165	My memory seems to be alright. (R)
168	I have had periods in which I carried on activities without knowing later what I had been doing.
182	I have had attacks in which I could not control my movements or speech but in which I knew what was going on around me.
198	I often hear voices without knowing where they come from.
229	I have had blank spells in which my activities were interrupted and I did not know what was going on around me.
247	I have numbness in one or more places on my skin.
295	I have never been paralyzed or had any unusual weakness of any of my muscles. (R)
296	Sometimes my voice leaves me or changes even though I have no cold.
308	I forget right away what people say to me.
311	I often feel as if things are not real.
319	I hear strange things when I am alone.
336	Someone has control over my mind.
355	At one or more times in my life I feel that someone was making me do things by hypnotizing me.
361	Someone has been trying to influence my mind.

Note. MMPI–2 = Minnesota Multiphasic Personality Inventory–2

(R) = reverse-scored item.

Ross, Joshi, & Currie, 1991; Sanders & Green, 1994; Waller, Putnam, & Carlson, 1996). Its authors report that the DES is the only measure of dissociation with established validity and reliability (Carlson & Putnam, 1993). Thus, the DES was chosen as the external criterion against which the PDS and NCDI were validated in the present study.

Dissociative symptomatology has frequently been associated with sexual abuse and is commonly noted in adults with abusive histories (e.g., Chu & Dill, 1990; Herzog, Staley, Carmody, Robbins, & van der Kolk, 1993; Nash, Hulsey, Sexton, Harralson, & Lambert, 1993). Adult survivors of childhood sexual abuse report higher levels of dissociative experiences, as measured by the DES, than non-abused individuals (Sandberg & Lynn, 1992; Sanders, McRoberts, & Tollefson, 1989; Sheiman, 1993).

The purpose of this investigation was to assess the validity of the PDS and NCDI by examining their relationship to the DES in adults with histories of childhood sexual abuse. The objectives of this study were threefold: a) to determine the extent to which the PDS and NCDI correlate with each other; b) to explore possible relationships between these scales and the DES in a sexually abused sample; and c) to examine the particular realms of dissociation assessed by the PDS and NCDI by examining their relationship to DES subscale scores.

METHOD

Participants

Participants were 138 females and 22 males who were referred for treatment to a sexual abuse survivors clinic within a community mental health center. At intake evaluation, all participants reported having been sexually abused before age 18 and evidenced psychological difficulties that appeared to be associated with the abuse. Participants ranged in age from 16 to 57, with a mean age of 31.13 (SD = 9.11). The majority were Caucasian (79%), with the remainder reporting their ethnic backgrounds as Hispanic (11%), African American (6%), Native American (1%), Asian (1%), or other (2%). Approximately 41% of the sample were married, engaged, or living together, 33% were single, 24% were divorced or separated, and 2% were widowed. The average level of educational attainment was 12.5 years (SD = 2.22). Approximately 27% reported annual household income levels less than $5,000; only 20% reported incomes over $20,000. Forty-one percent reported being unemployed, 40% were employed full-time, 18% worked part-time, and one participant was retired. Analyses revealed no significant differences between female and male participants on any sociodemographic variables examined.

Participants' reported age of onset of abuse ranged from one to 17 years, with an average of 6.95 years (SD = 3.67). Duration of abuse range averaged 5.84 years (SD = 6.98). Approximately 58% of our sample reported being abused by more than one person, and perpetrators included parents (30%), stepparents (15%), other family members (41%), and non-family members (48%). Detailed examinations of abuse characteristics of men and women in our sample have been described elsewhere (Gold, Elhai, Lucenko, Swingle, & Hughes, 1997; Gold, Hughes, & Swingle, 1996).

MEASURES

The Dissociative Experiences Scale (DES)

The DES consists of 28 items that characterize dissociation along a continuum ranging from normal dissociative experiences to those that are pathological. On a scale ranging from zero to 100, participants respond by indicating the percentage of time they experience various dissociative symptoms. The DES was designed as a screening instrument rather than a diagnostic tool.

Several investigations have examined the reliability of the DES. Test-retest reliability coefficients of .96 for four-week intervals (Frischholz et al., 1990), .84 for four- to eight-week intervals (Bernstein & Putnam, 1986), and .79 for six- to eight-week intervals (Pitblado & Sanders, 1991) have been reported. The DES was found to possess good split-half reliability, ranging from .83 (Bernstein & Putnam, 1986) to .93 (Pitblado & Sanders, 1991). Excellent internal consistency has also been reported; Frischholz and colleagues (1990) reported Cronbach's alpha coefficient of .95 for the English version of the DES, and internal consistency for the Dutch translation was .90 for college students and .91 for patients with dissociative disorders (Ensink & van Otterloo, 1989).

The DES has also demonstrated good construct and discriminant validity. Patients with dissociative disorders and PTSD have consistently scored high on the DES, while adults in the general population and patients with other psychiatric diagnoses have demonstrated lower scores (see Bernstein & Putnam, 1986 for review). The DES has been shown to effectively screen for dissociative disorders (Carlson et al., 1993; Murphy, 1994; Ross, Ryan, Voigt, & Eide, 1991; Saxe et al., 1993).

Convergent validity has been demonstrated by correlations between the DES and the Perceptual Alteration Scale (PAS; Sanders, 1986), an unvalidated dissociation instrument (Frischholz et al., 1991). Frischholz and colleagues also found positive correlations between the DES and measures of constructs related to dissociation, including the Tellegen Absorption Scale (TAS) (Tellegen & Atkinson, 1974) and the Ambiguity Intolerance Scale (Yellen, 1989, 1991). Discriminant validity of the DES has also been demonstrated by a lack of association between the DES and socioeconomic status, sex (Bernstein & Putnam, 1986; Ross, Joshi, & Currie, 1990), race (Branscomb, 1991), or religious affiliation (Ross, Joshi, & Currie, 1990).

Several investigations that have examined the factor structure of the DES have produced a three-factor solution

TABLE 2

Means and Standard Deviations of Dissociative Scales

Scale	Female		Male	
	Mean	SD	Mean	SD
Phillips Dissociation Scale	6.73	4.37	5.82	3.16
North Carolina Dissociation Index	8.64	3.48	8.45	3.26
DES - Total Score	22.94	17.91	25.34	20.00
DES - Amnesia Factor	12.78	15.06	15.34	21.17
DES - Absorption Factor	33.68	22.20	37.51	21.08
DES - Derealization/ Depersonalization Factor	16.89	21.06	19.32	22.18
DES - Taxon	16.15	17.27	19.11	19.43

Note. DES = Dissociative Experiences Scale.

in clinical and non-clinical samples (Carlson et al., 1991; Ross, Joshi, & Currie, 1991; Sanders & Green, 1994). These factors were replicated in our clinical population of sexual abuse survivors (Gold, Hansen, Swingle, & Hill, 1997) and assess the following realms of dissociation: a) amnesia, b) absorption/imaginative experiences, and c) derealization/depersonalization. Draijer and Boon (1993) report Cronbach's alpha coefficients for each factor of .90, .91, and .88, respectively. A further subscale derived by taxometric methods (DES-T) distinguishes pathological from non-pathological dissociative experiences (Waller, Putnam, & Carlson, 1996).

In this study, the DES was used as the standard by which we attempted to validate the two newly developed MMPI-2 dissociation scales. This scale was chosen because it has consistently demonstrated its utility as a valid and reliable screen for dissociative symptomatology. Furthermore, no other validated instruments are currently available that have been shown to reliably assess the construct of dissociation.

North Carolina Dissociation Index (NCDI)

MMPI-2 items included in the NCDI are listed in Table 1. Mann (1995) reported Cronbach's alpha coefficients of .75 and .78 for two college student samples. Construct validity was demonstrated by positive correlations among the NCDI and the HGSHS:A, PAS, TAS, DES, and SCID-D in college students. NCDI scores were found to discriminate between students with dissociative disorders ($n = 7$) and those with either anxiety disorders ($n = 15$) or no psychiatric diagnosis ($n = 23$). Mann (1995) also reported significantly higher NCDI scores in a group of male inmates with comorbid diagnoses of PTSD and conduct disorder ($n = 14$) compared with inmates with a diagnosis of conduct disorder only ($n = 5$). No other attempts to validate the NCDI have been published.

Phillips Dissociation Scale (PDS)

The 20 MMPI-2 items included in the PDS are listed in Table 1. Phillips (1994) reported initial validation using a sample of 40 (primarily female) private practice patients; 20 had a dissociative disorder and 20 had a range of other psychiatric disorders. Participants in the dissociative disorders group scored significantly higher on the PDS than those in the non-dissociative sample, providing preliminary evidence of construct validity.

For the entire sample, the split-half reliability coefficient was .95, and the average inter-item correlation was .38. Cronbach's alpha coefficient was not reported. Responses of the 40 participants yielded a four-factor structure, which included amnesia/identity alteration, conversion symptoms, hearing voices, and trance/depersonalization. Phillips (1994) reported that the PDS demonstrated convergent validity, evidenced by high correlations between the PDS and the Sc6, Sc5, BIZ, Sc, F, PS, and PK scales and subscales of the MMPI-2, as well as divergent validity, evidenced by low correlations between the PDS and the R, Mal, TRIN, Pa-S, VRIN, L, Mf, and MACR subscales. Unfortunately, the correlation coefficients for the majority of the MMPI-2 scales were not reported. Phillips found that the PDS was negatively correlated with both employment and marital status. In addition, results indicated that females scored higher than males; however, this finding is ambiguous, since there was only one male participant in the dissociative disorders group. Phillips used no other measures of dissociation or related constructs to validate the PDS, and no further studies have been published that may provide additional evidence of the validity of the PDS as a screening instrument for dissociation.

Procedure

Participants completed the MMPI-2 and DES at the time of their initial intake evaluation. Consent to participate in research and demographic information were obtained at that time.

Data Analysis

Total DES score was derived by summing all items and dividing by 28. Factor and DES-T scores were obtained by summing the appropriate items and dividing by the num-

TABLE 3

Correlations of North Carolina Dissociation Index and Phillips Dissociation Scale with DES Scores

	1	2	3	4	5	6	7
1. Phillips Dissociation Scale	—	.744***	-.081	-.077	-.048	-.021	-.016
2. North Carolina Dissociation Index	.647**	—	-.066	-.055	-.075	-.056	-.021
3. DES Total Score	.392	.230	—	.891***	.929***	.887***	.929***
4. DES Amnesia Factor	.509*	.283	.937***	—	.727***	.786***	.842***
5. DES Absorption Factor	.194	.095	.942***	.791***	—	.747***	.812***
6. DES Derealization/Depersonalization	.354	.307	.925***	.874***	.837***	—	.950***
7. DES Taxon	.531*	.243	.946***	.933***	.866***	.937***	—

Note. DES = Dissociative Experiences Scale.
Correlations for female participants are recorded above the diagonal; correlations for male participants are recorded below the diagonal.

ber of items in each subscale (see Carlson & Putnam [1993] for factor items). For NCDI and PDS scores, reverse-scored items were recoded, and total scores were obtained by summing the number of endorsed items in each scale. All participants completed each MMPI-2 item included in the NCDI and PDS. On a few occasions, items were omitted from the DES. Scores for the DES and its subscales represent only responses of participants who completed each item of the respective scale.

Pearson's product-moment correlations were computed for all measures (DES total score, DES amnesia factor, DES absorption factor, DES derealization/depersonalization factor, DES-T, NCDI, and PDS). Correlations between all DES scores and each item of the NCDI and PDS were also computed. Separate analyses were performed for male and female participants. An alpha level of .05 was used for all analyses.

RESULTS

Means and standard deviations of all measures are reported separately for men and women in Table 2. No significant gender differences were found on any of these measures.

Internal consistency was examined for each measure. Cronbach's alpha coefficients for the entire sample were as follows: DES Total = .95 (males = .96, females = .95); DES amnesia factor = .85 (males = .91, females = .83), D ES absorption factor = .87 (males = .86, females = .87), DES derealization/depersonalization factor = .87 (males = .86, females = .87); DES-T = .84 (males = .85, females = .84); NCDI = .72 (males = .71, females = .73); and PDS = .80 (males = .65, females = .81).

Correlations between all measures are reported in Table 3. The NCDI was significantly correlated with the PDS for both men and women. Neither the NCDI nor the PDS correlated significantly with the DES total, factor, or taxon scores for women. However, male PDS scores, but not NCDI scores, were significantly correlated with the DES amnesia factor ($r = .51$, $p < .05$) and the DES-T ($r = .53$, $p < .05$). No significant correlations were found between either the NCDI or the PDS for DES total, absorption, or depersonalization/derealization factor scores.

Of the 32 MMPI-2 items used in the NCDI and the PDS, only 11 correlated significantly with any DES total or subscale score; of these, only three were NCDI items. As can be seen on Table 4, significantly correlated items differed substantially for women and men. Only one item (#247, "I have numbness in one or more places on my skin") was positively correlated with DES scales for women, while two (#159 and #296) were negatively correlated. Conversely, five items were positively correlated for men, and three items were negatively correlated with one or more DES scale scores.

TABLE 4

Significant Correlations of MMPI-2 Items of the Phillips Dissociation Scale and North Carolina Dissociation Index with DES Scores

Sex	DES Scales	MMPI-2 Item Number										
		72 (PDS)	112 (NCDI)	159 (PDS)	182 (PDS)	247 (PDS)	296 (PDS)	319 (PDS)	336 (PDS)	361 (PDS)	564 (NCDI)	565 (NCDI)
Females												
	Total			-.195*		.226**	-.243**					
	Amnesia						-.227**					
	Absorption					.247**	-.219*					
	Derealization					.196*	-.204*					
	Taxon					.215*	-.225**					
Males												
	Total							.817***		.669**	-.593*	
	Amnesia							.812***		.706**	-.644**	
	Absorption	-.459*	.473*		-.525*			.569*		.531*	-.536*	
	Derealization							.536*		.532*	-.581**	
	Taxon							.774***	.464*	.662**	-.576**	.435*

Note: DES = Dissociative Experiences Scale. MMPI-2 = Minnesota Multiphasic Personality Inventory–2. (PDS) = Phillips Dissociation Scale item. (NCDI) = North Carolina Dissociation Index item.
**** $p = .000$. ** $p < .01$. * $p < .05$.*

DISCUSSION

Our results show an association between scores on the North Carolina Dissociative Index and the Phillips Dissociation Scale in our clinical sample of sexual abuse survivors. However, the near-zero correlations between these scales and the majority of DES scores we examined suggest that the NCDI and PDS do not assess the spectrum of dissociative symptomatology measured by the DES. In addition, neither scale demonstrated good internal consistency in men or women.

The positive correlation ($r = .74$) between the NCDI and PDS suggests that these scales are, apparently, measuring similar constructs. However, it should be noted that these scales share four items. When these common items are deleted, the correlation remains significant but drops substantially in magnitude ($r = .55$ for the entire sample), and is lower in men ($r = .45$) than women ($r = .56$). In addition, these relationships may be biased due to method variance (Kazdin, 1998). Because both scales are comprised of items from the MMPI-2, both are answered in a true-false, forced-choice format. This conformity of response format may spuriously inflate the degree of the positive association between these two scales. In contrast, participants respond to DES items on a continuum ranging from zero to 100, which offers substantially greater variability of responses. Therefore, associations between the DES and the two scales derived from the MMPI-2 could be expected to be somewhat lower. However, most of the correlations between DES scores and the NCDI and PDS in our sample were near zero.

Our findings do not support the validity of the PDS and NCDI for their stated purposes in our sample. Kline (1993) suggests that cross-validation is a critical step in the development of criterion-keyed tests, such as the MMPI-2. He further indicates that such instruments should not be used until evidence of validity in various groups has been established.

Given the extensive evidence of reliability and validity of the DES, it must be assumed that the NCDI and PDS, while measuring some construct of psychiatric symptomatology, are not valid screening instruments for dissociative experiences in our sample. Mann (1995) reported significant correlations between the NCDI and the DES for both male ($n = 181$, $r = .55$) and female ($n = 344$, $r = .64$) college students. However, in our sample of sexual abuse survivors, no significant correlations were found between the NCDI and any DES score (total, factor, or taxon) for men or women. Although means for Mann's (1995) entire sample are not reported, one can assume that our clinical participants scored higher on the DES than the college student sample (see Carlson & Putnam [1993] for review of mean DES scores). Conversely however, it should be noted that mean NCDI scores in our sample of sexual abuse survivors were lower than those reported by Mann for high dissociators, college students with dissociative disorders, or young male inmates with PTSD. Apparent differences of our sample from those used by Mann include older age, probable lower educational attainment, and histories of childhood sexual abuse.

The apparent relationship between the DES and PDS for male participants must be viewed with caution. It should be noted that the internal consistency of the PDS for males in our sample was quite low (.65), virtually rendering the scale unreliable. Thus, these correlations are rendered uninterpretable (Guilford, 1956; Nunnally, 1978).

The results of our study are limited in generalizability due to the specific population studied. Participants in our sample had histories of childhood or adolescent sexual abuse and had been referred for treatment; therefore, our findings may not generalize to a non-abused, non-referred population. Only 22 males were included in this investigation; replication with larger male samples is needed. Additionally, only one previously validated measure of dissociation was used in this investigation. Replication with other instruments that assess constructs related to dissociation is desirable.

This study provides the first attempt at cross-validation since the publication of the PDS and NCDI. No relationship between the DES and NCDI was found for males or females. The PDS was not significantly correlated with the DES in females and correlated only with two subscales (the amnesia factor and the DES taxon) in males. However, the PDS demonstrated poor internal consistency for males in our sample. Thus, our findings do not support the use of either the NCDI or the PDS as a screen for dissociative symptoms in male or female adult survivors of childhood sexual abuse. Clearly, more research is needed in order to determine the utility of the PDS and NCDI as screening instruments in clinical settings. ■

REFERENCES

Bernstein, E.M., & Putnam, F.W. (1986). Development, reliability, and validity of a dissociation scale. *The Journal of Nervous and Mental Disease, 174*, 727-735.

Branscomb, L. (1991). Dissociation in combat-related post-traumatic stress disorder. *DISSOCIATION, 4* (1), 13-20.

Butcher, J.N., Dahlstrom, W.G., Graham, J.R., Tellegen, A., & Kaemmer, B. (1989). *Minnesota Multiphasic Personality Inventory-2 (MMPI–2): Manual for administration and scoring.* Minneapolis: University of Minnesota Press.

Carlson, E.B., & Putnam, F.W. (1993). An update on the dissociative experiences scale. *DISSOCIATION, 6* (1), 16-25.

Carlson, E.B., Putnam, F.W., Ross, C., Anderson, G., Clark, P., Torem, M., Coons, P., Bowman, E.S., Chu, J.A., Dill, D.L., Loewenstein, R.J., & Braun, B.G. (1991). A factor analysis of the Dissociative Experiences Scale using multicenter study data. In B.G. Braun & E.B. Carlson (Eds.), *Proceedings of the Eighth International Conference on Multiple Personality and Dissociative States.* Chicago: Rush Presbyterian.

Carlson, E.B., Putnam, F.W., Ross, C.A., Torem, M., Coons, P., Dill, D.L., Loewenstein, R.J., & Braun, B.G. (1993). Validity of the Dissociative Experiences Scale in screening for multiple personality disorder: A multicenter study. *American Journal of Psychiatry, 150,* 1030-1036.

Chu, J.A., & Dill, D.L. (1990). Dissociative symptoms in relation to childhood physical and sexual abuse. *American Journal of Psychiatry, 147,* 887-892.

Draijer, N., & Boon, S. (1993). The validation of the Dissociative Experiences Scale against the criterion of the SCID-D, using receiver operating characteristics (ROC) analysis. *DISSOCIATION, 6*(1), 28-37.

Ensink, B.J., & van Otterloo, D. (1989). A validation study of the DES in the Netherlands. *DISSOCIATION, 2*(4), 221-223.

Frischholz, E.J., Braun, B.G., Sachs, R.G., Schwartz, D.R., Lewis, J., Shaeffer, D., Westergaard, C., & Pasquotto, J. (1991). Construct validity of the Dissociative Experiences Scale (DES): I. The relationship between the DES and other self-report measures of DES. *DISSOCIATION, 4*(4), 185-188.

Frischholz, E.J., Braun, B.G., Sachs, R.G., Hopkins, L., Shaeffer, D.M., Lewis, J., Leavitt, F., Pasquotto, J.N., & Schwartz, D.R. (1990). The Dissociative Experiences Scale: Further replication and validation. *DISSOCIATION, 3*(3), 151-153.

Gold, S.N., Elhai, J., Lucenko, B., & Swingle, J.M. (June, 1997). *A comparison of abuse characteristics among men and women survivors of childhood sexual abuse.* Paper presented at the 5th International Family Violence Research Conference, Durham, New Hampshire.

Gold, S.N., Hansen, C., Swingle, J., & Hill, E. (November, 1997). *Factor analysis of DES scores among adult survivors of childhood sexual abuse in therapy.* Paper presented at the 14th International Fall Conference of The International Society for the Study of Dissociation, Montreal, Canada.

Gold, S.N., Hughes, D.M., & Swingle, J.M. (1996). Characteristics of childhood sexual abuse among female survivors in therapy. *Child Abuse & Neglect, 20,* 323-335.

Guilford, J.P. (1956). *Psychometric methods.* New York: McGraw-Hill.

Herzog, D.B., Staley, J.E., Carmody, S., Robbins, W.M., & van der Kolk, B.A. (1993). Childhood sexual abuse in anorexia nervosa and bulimia nervosa: A pilot study. *Journal of the American Academy of Child and Adolescent Psychiatry, 32,* 962-966.

Kazdin, A.E. (1998). *Research design in clinical psychology* (3rd ed.). Boston: Allyn & Bacon.

Kline, P. (1993). *The handbook of psychological testing.* London: Routledge.

Mann, B.J. (1995). The North Carolina Dissociation Index: A measure of dissociation using items from the MMPI-2. *Journal of Personality Assessment, 64,* 349-359.

Murphy, P.E. (1994). Dissociative experiences and dissociative disorders in a non-clinical university student group. *DISSOCIATION, 7*(1), 28-34.

Nash, M.R., Hulsey, T.L., Sexton, M.C., Harralson, T.L., & Lambert, W. (1993). Long-term sequelae of childhood sexual abuse: Perceived family environment, psychopathology, and dissociation. *Journal of Consulting and Clinical Psychology, 61,* 276-283.

Nunnally, J.O. (1978). *Psychometric theory.* New York: McGraw Hill.

Phillips, D.W. (1994). Initial development and validation of the Phillips Dissociation Scale (PDS) of the MMPI. *DISSOCIATION, 7*(2), 92-100.

Pitblado, C.B., & Sanders, B. (1991). Reliability and short-term stability of scores on the Dissociative Experiences Scale. In B.G. Braun & E.B. Carlson (Eds.), *Proceedings of the Eighth International Conference on Multiple Personality and Dissociative States.* Chicago: Rush Presbyterian.

Ross, C.A., Joshi, S., & Currie, R. (1990). Dissociative experiences in the general population. *American Journal of Psychiatry, 147,* 1547-1552.

Ross, C.A., Joshi, S., & Currie, R. (1991). Dissociative experiences in the general population: A factor analysis. *Hospital and Community Psychiatry, 42,* 297-301.

Ross, C.A., Ryan, L., Voigt, H., & Eide, L. (1991). High and low dissociators in a college student population. *DISSOCIATION, 4*(3), 147-151.

Sandberg, D.A., & Lynn, S.J. (1992). Dissociative experiences, psychopathology and adjustment, and child and adolescent maltreatment in female college students. *Journal of Abnormal Psychology, 101,* 717-723.

Sanders, S. (1986). The Perceptual Alteration Scale: A scale measuring dissociation. *American Journal of Clinical Hypnosis, 28,* 95-102.

Sanders, B., & Green, J.A. (1994). The factor structure of the Dissociative Experiences Scale in college students. *DISSOCIATION, 7*(1), 23-27.

Sanders, B., McRoberts, G., & Tollefson, C. (1989). Childhood stress and dissociation in a college population. *DISSOCIATION, 2*(1), 17-23.

Saxe, G.N., van der Kolk, B.A., Berkowitz, R., Chinman, G., Hall, K., Lieberg, G., & Schwartz, J. (1993). Dissociative disorders in psychiatric inpatients. *American Journal of Psychiatry, 150,* 1037-1042.

Sheiman, J.A. (1993). "I've always wondered if something happened to me": Assessment of child sexual abuse survivors with amnesia. *Journal of Child Sexual Abuse, 2* (2), 13-21.

Shor, R.E., & Orne, E.C. (1962). *The Harvard Group Scale of Hypnotic Susceptibility, Form A.* Palo Alto, CA: Consulting Psychologists Press.

Steinberg, M. (1993). *The Structured Clinical Interview for DSM-IV Dissociative Disorders.* Washington, DC: American Psychiatric Press.

Tellegen, A., & Atkinson, G. (1974). Openness to absorbing and self-altering experiences ("absorption"), a trait related to hypnotic susceptibility. *Journal of Abnormal Psychology, 83,* 268-277.

Waller, N.G., Putnam, F.W., & Carlson, E.B. (1996). Types of dissociation and dissociative types: A taxometric analysis of dissociative experiences. *Psychological Methods, 1,* 300-321.

Yellen, S.B. (1989). *Measurement of ambiguity intolerance.* Paper presented at the annual meeting of the American Psychological Association, New Orleans, LA.

Yellen, S.B. (1991). Intolerance of ambiguity: Measurement and construct validation. *Dissertation Abstracts International, 52,* 1774-1775.