

A FACTOR ANALYSIS OF THE DISSOCIATIVE EXPERIENCES SCALE (DES) IN DISSOCIATIVE IDENTITY DISORDER

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ABSTRACT

A factor analysis of the Dissociative Experiences Scale (DES) in 274 patients with dissociative identity disorder (DID) was conducted as an extension of a previous DES factor analysis in a general population sample. A principal components analysis yielded three factors in the DID group that were virtually identical to those in the general population.

The epidemiology and phenomenology of dissociative identity disorder have begun to be investigated in the last decade (Allen, 1993; Bliss & Jeppsen, 1985; Kluft, 1985, 1986; 1987; Ross, 1991b). Dissociative identity disorder, formerly known as multiple personality disorder, is a severe form of dissociative disturbance, as defined by *DSM-IV* (American Psychiatric Association, 1994). There is a general consensus in the literature that the disorder usually arises as a way of coping with severe childhood trauma (Allison & Schwartz, 1980; Andorfer, 1985; Boor, 1982; Braun & Sachs, 1985; Coons & Milstein, 1984; Elliot, 1982; Goodwin, 1985; Price, 1988; Putnam, 1985, 1989; Putnam, Guroff, Silberman, Barban, & Post, 1986; Ross, 1989, 1991a; Spiegel, 1984, 1986; Solomon & Solomon, 1982; Stern, 1984; Vincent & Pickering, 1988; Wilbur, 1984, 1985). It has been hypothesized that patients with this disorder were born as intact, potentially normal individuals (Allison & Swartz, 1980; Goderez, 1987), but subsequently learned to cope by using auto-hypnosis (Bliss, 1980, 1984; Braun & Sachs, 1985; Frischholz, 1985; Noll, 1989) as a means of psychological survival.

A previous study (Ross, Joshi, & Currie, 1991) investigated dissociative experiences in a sample of 1,055 subjects from the general population by means of a factor analysis, using a scale designed for the assessment of dissociative experiences, the Dissociative Experiences Scale (DES) (Bernstein

& Putnam, 1986; Carlson, Putnam, Ross, Torem, Coons, Dill, Loewenstein, & Braun, 1993). This analysis yielded three factors: absorption-imaginative involvement, activities of dissociated states or amnesia, and depersonalization-derealization. A recent investigation of 860 undergraduate students also yielded a fairly similar factor structure (Sanders & Green, 1994). Results of other factor analysis have ranged from a one factor solution (Fischer & Elnitsky, 1990) to as many as seven factors (Ray, June, Turaj, & Lundy, 1992) among 507 and 260 college students, respectively. The purpose of the present study is to extend the large (Ross et al., 1991) general population study, by administering the DES to a population of patients with dissociative identity disorder.

METHOD

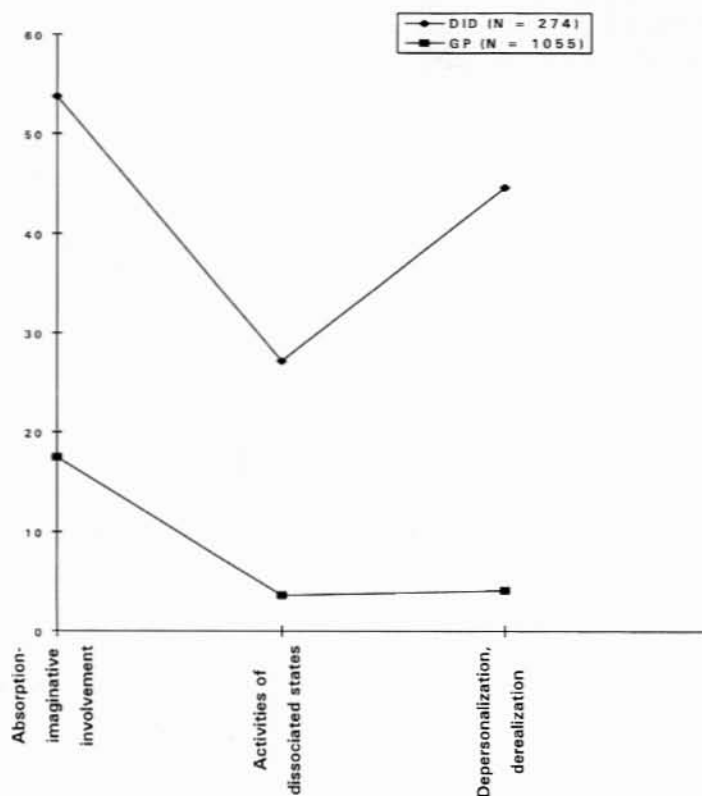
Sampling Procedure

The subjects were 274 patients clinically diagnosed with multiple personality disorder according to *DSM-III-R* criteria (American Psychiatric Association, 1987), who also met *DSM-IV* criteria for dissociative identity disorder (American Psychiatric Association, 1994). A diagnosis of MPD was confirmed in all patients by clinical observation, according to *DSM-III-R* rules, and by structured interview using the Dissociative Disorders Interview Schedule (Ross, Heber, Norton, Anderson, & Barchet, 1989). Data were collected from five different locations within the United States and Canada. There were subjects from Winnipeg, Ottawa, Utah, California (Ross, Anderson, Fraser, Reagor, Bjornson, & Miller, 1992), and Texas.

Instrument

The Dissociative Experiences Scale (DES) (Bernstein & Putnam, 1986; Carlson et al., 1993) is a 28-item self-report questionnaire with a test-retest reliability of .84, split-half reliabilities ranging from .71 to .96, good internal consistency, and good construct validity (Bernstein & Putnam, 1986). A recent investigation demonstrated the instrument's ability to identify dissociative identity disorder with a sensitivity of 76% and specificity of 85% in a heterogeneous clinical population (Carlson et al., 1993). In the present study, the DES was not used as a diagnostic tool during the selection process.

FIGURE 1
Factor Means of DID Patients and a General Population Sample
on the Dissociative Experiences Scale



Note: DID = Dissociative Identity Disorder; GP = General Population

Data Analysis

Descriptive analysis yielded a mean and standard deviation for the DES in the dissociative identity patients. Chronbach's alpha was calculated for the DES. A principal components analysis was conducted, using the varimax rotation method. Items were considered to load onto a factor if they had a score of 0.45 or greater. Overall scores and average factor scores were compared between the dissociative identity patients and the general population using *t* tests.

RESULTS

For 10 subjects, demographic data were unavailable. The ages of the dissociative identity subjects ranged from 17 to 63; the mean age \pm SD was 33.2 ± 8.51 . Out of 28 males (10.6%) and 236 females (89.4%), 106 (40.2%) were single, 89 were married (33.7%), and 69 (26.1%) were either separated, divorced, or widowed. The mean \pm SD DES score was 44.6 ± 19.2 , with a median of 46.0. This is similar to DES scores

for dissociative identity subjects in previous studies (Ross, 1989; Bernstein & Putnam, 1986; Carlson et al., 1993). Chronbach's alpha for the DES was 0.95. The mean DES score in the general population was 10.8 ± 20.2 .

The dissociative identity patients differed significantly from the general population subjects on average DES scores ($t = 24.88$, $df = 1327$, $p < .00001$). Principal components analysis yielded three factors virtually identical to those found in the general population study (Ross et al., 1991). Together these three factors accounted for 53.4 percent of the variance in the dissociative identity group, which was comparable to the 47.1 percent of the variance explained by these same factors in the general population sample. Factor 1, identified as "absorption-imaginative involvement," accounted for 15.8 percent of the variance ($\bar{X} = 53.7 \pm 5.7$). Factor 2, called "activities of dissociated states," accounted for 20.3 percent of the variance ($\bar{X} = 31.5 \pm 9.9$). Factor 3 named "depersonalization-derealization," explained 17.3 percent of the variance ($\bar{X} = 43.4 \pm 8.1$). The item loadings of the three factors, shown in Table 1, differed very little between the two groups: activities of dissociated states had four additional items and depersonalization-derealization each had three additional items in the dissociative identity disorder

patients. When the factor means for dissociative identity disorder were calculated for only those items that loaded onto each factor in both the dissociative identity patients and the general population, the mean of Factor 1 increased only by 0.1, the mean of Factor 2 decreased by 4.3, and the mean of Factor 3 increased by 1.3. Comparative analysis, employing only those items loading onto each factor in both groups, resulted in significant differences between the general population and the dissociative identity group on "absorption-imaginative involvement" ($t = 99.8$, $df = 1327$, $p < .0001$), "activities of dissociated states" ($t = 87.1$, $df = 1327$, $p < .0001$), and "depersonalization-derealization" ($t = 121.6$, $df = 1327$, $p < .0001$); Figure 1 illustrates the mean factor scores in the two groups.

DISCUSSION

Our data differ from the findings of Fischer and Elnitsky (1990), who found only one factor in their DES study. One

TABLE 1
Factor Loadings of the DES in the General Population and Dissociative Identity Disorder
Using Principal Components Analysis with Varimax Rotation

		General Population*		Dissociative Identity	
		(N = 1,055)		(N = 274)	
Items		\bar{X} Factor Loading		\bar{X} Factor Loading	
Factor 1: Absorption-Imaginative Involvement					
2.	Missing part of a conversation	24.3	.57	60.7	~
14.	Remembering past so vividly one seems to be reliving it	17.4	.58	54.0	~
15.	Not sure if remembered event happened or was a dream	12.6	.56	53.6	.62
17.	Absorption in TV program or movie	20.2	.62	50.1	.67
18.	So involved in fantasy that it seems real	10.0	.53	43.4	.71
19.	Able to ignore pain	25.6	.50	55.1	.47
20.	Staring into space	15.3	.64	57.8	.49
21.	Talking out loud to oneself when alone	15.2	.54	48.1	.45
22.	Feeling as though one were two different people	11.5	.35	62.3	.56
23.	Usually difficult things can be done with ease and spontaneity	22.8	.64	56.2	.65
24.	Not sure whether one has done something has thought about it	21.2	.72	57.0	.59
25.	Finding evidence of having done things one can't remember doing	13.5	.64	47.6	~

TABLE 1 – Continued

	General Population*		Dissociative Identity	
	(N = 1,055)		(N = 274)	
Items	\bar{X} Factor Loading		\bar{X} Factor Loading	
Factor 2: Activities of Dissociated States				
3. Finding oneself in a place but unaware how one got there	2.8	.75	26.7	.76
4. Finding oneself dressed in clothes one can't remember putting on	1.9	.75	19.9	.79
5. Finding unfamiliar things among ones belongings	4.5	.68	23.3	.79
6. Being approached by people one doesn't know who call one by a different name	12.4	~	33.5	.61
8. Not recognizing friends or family members	5.1	.57	22.9	.61
10. Being accused of lying when one is telling the truth	7.3	~	38.9	.64
25. Finding evidence of having done things one can't remember doing	13.5	~	47.6	.72
26. Finding notes or drawings that one must have done but doesn't remember doing	6.7	~	39.5	.75
Factor 3: Depersonalization-Derealization				
1. Driving a car and realizing that one doesn't realize what has happened during all or part of the trip	9.0	~	42.0	.50
7. Seeing oneself as if looking at another person	5.3	~	41.3	.67
11. Not recognizing one's reflection in a mirror	1.8	.59	32.0	.57
12. Other people and objects do not seem real	4.9	.66	40.3	.67

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Items	General Population*		Dissociative Identity	
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	\bar{X} Factor Loading		\bar{X} Factor Loading	
13. Feeling as though one's body is not one's own	3.9	.62	47.5	.78
16. Being in a familiar place but finding it unfamiliar	8.6	~	40.5	.56
27. Hearing voices inside one's head	5.3	.66	60.5	.51
28. Looking at the world through a fog	4.7	.74	43.2	.69

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

Note: ~ = Item not loading on same factor.

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explanation for their one-factor solution could be their use of a different statistical method, principal factor extraction, while we used a principal components analysis. Fischer and Elnitsky (1990) also used oblique rotation and based their final decisions partly on a SCREE test. Although often highly regarded for its ability to locate major common factors, the SCREE test has also been criticized as subjective and ambiguous with respect to criterion rules (Kim & Mueller, 1978). The factor loadings in Fischer and Elnitsky's (1990) study were low while those in the present study ranged from .34 to .72. In addition to the fact that different rotation methods were used, one must be cautious in comparing the results of these two studies because of their different sampling methods. Fischer and Elnitsky (1990) used exclusively college students, while the Ross sample (Ross, et al., 1991) was made up of a stratified cluster sample of the general population.

Our results indicate, however, that the Dissociative Experiences Scale has a virtually identical factor structure in dissociative identity disorder patients and the general population. Our sample of patients is consistent with previously reported samples, and therefore appears to be representative (Ross, 1989; Bernstein & Putnam, 1986; Carlson et al., 1993; Sanders & Green, 1994). One might infer from this

finding that dissociative identity patients differ from normal individuals in their degree of dissociative experiences, but not in the quality or structure of their internal worlds. The disorder, then, might represent an extension and crystallization of normal psychological structure and function.

A word of caution is necessary. The design of this study does not directly test the question of a dissociative continuum, or whether dissociative identity disorder is an extension of normal phenomena. Principal components analysis assumes a continuum and applies a dimensional analytic technique, yielding a dimensional result regardless of whether or not the data are actually continuously distributed. In a reanalysis of our general population DES data (Waller and Ross, unpublished data), we found that the 1,055 subjects clearly fell into two distinct categories: normal subjects and those with pathological dissociation. The hypothesis of a continuum of dissociative experiences from normal to pathological is therefore problematic, and requires further study. The purpose of the present study was to determine whether the DES factor structure is similar in dissociative identity disorder and the general population, not to test the continuum hypothesis.

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On factor analysis, the difference between the general

population and dissociative identity disorder is the greater quantity of dissociation in the patients: the structural organization of dissociative experiences in the two groups is similar. Research on clinical populations using the Dissociative Experiences Scale, it appears, can use the factor structure of the scale in the general population. Future research should examine the factor structure of the DES among male and female DID patients, as recent investigators (Sanders & Green, 1994; Ray et al., 1992) have done with non-clinical samples, and should bear in mind that factor analyses do not test the continuum hypothesis. ■

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