HIGH AND LOW DISSOCIATORS IN A COLLEGE STUDENT POPULATION

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AB S' 1KACT

From a sample of .94.5 college students completing the Dissociative Experiences Scale (DES), the authors interviewed twenty-two q v- *dents scoring below 5.0, and twenty students scoring above 22.6 with the Dissociative Disorders Interview Schedule, and also administered theSCL-9OandMillon Clinical MultiaxialInventory to them. High and low scorers on the DES were clearly differentiated on all three measures. Seventy per cent of the high DES scores had a* DSM-III-R *dissociative disorder, while none of the low scorers did. Extrapolation from the data yields a. prevalence of* DSM-III-R *dissociative disorders among college students of'11.0%.*

INTRODUCTION

The Dissociative Experiences Scale (DES) (Bernstein & Putnam, 1986) has been used to measure dissociation in a variety *of* clinical populations. Group median scores on the DES can distinguish cohorts with multiple personality disorder (MPD) from those with other psychiatric disorders and normal controls (Bernstein & Putnam, 1988; Ross, Norton, & Anderson, 1988). Recently, the DES has also been given to large samples of normal college students (Ross, Ryan, Anderson, Ross, & Hardy, 1989; Sanders, McRoberts, & Tollefson, 1989).

The relationship between high DES scores, severe childhood trauma, and the presence of dissociative disorders in clinical populations is well established (Putnam, 1989; Ross, 1989). However, this relationship has not been explored among non-clinical subjects using a reliable screenirtginstru-Ownt.. In a previous report (Ross, Rvan, etal.,1989) we described the DES scores of 345 college students. The purpose *of* this paper is to present historical and diagnostic data on subgroups of high and low DES scorers from these 345 college students.

METHOD

Subjects

As described previously (Ross, Ryan, et al., 1989), subjects were 345 college students who completed the DES. The students filled out the DES during class time, and gave written informed consent. Ethical approval for the study had been received from the Faculty of Medicine and the Counselling Service at the University of Manitoba. The students had been selected to complete the DES using a sampling technique which randomired for faculty and year of study only.

From this pool of 345 students we identified 112 students who scored below 5.0 on the DES, which is in the normal range, and 54 who scored above 20. We selected low scorers at random and asked them to participate in the second phase of the project: low scorers were interviewed consecutively as they gave consent until 22 were completed. We selected high scorers by starting with the highest scorer and working downwards in DES scores until 20 subjects had consented and completed *the* second phase.

Measures

The forty-two students completed the SCE-90 (Derogatis, Lipman, & Covi, 1973) , a widely used self-report measure of general psychopathology; the Milton Multiaxial Clinical Inventory (MCMI) (Millon, 1977), a widely used personality measure; and the Dissociative Disorders Interview Schedule (DDIS) (Ross, 1989; Ross, Heber, et al., 1989).

Procedure

The second phase of the project involved administration of the SCI.-90, MCMI, and DDIS to twenty students scoring above 22.6 on the DES and twenty-two scoring below 5.0. The professionals administering the DDIS were blind to DES scores, with the exception of one subject, who was known to be a high scorer by the interviewer.

High and low dissociators were then compared on overall SCI.90 scores and SCI..-90 suhitern scores using t tests. The two groups were compared on selected MCMI subscales using t tests. DDIS scores for the two groups were compared using ttests for continuous variables and chi square tests for dichotomous variables: the subjects positive for different DDIS diagnoses are expressed as percentages, but chi square tests were

used in the analysis. DDIS data included demographic information on the subjects.

Significance was set at $p < .05$.

RESULTS

Demographic Findings

The high and low DES-scorers did not differ on any demographic variables. The high DES group had an average age of 28.6 years (S.I). 7.7) , and the low DES group an average age of 26.8 years (S.D. 5.7), (t {39) = 0.852, N.S.). Age data were missing for one subject in the high DES group. There were eight males and twelve females in the high DES group, and seven males and fifteen females in the low DES group (x^2 (1) = 0.053, N.S.). In the high DES group, twelve subjects were single, three were married or living common law, and five were separated or divorced, while in the low DES group, eleven subjects were single, eight married or living commonlaw, and two were separated or divorced (x^2 (3) _ 4.517, N.S.). In the high DES group, seven subjects were employed, eight were unemployed, and employment data were missing on five, while in the low DES group, nine were employed, live were unemployed, and data were missing on eight. (x^2 (1) - 0.336, N.S.). The subjects in the high DES group had an average of 0.6 children (S.D. 1.1) while those in the low DES group had an average of 0.8 children (S.D. 1.2) , (t (39) = 0.581, N.S.). Data on number of children were missing for one subject.

The high and low DES scorers were dearly differentiated on all measures used.

SCL-90 Findings

The high and low DES scorers differed on each subscale of the SCI..90 and on overall SCI.-90 scores, with the high DES group having h igher SCE-90 scores in every instance. For the high DES group the mean SC1.M0 score was 2.31 (S.D. 0.74), and for the low DES group it was 1.32 (S.D. 0.40) (t (39) = 5.550, $p < .00001$). SCIr90 data were missing for one subject. The average SCL-90 score for general adult psychiatric outpatients *is* 1.35 (Derogatis et at., 1973).

MCMI Findings

The high DES scorers scored higher than the low DES group on fifteen out of twenty subscales of the MCMI. They did not score lower on any subscales. We were particularly interested in four subscales shown in "fable I.

DDIS Symptom Clusters

As shown in Table 2, the high DES group scored significantly higher ($p < .0001$ or beyond) on each of the major DDIS symptom clusters (Ross, 1989). The content of these symptom clusters is described in previous publications (Ross, 1989; Ross, Heber, et al., 1989).

Amnesia is enquired about six times in the DDIS. The high DES group reported significantly more amnesia than the low DES group. The high DES group endorsed an average of 2.1 amnesia items (S.D. 1.5), and the low DES group an average of 0.9 (S.D. 0.4) (t (40) = 3.799, $p < .0005$).

DDIS Diagnostic Categories

As shown in Table 3, the high DES group met the criteria for five of the eight M AI-11M diagnoses evaluated by the DDIS significantly more often than the low DES group, including MPD, psychogenic amnesia, depersonalization disorder, borderline personality disorder, *and* major depressive episode. Altogether there were forsrteen individuals (70%) in the high DES group with one or more dissociative disorders, and none in the low DES group (x^2 (1) = 20.057, $p < .00001$) .

Childhood Trauma Histories

In the high DES group the average number of types of sexual abuse per subject was 2.0 (S.D. 3.5), while for the low DES group it was 0.4 (S.D. 1.2), (t (40) = 2.065, $p < .05$). The two groups did *not* differ on the average numher of perpetrators of physical and sexual abuse per subject. The duration of physical *and* sexual abuse for the two groups could not be calculated because of missing data.

When the high and low DES groups were compared on the *number* of students who had a history of physical or sexual abuse or both, they did not differ. There were eleven students with an abuse history of some kind in the high DES group, and five in the low DES group (x^2 (1) = 3.360, N.S.).

When the twelve studentswith borderline personality disorder were compared to the thirty stu-

TABLE. 1
Differences in Selected Subscales of the Milton Clinical Multizxial I n'entory Between College Students with High and Low Scores on the Dissociative Experiences Scale (DES)

Item	High Scorers (DES > 22.6) (N = 19) Average Score (S.D.)	Low Scorers (DES < 5.0) (N = 22) Average Score (S.D.)	t	p value
Borderline	66.5 (17.0)	34.4 (20.4)	5.425	.00001
Narcissistic	62.5 (28.4)	65.3 (18.4)	0.386	N.S.
Histrionic	56,4 (29.7)	59.5 (23.7)	0.374	N.S.
Antisocial	62.1 (26.1)	59.6 (17.1)	0.361	N.S.

dents without that diagnosis, the borderline students had experienced more childhood trauma. Of the borderlines, nine out of twelve had abuse histories, while of the non-borderlines, seven out of thirty had an abuse history (x^2 (1) _ 7.635, p < .006).

When the fourteen individuals with a dissociative disorder in the sample were compared to the twenty-eight students with no dissociative disorder, the group with dissociative disorders had experienced significantly more trauma. Of the dissociative disorders group, nine had an abuse history, while of the non-dissociative group, seven had an abuse history (x^2 (1) = 4.556, p < .04).

Prevalence of Dissociative Disorders: Extrapolation from the Data

There were eight students with MPD in the high DES group. The high DES group consisted of twenty students out of fifty-four with scores above 22.6: if one assumes that the twenty students interviewed were representative of the entire fifty-four scoring above 22.6 on the DES, there would he 21.6 cases of MPD among the entire fifty-four students. If one assumes that no cases of MPD occur in college students with DES scores below 22.6., then there were 21.6 cases of MPD among the 345 students sampled, which is 6.3% of the sample.

Using similar logic, since there were fourteen individuals with a *DSAM-IIT-R* dissociative distilder in the high DES group, the minimum lifetime prevalence of dissociative disorders among college students is 11.0%. This is a conservative estimate because about 15% of MPD cases have DES scores below twenty in clinical samples (Ross, Miller, Reagor, Bjornson, Fraser, & Anderson, 1990).

DISCUSSION

The DES is highly effective as a screening instrument for dissociative disorders in a non-clinical college student population. No students with DES scores below 5.0 had a dissociative disorder while 70% of those with scores above 22.6 did. Extrapolation from the data yields an estimate that 11.0% of college students have or have had a dissociative disorder. If this finding is generalizable, it means that dissociative disorders may he relatively common in the general population.

Clearly these findings are preliminary. The validity of the DDIS diagnoses in a non-clinical sample can be questioned. College students are not likely to be representative of the general population, and our sample may not be representative of college students. Despite these limitations, we think that dissociative disorders must be a more common form of psychopathology than is generally believed.

Among college students the dissociative disorders are part of a large set of symptom clusters related to childhood trauma. 'I hese include somatic, Schneiderian, borderline, extrasensory perception, and classical dissociative symptoms, as well as depression. This finding is demonstrated by the DDIS, MICMI, and SCE-90 findings. Since the SCL-90 and MCMI are widely used measures of general psychopathology, it is noteworthy that the DES can predict who will have high SCI.-90 and MCMI scores. The DES and DDIS appear to be detecting severe psychopathology in a valid manner.

It is also of note that highly dissociative college students do not differ from normal students on three subscales of the MCMI: the antisocial, histrionic, and narcissistic subscales. They do differ on the borderline suhscale, however. Although this is a preliminary finding, it speaks against the stereotype

TABLE 2
Differences in Dissociative Disorders Interview Schedule Items Between College Students with High and Low Scores on the Dissociative Experiences Scale (DES)

Symptom	High Scorers (DES > 22.6) (N = 20) Avg. Number of Positive Symptoms (S.D.)	Low Scorers (DES < 5.0) (N = 22) Avg. Number of Positive Symptoms (S.D.)	t	p value
Secondary Features of MPD	4.8 (3.5)	0.3 (0.8)	5.731	.00001
Schneiderian Symptoms	4.4 (3.7)	0.2 (0.5)	5.190	.00001
ESP Experiences	5.0 (3.2)	L6 (1.6)	5.517	.0001
Somatic Symptoms	8.8 (6.9)	2.0 (3.4)	4.099	.0002
Borderline (irit.eria	4.4 (2.2)	0.6 (1.4)	6.651	.00001

	Percentage of Subjects Positive	Percentage of Subjects Positive	x^2	p value
Sexual Abuse	35.0	9.1	2.780	N.S.
Physical Abuse	35.0	18.2	0.786	N.S.

of the dissociative patient as a hysteric, and calls into question the inclusion of borderline personality disorder among Cluster B personality disorders in *DSM-III-R* (American Psychiatric Association, 1987).

ClusterB includes antisocial, histrionic, narcissistic, and borderline personality disorders. All clinical studies with the DDIS to date suggest that borderline criteria are post-traumatic in nature. If this is borne out in other studies using different instruments, borderline personality disorder may be rcconceptualized as a disorder related to childhood trauma. Investigators who have enquired about childhood abuse histories in borderline patients have found high rates of trauma (Herman, Perry, & van der I(olk, 1989; Ludolph et al., 1970; Zanarini, Gunderson, Marino, Schwartz, & Frankerrburg, 1989) . The relationship between borderline personality disorder and childhood trauma was confirmed in the present sample.

As a group, the high DES-scorers had a great deal more general and dissociative psychopathology, hut they did not have more severe abuse histories than the low DES-scorers. The only difference between the two groups was that the high scorers reported significantly more ($p < .05$) types of sexual abuse. In clinical studies, more severe dissociation is clearly linked to more severe childhood trauma *(Ross,* Anderson, Heber, & Norton, 1990).

Among college students the relationship between trauma and dissociation is not revealed by DES scores alone. However, the presence of *a* dissociative disorder is linked to a higher frequency of childhood abuse: it appears that the link between dissociative disorders and trauma occurs in the general population as well as among clinical subjects.

Several of the college students meeting diagnostic criteria for MPD did not have the characteristic severe DDIS symptom profile of clinical MPD (Ross, Miller, et al., 1990) and did not report childhood abuse. There may be a relatively non-pathological form of MPD in the general population or, alternatively, the DDIS may generate a significant number of false positive diagnoses in the general population. In clinical populations, DDIS false positive diagnoses of MPD occur in less than 1% of interviews. A large random sample of the general population and validating clinical interviews are required to explore this issue more fully. One cannot tell from the methodology of the present study whether there are problems with a skewed sample, with the questionnaires themselves, or with the administration of the questionnaires.

We want to emphasize in conclusion that the present study is preliminary. However, it provides the first estimate of the prevalence of dissociative disorders in the general population. Even if 75% of the MPI) diagnoses in our sample are false positives, the prevalence of MPD in college students is still 1.6%. If confirmed, this prevalence will necessitate a major shift in our thinking about the epidemiology of the dissociative disorders. The estimated prevalence of 11.0% fbr the dissociative disorders as a. group is unlikely to be inflated by false positive diagnoses of MPD because an individual with a false positive diagnosis of MPD probably has another less severe dissociative disorder, rather than no dissociative disorder at all. ■

TA.B1..E 3
Differences in Dissociative Disorders Interview Schedule Items Between College Students with High and Low Scores on the Dissociative Experiences Scale (DES)

	High Scorers (DES > 22.6) (N=20) Percentage of Subjects Positive	**Low Scorers (DES < 5.0)** (N=22) Percentage of Subjects Positive	x^2	p value
Multiple Personality Disorder	40.0	0.0	8.431	.004
Psychogenic Amnesia	50.0	0.0	11.813	.0006
Psychogenic Fugue	5.0	0.0	0.002	N.S.
Depersonalization Disorder	40.0	0.0	8.431	.004
Atypical Dissociative Disorder	10.0	0.0	0.631	N.S.
Borderline Personality Disorder	55.0	4.5	10.712	.001
Somatization Disorder	15.0	4.5	0.766	N.S.
Major Depressive Episode	80.0	27.3	9.659	.002

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