RELIABILITY AND VALIDITY OF THE ADOLESCENT DISSOCIATIVE EXPERIENCES SCALE

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ABSTRACT

The Adolescent Dissociative Experiences Scale (A-DES) is designed to measure dissociation in adolescents (ages 11-17). The A-DES measures dissociation in four areas: dissociative amnesia, absorption and imaginative involvement, depersonalization and derealization, and passive influence. The present study was designed to establish A-DES norms for general population adolescents and to study aspects of the reliability and validity of the A-DES. Test-retest reliability was studied by testing one group of subjects twice, with a two-week interval between test administrations. Internal consistency was assessed by measuring the split-half reliability of the A-DES. Cronbach's alphas were calculated for the A-DES global score and four subscales. Results of these three analyses provide evidence for the reliability of the A-DES. The concurrent validity of the A-DES was studied by correlating scores on the A-DES with scores on the Dissociative Experiences Scale (DES) in a college sample. Results showed a high correlation between scores on these two measures. Overall, results indicate that the A-DES appears to have promise as a measure of dissociation in adolescents.

Dissociation can be defined as a lack of integration of thoughts, feelings, and experiences into the normal stream of consciousness (Bernstein & Putnam, 1986). Four categories of dissociation have been identified and described by Putnam (1994) including memory dysfunctions, disturbances in identity, passive influence, and absorption. Dissociative memory dysfunctions can take the form of amnesia for events, intrusive memories, or "flashbacks" (vivid reliving of an experience). Dissociative memory dysfunctions can also include phenomena such as the inability to determine if a perceived memory represents an actual event or information obtained by reading, hearing, or thinking about the event. Disturbances in identity include feelings of being more than one person (dissociated identity), distortions in the perceptions of one's own body (depersonalization), and the inability to remember important personal information (dissociative amnesia). Passive influence involves a feeling that one's behaviors are caused by a force from within. Absorption refers to a very intense focusing of attention (e.g., becoming so engrossed in a television program or a movie that outside events are not attended to or not perceived).

Dissociative experiences happen to everyone, but vary in nature, severity, and frequency across different populations (Bernstein & Putnam, 1986). Most of these experiences in the general population are relatively infrequent and do not cause any disruption in normal functioning. Such normative dissociative experiences are minor and might include absorption experiences such as daydreaming.

For persons with dissociative disorders, dissociative symptoms are much more frequent and severe than they are for those in the general population (Carlson & Putnam, 1993). In these individuals, dissociative experiences occur so often as to disrupt their lives. Examples of symptoms found in persons with dissociative disorders include such experiences as having more than one distinct personality state or experiencing extended periods of amnesia for traumatic life events (American Psychiatric Association, 1994).

Among normative adolescent populations, dissociative experiences are more common than in normative adult populations (Putnam, 1991). Adolescents engage in behaviors such as intricate daydreaming and fantasizing that are dissociative in nature and might be considered disordered in adults (Putnam, 1994). However in adolescents, these behaviors are a part of normal conscious processes inherent in the development of identity. During this pivotal time in life, children and adolescents fantasize about, experiment with, and create new aspects of themselves (Putnam, 1994). Many adolescents undergo sudden changes in identity and behavior and often feel divided into different versions of themselves. These differing identities are often conflictual and situationally varying.

Persons with a history of psychological trauma such as war, natural disasters, rape, or the witnessing of loss of life also experience more severe and frequent dissociation. (Classen, Koopman, & Spiegel, 1993). Results of several studies have found a relationship between severity of dissocia-

tion and the severity and frequency of traumatic experiences (American Psychiatric Association, 1987; Briere, 1988; Briere & Runtz, 1988; Carlson, Armstrong, Loewenstein, & Roth, in press; Chu & Dill, 1990; Coons, Bowman, Pellow, & Schneider, 1989; DiTomasso & Routh, 1993; Goodwin, Cheeves, & Connell, 1990; Kirby, Chu, and Dill 1993; Nash, Hulsey, Sexton, Harralson, & Lambert 1993; Puntam, 1985; Strick & Wilcoxon, 1991; Swett & Halpert, 1993; van der Kolk, 1987; van der Kolk & Kadish, 1987).

A relationship between sexual and physical abuse histories and increased dissociation has also been found in a non-clinical sample of college-age adolescents (Sandberg & Lynn, 1992). Results of this study showed that those reporting histories of abuse or victimization were more dissociative than those reporting no abuse.

Evidence of a relationship between traumatic experiences and dissociation has also been found in adolescent subjects. In a study focusing on the association between trauma and dissociation in inpatient adolescents, physical and/or sexual abuse and psychological abuse were found to be significantly related to increased levels of dissociative symptomatology (Sanders & Giolas, 1991). Unfortunately, these results are not conclusive as dissociation was measured using the DES, which was not designed for use with adolescents.

In order to empirically study dissociation in adolescents, their dissociative experiences must be quantified with a measure that is appropriate for use with adolescents. The measurement of dissociation in adolescents is important for two reasons. First, because high levels of dissociative symptomatology are related to experiences of trauma and stress, any individuals who experience above average amounts of dissociation may have had traumatic experiences. A measure of dissociation appropriate for adolescents might aid in the identification of traumatized individuals in clinical settings and might facilitate diagnosis and treatment (Carlson & Armstrong, 1994). Second, because dissociation is an important part of normative adolescent identity formation (Putnam, 1994), measurement of the frequency and intensity of the dissociation and of different subtypes of dissociation may be useful in the examination of the different facets of adolescent emotional and cognitive development.

Measures have been developed for the quantification of dissociation in adults and children. The Dissociative Experiences Scale (DES) was developed for use as a measure of dissociation in adult populations (Bernstein & Putnam, 1986; Carlson & Putnam, 1993). Several dissociation scales also exist for child populations, of which the Child Dissociative Checklist (CDC) is the most widely used (Putnam, Helmers, & Trickett, 1993). Both of these measures are valid and reliable screening instruments for dissociation. However, the DES is not appropriate for use with persons under the age of 18 because the language and experiences described in the DES would be inappropriate to younger subjects. The CDC is not appropriate for adolescents as many of its items do not apply to adolescents. Moreover, because the observer-scored method of the CDC quantifies specific observable behaviors, it does not measure cognitive or emotional dissociation without behavioral indicators. For this reason, the CDC is not sensitive to some of dissociative symptoms of interest.

Until now, there has been no measure of dissociation specifically for adolescents. Recently the Adolescent Dissociative Experiences Scale (A-DES) was developed to measure dissociation in children between the ages of 11 and 17 (Armstrong, Putnam, Carlson, Libero, & Smith, 1997). The A-DES is a 30-item self-report measure designed to assess dissociation in four areas: dissociative amnesia, passive influence, depersonalization and derealization, and absorption and imaginative involvement.

Armstrong et al. (1997) examined the relationship between A-DES scores and traumatic histories in adolescents referred for psychological evaluation. They found that A-DES scores for non-abused adolescents were significantly lower than scores for adolescents who reported both physical and sexual abuse histories. Furthermore, their study examined the ability of A-DES scores to differentiate adolescents with dissociative disorders from those with other diagnoses. They found that adolescents with dissociative disorders scored significantly higher than adolescents in other diagnostic groups, with the exception of psychotic disorders. These findings support the validity of the scale as a measure of dissociative experience.

The purpose of the present study was to establish preliminary A-DES norms using a non-clinical sample of subjects and to investigate the reliability and concurrent validity of the A-DES. First, we sought to establish norms for frequency and degree of dissociation across three age groups in junior and high school adolescents. We obtained A-DES subscale scores for these subjects as well as global A-DES scores.

Furthermore, we sought to assess the reliability of the A-DES. Reliability refers to the consistency of scale scores over time as well as the extent to which a measure is internally consistent (Anastasi, 1988). In the present study, test-retest reliability and internal consistency were assessed.

In addition to reliability, evidence for the construct validity of the A-DES was also assessed. Construct validity refers to the extent to which a measure accurately quantifies the construct that it was designed to assess (Anastasi, 1988). Concurrent validity was assessed by correlating DES and A-DES scores of college students.

METHODS

Participants

Junior and senior high school subjects were from racially and socioeconomically diverse schools in a small Midwestern city. Data was collected from students in three

TABLE 1
A-DES Total and Subscale Means by Age

	AGE GROUP				
	12-13 (N=18)	14-15 (N=22)	16-17 (N=20)	College (N=46)	All Ss[a] (N=60)
A-DES Total Score	2.33 (1.5)	2.14 (1.2)	2.26 (1.5)	0.78 (0.95)	2.24 (1.4)
Amnesia	2.70 (1.9)	2.14 (1.4)	2.35 (1.8)	1.38 (1.15)	2.37 (1.7)
Absorption	2.71 (1.6)	2.32 (1.6)	2.41 (1.5)	2.02 (1.20)	2.46 (1.6)
Deper/Dereal	1.93 (1.8)	1.81 (1.1)	1.87 (1.7)	1.01 (0.9)	1.87 (1.5)
Passive Influence	2.57 (1.7)	2.74 (1.8)	2.92 (2.0)	1.71 (1.24)	2.75 (1.8)

Note: [a] *College subject data not included.*

age groups: 12 to 13 year-olds (N = 18, mean age = 12.6), 14 to 15 year-olds (N = 22, mean age = 14.7), 16 to 17 year-olds (N = 20, mean age = 16.4). These junior and senior high school students were selected from regular-level English classes in public schools, in order to maximize the likelihood that they represented a cross-section of the entire student body in terms of race, sex, and socioeconomic status. Seventy-eight percent of the sample was Caucasian, 5% were African American, 3% were Native American, 5% were Asian, 3% were Hispanic, and 5% described their race as "Other." Sixty-two percent of the sample was male. A sample of college students from a small, Midwestern college located in a suburb of a mid-sized city was also tested. The students ranged in age from 18 to 21 years old (N = 46, mean age = 19.5).

Materials

The A-DES is a thirty-item self-report measure. Each item presents a statement in first person form (e.g., "My body feels as if it doesn't belong to me."). Under each of these statements, subjects mark the frequency of these experiences on a scale from 0 to 10 with 0 labeled "never" and 10 labeled "always." Flesch-Kincaid and Coleman-Liau indices were calculated using Microsoft Word Version 6.0c (1994) computer software. The Flesch-Kincaid grade level readability index is 5.2, while the Coleman-Liau grade level index is 5.4. In a clinical sample, Armstrong et al. (1997) found the A-DES to have good internal reliability as indicated by a Spearman-Brown of $r = .92$ ($p < .00001$) and Cronbach's alpha for the total scale score of $r = .93$ ($p < .05$).

Total A-DES scores are equal to the mean of all item scores. Subscale scores can also be calculated in four areas: dissociative amnesia (items 2, 5, 8, 12, 15, 22, & 27), absorption and imaginative involvement (items 1, 7, 10, 18, 24, & 28), depersonalization and derealization (items 3, 6, 9, 11, 13, 17, 20, 21, 25, 26, 29, & 30), and passive influence (items 4, 14, 16, 19, & 23).

The Dissociative Experiences Scale (DES) is a 28-item self-report measure (Bernstein & Putnam, 1986). Scale items are presented as situations (e.g., "Some people have the experience of driving a car and suddenly realizing that they don't remember what has happened during all or part of the trip"). For each situation, subjects are asked to indicate how often these situations happen to them on a scale from 0 to 100, with 0 labeled "never" and 100 labeled "always." The DES measures experiences of gaps in memory and awareness, and experiences of derealization, depersonalization, absorption, and imaginative involvement. High test-retest reliability, internal reliability, and validity have been reported for the DES (Carlson & Putnam, 1993).

Procedure

Instructions were read orally and students were assured that participation would be anonymous and voluntary. Subjects gave consent by their completion of the measures. Instructions for the completion of the measures were read by the students. The junior and senior high students completed the A-DES first, followed by the demographic questionnaire. The 14 to 15 year-old students completed the A-DES twice with a two week interval between testing. The college students completed the A-DES and the DES first, followed by the demographic questionnaire. The A-DES and the DES were presented in random order to test for order effects. Because the subject matter of the A-DES and the DES are similar, the first measure was completed and collected before

the second one was distributed to prevent subjects from comparing their answers on the two measures.

RESULTS

Normative Data

A one-way ANOVA was performed on A-DES scores across age groups in the student samples. No significant differences were found. Means, standard deviations, and median scores are reported in Table 1.

A-DES subscale means across age groups are reported in Table 1. One-way ANOVAs were performed on A-DES scores across age groups in the student samples. No significant differences were found.

Reliability

The 14 to 15 year-old subjects completed the A-DES on two occasions (two weeks apart) to assess for test-retest reliability. A Pearson product-moment correlation between scores on first and second administrations of the A-DES yielded a correlation coefficient ($\underline{r} = .77$, $\underline{p} < .00001$, $\underline{N} = 22$) for this analysis.

As a measure internal consistency, Cronbach alphas were calculated for the global scale score as well as the four subscales. Alpha was .92 for the whole scale, .75 for the amnesia subscale, .64 for the absorption subscale, .83 for depersonalization/derealization, and .77 for passive influence ($\underline{N} = 60$ for all calculations).

For all adolescent subjects, A-DES items were divided into two conceptually equivalent halves to assess internal consistency. A Pearson's product-moment correlation coefficient between the two halves was calculated and corrected with the Spearman-Brown split-half reliability formula to yield an r for the whole scale of .94 ($\underline{p} < .00001$, $\underline{N} = 60$).

Validity

In the college sample, scores on the A-DES were correlated with scores on the DES, yielding an $\underline{r}$ of .77 ($\underline{p} < .00001$, $\underline{N} = 46$). There was no difference in A-DES scores for the different test administration order ($t = -1.79$, $df = 42$, n.s.)

DISCUSSION

The results of this study provide support for the reliability and validity of the A-DES. The high split-half reliability and Cronbach's alpha provide evidence that the measure has good internal consistency. Furthermore, high test-retest reliability indicates that the A-DES is able to measure consistently over time. Last, the strong relationship between A-DES and DES scores in the college population is evidence of the concurrent validity of the A-DES.

Our study has limitations, however. The most notable limitation is that we used a small, convenience sample of largely homogeneous school students. This non-random sample greatly reduces the generalizability of the study. Furthermore, conclusions about the construct validity of the scale would have been strengthened by examining A-DES scores of adolescents known to have high levels of dissociation. Without these data, the validity conclusions reached in this study are preliminary.

Further research should be conducted in order to gather more validity evidence for the A-DES. Comparing A-DES scores to other constructs thought to be related to dissociation (e.g., fantasy proneness, openness to experience) would be valuable in assessing the validity of the measure. Outcome studies of adolescents in treatment for dissociative disorders would also help establish the construct validity of the A-DES.

If the A-DES does prove to be reliable and valid upon further study, it may be useful for several purposes. Because the A-DES is designed to measure dissociation in several different areas of normative dissociative phenomena such as dissociative amnesia, depersonalization, derealization, and absorption, researchers who wish to study normative processes in the adolescent population may be able to use the scale as a means of understanding various aspects of adolescent cognitive and emotional development and consciousness. Furthermore, the A-DES might be useful as a screening measure in some settings to identify those adolescents who are experiencing high levels of dissociation. This measure might aid clinicians by helping to quantify psychological symptoms that may be related to abuse or trauma histories. ■

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