FURTHER VALIDATION OF THE CHILD DISSOCIATIVE CHECKLIST

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ABSTRACT

The Child Dissociative Checklist (CDC) is a 20-item parent/adult observer report measure of dissociative behaviors. The processes of establishing the reliability, validity and limitations of such an instrument includes its use by different investigators and under different conditions. This study compared CDCs completed by parents and guardians of children with analogous dissociation scales completed by the children's primary therapists. In this sample the CDC had a Cronbach's alpha of .86 and was significantly correlated with the two clinician-completed measures of dissociation. The CDC was able to statistically discriminate between children diagnosed as having multiple personality disorder and dissociative disorder not otherwise specified. The results provide further evidence that the CDC is a useful, reliable and valid screening tool for the detection of pathological dissociation in children.

INTRODUCTION

The relationship between multiple personality disorder (MPD) and early childhood trauma was apparent to modern pioneers such as Cornelia Wilbur and Richard Kluft and led them to look for child and adolescent cases. By the late 1970s, children and adolescents with MPD were being identified and treated and clinicians specializing in dissociative disorders were collating clinical profiles to aid in the diagnosis of dissociative disorders in youth. This initial work led to the development of a number of informal "predictor lists," several of which have subsequently evolved into screening and diagnostic instruments.

The Child Dissociation Checklist (CDC) is derived from a predictor list circulated by Putnam during the early 1980s to protective service workers in the Washington, D.C. metropolitan area (Putnam, Helmers, & Trickett 1993). Although sometimes referred to as unpublished in the literature, it was in fact first published in 1982 as a footnote to an article by Elliot (Elliot, 1982) and again by Putnam in 1985 (Putnam, 1985). Over time the CDC has been updated; it has progressed through three major revisions (versions 1.2, 2.2 and 3.0) (Putnam et al., 1993). The version number and the month and year of the version's release are listed directly underneath the title on all authorized versions. Unfortunately, several unauthorized versions with altered questions and/or answer formats are known to be in circulation. The current CDC version (V 3.0 - 2/90) is a 20-item instrument in which the first 16 items are identical to the earlier 16-item version (V 2.2 - 2/88), which first was circulated in 1988.

The CDC is an observer report measure and uses a response format modeled on the Child Behavioral Checklist, a well-established, observer report measure for child and adolescent behavioral problems (Achenbach & Edelbrock, 1981). The directions ask the adult completing the measure to circle a response on a 3-point scale (2 = very true, 1 = somewhat or sometimes true, and 0 = not true) that best describes the child's behavior on a given item over the previous 12 months. The measure is intended to be completed by an observer who is familiar with the child's behavior across a number of contexts. The CDC is therefore primarily designed for use with parents, foster parents, teachers and other adults in close contact with the child. It has also been successfully used on inpatient and residential units by nursing staff and by raters in a preschool setting.

A copy of the CDC is available (see Appendix 1). The CDC is a public domain document freely available for reproduction, distribution and use without copyright restriction. Since unauthorized altered versions do not have the same validity and reliability as the CDC, it is unethical and misleading to circulate alterations of the CDC without clearly indicating the nature and authorship of any modifications. Authors of altered versions are responsible for establishing the reliability and validity of their modified versions.

The reliability and validity of the CDC has been partially established in prior studies by Malinosky-Rummel and Hoier (1991); Wherry, Jolly, Feldman, Adam, and Manjanatha (1994); and Putnam et al. (1993). Malinosky-Rummel and Hoier (1991) examined the CDC (version 2.2, 2/88 - referred to in their paper as the CDCL) in a study of 10 sexually abused girls and 50 comparison girls, age 7 - 13 years. They reported a mean score of 6.1 for the abused girls and 1.6 for the controls. These scores are similar to the mean scores reported for larger samples of sexually abused (6 ± 6.4) and com-

parison girls (2.3 ± 2.7) by Putnam et al. (1993). Malinosky-Rummel and Hoier (1991) reported a Cronbach's alpha of .784 (p < .001) and a test-retest correlation of r(60) = .732 (p < .001) for their sample as a whole. Wherry et al. (1994) reported on two studies in a single communication (Wherry et al., 1994). The first sample included 73 outpatients, ages 4-18, evaluated at a children's psychiatric clinic. Outpatient means were 6.92 ± 5.53 and did not differ by gender. No histories of abuse were available on outpatient subjects. The second study included 26 inpatients, age 4-12 years, admitted to an inpatient psychiatric unit. Inpatients were assessed for sexual abuse with abused subjects scoring significantly higher $(16.13\pm9.39 \text{ v}, 10.44\pm5.07)$ compared with non-sexually abused patients.

Putnam et al. (1993) reported the Spearman test-retest reliability over a one year interval to be rho = .69 (N = 73, p = .001) (Putnam et al., 1993). Individual item test-retest reliabilities ranged from rho = .57 (p = .005) to rho = .92 (p = .0001) with a median coefficient of rho = .735 (p = .0001). Cronbach's alpha for the overall sample (N = 181) was .95 (p < .0001). Split-half reliability was r(181) = .88, p = .0001. Partial construct validity was determined by Spearman rank order correlations between each item and item-corrected scale scores. These ranged from rho = .59 to rho = .79 (all p < .0001 or better). Criterion-referenced concurrent validity was demonstrated by a Kruskal-Wallis comparison (X^2 = 110.55, N=181, df=3, p<.0001) of scores across four groups: 1) sexually abused girls, 2) normal comparison girls matched to the sexually abused girls, 3) boys and girls with Dissociative Disorder Not Otherwise Specified (DDNOS), and 4) boys and girls with MPD. Pairwise comparisons demonstrated that the CDC was able to distinguish each subgroup from all other subgroups (Putnam et al., 1993).

The reliabilities and validities of a screening instrument such as the CDC are established by repeated use in different samples and by different investigators. This report presents further evidence of the reliability and validity of the CDC in children and adolescents with dissociative disorders. We examine: i) the internal reliability of the CDC; (ii) correlations between parent/guardian-completed CDCs and comparable therapist-completed scales for dissociative symptoms and behaviors; and iii) the ability of the CDC to statistically discriminate among different dissociative disorder diagnoses.

METHODS

Data Collection Instruments

The authors conducted a questionnaire study to evaluate the suitability of the *DSM* criteria drafted by one author (G.P.) for the proposed *DSM-IV* diagnosis of Dissociative Disorder of Childhood (DDoC) (Peterson & Putnam, 1994). Individual cases of children and adolescents with dissociative symptoms were studied by means of a questionnaire completed by a clinician involved with the case. In most instances the questionnaire was completed by the child's primary therapist. The questionnaire was derived from a data base developed to facilitate data collection in a two-site study of the clinical phenomenology of child and adolescent dissocia-

tive disorders (Hornstein & Putnam, 1992).

The questionnaire was organized into six parts. Part I consisted of an introductory section explaining the purpose of the study, confidentiality safeguards, information about the clinician completing the questionnaire, demographic information on the patient, and the setting and purpose of the clinician's contact with the child. Part II contained a 107item symptom checklist inquiring about behavioral problems, affective symptoms, dissociative symptoms, cognitive and thought disorder symptoms, post-traumatic symptoms, self-injurious and aggressive behaviors, school problems, anxiety symptoms and miscellaneous symptoms. For each item on the checklist, the clinician checked one of four possible options: "present," "past," "never," or "unknown." Part II ended with a brief section on IQ testing information inquiring about full scale, verbal and performance IQ data and the name of the IQ measure.

Part III inquired about trauma and maltreatment history. The clinician was asked to indicate whether the child had experienced the following: physical abuse, sexual abuse, neglect or abandonment, emotional abuse, death of a parent, domestic violence, or other traumas that could be specified by the respondent. For each trauma, the clinician was asked to indicate his/her degree of certainty ("well documented," "suspected," or "unknown") about the factuality of the experience. Part IV collected information on current and past DSM-III-R diagnoses received by the child, and on substance abuse. Part V collected information on the child's family, including inquiries about dissociative and other mental disorders in family members. Part VI consisted of a checklist for the proposed criteria for DDoC. The clinician was instructed to check all of the items that applied to each case. DDoC items were arranged in the A, B, C, and D groupings proposed by Peterson (Peterson, 1991).

In addition, each clinician was asked to have a parent, foster parent, guardian or other responsible independent adult observer complete a copy of the Child Dissociative Checklist (CDC) and return it with the questionnaire. This provided a second source of information on the case. If a second informant was not available, clinicians were permitted to completed to the CDC, but were asked to indicate that they done so by initialing the form. CDCs completed by clinicians were eliminated from this sample.

Sampling and Subjects

Copies of the questionnaire were distributed by one author (G.P.) under the auspices of the Department of Psychiatry of the University of North Carolina. Questionnaire distribution took several forms. Copies were mailed to clinicians known to be working with dissociative child and adolescent cases. Questionnaires were mailed to clinicians who were members of the International Society for the Study of Multiple Personality and Dissociation (ISSMP&D), a professional organization devoted to the dissociative disorders. Copies of questionnaires were also distributed during professional workshops and lectures given by Dr. Peterson and his associates on the subject of child and adolescent dissociative disorders. Distribution of questionnaires took place over the

TABLE 1 Child Dissociative Checklist Means, Medians and Modes

"Diagnostic Group"	Mean ± S.D.	Median	Mode	
Multiple Personality Disorder	23.6 ± 7.8	24	24	
Dissociative Disorder of Childhood	19.8 ± 8.6	20	18	
"Other" Dissociative Disorder	16.1 ± 6.7	15	12	

TABLE 2 Reliability

Scale	Cronbach's Alpha	Split Half Reliability
Child Dissociation Checklist	.86	.79
Clinician Dissociation Scale	.71	.51
DDoC Criteria Scale	.69	.53

TABLE 3 Spearman Rank-Order Correlations

	Clinician Dissociation Scale	DDoC Criteria Scale
CDC	.326 (p=.0015)	.363 (p=.0004)
Clinician Dissociation Scale		.612 (p=.0001)

period July, 1991 to July, 1993. Approximately 500 copies were distributed, but the precise number is not available because some respondents copied the questionnaire and redistributed it within their clinical networks. One hundred and twenty-three completed questionnaires were returned by 76 clinicians.

The sample used in this study differs somewhat from the sample used in the Peterson and Putnam DDoC criteria analyses (Peterson & Putnam, 1994). This sample was drawn from the same pool of 123 cases and includes all cases in which there was a CDC completed by an independent observer, usually a parent or foster parent, in addition to the therapist questionnaire. Questionnaires used in this study were returned by 62 therapists representing the following disciplines: 30.6% (19) psychiatrists, 16.1% (10) Ph.D. or Psy.D. psychologists, 24.1% (15) MSW social workers, 20.9% (13) masters level therapists, and 8% (5) other mental health workers.

Data Analysis

Using the DDoC criteria checklist provided in Part VI of the questionnaire, the sample was divided into three groups. Subjects were given a "diagnosis" of MPD if they met DSM-III-R criteria for MPD (DDoC criterion D). Cases were given a "diagnosis" of DDoC if they did not meet DSM-III-R criteria for MPD but did satisfy criteria for DDoC. Cases were given the label of "Other Dissociative Disorder" (ODD) if they did not satisfy criteria either for MPD or DDoC. Many of the members of the ODD group would probably qualify for a diagnosis of Dissociative Disorder NOS. Cases were grouped and analyzed by these three categories (MPD, DDoC & ODD).

Two scales were constructed from the clinicians' questionnaire responses to compare with the parent/guardian completed CDC's. A clinician's counterpart of the CDC, here referred to as the "Clinician Dissociation Scale," was constructed by taking items from the 107-item symptom and behavior checklist completed by therapists as part of the DDoC study. This scale includes 22 items that directly correspond to the CDC items. In two instances, two DDoC questionnaire items directly corresponded to a single CDC item and both were included on the Clinician Dissociation Scale. Each Clinician Dissociation Scale item was scored as "1" if the therapist reported the item as "present" or "past" and "0" if "never" or "unknown." A second scale, the "DDoC Criteria Scale", was constructed by summing the items composing the A, B and C sections of the DDoC criteria included in Section VI of the questionnaire. These items were scored as "1" if checked and "0" if unchecked.

Statistical Analysis

The CDC, Clinician Dissociation Scale and DDoC Criteria Scale scores were computed by summing their respective items. Cronbach's alpha and split-half reliablities were computed using SPSS-PC. The Clinician Dissociation Scale and the DDoC Criteria Scale have not been previously normed and validated. Therefore, non-parametric statistics were used to analyze group differences (Kruskal-Wallis and Mann-Whitney U Test) and correlations (Spearman rho) between scales. Although non-parametric statistics are used, group means are included in the text to better characterize response levels for the reader.

RESULTS

Demographic Analyses

The sample consisted of 96 cases, 67 (69.8%) female and 29 (30.2%) male. The mean age was 11.17 ± 4.19 years with a range of 3 - 19 years. Using the DDoC criteria in Part VI of the questionnaire, the sample was classified into three diagnostic groups: 50 (52.08%) MPD cases; 27 (28.12%) DDoC cases; and 19 (19.79%) ODD cases. There were no significant differences in age or gender by diagnosis.

Table 1 contains the CDC means, medians and modes by "diagnostic" group. Figure 1 shows the scatter of CDC scores by diagnostic group. Prior studies have indicated that a CDC score of 12 or higher is highly suggestive of significant dissociative psychopathology (Putnam et al., 1993; Putnam, Helmers, Horowitz, & Trickett, in press). In this sample, 92% of MPD cases, 78% of DDoC cases and 84% of ODD cases scored 12 or higher.

Reliability Analyses

Cronbach's alpha and split-half reliabilities were computed on the Child Dissociative Checklist (CDC), Clinician's Dissociation Scale and DDoC Criteria Scale (Table 2).

Validity Analyses

Kruskal-Wallis analyses of scale score by diagnosis were robustly significant for all three scales. Not surprisingly, the scale derived from the DDoC criteria on which the diagnoses were based yielded a strong group effect (tie-corrected H = 42.64, p < .0001). The Clinician Dissociation Scale, created from questionnaire items that directly correspond to CDC items, was strongly significant (tie-corrected H = 30.55, p < .0001). The independently (parent/guardian) completed CDC was also significant across the three diagnostic groups (tie-corrected H = 14.03, p = .0009). Post-hoc pairwise Mann-Whitney U tests demonstrated that Clinician Dissociation Scale and the DDoC Criteria Scale could differentiate each diagnostic group from the other two diagnoses. The CDC could differentiate between cases of MPD and DDoC (tie-corrected Z score = -1.98, p = .04) but not between DDoC and ODD (tie-corrected Z = -1.61, p = .1). Figure 1 shows the distribution of CDC scores by DDoC criteria "diagnostic" group.

Since the division of non-MPD cases into DDoC and ODD categories is based on proposed criteria, another analysis was conducted in which the DDoC and ODD cases were lumped together under the diagnosis of Dissociative Disorder Not Otherwise Specified (DDNOS). CDC scores robustly distinguished the MPD cases from the combined pool of DDNOS cases (Mean MPD = 23.66, DDNOS = 18.2, tie-corrected Z

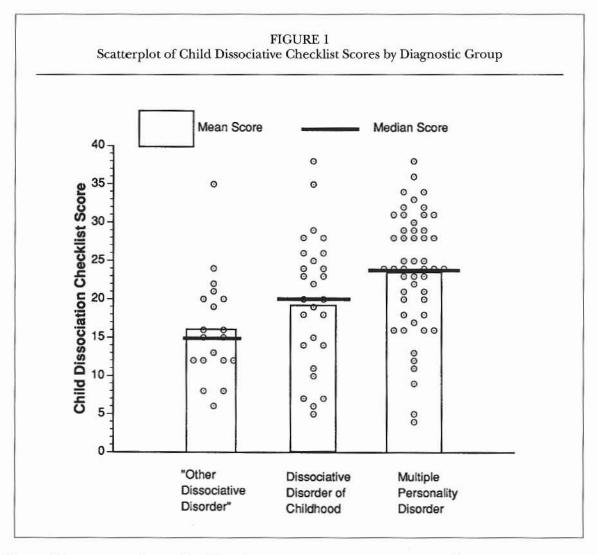
= -3.35, p = .0008).

Table 3 contains the non-parametric (Spearman Rank-Order) correlations among the three scales. As would be expected, the Clinician Dissociation Scale and the DDoC Criteria Scale composed of items completed by the same individual are more highly correlated with each other than with the CDC which was completed by an independent observer. Nonetheless, the parent/guardian CDC is significantly correlated with these two measures, providing evidence that the CDC has good criterion validity.

DISCUSSION

Limitations of the Study Design

Temporal and fiscal necessity dictated the adoption of a questionnaire approach to testing the feasibility of the proposed DDoC criteria. (The interested reader may study Peterson and Putnam 1994 for an account of the design and circumstances of this study). The sample was contributed by therapists interested in childhood dissociative disorders and therefore may not be representative of the larger pool of child and adolescent dissociative patients. We were not able to verify the "diagnoses," nor were we able to standardize



the definitions of the symptoms in the checklists that comprised the two therapist-completed scales. These methodological constraints limit the validity of the "diagnoses" used to group subjects in this study and should be kept in mind by the reader.

Validity and Reliability of the CDC

Despite its limitations, this study provides another useful examination of the performance of the CDC across a range of clinical settings. The CDC, like the highly successful Dissociative Experiences Scale (DES) (Bernstein & Putnam, 1986), is intended to be a simple, cost-effective screening device for the detection of dissociative disorders in children and adolescents. The purpose of this study was to examine the internal reliability of the CDC and to assess its validity against reference criteria. The results of the reliability analyses conducted on this sample of CDCs are comparable to those previously reported in the literature (Malinosky-Rummell & Hoier 1991; Putnam et al., 1993; Wherry et al., 1994). The CDC shows good internal consistency across a number of samples and has test-retest reliabilities equal to or better than most parent report measures of child behavior

Validity was assessed by comparing the CDC with therapist measures of dissociation and by determining if the CDC could differentiate between MPD and other dissociative diagnoses. The correlations between the CDC and the two therapist-completed scales were significant, albeit in the moderate range (rho = .32-.36). The CDC was able to discriminate MPD cases from the DDoC and ODD cases, but was not able to differentiate between DDoC and ODD cases. The clinical significance of the distinction between the "diagnoses" of DDoC and ODD remains to established (Peterson & Putnam, 1994). As most of these cases would qualify for a diagnosis of DDNOS, a second analysis was conducted in which DDoC and ODD cases were lumped together. In this study, as in two prior studies, the CDC was able to robustly differentiate the heterogeneous pool of DDNOS cases from MPD cases (Hornstein & Putnam, 1992; Putnam et al., 1993). The ability of the CDC to statistically discriminate among dissociative disorder diagnoses in both clinical and questionnaire samples indicates that it has good sensitivity and specificity. Prior studies including non-clinical comparison subjects have established that the CDC can readily distinguish between normal and pathological dissociation in children (Putnam et al., 1993).

The results of this study, taken together with prior studies, indicate that the CDC is a useful, reliable and valid screening tool for the detection of pathological levels of dissociation in children. However, the CDC is not a diagnostic instrument. Dissociative disorder diagnoses must be made by a clinical or structured diagnostic interview that determines if the subject fulfills DSM criteria for a given disorder. The CDC is designed to serve as a clinical screening tool and as a research instrument for quantifying dissociation. Research in progress includes factor and taxometric analyses of CDC items, child and adolescent twin studies of the genetic contributions to dissociation, and longitudinal analyses of dissociative developmental trajectories in non-clinical and clinical samples. A recent CDC study demonstrated that traumatically associated dissociation was not accompanied by increases in hypnotizability in sexually abused girls (Putnam et al., in press.)

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APPENDIX 1

The Child Dissociative Checklist (CDC), Version 3.0. This scale may be reproduced and distributed without special permission.

CHILD DISSOCIATIVE CHECKLIST (V 3.0-2/90) Frank W. Putnam, M.D., Unit on Dissociative Disorders, LDP, NIMH

Date	:	_ A	lge:	Sex: M F Identification		
Below is a list of behaviors that describe children. For each item that describes your child NOW or WITHIN THE PAST 12 MONTHS , please circle 2 if the item is VERY TRUE of your child. Circle 1 if the item is SOMEWHAT or SOMETIMES TRUE of your child. If the item is NOT TRUE of your child, circle 0 .						
0	1	2	1.	Child does not remember or denies traumatic or painful experiences that are known to have occurred.		
0	1	2	2.	Child goes into a daze or trance-like state at times or often appears "spaced-out". Teachers may report that he or she 'daydreams' frequently in school.		
0	1	2	3.	Child shows rapid changes in personality. He or she may go from being shy to being outgoing, from feminine to masculine, from timid to aggressive.		
0	1	2	4.	Child is unusually forgetful or confused about things that he or she should know, e.g. may forget the names of friends, teachers or other important people, loses possessions or gets lost easily.		
0	1	2	5.	Child has a very poor sense of time. He or she loses track of time, may think that it is morning when it is actually afternoon, gets confused about what day it is, or becomes confused about when something happened.		
0	1	2	6.	Child shows marked day-to-day or even hour-to-hour variations in his or her skills, knowledge, food preferences, athletic abilities, e.g. changes in handwriting, memory for previously learned information such as multiplication tables, spelling, use of tools or artistic ability.		
0	1	2	7.	Child shows rapid regressions in age-level of behavior, e.g. a twelve year-old starts to use baby-talk, sucks thumb or draws like a four year-old.		
0	1	2	8.	Child has a difficult time learning from experience, e.g. explanations, normal discipline or punishment do not change his or her behavior.		
0	1	2	9.	Child continues to lie or deny misbehavior even when the evidence is obvious.		
0	1	2	10.	Child refers to him or herself in the third person (e.g. as she or her) when talking about self, or at times insists on being called by a different name. He or she may also claim that things that he or she did actually happened to another person.		
0	1	2	`11.	Child has rapidly changing physical complaints such as headache or upset stomach. For example, he or she may complain of a headache one minute and seem to forget all about it the next.		
0	1	2	12.	Child is unusually sexually precocious and may attempt age-inappropriate sexual behavior with other children or adults.		
0	1	2	13.	Child suffers from unexplained injuries or may even deliberately injure self at times.		
0	1	2	14.	Child reports hearing voices that talk to him or her. The voices may be friendly or angry and may come from 'imaginary companions' or sound like the voices of parents, friends or teachers.		

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- 1 2 15. Child has a vivid imaginary companion or companions. Child may insist that the imaginary companion(s) is responsible for things that he or she has done.
 1 2 16. Child has intense outbursts of anger, often without apparent cause and may display unusual physical strength during these episodes.
- 0 1 2 17. Child sleepwalks frequently.
- 1 2 18. Child has unusual nighttime experiences, e.g. may report seeing "ghosts" or that things happen at night that he or she can't account for (e.g. broken toys, unexplained injuries).
- 0 1 2 19. Child frequently talks to him or herself, may use a different voice or argue with self at times.
- 2 20. Child has two or more distinct and separate personalities that take control over the child's behavior.