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A Correlational Study of the Personality Inventory for Children, the Piers-Harris Children's Self-Concept Scale and the Devereux Child Behavior Rating Scale

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A CORRELATIONAL STUDY OF THE PERSONALITY INVENTORY FOR CHILDREN, THE PIERS-HARRIS
CHILDREN'S SELF-CONCEPT SCALE AND THE DEVEREUX CHILD BEHAVIOR RATING SCALE.
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BY

Luis J. Rivero

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1980

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A CORRELATIONAL STUDY OF THE PERSONALITY INVENTORY
FOR CHILDREN, THE PIERS-HARRIS CHILDREN'S
SELF-CONCEPT SCALE AND THE DEVEREUX
CHILD BEHAVIOR RATING SCALE

BY

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ABSTRACT OF A THESIS

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Abstract

In order to assess the validity of the Personality Inventory for Children (PIC) and establish the relationship between its clinical scales and two other well established child personality assessment devices the PIC and Devereux Child Behavior Rating Scale (DCB) were completed by mothers of twenty clinic referred children (M age=9-11) and twelve randomly selected children (M age=11-8) from a rural community. In addition, all of the children were administered the Piers-Harris Children's Self-Concept Scale. The results support the conclusion that the PIC and the CSCS possess sufficient discriminant validity to warrant their use as a diagnostic instrument although the validity of certain scales needs further assessment. The hypothesis that significant differences would exist in the CSCS scores obtained from the clinic and control samples was strongly supported. Of the sixteen PIC clinical scales ten differed at a significant level between groups. Only one of the DCB factors (Factor I: Conduct-disorder) differed significantly between the two groups.

As hypothesized ten of the sixteen PIC scales were significantly inversely correlated with self-esteem. An interesting occurrence which warrants future investigation is that five of the six scales which failed to correlate inversely were also scales which failed to discriminate between the two groups.

Also as expected, several of the PIC scales correlated significantly with the three DCB factors thus providing further evidence of their validity.

Some hypotheses were drawn about children referred to a Mental Health Center. However caution should be used in interpreting these findings as controls for many variables were not used in the selection of the groups. Referred children tend to be under-achievers, have lower intellectual abilities and be developmentally delayed. Also, depression and the presence of delinquent behaviors, hyperactivity and lack of social skills are characteristic of this group. Finally, there is a greater degree of psychoticism and lower self-esteem.

TABLE OF CONTENTS

	<u>Page</u>
List of tables.....	iii
Acknowledgements.....	iv
Introduction.....	1
Rationale.....	1
Significance of the study.....	2
Statement of the problem.....	2
Limitations of the study.....	3
Hypotheses.....	4
Review of the Literature.....	5
Validity of objective and self-report assessment.....	5
Sources of distortion in self-reports and parental reports.....	7
Validity and reliability of the Devereux CBRS.....	11
Piers-Harris children's self-concept scale.....	13
Personality inventory for children.....	17
Method.....	22
Subjects.....	22
Informants.....	22
Subjects as informants.....	23
Instruments.....	23
Procedure.....	26
Results.....	28
Analysis.....	28
Results.....	28
Table I.....	30
Table 1.....	31

	<u>Page</u>
Table 2.....	32
Table 2.....	33
Table 2.....	34
Table 3.....	36
Table 3.....	37
Table 3.....	38
Table 4.....	39
Table 4.....	40
Table 4.....	41
Discussion.....	42
Discriminant Validity.....	42
Correlations among PIC, CSCS and Devereux Factors.....	45
References.....	46

LIST OF TABLES

<u>Table</u>	<u>Page</u>
1 Mean scores obtained on PIC scales, CSCS and DCB factors by clinic and control samples.....	30,31
2 Pearson product-moment correlations for PIC scales, CSCS and DCB factors; pooled sample (N=32).....	32,33,34
3 Pearson product-moment correlations for PIC scales, CSCS and DCB factors; clinic sample (N=20).....	36,37,38
4 Pearson product-moment correlations for PIC scales, CSCS and DCB factors; clinic sample (N=12).....	39,40,41

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CHAPTER I

IntroductionRationale

The development of valid personality assessment devices or tools for measuring behavior and personality remains a difficult challenge for the field of psychometry. This study involves the collection of empirical data which describes the relationships between different behavior samples (tests, checklists, rating scales, etc.), and thereby hopes to validate a promising new instrument and study the relationship between personality test scores and behavior ratings.

In recent years, numerous new pencil and paper assessment devices have become available to clinicians, social workers, counselors, and psychiatrists. One such device within the realm of personality assessment is the Personality Inventory for Children (PIC). The PIC, only recently published in 1977, was designed to "provide comprehensive and clinically relevant personality descriptions of individuals primarily in the range from six to sixteen years of age" (Wirt, Lachar, Seat and Klinedinst, 1977). In the two years following its publication, research on the validity, reliability and other dimensions of the PIC, has been limited to two studies. These studies describe the correlations between the PIC and several problem behavior factors. It is the author's intent to evaluate the PIC's potential as a clinically useful tool for the assessment of child behavior pathology.

Significance of the Study

One purpose of this study was to explore the construct validity of the PIC by determining the correlations between its clinical scales and scores obtained from two other established assessment devices:

(1) Three higher order factors found to compose the Devereux Child Behavior Rating Scale (Spivack and Spotts, 1966) (DCB) and, (2) the Piers-Harris Children's Self-Concept Scale (Piers and Harris, 1964) (CSCS).

A second purpose was to assess the discriminant validity of the PIC, the CSCS, and the three higher order factors of the DCB (Schaeffer and Millman, 1973) by comparing the scores from two groups. The first consisting of clinic referred children who were experiencing behavioral problems and the other consisting of children of similar age and education but lacking such behavior pathology.

The findings of this study are expected to contribute to the validation of the PIC as well as provide a basis for future research on this device. Also the correlations established between the DCB, PIC, and CSCS will add to the understanding of the relationships among the behaviors measured by each device. If further research can demonstrate that the PIC is a valid indication of a child's problem, then it will certainly be a valuable contribution to clinical practice with children.

Statement of the Problem

First, the study sought to determine the empirical correlations between the 16 clinical scales of the PIC and the self-esteem

score obtained on the CSCS for two groups of subjects. This relationship is expected to indicate that a score indicating maladjustment on the PIC should be related to low self-esteem.

Secondly, the study proposed to investigate the possible existence of correlations between the 16 clinical scales of the PIC and the three higher-order behavior factors found in the DCB (Schaeffer and Millman, 1973). It is expected that the behavior pathology reported by others should be reflected in the parental ratings of actual behavior.

It is the author's intent that this data be used as a means of evaluating further the PIC as a clinical instrument as well as to generate future research into the relationship between the several constructs measured by these devices.

Limitations of the Study

External Validity (1) Generalization of the results are restricted to subjects of similar age, socioeconomic, geographic and ethnic origin. This study was conducted in a rural central Illinois community using clients referred to a mental health center and randomly selected school children. These findings apply to the device's use with children of similar upbringing, age and experiences.

Internal Validity (1) Those restrictions imposed by the instruments and techniques used themselves. With the CSCS the willingness of the respondent to honestly reveal how he feels about himself is a limitation of the device. With both the DCB and the PIC the informant's honesty and accuracy in describing the subject's behavior is a limitation of both devices.

Hypotheses

The author hypothesizes that the relationship between the clinical scales of the PIC, the raw score of the CSCS and the three higher order factors of the DCB for both groups will be as follows:

Hypotheses 1. The CSCS raw scores will be inversely related to the standard scores on the following PIC Scales: Adjustment, Achievement, Intellectual Screening, Development, Somatic Concern, Depression, Family Relations, Delinquency, Withdrawal, Anxiety, Psychosis, Hyperactivity and Social Skills.

Hypotheses 2. The CSCS raw scores will be inversely related to the raw scores composing the three higher order factors of the DCB.

Hypotheses 3. The raw scores composing Factor I (Conduct Disorder) on the DCB will correlate positively with standard scores on the PIC's Adjustment Scale and Delinquency Scale.

Hypotheses 4. The raw scores composing Factor II (Personality Disorder) on the DCB will correlate positively with the standard scores on the PIC's Adjustment Scale, Social Skills Scale, Withdrawal Scale and Anxiety Scale.

Hypotheses 5. The raw scores composing Factor III (Inadequacy - Immaturity) on the DCB will correlate positively with standard scores on the PIC's Adjustment Scale, Development Scale and Delinquency Scale.

Hypotheses 6. There will be significant differences on the CSCS scores obtained for the clinic group and those from the control group.

Hypotheses 7. There will be significant differences on the DCB

Factor scores obtained from the clinic and control groups.

Hypotheses 8. There will be significant differences in the average PIC profile obtained from the clinic group and that from the control group.

Review of the Literature

A review of the literature pertaining to the validity and reliability of the three devices used in this study is presented in this section. In addition, a review of the validity of objective (self-report) assessment and a review of the sources of distortion in self and parental reports are provided.

Validity of Objective and Self-Report Assessment. In a critique of objective techniques on personality assessment, Meehl (1972) opts for the use of objective techniques on the basis of temporal economy and moderate validity. In his words:

A device that takes negligible time for the skilled clinician to administer or interpret is often worth using even when the inferences it permits are of only moderate validity.

Meehl concludes that objective tests at their current level of development possess enough construct, concurrent and predictive validity to warrant their use.

Scott and Johnson (1972) argue that it is a distinct possibility that the invalidity of self-reports, which may be due to various distortions (eg. defensiveness, social desirability, faking, etc.), has been "over-rated". They suggest that with proper attention to encouraging

subjects to be truthful, low validity may be avoided.

Along more empirical lines, Walsh (1967) using a questionnaire method of collecting self-report data (biographical) concluded that the information gathered by this means showed evidence of validity for subjects under varied conditions. Walsh, in reviewing the literature regarding the validity of interview data, stated that 13 of the 27 studies he examined described interview data as having high validity, nine of these were of low validity and the results of the remaining five were not clear. Similarly, of seven studies reviewing the accuracy of questionnaire data he found that three were of high validity, and four suggested low validity. Furthermore, studies with college students have demonstrated that self-descriptions are relatively reliable sources of data (Geer, 1965; Lanyon and Manosevitz, 1966) and display a moderate correlation with other instruments which measure conceptually relevant and theoretically related dispositions (Geer, 1965; Crossbery and Wilson, 1965).

With respects to content validity, Thomas (1974) argues in favor of self-report measures by pointing out that critics of these objective techniques fail to consider that self-report is behavior. Also, he points out that data obtained by means of self-report has not been proven to be significantly more unreliable or invalid than that obtained by other means.

Perhaps a follow-up to Thomas' argument that self-report is behavior is Ebel's (1961) assertion that all reliable tests are valid since they are measures of themselves.

Upon reviewing the literature on self-report, Bellack and Hersen (1977) conclude:

Not only is the status of the verbal report relatively secure at this time, but the number of self-report inventories currently being developed by behaviorists is increasing.

Walter Mischel (1970) sums up his impressions of the validity and reliability of self-report information by stating, "Perhaps people often really are the best sources of information about themselves and their future" (p. 324).

The key issue then does not appear to center around whether or not self-report or objective measures of personality assessment can be valid, but rather under what conditions are they valid. However, Linehan (1977) suggests:

It would be a mistake to conclude that, because these sources of invalidity exist, all information obtained in the clinical interview is invalid. Instead, these findings suggest under what circumstances the information is most likely to be inaccurate and under what circumstances it is likely to be fairly accurate. (p. 44)

Sources of Distortion in Self-Reports and Parental-Reports. To accept all self-report measures obtained under all conditions as valid and reliable would be, at best, unwise. Cannell and Kahn (1968) in reviewing the multitude of factors which may interact to invalidate verbal reports identify three major sources which contribute to their

invalidity. They are: accessibility of information, cognitive factors and motivation. Colloquially expressed, these may be stated as remembering or forgetting the information asked, understanding what is being asked and the subject's reasons for being truthful or distorting the information. It is obvious that the interaction of these variables must be taken into account when evaluating the validity and reliability of any self-report measure.

Cronback (1960) suggests that accuracy of self-report data is also directly related to the specificity and concreteness of the wording of the question being asked.

Similarly Bellack (1977) asserts that:

Generally the greater the specificity of the question (eg. When and where do you feel depressed?) and the greater the extent of qualification (eg. On a scale of 1-7, how fearful are you?), the more meaning and generality a response is likely to have. (p. 58)

This notion is further supported in a study by Simpson (1944) which found that 50% of his subjects assigned the term "usually" to events which occurred between 70% and 90% of the time, 25% assigned it to events occurring less than 70% of the time. These findings were similar for terms such as, frequently, seldom, rarely, etc.

In general, the less specific and concrete the wording (eg. usually), the greater the probability of idiosyncratic interpretations of what that question is asking. Consequently, the interpretative distortions which account for the invalidity of the response may be reduced by increasing

the concreteness and specificity of the question being asked.

Parental reports of a child's behavior seem to possess the general validity characteristics which are evident in self-report data. That is, they may be just as valid but are subject to the same distortions as other self-report measures. Yarrow, Campbell and Burton (1970) compared mother's recollections of early childhood history to objective data obtained from various sources. They concluded that mother's tended to describe their child's early behavior as representative of social stereotypes and sex-appropriate behavior. In general they tended to describe the earlier years as "ideal". Data pertaining to more objectively measurable aspects of their child such as height, weight, etc. was more accurately recalled than personality variables.

The correct chronological recall of the occurrence of an event has been studied by Chess, Thomas and Birch (1966) who investigated the "timing" of maternal reports and concluded that distortions in reporting the timing of difficult behavior were related to the current popular explanations for those behaviors such as the birth of a second child.

Robbins (1963) in her study of the accuracy of parental recall of aspects of child rearing practices, concluded that parental reports were inaccurate with respects to early developmental practices and progress. Furthermore, the inaccuracy tended to be in the direction of recommendations made by experts in the field of child rearing. The study also supported the notion that mothers tended to recall information more accurately than did fathers.

In regards to social desirability bias, McCord and McCord (1961)

suggest that it can be a major source of distortion in parental reports of a child's behavior as they conclude in their study, "It would appear therefore, that the validity of the interview was marred by the parents' tendency to make their picture of family life conform to cultural stereotypes". (p.185)

Evans and Nelson (1977) summarized the distortions which have been found in parental reports as follows:

Factual events in the child's developmental history are much more likely to be accurately reported than parental attitudes, feeling states and child rearing practices. Accuracy does not seem to be increased by repeated questioning, but it can be improved by diagrams and by precise statements of the information required. There tends to be poor recall of information related to: 1) neo-natal injuries or complications, 2) childhood illnesses, 3) early attitudes regarding the arrival of the baby and, 4) clinic-referred behavior problems." (p. 616)

Accuracy of parental recall and validity of information gathered may be improved through the use of verbal qualifications of degree or frequency (Bellack and Hersen, 1977). However, although these allow for some restraint on responses they are still subject to distortion. A study by Novick, Rosenfeld and Dawson (1966) concluded that the use of symptom list endorsements by mothers could potentially be misleading.

Evans and Nelson (1977) conclude that checklists are subject to the same sources of error as parental reports of their children and

that a tendency to present an optimistic picture is likely to occur. With respects to a child's response to more structured self-report measures such as questionnaires, a study by Gorusch, Henighan and Barnard (1972) which investigated the relationship between a child's verbal capacities and responses on a locus of control scale concluded that children with lesser language capacities tended to respond randomly. The authors warn of the importance of considering the child's language capacities when completing any self-report devices which requires their reading items.

Clearly then, the available research literature would indicate that data obtained from any self-report device may or may not be valid and reliable. The notion that it cannot be valid because of personality components (ie. subconscious defenses) does not seem well supported at this time. It is up to the clinician then to develop a critical attitude, which bases itself upon the probability that distortions in self-reports will occur; with this attitude they can then assess the validity and reliability of the information gathered.

Validity and Reliability of the Devereux CBRS. The DCB was developed for primary use with disturbed children ranging in age from 8 to 12. It consists of 97 items (behavioral descriptions) which the informant, usually the child's mother, rates on a scale ranging from 1 to 5 or 1 to 9 depending upon such things as frequency, degree and intensity of the behavior. The items used were derived from studies based upon three groups: 252 "atypical" children in four live-in treatment centers, 348 school children and 100 retarded children from a state facility.

The reliability data reported in the manual suggests adequate interscorer reliability ranging from .77 to .93 with a median of .83. These correlations are based on 68 ratings of 140 children at Devereux schools. Test-retest reliability over a one week period is reported at .83 with a quartile range from .79 to .88. The authors employing the same data used in the test-retest reliability study obtained factor score reliability coefficients. The median coefficient was .91 with a range from .80 to .99.

Contrary to the author's findings, Millman and Davis (1975) report in their study of the DCB's reliability interrater reliability coefficients which are much lower than those reported in the manual. Also five factors on the scale were found to have unacceptable reliability. This is consistent with Schaeffer and Millman's (1973) findings that the 17 factors reported on the DCB were too unreliable and best reduced to a more reliable group of higher-order factors: Conduct disorder, personality disorder and inadequacy-immaturity.

Ross and Gallagher (1976) investigated the sensitivity and reliability of the DCB and also obtained results which suggests that the test-retest reliability of the instrument was unacceptable. Despite these findings they supported the use of the DCB on the basis of it's viability as an evaluation instrument.

With respects to the validity of the DCB, Gregory (1977) correlated ratings on the DCB with emotional indicators found on the Bender Gestalt. The results support the validity of the DCB in that five factors correlated significantly with the total number of emotional indicators. The

implications are that certain DCB factors are predictive of emotional problems.

Similarly, Nelson (1971) concluded that the ability to differentiate children with an adapted version of the DCB correlated significantly with data taken from direct behavioral observation. He concluded that the Inability to Delay and Social Aggression factors of the DCB were both valid and reliable measures of important aspects of children's functioning.

Forbes (1978) in studying the DCB's ability to distinguish between hyperactive and behaviorally disturbed children concluded that the DCB was able to differentiate the two groups and therefore was clinically useful.

In summary, although it appears that the test-retest reliability of the DCB is questionable there appears to be evidence to support its usefulness as a measure of certain forms of child pathology. It is clear, however, that as research on the device has been rather limited any conclusions drawn are subject to the limitations imposed by the small amount of literature available on the device.

Piers-Harris Childrens Self-Concept Scale (CSCS). The CSCS consists of 80 items which were derived from Jersild's (1952) categories. All items are written in the first person declarative tense, eg. "I am easy to get along with". The child responds in a yes or no manner depending upon whether he/she feels the statement is "generally like" him/her.

The CSCS was standardized on 1,183 children in grades 4 - 12 all

from one Pennsylvania school district. The median raw score obtained was 53 and the mean was 51.84.

With respects to the reliability of the CSCS the data available is from the original standardization group which used the original 95 items scale (Piers and Harris, 1964). In order to judge the internal consistency of the test, the Kuder Richardson Formula 21 (KR21) was used. Results yielded coefficients ranging from .78 to .93.

As a further measure of internal consistency the Spearman-Brown odd-even formula was used for one half of the grade 6 and grade 10 sample. The resulting coefficients were again quite high, .90 and .87 respectively. To assess its temporal stability a four month test-retest of one half of the standardization sample resulted in coefficients of .72, .71, and .72 for grades 3, 6, and 10 respectively. Using the revised 80 item scale Wing (1966) on an Oregon Public School sample obtained a .77 test-retest coefficient for both a two and four month test-retest interval. The authors conclude that the scale has good internal consistency and adequate temporal stability (Piers and Harris, 1969).

An initial attempt was made by the authors to build content validity into the scale by defining the criteria to be measured as the aspects children liked or disliked about themselves (Jersild, 1952). Several studies support the concurrent validity of the CSCS. Mayer (1965) for example correlated scores on the CSCS with scores on Lipsitt's CSCS (1958) and obtained a significant correlational coefficient of .68 for a sample of 98 special education students, 12 - 16 years of age.

Similarly Cox (1966) compared scores on the CSCS with Problems

checked on the SRA Junior Inventory for 97 children in grades 6 - 9. A correlation of $-.64$ was obtained. This has significant implications for the construct validity of the instrument since the hypothesis that children with few major problems would have higher self-esteem was supported. Additional support for this lies in Coopersmith's (1967) findings that children with low self-esteem tended to have major problems such as academic failure. Furthermore, Smith and Rogers (1977) in a study designed to investigate the hypothesis that low scores were invalid because of respondent unreliability, concluded that generally, low, middle and high scores on the CSCS were valid measures and specifically that low scores were not due to random responding or respondent unreliability.

Ullmann (1952) and Powell (1948), all have reported slight correspondence between children's self-report and peer and teacher ratings. Piens (1965) obtained correlations with a sample of fourth and sixth grades which varied from non-significant to $.49$. Similarly, Cox (1966) using subjects in the sixth through ninth grades found that CSCS scores correlated significantly, $.43$ and $.31$, for teacher and peer ratings of socially effective behavior.

Further evidence of validity is provided by Hugo's (1969) investigation of the effects of group counseling on self-esteem. Although no significant differences due to group counseling were found the CSCS did obtain a significant correlation with the Coopersmith Self-Esteem Behavior Scale.

Conversely, a validity study by Cowan (1978) which compared four self-report concept measures: Bledsoe Self-Concept Scale, Self-Esteem

CHARLESTON, ILL. 61899

Inventory, Purdue Self-Concept Scale and the CSCS failed to establish the convergent validity of the tests. Cowan states that the results suggest that self-concept, anxiety and social desirability may be separate dimensions of adjustment that interact with each other.

In a review of self-concept instruments Shavelson et al (1976) conclude that:

There is some evidence to suggest that total scores on the WIFAM (CSCS) warrant self-concept interpretations. However, this statement is based on convergent validity coefficients - correlations of scores on WIFAM with other measures of self concept. (p. 431)

Similarly Shreve (1973) in a critical review of the validity and reliability of four self-concept devices rated the CSCS with respects to seven and six essential criteria for validity and reliability respectively. He concluded that:

Although no instrument was judged to have met all 13 major reliability and validity standards each scale had it's strengths, the most nearly satisfactory test being the Piers-Harris Childrens Self- Concept Scale. (p. 625)

In summary then, the literature supports the validity and reliability of the CSCS as a measure of self-esteem. The components and dimensions of self-esteem however cannot be validly defined from the existing factor analytic studies performed on the CSCS.

Personality Inventory for Children. The Personality Inventory for Children (PIC) was designed to "provide comprehensive and clinically relevant personality descriptions of individuals primarily in the range from six to sixteen years of age" (Wirt, Lachar, Klinedinst, Seat, 1977). Personality profiles and clinically relevant data can also be obtained from children between the ages of three and five. The booklet contains 600 items, relevant to a child's behavior, attitudes and family relationships, which can be answered in a "true" or "false" fashion depending upon the respondent's opinion of the child. The most useful respondent, according to current research, is the biological mother (provided she has lived continuously with the child). "Helpful insights" can be obtained from PIC forms completed by anyone of numerous other sources familiar with the child. These include, fathers, step-parents, foster parents, and others who have known the child well since childhood.

Thirty-three scales representing different dimensions of a child's personality are obtained from a completed inventory. The 16 scales judged to be the most important (based on factor loadings) have been included on profile sheets on which T scores, derived from the raw scores obtained on each of these 16 scales, are plotted. Each profile then, contains three validity scales, a screening scale for general maladjustment and 12 clinical scales. The Lie (L) and F scales are validity determinants used to identify response sets used by the informant during the evaluation. The Defensive scale (DEF), also designed to increase the instruments validity, measures the informant's tendency to be defensive about their child's behavior. The Adjustment scale (ADJ) serves

and key these items with respects to placement in a particular scale. These were further exposed to refinement in the form of interval consistency item analysis. Interval consistency estimates ranged from .72 to .89.

As the items for the PIC were originally developed largely on a rational basis (Wirt and Broen, 1958), face validity was incorporated into its construction. The test content "appears" relevant and appropriate to the test's function. There are few items which do not appear to be related to a child's behavior.

The PIC, because of its partial empirical foundation, has incorporated into it a high degree of concurrent validity. Concurrent validity for the PIC has been established using one of two methods for each respective scale. Either the scale was constructed using correlations with a selected criterion group (Hampton, 1970), or by using the correlation between an item and the criterion, established by a group of expert judges (Klinedinst, 1975). Therefore, a high correlation between the test items or scale and the behavior which it describes insures that the test has adequate concurrent validity.

Depending upon who the informant on the protocol is, the concurrent validity of the test is likely to be affected. A study by Roskos (1974) designed to investigate the degree of similarity between mother's and father's responses indicated that there are significant differences between the respondent's protocols.

Factor analytic studies of the PIC (Lachar, 1975) indicate the emergency of five factors composed of different scales.

as a screening device to identify children who are in need of psychological evaluation and as a general measure of poor psychological adjustment. The clinical scales are: Achievement (ACH), Intellectual Screening (IS), Development (DVL), Somatic Concern (SOM), Depression (D), Family Relations (FAM), Delinquency (DLQ), Withdrawal (WDL), Anxiety (ANX), Psychosis (PSY), Hyperactivity (HPR) and Social Skills (SSK).

There are three reported temporal reliability studies completed on the PIC (Wirt, Lachar, Klinedinst, Seat, 1977). In the first study, the PIC was completed on two separate occasions by the mothers of children being evaluated as outpatients. A total of 34 test-retest pairs were obtained from the population. Controls were established to decrease variance due to variables such as psychotherapy, chemotherapy, etc. The interval between test administrations was randomized with the average interval being 15.2 days (SD 12.99). The sample was composed of 22 boys and 12 girls aged 5 - 2 to 14 - 7. The range of the testing sessions was from 4 days to 75 days. The average reliability coefficient for the 16 profile scales was .86. Only one scale, DEF, failed to achieve significant correlations ($r_{pm} .46$). The authors argue that since DEF measures an aspect of informant response set the variance may be due to differences in the mother's defensiveness over time.

A second study (Wirt et al, 1977) which obtained 46 test-retest protocols (25 boys and 21 girls) was completed using intervals which ranged from 13 to 102 days and averaged 50.96 days (SD = 27.13). The children were between 4 - 14 and 6 - 11 years of age and averaged 112.24 months in age. The average test-retest reliability coefficient for the 16

profile scales was .71. Several of the profile scales F, DEF, IS, and DLQ obtained questionable correlation coefficients of .39, .50, .51, and .56 respectively.

The third reliability study (Wirt, et al, 1977) which had as its population normal children was carried out using a shorter test-retest interval. Fifty-five pairs of protocols were obtained from 34 boys and 11 girls between the ages of 5 - 0 and 11 - 0. The average correlation coefficient for the protocols and scales was higher than in both studies previously reported ($r_{pm} = .89$). As in the two previous studies the lowest correlation coefficients were with the DEF and INF scales. These were .70 and .68, respectively.

Although the PIC relies on an empirical approach to scale construction (Klinedinst, 1975), many of the items which were originally written (Wirt and Broen, 1958) were based partially on empirical research but largely on a rational basis. As previously mentioned Patterson (1956) had identified several personality factors based upon his behavioral observations of children. This was a major source of item selection as behaviors which were relevant to particular personality factors were selected for the PIC. Furthermore, item selection depended heavily on sample behaviors elicited from a review of case files from child guidance clinics and from the author's clinical experience with normal and disturbed children (number of cases is unknown).

For several of the scales Klinedinst (1972, 1975) had a group of 12 judges (clinical psychology faculty and graduate students completing their doctoral internship) survey the 600 statements in the item pool

These are labeled factors I through V and are as follows:

I Acting Out; II Cognitive Development; III Psychopathology; IV Activity Level and V Somatic Concern. All scales composing these factors have a factor loading of .39.

Further support for the validity of the PIC is found in a study by Lachar and Gdowski (1979). The authors' results indicate that the PIC scales correlated significantly with 16 interpretable factors obtained from a factor analytic study of problem behaviors. Furthermore, discriminant validity for the PIC was evidenced by the fact that the scales correlated significantly mostly with the behavior factors they purport to measure.

Similarly, Lachar, Butkus, and Hryhorczuk (1978) in a study comparing PIC profiles to a 94 item problem checklist developed from the subjects' case histories concluded that:

These child and family descriptors derived independently of the PIC data have provided substantial support for the basic interpretive intent of at least 14 of these scales, as well as additional serendipitous construct validity in the form of PIC scale-parent descriptor relationships.

In conclusion, the PIC appears to be an empirically solid, valid assessment device which holds much promise with respects to future research in child psychopathology and diagnostic accuracy.

CHAPTER II

MethodSubjects

This study used 20 children who had been referred to the Shelby County Mental Health Center for evaluation and treatment of emotional and behavioral problems and 12 children who were randomly selected from families volunteering to participate in this study. None of the control group children had been referred for professional help because of behavioral disorders.

The clinic sample was composed of 13 boys and 7 girls who averaged 9 years and 11 months of age ($x = 9-11$, $SD = 2.52$, range 7-13). Similarly the non-clinic sample or control group was composed of 6 boys and 6 girls who averaged 11 years and 8 months of age ($x = 11-8$, $SD = 1.85$, range 7-13).

Informants

In both groups the subject's biological mother served as the informant for the data collected from the PIC and DCB assessment devices. Two criterion were required for the PIC and DCB informants: a) completion of high school, b) continuous residency with the child since his/her birth. The first limitation was placed as a matter of assurance that the informant would be able to read and comprehend the items on the PIC and DCB. Continuous residency with the child since

it's birth was required to insure that certain developmental items on the PIC would not be left unanswered because of a parent's absence during a crucial period in the child's life. The use of the child's biological mother as the informant is based upon the PIC manual's recommendation (Wirt, Lachar, Klinedinst and Seat, 1977) as well as research supporting the hypothesis that reports from biological mothers with whom the child has resided continuously tend to be more valid and reliable (Roskos, 1974; Evans and Nelson, 1977).

Subjects as Informants

The subjects were asked to complete the CSCS according to the instructions read to them by the examiner. To control for the subject's ability to read (which could have been a source of variance since some of the subjects had been having difficulty reading in school) all of the items on the CSCS were read to each subject by the examiner.

Instruments

Piers-Harris Children's Self-Concept Scale (CSCS): The CSCS is an 80 item questionnaire with all items written in the first-person declarative tense, eg., "I am easy to get along with." The child responds to these in a "yes", "no" manner depending upon whether he feels the statement is "generally like" him/her or not. About half of the items are worded in a fashion which indicates a positive self

concept with respects to the item and half are worded in a manner which reflects a negative self-concept. The population used for standardization of the scale consisted on 1,183 children in grades 4-12 all from one Pennsylvania school district. Raw scores obtained are totaled and converted into stanine and percentiles for comparison to a normative population.

Devereux Child Behavior Rating Scale (DCB)

The DCB was developed for primary use with disturbed children ranging in age from 8 to 12. It consists of 97 items (behavioral descriptions) which the informant, usually the child's mother, rates on a scale ranging from 1 to 5 or 1 to 9 depending upon such things as frequency, degree and intensity of the behavior. The items used were devised from studies based upon three groups: 252 "atypical" children in four live-in treatment centers, 348 school children and 11 retarded children from a state facility. Factor analytic studies yielded a total of 17 factors: Distractability, Poor Self-Care, Pathological Use of Senses, Emotional Detachment, Social Isolation, Poor Coordination and Body Tonus, Incontinence, Messiness and Sloppiness, Inadequate Need for Independence, Unresponsive to Stimulation, Proneness to Emotional Upset, Need for Adult Contact, Anxious Fearful Ideation, "Impulse" Ideation, Inability to Delay, Social Aggression, and Unethical Behavior. Each factor item raw score can then be converted to a standard

score for comparison with other groups. For the purpose of this study, these seventeen factors have been regrouped into three higher order factors; Conduct Disorder, Personality Disorder and Inadequacy-Immaturity (Shaeffer and Millman, 1973).

Personality Inventory for Children (PIC)

The PIC consists of 600 items, derived from Patterson's work on personality factors in children (1956), relevant to a child's behavior attitudes and family relationships, which can be answered in a "true" or "false" fashion, depending upon the informant's opinion of the child's behavior. Thirty-three scales each representing a dimension of a child's personality can be obtained from a completed inventory. For the purpose of this study, only the 16 clinical scales; Lie, F, Defensiveness, Adjustment, Achievement, Intellectual Screening, Development, Somatic Concern, Depression, Family Relations, Delinquency, Withdrawal, Anxiety, Psychosis, Hyperactivity, and Social Skills will be used. Raw scores obtained on each scale are converted into T scores for comparison with established norms. Norms for the inventory were established on a sample of 2390 subjects, 81.5% of these were students in the Minneapolis public schools. The remainder were obtained through other means. The age range of the normal sample was 5½ to 16½ years of age.

Procedure

Mothers of children composing the control and clinic samples were asked to complete both the PIC and the DCB (in that order) as part of the initial assessment and evaluation of the child's personality. With the clinic sample this was preceded by an interview, with only the mother present, in which the general nature of the child's difficulty, the mother's continuous or non-continuous residency with the child and the mother's education level were established. In both groups the examiner reviewed the instructions for completion of the PIC and the DCB and offered any explanation that may have been required. This was followed by a brief (15-20 minute) interview with the child (designed to establish rapport), after which the child was asked to complete the CSCS, responding in a "yes - "no" fashion to items read aloud by the examiner. Only the examiner and child were present in the room during the interview and completion of the CSCS. The directions read to the child were as follows:

"Here are a set of statements. Some of them are true of you and so you will answer yes. Some are not true of you and so you will answer no. Answer every question even if some are hard to decide, but do not answer both yes and no. Remember, answer yes if the statement is generally like you, or answer no if the statement is generally not like you. There are no right or wrong answers. Only

you can tell me how you feel about yourself, so I hope you will answer the way you really feel inside."

Both the child and mother were then reunited and thanked for their cooperation.

The scoring for both the PIC and CSCS was carried out according to the manual's instructions, thus yielding a scaled score and a raw score, respectively. With the DCB however, the 17 primary factor scores were obtained and then condensed into three higher order factors (Shaeffer and Millman, 1973) yielding scores for Conduct Disorder, Personality Disorder and Inadequacy-Immaturity factors, as follows:

Factor I scores were derived by summing up the rating totals for DCB scales 16, Social Aggression; 15, Inability to Delay; 11, Proneness to Emotional Upset; 17, Unethical Behavior and 13, Anxious - Fearful Ideation.

Factor II scores were derived by summing up the rating totals for DCB scales 5, Social Isolation; 6, Poor Coordination and Tonus; and 4, Emotional Detachment and 13, Anxious - Fearful Ideation.

Factor III scores were derived by summing up the rating total for DCB scales 7, Incontinence; 8, Messiness, Sloppiness; 1, Distractability; 12, Need for Adult Contact and 17, Unethical Behavior.

CHAPTER III

ResultsAnalysis

In order to pursue the purpose of this investigation the following statistical procedures were used in the analysis of the data:

1. Pearson product-moment correlations were computed for the PIC, CSCS and DCB scores obtained from the clinic sample.
2. Pearson product-moment correlations were computed for the PIC, CSCS and DCB scores obtained from the normal sample.
3. Pearson product-moment correlations were computed for the PIC, CSCS and DCB scores of both clinic and control samples combined.
4. A T-test was used to determine if there were significant differences between the PIC, CSCS and DCB scores from the clinic and control samples.

Results

As presented in table 1 results of the T-test indicate that significant differences were found between the clinic and control group scores for PIC scales: F, ADJ, ACH, DVL, DLQ, PSY, SSK, IS, D, and HPR. Significant differences also exist between mean scores on the CSCS ($p < .001$) and DCB Factor I ($p < .01$). All other mean differences were found to be not significant.

Of the thirteen (13) clinical PIC scales, nine (9) were significantly higher for the clinic group than for the normal controls. This suggests that these nine scales may validly differentiate maladjusted youth from normals. The remaining four (4) clinical scales (SOM, FAM, WDL, ANX) may not be valid,

since these subtests should be different when comparing patients with controls.

It is important to note that the "established" measures did not always yield significant differences. The mean CSCS score was much higher for control than for clinic clients, as expected in hypothesis 6, but the DCB Factors failed to differentiate in two out of three instances (Hypothesis 7). Thus, perhaps the CSCS and DCB Factor I are the best criteria for judging the validity of the PIC.

In addition to comparing mean PIC scores for clinic and control samples, it was hypothesized that the PIC clinical scales would be inversely related to self-concept. Also, certain PIC scales were predicted to be related to specific DCB factors, if the PIC scales were valid. Table 2 shows those correlations for the clinic and controls treated as a pooled sample, which seems justified considering the apparent similarity of the results in both samples and the lack of heterogeneity expected within the samples.

The correlation matrix indicates, as hypothesized, all thirteen (13) of the PIC clinical scales do, indeed, correlate negatively with the CSCS, nine of the thirteen significantly. Three of the four subtests (SOM, FAM, WDL) that did not differentiate clinic from control subjects did not correlate significantly with the CSCS either, further raising questions about their validity. The ANX scale does correlate with the CSCS even though, in this case, it didn't differentiate clinic from control subjects.

Regarding hypothesis 2, the CSCS was negatively related to all the DCB factors, but only significantly with Factors I and II. This may again raise some question about the utility of Factor III as a valid indicator of maladjustment.

TABLE I

Mean scores obtained on PIC scales, CSCS and DCB Factors by clinic and control samples.

VARIABLE	CLINIC	CONTROLS	P ^e	Df	T-Value
LIE	3.05 (2.523)	4.5 (2.505)	NS	30	-1.58
F	6.20 (3.427)	2.58 (1.165)	<.001	25.39	4.32
DEF	10.45 (1.50)	11.08 (1.44)	NS	30	-1.17
ADJ	38.1 (7.9)	24.5 (3.5)	<.001	30	5.57
ACH	16.25 (4.11)	10.16 (3.99)	<.001	30	4.09
IS	14.20 (4.23)	11.91 (2.02)	<.05	28.95	2.05
DVL	10.35 (3.78)	5.50 (2.84)	<.001	30	3.83
SOM	8.85 (4.08)	6.41 (3.45)	NS	30	1.73
D	14.50 (5.65)	9.83 (3.37)	<.05	30	2.47
FAM	10.95 (5.08)	9.58 (3.37)	NS	30	.83
DLQ	18.30 (4.75)	11.58 (1.73)	<.001	26.10	5.71
WDL	4.85 (2.68)	4.50 (2.23)	NS	30	.707
ANX	9.70 (4.28)	9.83 (4.56)	NS	30	-.08
PSY	6.05 (3.20)	2.58 (1.78)	<.001	29.91	3.93
HPR	19.35 (4.41)	15.50 (1.93)	<.01	28.11	3.40
SSK	16.70 (4.49)	8.83 (1.93)	<.001	30	5.49

TABLE 1 continued

VARIABLE	CLINIC	CONTROLS	P [@]	Df	T-Value
CSCS	48.65 (11.04)	63.41 (10.3)	< .001	30	-3.75
Factor I	93.70 (23.07)	67.58 (18.56)	< .01	30	3.32
Factor II	46.50 (12.09)	40.83 (14.09)	NS	30	1.21
Factor III	57.95 (16.09)	48.25 (13.24)	NS	30	1.76

NOTE: Standard deviations are given in parenthesis.

@ T tests for differences between independent means (two tailed).

114 AUGUST 1971

TABLE 2

Pearson Product-Moment correlations for PIC scales, CSCS and DCB Factors; pooled sample (N=32)

	LIE	F	DEF	ADJ	ACH	IS	DVL	SOM	D	FAM
LIE										
F	-.03									
DEF	-.00	-.08								
ADJ	-.29	.59***	-.29							
ACH	-.09	.54***	-.23	.78***						
IS	.08	.45**	-.23	.55***	.51**					
DVL	-.20	.53**	-.19	.76***	.88***	.60***				
SOM	.00	.55***	.04	.19	.29	-.14	.19			
D	-.27	.30	.18	.53**	.41*	.10	.36*	.35*		
FAM	-.03	.18	.12	.13	.02	-.05	.01	.01	.23	
DLQ	-.08	.67***	-.32	.76***	.72***	.38*	.60***	.30	.36**	.14
WDL	-.11	.53**	.10	.33*	.11	.14	.12	.17	.36**	.41*
ANX	-.07	.10	.19	.21	.28	.00	.13	.29	.70***	.11
PSY	-.22	.49*	.00	.68***	.49**	.52**	.61***	.15	.53**	.23
HPR	-.11	.47*	.11	.69***	.54***	.58*	.48**	.22	.27	.05
SSK	-.40*	.45**	.00	.74***	.52**	.26	.54***	.23	.75***	.31

TABLE 2 continued

	LIE	F	DEF	ADJ	ACH	IS	DVL	SOM	D	FAM
CSCS	-.20	-.48**	-.05	-.67***	-.64***	-.29	-.58	-.29	-.64***	-.02
I	-.35*	.45**	.17	.66***	.50**	.25	.46**	.39*	.64***	.10
II	-.48**	.15	.06	.48**	.33*	.13	.36*	.18	.56***	.13
III	-.36**	.36*	.06	.56***	.43*	.26	.39*	.34	.33*	-.12

*p < .05

**p < .01

***p < .001

TABLE 2 continued

	DIQ	WDL	ANX	PSY	HPR	SSK	CSCS	I	II	III
WDL	.44*									
ANX	.18	.27								
PSY	.35*	.22	.11							
HPR	.47**	.12	-.02	.59***						
SSK	.51**	.31	.28	.73***	.49**					
CSCS	-.49**	-.28	-.50**	-.54***	-.50**	-.634***				
I	-.36*	.23	.31	.57***	.57***	.70***	-.59***			
II	.03	.12	.49**	.58***	.40*	.62***	-.53**	.60***		
III	.29	.13	.16	.40*	.61***	.48**	-.31	.77***	.57***	

As suggested in hypothesis 3, 4, and 5, the correlation between Factor I and ADJ was .66 but with DLQ was .03. Factor II correlated .48 with ADJ, .62 with SSK, .12 with WDL, and .49 with ANX. Factor III correlated .56 with ADJ, .39 with DVL, and .29 with DLQ. The latter is not significant, but the DLQ scale was already of questionable validity based on the comparison of clinic and control means.

Tables 3 and 4 give the correlations among all the variables for each sample separately. As one can see, the correlations within each sample alone are smaller, but that is to be expected because the variability is probably less than in the combined sample. There are occasionally interesting differences between the correlations from the clinical and the control groups but, in general, the correlations are similar in magnitude and direction.

TABLE 3

Pearson Product-moment correlations for PIC scales, GSCS and DCB Factors; clinic sample (N=20)

	LIE	F	DEF	ADJ	ACH	IS	DVL	SOM	D	FAM
LIE										
F	.30									
DEF	-.08	.02								
ADJ	-.10	.37	-.24							
ACH	.17	.45	-.30	.68**						
IS	.15	.42	-.19	.58*	.62*					
DVL	-.08	.42	-.09	.63*	.86**	.69**				
SOM	.50	.46	.02	-.06	.12	-.24	.00			
D	-.04	.06	.24	.39	.25	-.00	.25	.12		
FAM	.07	.17	.20	.12	.04	-.04	.00	-.07	.26	
DIQ	.17	.53*	-.41	.58	.60*	-.26	.38	.17	.14	.17
WDL	.04	.66**	.00	.48	.30	.16	.22	.09	.32	.48
ANX	.13	.06	.07	.33	.24	.04	.15	.10	.78**	.35
PSY	-.01	.30	.09	.55	.35	.61*	.55	-.12	.36	.17
HPR	.07	.32	-.06	.62*	.37	.36	.36	.08	.07	-.13
SSK	-.14	.07	.23	.49	.20	.09	.29	-.09	.78**	.36

TABLE 3 continued

	LIE	F	DEF	ADJ	ACH	IS	DVL	SOM	D	FAM
CSCS	-.07	-.30	-.05	-.48	-.28	-.31	-.32	-.01	-.56*	-.02
I	.05	.18	.39	.54	.35	.25	.31	.08	.54	-.03
II	-.29	-.08	.13	.51	.20	.24	.36	-.22	.51	.17
III	-.07	.21	.11	.56*	.38	.24	.34	.12	.14	-.25

*p < .01

**p < .001

TABLE 3 continued

	DLQ	WDL	ANX	PSY	HPR	SSK	CSCS	I	II	III
WDL	.67**									
ANX	.23	.39								
PSY	.05	.14	.08							
HPR	.23	.20	.18	.50						
SSK	.09	.31	.48	.67	.32					
CSCS	-.14	-.44	-.55	-.34	-.27	-.49				
I	.06	.14	.33	.38	.49	.53	-.44			
II	-.19	.01	.40	.62*	.41	.73**	-.52	.47		
III	.14	.00	.03	.33	.66*	.26	-.11	.74**	.43	

TABLE 4

95 Pearson Product-moment correlations for PIC scales, CSCS and DCB Factors, control sample (N=12)

	LIE	F	DEF	ADJ	ACH	IS	DVL	SOM	D	FAM
LIE										
F	-.60									
DEF	-.01	.13								
ADJ	-.34	.10	.17							
ACH	-.04	-.15	.17	.62						
IS	.33	-.17	-.15	-.05	-.16					
DVL	-.01	-.20	-.07	.62	.78*	-.07				
SOM	-.76	.77*	.30	.15	.19	-.37	-.06			
D	-.51	.44	.45	.34	.20	-.11	-.1	.66		
FAM	-.16	-.23	.06	-.43	-.43	-.43	-.40	-.01	-.05	
DLQ	-.01	.08	.41	.26	.58	.24	.34	.12	.15	-.71*
WDL	-.40	.40	.38	.16	-.35	-.01	-.22	.30	.52	.17
ANX	-.42	.49	.38	.42	.57	-.11	.22	.71*	.78*	-.44
PSY	-.37	.25	.29	.29	.01	-.59	.02	.38	.58	.24
HPR	-.20	-.02	.17	.24	.53	-.36	.06	.17	.31	-.18
SSK	-.64	.50	.19	.47	.12	-.03	.01	.48	.45	-.02

TABLE 4 continued

	LIE	F	DEF	ADJ	ACH	IS	DVL	SOM	D	FAM
CSCS	.31	-.06	-.52	-.47	-.81**	-.42	-.42	-.47	-.52	-.21
I	-.92**	.66	.21	.36	.11	-.52	.01	.80*	.57	.23
II	-.69	.62	.07	.57	.34	-.41	.20	.74*	.61	-.04
III	-.79**	.54	.17	.44	.21	-.04	.07	.65	.52	.02

*p < .01

** < .001

TABLE 4 continued

	DIQ	WDL	ANX	PSY	HPR	SSK	CSCS	I	II	III
41										
WDL	-.15									
ANX	.51	.05								
PSY	-.26	.55	.34							
HPR	.47	-.35	.58	.22						
SSK	.16	.62	.28	.17	-.03					
CSCS	-.55	-.03	-.75*	-.43	-.68	-.17				
I	-.03	.47	.47	.52	.21	.69	-.41			
II	-.02	.33	.64	.56	.29	.66	.48	.81**		
III	.14	.41	.58	.18	.13	.86**	-.32	.81**	.78*	

CHAPTER IV

DiscussionDiscriminant Validity

The present findings support the conclusion that the PIC and CSCS possess sufficient discriminant validity to warrant their use as diagnostic instruments although the validity of certain scales needs further assessment. The hypothesis that significant differences would exist in the CSCS scores obtained from the clinic and control samples was strongly supported. Of the sixteen PIC scales ten differed at a significant level between groups. Only one of the DCB Factors (Factor I: Conduct-disorder) differed significantly between the two groups,

Of the sixteen PIC scales six did not differ significantly between the two groups. Of these, two scales (LIE and DEF) are validity scales and would not be theoretically expected to differ since they are a measure of respondent behaviors rather than any child pathology. It is interesting to note that this lends support to a large body of literature which suggest that mothers of children experiencing behavior difficulties tend to report their child's behaviors accurately.

A clinical scale which failed to discriminate between groups, the SOM scale, raises some interesting questions. One explanation for this failure to discriminate lies in the possibility that children who develop physical symptoms as a result of emotional problems are referred to a medical institution for treatment. If this is the case then one would reasonably expect that the clinic sample did not have a significant number of children with somatic complaints.

The FAM scale also did not discriminate significantly between the two groups and hence this casts doubts on the validity of this scale for two reasons. First, the interviewer having also been the therapist was aware of the occurrence of pathological behaviors within most of the clinic sample families. Second, these results are in direct contrast with the supported notion that pathological behaviors in families is reflected in the behavior of the child. However, as the clinic group was not specifically selected with the occurrence of familial pathology as a criterion these interpretations must be taken cautiously. Further research on the validity of this scale is needed, but the FAM scale does not correlate with the CSCS or any of the DCB factors.

Both the ANX scale and WDL scale did not indicate significant differences between groups. As in the case with the FAM scale the WDL scale may or may not be invalid. It is possible that the groups did not differ in "withdrawal" behaviors because children who are withdrawn do not generally constitute an overt behavior problem and are therefore less likely to be referred to therapists for treatment. The results raise questions as to the validity of the ANX scale for various reasons. First, the high inverse relationship between anxiety and self-esteem has been a frequently reported occurrence in the literature. This correlation was not found among the ANX scores and CSCS scores for the clinic sample although it did occur in the pooled sample. Secondly, it is reasonable to expect that children with behavior pathology would be experiencing anxiety as a direct or indirect consequence of their behavior. However, again the reader is cautioned to remember that the presence of anxious behaviors was not a criterion for group selection.

The significant differences found between the F scale (measure of reported intensity or severity of symptoms) means for the clinic and control

samples indicate that it was able to discriminate between children experiencing severe behavioral difficulties and those which do not. Similarly the ADJ scale (measure of lack of adjustment) was able to discriminate between the clinic and control samples. The discriminant validity of both scales suggest that they possess sufficient construct validity to warrant the PIC's use as a clinical screening device for adjustment.

Although it is not possible to draw specific conclusions regarding the validity of all PIC diagnostic scales it is certainly possible to conclude that certain scales are capable of discerning the presence or absence of certain pathological behaviors among children. In order to assess their construct validity, however, future research should focus on the comparison of mean scores between groups selected with specific pathological behaviors (eg. hyperactivity, psychoticism, etc.) and a normal population.

In accordance with the hypothesis presented in Chapter I significant differences were found between the self-esteem of both groups. This is consistent with the notion that children who experience behavior problems tend to have lower self-esteem, than those which do not. It is suggested by these results that the CSCS has the potential for use as a quick screening device for clinicians to assess the adjustment or maladjustment of a client.

Only one of the Devereux higher order factor scores (Factor I) was found to discriminate significantly between the clinic and control samples. Although this raises questions about the validity of Factor II and Factor III scores several points merit future consideration. First, Factor I, conduct disorder, is composed of the occurrence of a series of disruptive behaviors which are more likely to be intolerable to parents and school officials and therefore

conducive to the seeking of professional help in decreasing their occurrence. Factor II and Factor III (Personality disorder and Inadequacy-immaturity) are perhaps composed of a series of behaviors which are more tolerable and therefore less likely to be referred for professional help. It is possible that the clinic sample was composed primarily of children exhibiting conduct disorders and this would account for the failure of Factor II and III to discriminate between groups. The reader is cautioned to consider that the groups were not selected for personality disorder (Factor II) or inadequacy-immaturity (Factor I) variables when interpreting the lack of significant difference in means. Further research is necessary to answer the question as to the validity of these two factors.

Correlations Among PIC, CSCS and Devereux Factors

As hypothesized in Chapter I, ten of the sixteen PIC scales were significantly inversely correlated with self-esteem. This is suggestive that the greater a child's pathology along any one of these scale dimensions, the lower his self-esteem. This is evidence in support of the validity of the PIC scales as this is precisely what one would predict theoretically. An interesting occurrence is that of the six scales which did not obtain any significant correlation with the CSCS, five of them (LIE, DEF, FAM, WDL, SOM and WDL) were also scales which failed to discriminate at a significant level between clinic and control sample means. This further lends support to the hypothesis that the construct validity of these scales (with the exception of LIE and DEF scales for reasons previously explained) is questionable and that further research on these measures is necessary to validate their diagnostic accuracy. One additional scale, IS, failed to inversely correl-

ate significantly with self-esteem in a manner which is incongruent with the research supporting the existent relationship between self-esteem and intelligence. Furthermore the IS scale along with the FAM and WDL scale did not correlate significantly with any of the three factor scores. This evidence further raises substantial doubt to the validity of these scales.

A further interesting result lies in the analysis of those scales which correlate significantly with all three Devereux factors. As was hypothesized ADJ was significantly correlated with conduct-disorder (Factor I), personality disorder (Factor II) and inadequacy-immaturity (Factor III). This is theoretically congruent since it is reasonable to assume that any child experiencing one of the above disorders can be expected to be maladjusted. A second scale which is significantly inversely correlated with all three factors is the LIE scale. It is reasonable to assume that the mother's tendency to lie about her child's behavior will inversely affect the pathology ratings given on the Devereux. Hence, the inverse relationship between the LIE scale and the three factors occurs, i.e. the more you lie, the less pathology you admit.

Several other scales correlate significantly with all three factors; ACH, DVL, D, PSY, HPR, and SSK. It is not possible to draw any definite conclusions from these correlations but some tentative hypothesis may be derived. It is possible, for example, that under achievement, poor development, depression, psychoticism, hyperactivity and poor social skills are pathologies which are common to all three forms of behavior pathology, i.e. conduct disorders, personality disorders and inadequacy-immaturity. However, it is interesting to note that these six scales all correlate significantly among themselves and although they are mutually exclusive in terms of the items composing them they may all be measuring the same dimension of pathology rather than

measuring independent pathological traits. It remains for future research to document that differences among these scales demonstrate the diagnostic validity of the PIC.

The inverse situation also occurs. The correlations among Factors I, II and III are also quite high. However, unlike the significant correlations between the ACH, DVL, D, PSY, HPR and SSK scales, these factor correlations may be spuriously high since the items composing the factors are overlapping. It is therefore impossible to determine whether the factors composing the Devereux are measures of distinct unrelated pathology because the PIC scales which correlate with all three factors also correlate significantly among themselves.

With respects to the DCB Factors and their relation to self esteem, both Factors I and II correlate significantly with the CSCS as hypothesized. Factor III however did not. Since it would be reasonable to assume that inadequate or immature children would tend to have low self-esteem and the available data runs contrary to this assumption further research is necessary to establish the reliability and validity of this result.

Some hypothesis may be drawn about children referred to a Mental Health Center. However caution should be used in interpreting these findings as controls for many variables (eg. parent's educational level, socioeconomic status, ect.) were not used in the selection of the groups.

It would appear that as a group certain characteristics separate them from normal children. They tend to be under achievers and have lower intellectual abilities and be developmentally delayed. Also, depression and the presence of delinquent behaviors, hyperactivity and lack of social skills are characteristic of this group. Finally there is a greater degree of

psychoticism and lower self-esteem.

In general the PIC appears to be a promising new objective and instrument for the assessment of children's personality.

With regards to the level of confidence that can be placed on this instrument the skilled clinician would be wise to exhibit caution in interpreting the profile results until more research can be generated to further validate the device.

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