OBJECTIVE AND PROJECTIVE MEASURES: ASSESSMENT OF DEPRESSION IN ADOLESCENTS A CONVERGENT VALIDITY STUDY

By

Karen Irene Young

A DISSERTATION

Submitted to
Michigan State University
in partial fulfillment of the requirements
for the degree of

DOCTOR OF PHILOSOPHY

Department of Psychology

1997

ABSTRACT

OBJECTIVE AND PROJECTIVE MEASURES:
ASSESSMENT OF DEPRESSION IN ADOLESCENTS
A CONVERGENT VALIDITY STUDY

By

Karen Irene Young

It goes without saying that more research using adolescent samples is necessary if there is to be an increase in adolescent-derived, rather than adult-extrapolated, information in the adolescent depression literature. The current study, therefore, represents a multimethod assessment of depression conducted with a sample of 72 depressed adolescents hospitalized at a private psychiatric hospital in Ferndale, Michigan. The purpose of the study was to empirically assess the effectiveness of objective and projective measures of depression in order to identify the presence of any racial, gender, and age differences and to systematically evaluate the relationship between these measures. It was found that depression as measured by the MMPI-A was significantly related to having a diagnosis of Major Depression. Females were classified as depressed at a significantly higher rate than males based on their responses on the TAT. It was also found that the PIY tended to classify significantly more Caucasians as

depressed as compared to African Americans.

ACKNOWLEDGEMENTS

I must first give all the honor, praise, and glory to my Lord and Savior, Jesus Christ. For it was by His grace and His mercy that I was able to endure to the end.

I am eternally grateful to my Lord and Savior for having blessed me with family and friends who supported and encouraged me and prayed for the successful completion of this work. To Terry, Khella, Mom (Mary and Christine), Dad (Willie and Ervin), Bryan, Carmen, Ervine, and my New St. Luke Church Family, I love you and I thank you. To my friend and colleague, Joe Z., may our Father continue to smile upon you.

Finally, I would also like to offer a special word of thanks to Norman Abeles, Ph.D., my Major professor, for his extra assistance in helping me to bring this project to completion. Thank you to my other committee members as well.

TABLE OF CONTENTS

LIST OF TABLES

CHAPTER 1

INTRODUCTION

Among clinicians, the debate continues regarding the nature of depression in childhood and adolescence (Aneshensel, Clark, & Frerichs, 1983; Lipovsky, Finch, & Belter, 1989; Roberts, 1992; Roberts & Sobhan, 1992; Worchel, Nolan, & Willson, 1987). Some believe that depressive symptoms which manifest themselves in these age groups represent psychopathology (Exner & Weiner, 1982; Kovacs & Beck, 1977; Smith & Danielson, 1982), while others assert that the symptoms are merely temporary phenomena associated with normal development (Achenbach, 1978; Alyward, 1985; Lefkowitz & Burton, 1978). Despite the controversy, children and adolescents continue to be diagnosed and treated for depression within the mental health system. The lack of consensus on this issue has, however, slowed (but not prevented) progress toward the development and validation of instruments or scales for the assessment of depression in children and adolescents. It is the purpose of this study to investigate the effectiveness of various instruments in the assessment of depression in youngsters with focus on the variables of age, race, and gender.

Depression overview

In the 1970s, Feighner and his associates at Washington University developed specific criteria for diagnosing depression in the adult population (Feighner et al., 1972). Subsequent classification systems, most notably the Research Diagnostic Criteria (RDC; Spitzer, Endicott, & Robins, 1978) and the Diagnostic and Statistical Manual of Mental Disorders III, III-R, and IV (DSM III; American Psychiatric Association, 1980; DSM III-R; American Psychiatric Association, 1987; DSM IV; American Psychiatric Association, 1994) were modeled on the criteria delineated by Feighner.

Criteria utilized to diagnose depression in children and adolescents have been patterned after investigations of adult depression. Some researchers later decided that it was necessary to conceptualize depression in youngsters by taking a developmental perspective, as opposed to relying primarily on adult criteria. In their view, consideration had to be given to developmental changes in affective, cognitive, biochemical, motoric, and other systems likely to affect the manifestation of depressive symptoms in children (Dignon & Gotlib, 1985; Kendall, Cantwell, & Kazdin, 1989; Kazdin, 1990). This belief led to the emergence of child-specific criteria for the classification of depression.

When the DSM-III and Weinberg (1973) criteria (e.g., dysphoric mood, self-deprecation, school phobia, poor school performance, aggressive behavior) were compared (Carlson &

Cantwell, 1981), it was found that the broad scope of the Weinberg criteria resulted in children being diagnosed as depressed more frequently than they were using the DSM-III criteria. According to Kazdin (1990, p. 133), "With the emergence of DSM-III, diagnoses became more clearly associated with a narrower range of symptoms, independent of the person's age. Although children might evince unique characteristics in their manifestations of depression, the current approach is to apply the diagnosis when the core criteria have been met. The notion of children-specific criteria is not completely abandoned. Yet, the progress evident from applying RDC and DSM-III criteria in unmodified forms to children and adolescents has attenuated the search for child-specific criteria." Although research has confirmed that depression can be diagnosed in children, adolescents, and adults using the same criteria (Chambers et al., 1985), the developmental stage of the individual has some effect on the manner in which symptoms, associated features, and clinical course will be exhibited (Kazdin, 1990).

Depression and age of onset

Achenbach and Edelbrock (1983) found that depressive symptoms may be organized differently as a function of age. Depressive symptoms and disorders have been shown to become more common in adolescence than in childhood and the age of onset of a depressive disorder has been shown to play a

crucial role in its level of severity (Angold, 1988). Kashani, Cantwell, Shekim, and Reid (1982) found that depression was diagnosed at different rates for treatment referred children and adolescents as a function of age. More specifically, they reported that only 1% of children between the ages of 1 and 6 years was diagnosed with major depression as compared to 13% of the children between the ages of 9 and 12 years.

A study conducted by Ryan et al. (1987) compared the depressive symptomatology of prepubertal children and adolescents as measured by the Kiddie-Schedule for Affective Disorders and Schizophrenia for School-aged Children (K-SADS; Chambers et al., 1985). They found that prepubertal children exhibited more somatic complaints, psychomotor agitation, separation anxiety, phobias, hallucinations, and a more depressed appearance. Adolescents, on the other hand, demonstrated greater anhedonia, hopelessness, hypersomnia, weight change, use of illicit drugs, and lethality of suicide attempts (although not more severe suicidal ideation or intent). Overall levels of depression and frequency of endogenous depression (i.e., depression caused essentially by internal/physiological factors) were about 50% for both groups, revealing no differences in these areas. Angold et al. (1991) found that dysphoric episodes were reported more frequently by 16-18 year olds than by individuals who were either younger or older. Clarizio (1989) reported that

depressive disorders diagnosed in childhood or adolescence, which meet stringent, operationally defined clinical criteria, have a lower probability of improvement. Depressed adolescents who experienced a depressive episode earlier in childhood were found to be more likely than other adolescents to experience subsequent depressive episodes (Carlson, 1984). Unlike the adult population, suicide due to feelings of depression is less frequent in children below the age of 12 (Hawton, 1986). However, suicidal ideation, threats of suicide, and suicide attempts are not uncommon occurrences in childhood and adolescent depression (Carlson & Cantwell, 1982).

Depressed adults have been shown to exhibit sleep characteristics such as decreased total sleep time, decreased delta wave sleep, shortened rapid eye movement latency, and early morning and intermittent awakenings (Kupfer et al., 1983, reported in Kazdin, 1990). Although electrophysiological recordings have revealed differences in the sleep patterns of depressed and nondepressed adults, no such consistent patterns have been found for depressed children (Young, Knowles, MacLean, Boag, & McConville, 1982, reported in Kazdin, 1990).

The relationship between depression and gender

In Western cultures, depression has been found to be more prevalent in women than men with a female to male ratio of 2:1 (Kazdin, 1990; Nolen-Hoeksema, 1987; Whybrow,

Akiskal, & McKinney, 1984). This type of consistency generally, however, has not been found in studies conducted with prepubertal children (Carlson, & Cantwell, 1979; Kashani, Cantwell, Shekim, & Reid, 1982), although Klovin et al. (1991) and Rutter (1986) found support for the notion that the sex ratio of depressed children shifts from a male preponderance before puberty to a female preponderance after puberty. A greater prevalence of depression among adolescent females than adolescent males has been found in other research studies (Angold, 1988; Emslie, 1990; Mezzich & Mezzich, 1979; Reynolds, 1984; Roberts & Sobhan, 1992; Worchel, Nolan, & Willson, 1987).

Utilizing the Beck Depression Inventory, several researchers (Hammen & Padesky, 1977; Vredenburg, Krames, & Flett, 1986) have found that the patterning of depressive responses in men and women differ. Men's depressive symptomatology was characterized, for example, by lack of satisfaction, suicidal wishes, inability to cry, a social withdrawal, work inhibition, somatic concerns, a sense of failure, and a focus on somatic complaints. On the other hand, women's depressive responses were characterized, for example, by self-dislike, crying spells, body image distortion, indecision, fatigue, and irritability. The results of a study conducted by Baron and Joly (1988) revealed that male and female adolescents also differ in the manner in which depression is expressed. Male symptomatology was characterized by irritability, work

inhibition, social withdrawal, and sleep disturbance. Females exhibited symptoms characterized by body image distortion, loss of appetite, weight loss, and lack of satisfaction.

For girls aged 6-11, anxiety and feeling persecuted were associated with other depressive symptoms, while at ages 4-5 these symptoms were not endorsed. For boys aged 6-11 suicidal talk was associated with other symptoms of depression, although this was not the case at ages 4-5 (Achenbach & Edelbrock, 1983). Some studies have shown an increased and consistent association between depression and characteristics such as nonverbal behavior, unpopularity, and somatic complaints in girls (Jacobsen, Lahey, & Strauss, 1983; Kazdin, Sherick, Esveldt-Dawson, & Rancurello, 1985). Girls who have a more extrinsic motivational orientation (i.e., performing tasks for approval or fear of evaluation) have been found to exhibit more symptoms of depression than either girls or boys who have a more intrinsic motivational orientation (i.e., performing tasks for the sake of learning and obtaining mastery over challenge) (Boggiano & Barrett, 1992).

Diagnosis and treatment of depression

According to Kazdin (1990, p. 126) "Reliable diagnosis has facilitated a great deal of research on the epidemiology, course, prognosis, and treatment of mood disorders in children." Nonetheless, differences in the

rates of depression reported in the literature do exist. In most cases, the discrepancies are likely the result of the concept of depression utilized, the type of criteria specified, and the nature of the clinical sample studied (Klovin et al., 1991). For example, Angold (1988) reported that recent studies which utilized direct research interviews and specified diagnostic criteria have reported the rates for severe and "quite long lasting" types of depression in children to be between 5 and 15%. On the other hand, the use of unmodified DSM-III criteria has resulted in rates around 5 - 30%. Only studies which utilized Weinberg's (1973) child-specific criteria, (e.g., dysphoric mood, self-deprecation, school phobia, poor school performance, aggressive behavior) or have not been based on direct interviews, but have instead used self-report symptom scales, have reported rates higher than 30%.

With regard to "masked" depression, Klovin et al. (1991) believe that when depression generally goes undetected, it is because of "inadequate techniques of clinical assessment" (p. 15). In support of this latter statement, Moretti et al. (1985) found that youngsters, in comparison to their parents and teachers, reported more "internalizing" or emotional symptoms with regard to their psychiatric disorder. In contrast, their parents and teachers tended to focus on more "externalizing" or conduct problems. With great consistency, it has been found that secondary informants tend to report fewer depressive symptoms than the

children themselves report, but tend not to report the presence of affective disorders that the children themselves do not report. These findings suggest that if parent and teacher report are utilized as the primary source of diagnostic information, rates of depression found in children will tend to be lower than if the children's self-report are given primary consideration. If only the secondary informant's information is relied upon, the child's symptoms may be ignored. However, if the secondary informant reports that depression is present, the child will most likely agree. Klovin et al. (1991) strongly agree that both the child/adolescent and parent should be interviewed when depression is a diagnostic issue.

When depression is diagnosed in youngsters, it is commonly associated with other psychiatric conditions as it is in adulthood (Rutter, 1986). Comorbidity is the term which refers to the increased risk an individual with one disorder has of having a second disorder, as compared to the base rate for the second disorder in the general population. (Master & Cloniger, 1990, cited in Lewinsohn et al., 1991). Unlike the adult population, there is not a great deal of information available regarding comorbidity in adolescents (Lewinsohn et al., 1991; Rohde et al., 1991). And the information which is available, according to Klovin et al. (1991), does not consistently parallel the adult literature which has found that treating the depression usually leads to the improvement of both disorders. For example, in

contrast to children diagnosed only as depressed, depressed children with a concurrent diagnosis of conduct disorder had a higher rate of officially recorded criminality in adulthood as well as a higher risk of being diagnosed with antisocial personality disorder and alcohol abuse/dependence in adulthood (Harrington et al., 1991).

A study conducted by Lewinsohn et al. (1991) is believed to be the first to investigate the degree of current and lifetime comorbidity between Major Depressive Disorder and Dysthymia in a community sample of older adolescents (ages 14-18). The results revealed that the two depressive disorders co-occurred much more frequently than expected on the basis of their respective base rates. The authors pointed out, however, that although Major Depressive Disorder and Dysthymia were "significantly comorbid," that many individuals in their study only had one form of the depressive disorder, not both. They found that Dysthymia preceded, rather than followed, Major Depressive Disorder for adolescents with great frequency. Additionally, if a second disorder had occurred, the likelihood that it would be Major Depressive Disorder was increased, regardless of the nature of the first episode. Finally, the study revealed that an individual's likelihood of experiencing another psychiatric disorder was not increased by the co-occurrence of the two depressive disorders.

In a second study utilizing the Lewinsohn et al. (1991) adolescent sample, Rohde et al. (1991) set out to determine

the current and lifetime comorbidity of depressive disorders (Major Depression and Dysthymia) with other common mental disorders. They, like Brady and Kendall (1992), found that depressed adolescents have an elevated rate of other mental disorders. For example, Rohde et al. reported that currently depressed adolescent males were significantly more likely to have a current diagnosis of Conduct Disorder or Oppositional Disorder than nondepressed males. Currently depressed females, as compared to nondepressed females, were significantly more likely to have a current eating disorder. For both males and females, a lifetime history of depression was found to be comorbid with disruptive behavior disorders. In terms of treatment-seeking behavior, comorbid depressed adolescents were most likely to have received treatment, while those with pure depression were least likely. Suicide attempts (and suicidal ideation) were greatest among comorbid adolescents, followed by an intermediate rate among pure depressed adolescents. Nondepressed adolescents were least likely to have made a suicide attempt or to have experienced suicidal ideation. Finally, when the diagnosis present at the time of the suicide attempt was investigated, it was found that the vast majority of comorbid adolescents had attempted during a period of depression.

Psychiatric disorder also has been shown to be commonplace among the offspring of parents who had been formally diagnosed with psychiatric disorder (Downey & Coyne, 1990; Quinton & Rutter, 1985). However, Kutcher and

Marton (1991) reported that it has not yet been fully established whether a family history of affective disorder is a predisposing factor in the etiology of affective disorders which first occur in adolescence, although the occurrence of depression at a young age has been associated with a high incidence of depression in relatives (Beardslee et al., 1993; Grigoroiu-Serbanescu et al., 1991; Hammen et al., 1990; Kutcher & Marton, 1991; Taylor & Abrams, 1973; Weissman et al., 1984a; Weissman et al., 1984b).

In 1966 Robins and Hill (reported in Klovin, 1991) stated that there was no firm link between psychiatric illness in childhood and later adult illness. In more recent years, however, researchers have found evidence to the contrary with regard to depression (Keller, 1983; Kovacs et al., 1984b; Garvey et al., 1986). A longitudinal study conducted by Harrington, Fudge, Rutter, Pickeles, and Hill (1991) found that individuals with a diagnosis of depression as children were more likely to be depressed in adulthood and were more likely than controls to have had subsequent psychiatric treatment.

Differences have been found to exist for treatment response and course of illness among patients with chronic depression compared to those with acute depression. For example, a slower initial rate of improvement during hospitalization was shown for adolescent inpatients diagnosed with chronic depression compared to those with an acute depressive diagnosis even though levels of depressive

symptoms upon admission were similar (Shain et al., 1991). Among adults with chronic or acute depression, Rounsaville et al. (1980) found no difference in response between the two groups to a four week course of treatment with an antidepressant. Other researchers (Garvey et al., 1989) reported that chronically depressed adults had a poorer response to tricyclic antidepressants as compared to those with acute depression. An earlier age of onset was noted for adult patients with chronic depression, as well as more lifetime depressive episodes, than those with acute depression (Garvey et al., 1986; Keller et al., 1983). Although chronically depressed adults have been shown to have a shorter time to recovery from the index major depressive episode and a higher rate of relapse into a subsequent major affective disorder (Keller et al., 1983), a similar study with youngsters did not find this type of recovery rate (Kovacs et al., 1984a). However, a higher ratio of subsequent episodes of major depression in chronically depressed youngsters was found (Kovacs et al., 1984b).

Angold (1988, p. 486) sums up the position currently espoused by the majority of researchers and clinicians in the field (see also Angold et al., 1991; Carlson, 1984; Ryan et al., 1987): "Few now doubt the existence of prepubertal depression, and we know that the whole range of adult depressive symptoms may be expressed in children, certainly by the age of 6-8, and perhaps even younger..."

Methods of assessment

Psychologists have developed two primary methods for assessing personality. One is the indirect method. Instruments in this category (often referred to as projective instruments) are described as unstructured because they rely on subjects' responses to relatively ambiguous stimuli to furnish insight into an individual's thoughts, images, and feelings. The unstructured design of these instruments allows material to be gathered without the individual being fully aware of the type of information being sought. Examples of such instruments often used in the assessment of children and/or adolescents include the Thematic Apperception Test, the Rorschach, the Rotter Incomplete Sentences Blank, and projective drawings. Those who criticize the use of projective instruments with children and adolescents to assess depression cite the limited amount of information available regarding their validity for assessing this personality construct (Anastasi, 1982; Gittleman, 1980; Kazdin, 1981; Kazdin, 1987). Projective testing has, however, remained a valuable personality assessment tool because clinicians who use this method are interested more in the common themes which can be traced through the projective responses of a battery than in psychometric properties (Schwartz & Lazar, 1979).

The direct method of personality assessment describes those instruments in which information about an individual is obtained via personal interviews, behavioral observation,

completion of self-report (or objective) inventories, and interviews with significant others. Self-report inventories are usually presented in paper-and-pencil format and require individuals to answer questions or endorse items based on what they know about themselves. Scoring of individual items does not require interpretation since the items can only be answered in a limited number of ways (e.g., yes or no, true or false) and the scoring system is standardized. Scoring can be completed by hand or machine and the resulting profile provides a summary of where an individual ranks on a variety of traits. The Minnesota Multiphasic Personality Inventory-A, the Child Depression Inventory, the Child Behavior Checklist (parent-report), the Personality Inventory for Children (parent-report), and Personality Inventory for Youth, are examples of direct methods of assessment which have been utilized in the assessment of children and adolescents. Self-report instruments have been criticized because youngsters receiving treatment often lack the reading skills, verbal comprehension, and/or compliance necessary for their accurate completion (Lachar, Kline, & Gdowski, 1987). However, Edelbrock, Costello, Dulcan, Kalas, and Conover (1985) reported that assessed reliability of self-report instruments appears to relate directly to increasing child age.

Racial/ethnic differences and personality assessment

Traditional thematic tests, such as the Thematic Apperception Test (TAT) have been criticized as being ineffective for use with ethnic minorities. Critics state that many minority individuals may have a difficult time relating to the stimulus cards since the scenes depicted are more representative of white, Anglo-Saxon culture. Research cited by Constantino, Malgady, and Rogler (1988; i.e., Ames & August, 1966; Booth, 1960; Constantino & Malgady, 1983) indicated that the decreased ability to relate affectively and experientially to the stimulus material has led to the false conclusion that minority individuals are less verbally fluent and, at times, more pathological than non-minority individuals. Several researchers have attempted to rectify this situation by developing culturally sensitive thematic tests for minorities (e.g., the minority version of the Tell Me a Story test [TEMAS]) or adapting current tests (e.g., Themes Concerning Blacks test [TCB]).

African American youngsters between the ages of five and eight were administered eight cards with similar content and character situation from the TAT and the TCB test (Triplett & Brunson, 1982). It was found that the feeling-tone ratings obtained for the TCB were much more positive than those for the TAT. The researchers speculated that the cultural specificity of the TCB (i.e., that its depiction of African American characters in scenes that are culturally relevant) likely contributed to this finding. Unlike the

TCB, then, "the stimulus properties of the TAT might be loaded on the negative side for Blacks" (p. 77). That is to say, that African Americans may be at a disadvantage when responding to the TAT because 1) the context of the scenes may not match their affective experiences and 2) the characters are overwhelmingly identified as Caucasian.

In the TEMAS test, African American and Hispanic characters are depicted in the minority version and Caucasian characters in the non-minority version (Malgady, Constantino, & Rogler, 1984). Several studies have shown that in comparison to the TAT, verbal fluency is enhanced in African American and Hispanic children by use of the TEMAS test (Constantino & Malgady, 1983; Constantino, Malgady, & Vazquez, 1981). However, Constantino and Malgady (1983) stated that "Enhanced verbal fluency of Hispanics and blacks on the TEMAS appears to be due to familiarity of cultural symbols and environmental settings, rather than to racial characteristics in projective test stimuli" (p. 200). Research with the measure has nonetheless continued, and it was found to accurately discriminate between clinical and non-clinical groups of minority children (Constantino, Malgady, Rogler, & Tsui; 1988). Constantino, Malgady, Rogler, and Tsui (1988) caution, however, that more validation studies are needed which involve other Hispanic subgroups and individuals from more diverse socioeconomic backgrounds before the TEMAS test can be recommended as a projective test for ethnic minority children.

Of all the personality tests, the one in which the most data have been collected regarding racial differences (with the adult population) is the Minnesota Multiphasic Personality Inventory (MMPI). The catalyst which incited such interest was the allegation that when used with African Americans the MMPI had the potential to misclassify this population (both psychiatric and normal) in terms of producing a high rate of false positive diagnoses (e.g., Adebimpe, Gigandet, & Harris, 1979; Gynther, 1972; Gynther & Green, 1980; Strauss, Gynther, & Wallhermfechtel, 1974).

Gynther's (1988) review of MMPI African American and Caucasian comparison studies published between 1960 and 1987 concluded that the research had not been able to generate a consensus regarding either the presence or absence of racial bias in this measure. Disagreement, in his opinion, was likely the result of differences related to procedures followed, the focal point of the findings, as well as the authors' subjective judgements concerning racial comparisons. Many of the researchers in the studies Gynther reviewed offered suggestions regarding possible foci of future MMPI racial comparison studies. Two examples included creating special subgroup norms and allowing certain protocols of African American men and women to be specially corrected based upon the individual's performance on a special race-sensitive scale for the MMPI. The latter suggestions were empirically tested and Dahlstrom, Lachar, and Dahlstrom (1986), in their comprehensive review of the

relationship between ethnic status and MMPI response patterns (based on both adolescent and adult samples), indicated that such "attempts to reduce 'racial bias' not only failed to achieve that end, they actually introduced racial bias" (p. 177). Thus, they concluded, "The evidence presented here documents the lack of serious bias or distortion in the use of the MMPI in mental health settings for the assessment of the emotional status of black clients, since the relative accuracy of these scores was as good or better for this ethnic minority as it was for white clients" (p. 205).

Racial/ethnic differences and the assessment of depression

A literature search to uncover studies which utilized the MMPI (or MMPI-A) and Rorschach to assess depression in adolescents using race/ethnicity as a variable revealed a small number of efforts in this area. However, a review of the literature was not successful in revealing studies which used the TAT to measure depression among adolescents of any race/ethnicity.

Based on the above, it is apparent that there is a paucity of literature pertaining to depression among minority children, and comparative data contrasting youngsters with differing ethnic backgrounds are also rare (Aneshensel, Clark, & Frerichs, 1983; Roberts, 1992; Roberts & Sobhan, 1992). Studies which investigated the variable of race/ethnic status (utilizing measures other than the MMPI,

TAT, and Rorschach) have not produced conclusive results. For example, Doerfler et al. (1988), Garrison et al. (1990), and Kandel and Davies (1982) found no evidence of ethnic differences in adolescent depression. On the other hand, depressive symptoms were found to have been reported at greater levels by minority adolescents in the studies conducted by Emslie et al. (1990) and Roberts and Sobhan (1992). According to Roberts (1992), inconclusive findings are the result of there being "no generally accepted techniques for measuring psychopathology in youth, majority or minority. As a consequence, there is great diversity in measurement strategies across studies, accompanied by an attenuation in comparability of results" (p. 627).

A 1962 study conducted by McDonald and Gynther, which examined the MMPI response patterns of African American and Caucasian students attending segregated high schools, found that African American students produced higher scores on a variety of scales, including the Depression (D) scale. In addition, African American female students were found to have scored significantly higher on all MMPI scales, with the exception of K (one of the validity scales) and Sc (Schizophrenia) than did Caucasian female students. More recent research suggests that racial differences on the MMPI are less likely to be found when African Americans and Caucasians have experienced common cultural influences and have comparable socioeconomic backgrounds (Bertelson, Marks, & May, 1982; Klinge & Strauss, 1976).

Even with regard to the use of the MMPI with majority adolescents, research is sparse. The paucity of information persists despite its widespread use in clinical settings and the availability of normative data (Lipovsky, Finch, & Belter, 1989). Research into the use of the MMPI to detect depression accurately in adolescents has been conducted (Archer & Gordon, 1988; Lipovsky, Finch, & Belter, 1989). Lipovsky, Finch, and Belter (1989) found evidence to support the use of the MMPI Depression (D) scale as a measure of depression in their sample of depressed and nondepressed adolescents. On the other hand, Archer and Gordon (1988) and Archer, Ball, and Hunter (1985) did not find the (D) scale on the MMPI to be significantly related to adolescent patients' clinical diagnoses of depression. Nelson (1987) posited that the latter results may have been obtained because the (D) scale may more accurately identify clinical depression when only face-valid or obvious depression scale items are used. Graham (1990) speculated that factors such as reliability problems in the psychiatric nosology and the unreliability of specific diagnostic groups used in the original development of the MMPI account for the lack of congruence across many studies.

The MMPI (D) scale and the depression subscale (DIS2) on the Personality Inventory for Youth (PIY) were shown to be highly correlated in the assessment of hospitalized adolescents (Lachar & Gruber, 1995). With regard to ethnicity effects and the PIY scales, Lachar and Gruber

(1995) reported that "Clinical interpretation based on norms pooled across all ethnic groups (i.e., African American, Hispanic, and Caucasian) appears to have comparable utility for all young Americans, regardless of ethnic background" (p. 68).

Frank (1993) cited the works of various researchers who investigated the feasibility of using C', one of the Rorschach variables, as an indicator of the presence of depressiveness. Given that the literature did not support the use of C' in this manner (e.g., Schlesinger & Fox, 1980; Lipovsky, Finch, & Belter, 1989), Exner (1991) developed the Depression Index (DEPI) to address this deficiency. Although some researchers have found a positive relationship between DEPI and other depressive features in children and adults (Singer & Brabender, 1993; Spigelman & Spigelman, 1991) other research has not proven the DEPI to be a reliable way in which to assess depression in adults or youngsters, due to the high number of false negative results (e.g., Archer & Gordon, 1988; Ball, Archer, Gordon, & French, 1991; Greenwald, 1990).

With regard to the use of the Rorschach and MMPI with adolescents, Archer and Gordon (1988) made the following cautionary statement, "In general, the sensitivity of MMPI and Rorschach measures in detecting specific forms of adolescent psychopathology should be empirically established based on investigations in adolescent samples rather than extrapolated from the adult literature" (p. 278). Taking

heed of this caution, Caputo-Sacco and Lewis (1991) examined the Rorschach's Egocentricity Index (EI), and the (D) scale on the MMPI with an adolescent sample. A significant relationship was found which revealed that adolescents with lower EI scores (indicating diminished concern for self and depression) showed higher elevations on the (D) scale, compared to their high EI counterparts. This finding was not surprising, given that earlier research had shown that withdrawn youngsters and adults with internalizing patterns (e.g., depression, obsessive-compulsive disorder) obtained lower EI scores. Conversely, youngsters with high EI scores were generally classified as having behavior problems and adults with this pattern fell into diagnostic groups characterized by acting out or externalizing behaviors (e.g., sociopaths) (Exner, Wylie, & Bryant, 1974; cited in Exner, 1978; Exner, 1978).

Researchers utilizing adult samples have also investigated the effectiveness of many other Rorschach variables in identifying the presence of depressive symptoms. For example, Viglione, Brager, and Haller (1988) examined DEPI as well as nine other variables which have been associated with depression (i.e., V, Color Shading, 3r + (2)/R, SumC', MOR, eb, R, FC, and Afr) and found positive results to varying degrees. It would be of interest to systematically examine these variables with adolescents.

A study using the Beck Depression Inventory and the Weinberg Screening Affective Scale with African American,

Anglo, and Hispanic adolescents found Hispanic females to have the highest levels of depression and Anglo males the lowest on both measures (Weinberg & Emslie, 1987, cited in Roberts & Sobhan, 1992). In their own study with adolescents from these same three groups, Roberts and Sobhan (1992) found that the highest levels of depression were found among females (regardless of ethnic group), Mexican American males in comparison to other males, and to a lesser extent, among Mexican American females in comparison to other females.

Focusing on depression/suicide and delinquency in adolescent females, Gibbs (1981) did not find suicidal behavior to be significantly related to ethnicity, although the Anglo females in her study showed greater tendency toward suicidal behavior. Gibbs measured depression with specific items from a structured diagnostic interview and from the reports of parents, probation officers, teachers, and psychological reports. Adcock, Nagy, and Simpson (1991), using a modified version of the National Adolescent Student Health Survey (NASHS), found that Anglo adolescents, more so than African Americans and those classified as "other," were at significantly greater risk to attempt suicide when specific risk factors were present. With regard to completed suicide, Steele (1977) reported that this behavior was just as common among African American youth, a finding which he felt "discredits the widely held belief that suicide is not an important psychiatric problem among blacks" (p. 982).

Gender and age effects on the MMPI and PIY

Archer (1992) cited the work of several researchers who had found contradictory results in their investigations of gender differences in correlate patterns for MMPI scales. Given this state of affairs, Archer concluded that at the present time "...firm conclusions cannot be drawn concerning the degree to which reliable gender differences occur in the correlate patterns of adolescents" (p. 212). With regard to age (i.e., middle school and high school aged adolescents) Lachar and Gruber (1995) reported "...all youth, essentially regardless of chronological age in these pre-adult years, can be accurately assessed with the PIY" (p. 68). In terms of gender effects and the PIY, statistical analyses identified relatively pervasive effects of gender, with four of the nine clinical scales showing significant differences. Further analyses led the authors to develop gender-specific norm conversions for all versions of the PIY.

Implications for Research

Utilization of projective and objective psychological measures in the assessment of adolescent depression has become standard practice. Unfortunately, usage continues despite the limited information to validate their use in this domain. This practice generally occurs because many incorrectly assume that the information found in the more extensive adult depression literature is transferrable to adolescents. The same "if it is true here, it must be true

there" attitude may also apply with regard to the variables of race and gender. Although practitioners ranked the TAT as the third most frequently used measure in their standard batteries with adolescents (Archer, 1992), the research data to support its use with adolescents is practically non-existent. The PIY and MMPI-A have been included in this study because they are new and relatively new measures, respectively, worthy of investigation and because the original version of the MMPI is generally the only objective personality measure practioners have been reported to use when assessing adolescents (Archer, 1992). Any statements concerning adolescent depression should come directly from research conducted with adolescents, rather than being based on extrapolations from the adult literature. It was, therefore, the purpose of this study to 1) empirically assess the effectiveness of various projective and objective instruments in the measurement of depression in inpatient and day-treatment adolescents in order to identify the presence of any racial, gender, and age differences and 2) systematically evaluate the relationship between objective and projective measures of depression.

More specifically, the research questions are as follows:

1. Is it possible to differentiate depression diagnoses (i.e., Adjustment Disorder with Depressed Mood, Dysthymia, Major Depression, and Depression NOS) based on test scores?
2. Are there gender, race, and age differences among

diagnoses and test scores?

Hypotheses:

-There will be a significant difference in tests scores based on gender, with females scoring higher on all measures.

-There will be a significant difference in the number of depressive themes reported on the TAT based on race, with Caucasian participants reporting more depressive themes.

-If differences exist between African American and Caucasian participants with regard to socioeconomic status, there will be a significant difference in scores on the MMPI-A, with African Americans scoring higher on the MMPI-A (D) scale.

-There will be no significant difference in Rorschach and PIY test scores based on race.

-There will be a significant association in the test scores based on age, with older participants obtaining higher depression scores.

3. Will there be any difference in the endorsement of depression based on type of measure (i.e., objective versus projective)?

Hypotheses:

-There will be a significant difference in the endorsement of depression based on type of measure, with objective measures being more sensitive to the presence of depression than projective measures.

-There will be a significant association in the level of

depression based on scores on the Rorschach Egocentricity Index (EI) and MMPI-A (D) scale, with those participants scoring lower on EI having a higher score of (D).

CHAPTER 2

METHOD

Sample and procedure

Participants were 72 adolescent inpatients and day-treatment patients between the ages of 13 and 17 at Kingswood Hospital, a private psychiatric hospital in Ferndale, Michigan. Only those adolescents with an Axis I diagnosis of depression (i.e., Major Depression, Depressive Disorder NOS, Adjustment Disorder with Depressed Mood, Dysthymic Disorder) as determined by their psychiatrist upon admission were included in the study. In addition, because the MMPI-A was used, participating adolescents had to have a reading level equivalent to 6th grade or higher. Reading level was assessed by the Education Department at Kingswood Hospital using the Kaufman Test of Educational Achievement (Kaufman & Kaufman, 1985). Every adolescent admitted to the unit was assessed to determine if they meet all specifications of the inclusion criteria.

The assessment battery included one measure to assess cognitive functioning and four measures to assess personality functioning. In addition, DSM-III-R or DSM-IV (American Psychiatric Association, 1987; American Psychiatric Association, 1994) discharge diagnoses, representing the clinical judgment of the psychiatrist, was

recorded for all patients.

Measures

There were six measures utilized in this study. Depending on the age of the adolescent, either the Wechsler Intelligence Scale for Children-III (WISC-III) or the Wechsler Adult Intelligence Scale-Revised (WAIS-R) was administered to assess cognitive functioning. The WISC-III was used with individuals ages 13-15 and the WAIS-R with 16 and 17 year olds. The personality assessment was completed with use of the Rorschach, Thematic Apperception Test (TAT), Minnesota Multiphasic Personality Inventory-A (MMPI-A), and the Personality Inventory for Youth (PIY).

Standardization

The WISC-III is a measure used to assess the intellectual capacity of children and adolescents. The measure was standardized on a sample of 2200 cases, which included 200 children in each of 11 age groups ranging from 6 through 16 years. Each age group was comprised of 100 males and 100 females. With regard to race/ethnicity, each child was categorized by his or her parent(s) as belonging to one of the following racial/ethnic groups: White, Black, Native American, Eskimo, Aleut, Asian, Pacific Islander, Hispanic, or Other. Children were selected for the normative group based on the proportion of children living in the Northeast, North Central, South, and West geographic regions of the United States. Finally, the sample was

stratified according to five parent education categories (i.e., 8th grade or less, 9th through 11th grade, high school graduate or equivalent, 1 through 3 years of college or technical school, 4 or more years of college) (WISC-III Manual; Wechsler, 1991).

The WAIS-R is a measure used to assess the intellectual capacity of individuals ages 16 years 0 months through 74 years 11 months. The standardization sample of 1880 individuals was divided into nine age groups and the number of cases in each age group ranges from 160 to 300. According to Wechsler (1981), "Since IQ norms were developed for each age group separately, it was not considered necessary for the proportion of the total sample within an age group to equal the proportion of the total United States population within the same age group" (WAIS-R Manual; Wechsler, 1981, p. 16). However, an equal number of men and women were included in each of the nine age groups (the number varied from 80 males and 80 females in a particular age group to 150 males and 150 females in a particular age group). United States census data collected in 1975 and 1977 were used to determine the approximate proportion of each racial category (white and nonwhite) to be included in the standardization sample for each age group tested. Individuals were selected for the standardization sample based on geographic region (Northeast, North Central, South, and West), so that the proportion of sample cases tested in each region corresponded to the proportion of the adult

population living in each region. Occupation was stratified according to six occupational group categories ranging from professional and technical workers to those not in the labor force (e.g., homemakers, full-time students, retired persons). Those individuals ages 16-19 were stratified according to the occupation of the head of their household. Education was not specified for individual cases, rather, an attempt was made to obtain a specified proportion of males and females at each of five educational levels (8 years or less, 9-11 years, high school graduate or equivalent, 13-15 years and 16 years [college graduate] or more) (WAIS-R Manual; Wechsler, 1981).

The Rorschach is a projective personality assessment measure for which norms are available for both youngsters and adults. Figures from the 1970 United States Census were utilized as a reference point for stratification of the child and adolescent sample. Following a series of revisions, the final stratification sample consisted of 1,390 protocols from non-patient children and adolescents ages 5 to 16. The youngsters were recruited through schools and social organizations (e.g., Boy Scouts, Girl Scouts, 4H Clubs). A modified Hollingshead and Redlich scale was used to estimate socioeconomic status. The latter resulted in 17% of the sample being comprised of individuals from the Upper Class, 55% from the Middle Class, and 28% from the Lower Class. A breakdown of the sample by race revealed that 77% were White, 13% Black, 8% Hispanic, and 2% Asian.

Fifty percent of the sample was female and 50% was male. Categorization of the sample by geographic distribution revealed that 30% were from an urban area while 35% were from suburban and rural areas each.

The PIY is a newly constructed objective personality assessment measure that was standardized on a sample of individuals ages 9 to 18. The regular education sample was comprised of 2,327 individuals while 1,178 individuals made up the clinically referred sample. Demographic information from both samples will be presented with the clinically referred sample figures appearing in parentheses immediately after the figures for the regular education sample. A review of the sample demographics revealed that nearly 50% of the sample was male and 50% female (same for clinically referred sample). Ethnic background of the sample included 5.6% (.07%) Asian, 6.5% (18.3%) Black, 11.1% (8.9%) Hispanic, and 73.8% (68.8%) White. The clinically referred sample also had 3.3% who comprised the "Other" category. Geographic region distribution of the sample showed that 24.1% (49.4%) was from the South, 58.9% (40.5%) was from the North Central, and 17% (3.2%) was from the West. The clinically referred sample also had 0.4% from the East and 6.5% from Canada. With regard to parents' educational level, it ranged from 16.5% with less than high school graduation to 28.8% being a college graduate or more. Formal SES information was not captured for the clinically referred sample, however it was noted that the inpatient

settings from which they were derived served a wide variety of communities and roughly 44% had catchment areas focused on low-income, high risk population areas. In sum, 61.4% of the clinically referred sample came from inpatient settings while 38.6% were from outpatient settings.

The MMPI-A is another relatively new objective personality assessment measure. The standardization sample consisted of 1620 adolescents, ages 14 to 18. Eight hundred and five individuals were male and 815 were female. The racial composition of the group included 76% White, 12% Black, and 12% Other. The individuals comprising the sample resided in eight communities in the United States: California, Minnesota, New York, North Carolina, Ohio, Pennsylvania, Virginia, and Washington. A review of parents' educational level revealed that the majority fell within the "well educated" category,. as 50% of the fathers and 40% of the mothers reported themselves as having a bachelors degree or higher.

Although the TAT is a popular projective personality assessment measure, no information could be ascertained regarding its standardization with adolescents.

Reliability and validity of the measures

The average reliability coefficients for the eleven subtests of the WAIS-R across the nine age groups ranged from .68 to .96. For the Verbal, Performance, and Full Scale IQ scores, the average reliability coefficients ranged

from .93 to .97. Test-retest coefficients obtained for the eleven subtests ranged from .72 to .93 based on analyses of a sample of 25 to 34 year olds and from .67 to .94 among 45 to 54 year olds. The test-retest coefficients for the three IQ scores ranged from .89 to .94 and .90 to .97 for the two age groups, respectively. The validity of the WAIS-R as a measure of global intelligence has been well established, given that it overlaps considerably with its predecessors - the Wechsler Adult Intelligence Scale and the Wechsler-Bellevue Intelligence Scale (WAIS-R Manual; Wechsler, 1981).

The average reliability coefficients for the eleven subtests of the WISC-III across the 11 age groups ranged from .69 to .87. For the Verbal, Performance, and Full Scale IQ scores, the average reliability coefficients ranged from .91 to .96. Test-retest coefficients were obtained from a sample of 353 children representing six age groups (6, 7, 10, 11, 14, and 15) from the original standardization sample. The analyses indicated that WISC-III scores possess adequate stability across time and across age groups (WISC-III Manual; Wechsler, 1991). The WISC-III manual (Wechsler, 1991) details the validity of this tool by providing evidence, for example, that it measures what it purports to measure, is related to similar measures, and discriminates among special populations of children.

Rorschach research conducted with non-patient adults has shown that most of the characteristics represented by Rorschach scores are very stable over long periods of time.

This, however, has not proven true for children. Child and adolescent retest correlations for most variables tend to remain low until the interval between ages 14 and 16 (Exner, Thomas, & Mason, 1985). Additionally, when retest intervals are short (e.g., one to three weeks), retest correlations for most variables are quite high for both adults and children (Exner & Weiner, 1982). With regard to validity, Exner (1995) stated, "... as a rule, protocols in which the number of responses is less than 14 should probably be discarded on the premise that they are unreliable and as such are not interpretively valid" (p. 33).

Pearson Product-Moment test-retest correlations for the ten MMPI-A clinical scales ranged from .65 to .84. Internal consistency coefficients (alpha) for the clinical sample of male adolescents on the ten clinical scales ranged from .44 to .88. For the clinical sample of females, alpha ranged from .35 to .91. With regard to the validity of the MMPI-A, factor analysis of the validity and clinical scales revealed that they are comparable to the traditional MMPI scales for adolescents and their factor structures are similar to the findings in previous factor-analytic studies.

Analyses of adolescents comprising the clinically referred sample for the PIY indicate that internal consistency and test-retest reliability figures are within adequate range. For the nine clinical scales, alphas ranged from .74 to .92 and test-retest correlations ranged from .76 to .91. PIY validity information (criterion-related,

construct-related, and content-related) is well documented within the PIY manual (Lachar & Gruber, 1995).

Responding to criticism regarding the lack of reliability for the TAT, Obrzut and Cummings (1983) stated that rather than focusing on test-retest reliability (consistency over time) that "a more realistic type of reliability for projective tools might incorporate their ability to categorize various types of psychopathologies consistently over time and over examiners" (p. 416). Regarding internal consistency (split-half reliability), they point out that each card of the TAT was not developed to elicit equivalent themes, drives, emotions, traits, and conflicts. Therefore, according to Exner (1976, cited in Obrzut & Cummings, 1983) responses to the various cards should be interpreted in the context of a gestalt where each response contributes to the whole, but not necessarily with the same weight or impact for each respondent. Reliability for specific variables on the TAT has been widely documented with the adult population and to a lesser extent with children and adolescents (Obrzut & Cummings, 1983). Responding to the validity of the TAT and other projective tests, Obrzut and Cummings stated that "Projective tests in general may be most valid when used as a type of structured clinical interview. In this context, projective tests facilitate an understanding of the unique needs, interests, pressures, conflicts, affective and cognitive styles, and coping strategies that characterize each individual

[respondent]" (p. 418).

Administration of the measures

All Rorschachs were administered and scored according to the guidelines for Exner's Comprehensive System. The evaluators included the author, three clinical psychology graduate students, and one Ph.D. psychologist. Each evaluator had previously been trained in the administration and scoring of the test. Inter-rater reliability for 15 randomly selected protocols was calculated using the percent exact agreement method. With this method, reliability equals the sum of the total number of responses, minus the sum of the number of disagreements (i.e., scoring discrepancies between two raters), divided by the total number of items on the measure. The resulting inter-rater reliability ranged from .63 to 1.00, with an average reliability of .90. Protocols with less than 14 responses were not included in order to ensure structural summary validity. Specific variables of interest included those which have been associated with depression: DEPI, V, Color Shading, 3r + (2)/R, C', MOR, eb, R, FC, and Afr.

The TAT's were administered by the author and three clinical psychology graduate students according to the instructions below. Participants were given an opportunity to tell a story about each picture and their responses were recorded verbatim by the examiner. Eight cards were presented. The stories were evaluated for themes of

depression in the following manner: To obtain an "overall depression score" (i.e., total depression theme) for the TAT, a story was given a score of 1 for the presence of a depression theme and a score of 0 if it was not present. A score of 1 was given for any story in which the adolescent described sadness, unhappiness, sorrow, crying, giving up, inability to function as expected or to function fully, fatigue, apathy, boredom, daydreaming, disappointment, disgust, grieving/mourning, misery, and pity. The number of depression themes present in the protocol was then divided by the number of cards presented to the participant and the resulting percentage represented the participant's total depression theme score. For the purpose of this study, depression was said to be present if the depression theme score for the total number of cards presented was 50% or higher. The percent exact agreement method was also used with the TAT to determine inter-rater reliability for 15 randomly selected protocols. Reliability ranged from .75 to 1.00, with an average reliability of .94. The TAT administration instructions were as follows:

> "I am going to show you some pictures in which you will see a person or people in a scene. On each one, I would like for you to tell a story that has a past, present, and future. In other words, try to tell what led up to the scene, what is happening in the scene now, and how the scene will end. Also, I would

like for you to tell what the person or people might be thinking and feeling."

If the participant failed to provide information concerning the identity and interrelationships of the characters and the thoughts and/or feelings of the character(s), the examiner made inquiries to elicit this information.

The eight cards selected for use in this study were those research has shown to be the most productive in eliciting thematic material (Hartman, 1970; Haynes & Peltier, 1985; Irvin & Vander Woude; 1971). The eight cards administered in this study were as follows: (#1) a young boy is contemplating a violin which rests on a table in front of him; (#2) country scene: in the foreground is a young woman with books in her hand and in the background a man is working in the fields and an older woman is looking on; (#3BM) on the floor against a couch is the huddled form of a boy with his head bowed on his right arm. Beside him on the floor is a revolver; (#4) a woman is clutching the shoulders of a man whose face and body are averted as if he were trying to pull away from her; (#6BM) a short elderly woman stands with her back turned to a tall young man. The latter is looking downward with a perplexed expression; (#7BM) A gray-haired man is looking at a younger man who is sullenly staring into space; (#8BM) an adolescent boy looks straight out of the picture. The barrel of a rifle is visible at one side, and in the background is the dim scene

of a surgical operation, like a reverie-image; and (#13MF) A young man is standing with downcast head buried in his arm. Behind him is the figure of a woman lying in bed.

The MMPI-A was given to each adolescent under the supervision of the author in an appropriate setting. The MMPI-A can be completed by adolescents 14-18 years old who have at least a 6th grade reading level. The measure also has been deemed appropriate for use with 13 year olds if they have at least a 7th grade reading level and a minimal Full Scale IQ score of 70 (Archer, 1992). All protocols were computer scored. A protocol was considered to show evidence of depression if the T-score for Scale 2 (D) was 60 or higher.

The Personality Inventory for Youth (PIY) was administered by the author to each adolescent individually. The minimal reading level necessary for completion of the PIY is 3rd grade and it can be administered to children and adolescents ages 9 to 18. Each protocol was hand-scored. A protocol was considered to show evidence of depression if the T-score for the Psychological Discomfort scale (i.e., the depression scale comprised of three subscales) was 60 or higher.

Demographic variables of interest included educational level and Full Scale IQ score for the participants as well as educational level of parent(s) to determine socioeconomic status.

CHAPTER 3

RESULTS

Descriptive Results

The findings from the three research questions investigated in this study and their related hypotheses will be presented in this section, as well as information regarding the demographic characteristics of the sample and their responses to the variables of interest concerning this study.

The demographic characteristics of the sample are presented in Table 1. As indicated, the majority of the participants were Caucasian females (55.6% and 58.3%, respectively). Fifty percent were ages 15 and 16 (average age of 15.01 years) and 59.7% were 9th and 10th graders (average grade of 9.21). The participants had an average reading level equivalent to the 8th grade. Reading level ranged from 3rd to 12th grade or higher. IQ scores ranged from 70 to 123, with the average score being 90.63. With regard to diagnosis, most of the participants were given a diagnosis of Depression, NOS upon admission (59.2%) and at discharge (57.1%). Of the 72 participants, there was a total of 69 with a recorded admission and discharge diagnoses (1 participant was missing a formal admission

Table 1 Demographic Characteristics

Variable	N	Percent
Gender		
Female	40	55.6
Male	32	44.4
Race		
African American	30	41.7
Caucasian	42	58.3
Age		
13	12	16.7
14	14	19.4
15	17	23.6
16	19	26.4
17	10	13.9
Full Scale IQ		
70-79	17	23.6
80-89	20	27.8
90-109	28	38.9
110+	7	9.7
Reading level		
less than 6.0	16	22.2
6.0-6.9	16	22.2
7.0-7.9	5	6.9
8.0-8.9	8	11.1
9.0-9.9	7	9.7
10.0-10.9	7	9.7
11.0-11.9	3	4.2
12.0+	10	13.9

Table 1 (cont'd)

Variable	N	Percent
School grade		
7	8	11.1
8	10	13.9
9	27	37.5
10	16	22.2
11	8	11.1
12	3	4.2
Admission Diagnosis		
Major Depression	24	33.8
Depression NOS	42	59.2
Adjustment Disorder with depressed mood	1	1.4
Dysthymia	4	5.6
Frequency Missing = 1		
Discharge Diagnosis		
Major Depression	13	18.6
Depression NOS	40	57.1
Adjustment Disorder with depressed mood	1	1.4
Dysthymia	5	7.1
Other	11	15.7
Frequency Missing = 2		

diagnosis and 2 others were missing a discharge diagnosis). Analysis which has not been included in this report indicated that 50 of the participants were given the same diagnosis upon admission and discharge: 34 Depression NOS, 13 Major Depression, 2 Dysthymia, and 1 Adjustment Disorder with depressed mood. It was also found that diagnoses outside the depression classification (i.e., Bipolar Disorder, Schizoaffective Disorder, Anxiety Disorder, Paranoid Personality Disorder) were given to 15.7% of the participants at discharge. The final demographic variable of interest is parent education. Parent education was assessed by directly asking participants. Of the total sample, only 41 participants (57%) knew this information. Of this number, it was found that 29.3% of the parents were high school graduates and 58.5% had attended college.

A review of responses for the various Rorschach variables in Table 2 revealed that the structural summary could not be completed for 16 participants because their response total was less than 14. Additionally, there were five participants who did not complete a Rorschach, due to being discharged before the test could be administered. A response total lower than 20 generally indicates the presence of lethargy in individuals who are feeling below par psychologically. Nearly 75% of the participants gave response totals which only ranged from six to 19. A DEPI of five likely signifies the presence depressive features in an individual's present condition, while a DEPI of six or seven

Table 2 Rorschach Variables

Variable	N	Percent
Responses		
less than 14	16	23.9
14-19	34	50.7
20+	17	25.4
Frequency Missing = 5		
DEPI		
Not Scorable	16	23.9
0	1	1.5
1-2	16	23.9
3-4	28	41.8
5	4	6.0
6	2	3.0
Frequency Missing = 5		
Vista		
Not Scorable	16	23.9
0	45	67.2
1	4	6.0
2	1	1.5
3	1	1.5
Frequency Missing = 5		
Color-shading blend		
Not Scorable	16	23.9
0	42	62.7
1	6	9.0
2	2	3.0
3	1	1.5
Frequency Missing = 5		

Table 2 (cont'd)

Variable	N	Percent
Egocentricity Index		
Not Scorable	16	23.9
less than .33	12	17.9
greater than or equal to .33	39	58.8
Frequency Missing = 5		
C'		
Not Scorable	16	23.9
0-2	42	62.7
3-5	7	10.4
6+	2	3.0
Frequency Missing = 5		
Morbid		
Not Scorable	16	23.9
0-1	42	62.7
2-4	8	11.9
5+	1	1.5
Frequency Missing = 5		
FC		
Not Scorable	16	23.9
0-1	34	50.7
2-4	14	20.9
5+	3	4.5
Frequency Missing = 5		

Table 2 (cont'd)

Variable	N	Percent
Affective Ratio		
Not Scorable	16	23.9
less than .46	28	41.8
greater than or equal to .46	23	34.3
Frequency Missing = 5		
EB		
Not Scorable	16	23.9
Right > Left	14	20.9
Right < Left	37	55.2
Frequency Missing = 5		

likely signifies the presence of a major depressive episode or a chronic disposition to becoming pathologically depressed. Looking at the participants' DEPI scores, it can be seen that four obtained a DEPI of five (6.0%) and two (3.0%) obtained a DEPI of six. The presence of one or more Vista responses denotes self-rumination which often results in feelings of guilt or remorse and the vast majority of the participants (67.2%) had no Vista responses. Responses designated as Color-Shading blends are associated with feelings of confusion which keep individuals from enjoying themselves, even to the point of anhedonia. Criteria for the latter is met when one or more of such responses are present. Nine participants (13.5%) had Color-Shading blend responses ranging from one to three. Twelve participants (17.9%) obtained an Egocentricity Ratio that was less than or equal to .33. When this ratio is low, it indicates the presence of a negative self-image in that an individual has a tendency to compare him/herself unfavorably with others. When three or more achromatic color responses appear in a protocol they indicate the presence of unpleasant internalized affect which is excessive and has dysphoric overtones. The average number of achromatic color responses was 1.57 with nine participants (13.4%) giving between 3 and 10 responses. The Rorschach variable which measures a generally pessimistic outlook on life is the Morbid response. The percentage of participants obtaining two or more Morbid responses was 13.4%. Form-dominated color

responses (FC) have been equated with the use of cognitive elements to control or direct passive affective experiences. A lower score on this variable (less than 2) suggests a tendency toward emotional acting out which is the opposite trend one would expect to see manifest in depressives. The results indicate that a greater percentage of the participants have a tendency toward emotional acting out (50.7%) rather than a control of affect by a more passive process (25.4%). A low Affective Ratio (i.e., less than .46), indicates a withdrawal from close interpersonal contact and affect-laden situations. The majority of participants (41.8%) had low Affective Ratio scores. Finally, when shading responses out-number the sum of animal and inanimate movement responses (eb; Right > Left) this signifies excessive experienced emotional distress or dejection. This type of distress was only present for 20.9% of the participants.

Table 3 shows whether or not the TAT stories told by the participants included a depressive theme. It should be noted, that as a result of evaluator error, some of the TAT cards were not administered to each participant (see frequency missing data). The obtained data do, however, indicate that more participants tended to offer depressive themes to Card 3BM (69.1%) and Card 6BM (55.7%) than to the other six cards. The results show that depression themes of 50% or higher were obtained by 51.5% of the participants.

The MMPI-A findings are reported in Table 4. The MMPI-A

Table 3 TAT Variables

Variable	N	Percent
Card 1		
depression theme	36	52.9
no depression theme	32	47.1
Frequency Missing = 4		
Card 2		
depression theme	21	36.2
no depression theme	37	63.8
Frequency Missing = 14		
Card 3BM		
depression theme	47	69.1
no depression theme	21	30.9
Frequency Missing = 4		
Card 4		
depression theme	20	29.4
no depression theme	48	70.6
Frequency Missing = 4		

Table 3 (cont'd)

Variable	N	Percent
Card 6BM		
depression theme	34	55.7
no depression theme	27	44.3
Frequency Missing = 11		
Card 7BM		
depression theme	12	19.7
no depression theme	49	80.3
Frequency Missing = 11		
Card 8BM		
depression theme	15	24.6
no depression theme	46	75.4
Frequency Missing = 11		
Card 13MF		
depression theme	28	41.2
no depression theme	40	58.8
Frequency Missing = 4		

Table 3 (cont'd)

Variable	N	Percent
Total depression theme		
less than .50	33	48.5
greater than or equal to .50	35	51.5
Frequency Missing = 4		

was not administered to 17 participants as 16 of them did not have the required 6th grade reading level and one was discharged before the test could be completed. A little over 36% of the participants obtained a (D) T-score of 60 or greater to indicate the presence of depression. The average depression score was 57.98.

Table 5 shows that 39.7% of the participants obtained a T-score of 60 or higher on the Psychological Discomfort scale of the PIY. The average depression score was 57.56. Due to discharge, four participants were not administered the PIY.

Before presenting the results of the specific research questions and hypotheses, it is necessary to note that due to the small number of participants given the diagnoses of Adjustment Disorder with depressed mood (n=1) and Dysthymia (n=4) upon admission, that these participants were not included in any of the analyses.

Additionally, it is necessary to note that when the term "Rorschach" is used in this section, it refers to DEPI, "MMPI-A" refers to the (D) scale score, "PIY" refers to the Psychological Discomfort scale score, and "TAT" refers to the overall depression theme score.

Research Question 1. Is it possible to differentiate depression diagnoses (i.e., Major Depression and Depression NOS) based on test scores? To address this research question, a chi-square analysis was conducted (or a Fisher's Exact Test if a cell size was less than 5). In this case,

Table 4 MMPI-A Variable

Variable	N	Percent
MMPI-A (D) scale		
less than 60	35	63.6
greater than or equal to .60	20	36.4
Frequency Missing = 17		

Table 5 PIY Variable

Variable	N	Percent
PIY Psychological Discomfort scale		
less than 60	41	60.3
greater than or equal to .60	27	39.7
Frequency Missing = 4		

the chi-square analysis or Fisher's Exact Test was used to assess the prevalence of presence or absence of depression (based on test scores) between admission diagnosis (i.e., Major Depression and Depression NOS). As Table 6 indicates, of the total participants classified as depressed by the MMPI-A, a significantly higher proportion ($p=0.012$) had the Major Depression diagnosis (57.89%) upon admission as compared to Depression NOS (22.58%). A larger proportion of patients classified as depressed on the PIY and Rorschach tended to be diagnosed as Major Depression (54.55%, 15.79%, respectively), rather than Depression NOS (31.71%, 7.17%, respectively), upon admission, although the difference did not meet significance ($p=0.077$, $p=0.318$, respectively). Additionally, it was found that a higher proportion of those classified as depressed by the TAT were given the Depression NOS diagnosis upon admission. The latter finding did not, however, reach significance.

Research Question 2. Are there gender, race, and age differences among diagnoses and test scores? Hypothesis 1 states that there will be a significant difference in tests scores based on gender, with females scoring higher on all measures. In this case, the chi-square analysis or Fisher's Exact Test was used to assess the prevalence of presence or absence of depression (based on test scores) between males and females. The results, presented in Table 7, show that a significantly higher proportion of females (67.74%) were classified as depressed compared to males (34.38%) only on

Table 6 Chi-square Analysis Comparing Admission Diagnosis Differences for the Depression Tests

Test	Depression NOS N (%)	Major Depression N (%)	P-Value
Rorschach	2 (7.14)	3 (15.79)	0.381f
TAT	21 (53.85)	11 (45.83)	0.537
PIY	13 (31.71)	12 (54.55)	0.077
MMPI-A	7 (22.58)	11 (57.89)	0.012*

*p < .05
f = Fisher's Exact Test

Table 7 Chi-square Analysis Comparing Gender Differences for the Depression Tests

Test	Depressed Males N (%)	Depressed Females N (%)	P-Value
Rorschach	2 (8.00)	3 (13.64)	0.654f
TAT	11 (34.38)	21 (67.74)	0.007*
PIY	10 (33.33)	15 (45.45)	0.325
MMPI-A	6 (30.00)	12 (40.00)	0.468

*p < .05
f = Fisher's Exact Test

Table 8 Chi-square Analysis Comparing Racial Differences for the Depression Tests

Test	Depressed African Americans N (%)	Depressed Caucasians N (%)	P-Value
Rorschach	1 (6.25)	4 (12.90)	0.648f
TAT	12 (46.15)	20 (54.05)	0.537
PIY	5 (19.23)	20 (54.05)	0.004*
MMPI-A	3 (21.43)	15 (41.67)	0.211f

*p < .05
f = Fisher's Exact Test

the TAT (p=0.007). Although females did not score significantly higher on depression than males on the MMPI-A (p=0.468), PIY (p=0.325), and Rorschach (p=0.654), for each of these tests a higher percentage of females were classified as depressed (40.00%, 45.45%, and 13.64%, respectively) as compared to males 30.00%, 33.33%, 8.00%, respectively).

Hypothesis 2 states that there will be a significant difference in the number of depressive themes reported on the TAT based on race, with Caucasian participants reporting more depressive themes. Table 8 shows the results of the chi-square or Fisher's Exact Test for this hypothesis. As indicated, the proportion of participants classified as depressed on the TAT was not significantly different for race (p=0.537). While not meeting significance, the results indicate that a higher percentage of Caucasians were classified as depressed compared to African Americans on the Rorschach (12.90%) and MMPI-A (41.67%). An unexpected significant finding was obtained regarding race and the PIY in that a higher proportion of Caucasian participants (54.05%) were classified as depressed as compared to African American participants (19.23%).

Hypothesis 3 states that if differences exist between African American and Caucasian participants with regard to socioeconomic status (SES), there will be a significant difference in scores on the MMPI-A, with African Americans scoring higher on the MMPI-A. This hypothesis was

investigated using a Student's two-sample t-test since parent education (used to estimate SES) was coded as a continuous variable. The results in Table 9 reveal that level of parent education (i.e., SES) was not significantly different for African American and Caucasian participants ($p=0.797$). For African American participants, their parents had an average education of 13.07 years while the average education for Caucasian participants parents was 12.92 years.

Hypothesis 4 states that there will be no significant difference in Rorschach and PIY test scores based on race. As was reported in Table 8, there was no significant difference in the proportion of African American (6.25%) and Caucasian (12.90%) participants classified as depressed by the Rorschach ($p=0.648$). However, a significant racial difference was found in the results ($p=0.004$) with a higher proportion of Caucasian participants (54.05%) as compared to African American participants (19.23%) being classified as depressed by the PIY.

Hypothesis 5 states that there will be a significant association in the test scores based on age, with older participants obtaining higher depression scores. Table 10 shows the results of this Spearman correlational analysis. As indicated, the relationships between the age of the participant and test score were of weak linear strength as illustrated by the low correlations ranging from -.12 to .07. None of these relationships were statistically

Table 9 T-test Analysis of the Association of Parent Education with Race

	African Americans			Caucasians			
Variable	N	Mean Education	SD	N	Mean Education	SD	P-Value
Parent Education	15	13.07	1.2	26	12.92	2.3	0.797

SD = Standard Deviation

Table 10 Spearman Correlations for the Association of Age and the Depression Tests

	Depression Test			
Variable	Rorschach	TAT	PIY	MMPI-A
	N=47	N=63	N=63	N=50
Age	-.07	-.12	-.02	.07

$p > 0.05$

Table 11 Agreement Between Objective and Projective Measures' Classification of Depression

Test	Objective Depressed N (%)	Objective Not Depressed N (%)	Totals N (%)
Projective Depressed	18 (40.00)	10 (22.22)	28 (62.22)
Projective Not Depressed	11 (24.44)	6 (13.33)	17 (37.78)
Totals	29 (64.44)	16 (35.56)	45 (100.00)

significant, $p > 0.05$ for each.

Research Question 3. Will there be any difference in the endorsement of depression based on type of measure (i.e., objective versus projective)? Hypotheses 1 states that there will be a significant difference in the endorsement of depression based on type of measure, with objective measures being more sensitive to the presence of depression than projective measures. In order to investigate this hypothesis, the McNemar test and the Kappa statistic were used. The McNemar test evaluates whether the two classification variables (i.e., objective measures and projective measures) are similar in their tendency to classify the participants as depressed. The Kappa statistic evaluates the strength of agreement between the two classification variables beyond what would be expected by chance alone. Table 11 indicates a very poor level of agreement (Kappa = -0.004) between the objective and projective measures in their classification of depression. Both the objective and projective classifications of depression, however, were similar in their tendency to classify the participants as depressed (McNemar p=0.827). Although not significant, there was a slightly higher percentage of participants classified as depressed by the objective measures (64.44%) as compared to the projective measures (62.22%).

Hypothesis 2 states that there will be a significant association in level of depression based on scores on the

Rorschach Egocentricity Index (EI) and MMPI-A (D) scale, with those participants scoring lower on EI having a higher score of (D). A Pearson correlational analysis was conducted to evaluate the relationship between these two measures. Table 12 shows that the relationship between EI and the MMPI-A (D) scale is a negative or inverse one of weak linear strength as illustrated by the low correlation of -.03. This relationship also was not statistically significant, $p = 0.847$.

Table 12 Pearson Correlation Between Rorschach EI and MMPI-A (D) Scale Classification of Depression

Depression Test	MMPI-A (D) scale
	Participants (N=38)
Egocentricity Index (EI)	-.03

$p > 0.05$

CHAPTER 4

DISCUSSION

This study sought to empirically assess the effectiveness of projective (Rorschach and Thematic Apperception Test) and objective (Minnesota Multiphasic Personality Inventory - Adolescent and Personality Inventory for Youth) measures in classifying adolescents with a DSM-III-R or DSM-IV depression diagnosis as depressed. In addition to depression diagnosis, the measures were also systematically evaluated with the variables of race, gender, and age to determine if significant differences exist in these areas. A final focus of this study was to systematically evaluate the relationship between the objective and projective measures of depression.

As a result of the small number of participants diagnosed with Dysthymia and Adjustment Disorder with depressed mood, they were not included in any of the analyses. The results of this research indicated that MMPI-A classification of depression and the diagnosis of Major Depression were significantly related. This finding supports those obtained by others (e.g., Archer & Gordon, 1988) who evaluated MMPI scale (D) and diagnosis. In addition, there was a suggested trend toward a higher

proportion of participants with a Major Depression diagnosis being classified as depressed by the PIY and Rorschach. Since the criteria one has to meet in order to be diagnosed with Major Depression is much more specific than that needed to be diagnosed Depression NOS, one might speculate that this could be a potential explanation for the obtained results regarding diagnosis and depression classification by measure. That is to say that when the physician gives a Major Depression diagnosis s/he may be more certain that depression is present than if a Depression NOS diagnosis is offered. And the increased level of certainty in these cases is likely to be consistent with the adolescent's perception of their level of depression.

The evaluation of gender with the various objective and projective measures revealed that a significant gender relationship was found in the results of the TAT. In addition, although not meeting the required level of significance, a higher percentage of females as compared to males were classified as depressed on the Rorschach, MMPI-A, and PIY. On the one hand, this result was not surprising, given that the prevalence of depression in women and post-pubertal girls in Western cultures is a well documented fact. However, it has been reported that some of the depression measures (e.g., MMPI) have been inconclusive in their ability to make firm statements about the "degree to which reliable gender differences occur in the correlate patterns of adolescents" (Archer, 1992, p. 212).

Although it was hypothesized that a higher percentage of Caucasian participants would be classified as depressed on the TAT, no significant result was found. The trend, however, was in this direction. It has been reported in the literature that individuals belonging to the white, Anglo-Saxon culture more readily relate on an affective and experiential basis to the scenes depicted in TAT stimulus cards than do individuals of other races/ethnicities. Significance may not have been reached because the stimulus cards were pulling for a variety of affective themes, not just depression. A significant relationship was, however, found in terms of race and depression classification by the PIY. That is, a significantly higher proportion of Caucasian participants were classified as depressed by the PIY. The same directional relationship, although not reaching significance, was found to exist for Caucasian participants and depression classification by the Rorschach and MMPI-A.

Given that no significant difference was found for race and socioeconomic status, (defined by parent education; Lachar & Gruber, 1995), it was not possible to further assess whether the difference in socioeconomic status would have been significantly related to classification as depressed by the MMPI-A. It was hypothesized that African Americans would score higher on the MMPI-A if differences in socioeconomic status had existed.

As predicted, race and classification as depressed by

the Rorschach were not significantly related. As stated above, however, a racial difference was found for depression classification by the PIY, with Caucasians being classified as depressed at a significantly higher rate. This finding may be related to the fact that a higher percentage of those with a depression diagnosis upon admission were Caucasian females (36%) as compared to the other reference groups (i.e., Caucasian males = 22%, African American females = 19%, and African American males = 22%). Based on the overall results of this study, the categories of race (i.e., Caucasian) and gender (i.e., female) have rather consistently been related to depression classification by the various objective and projective measures.

No significant relationships were found between age and the scores obtained on the four depression tests.

The results revealed that the probability of participants being classified as depressed by the objective measures was similar to that of being classified depressed by the projective measures, although there was a poor level of agreement between the two types of measures in their classification of depression. Overall, the objective measures had a small, but not significant, advantage over the projective measures in classifying participants as depressed. The poor level of agreement may be related to scoring differences, in that scoring for the objective measures is less subjective, due to the availability of standardized scoring procedures.

No statistically significant relationship was found between the Rorschach Egocentricity Index (EI) and the MMPI-A (D) scale.

Implications and Future Directions

This study was a multimethod assessment of depression in an adolescent sample. It was undertaken to add information to the literature concerning the relationships between various indicators of depression on the Rorschach (i.e., DEPI and EI), MMPI-A ((D) scale), PIY (Psychological Discomfort scale), and TAT (depression theme score) with the variables of age, race, gender, and diagnosis. Certain methodological limitations (e.g., small sample size, lack of a control group, type of analysis selected) influenced the results as reported in this study. For example, if a control group of adolescent participants without a history of mental health treatment (i.e., "normal" adolescents) had also been included in this study, their addition would have permitted evaluation of the possibility that being diagnosed with depression is related to scoring in the clinical range on the various depression measures/scales. With regard to analysis selection, it can be stated that even though all of the participants in this study were given a depression diagnosis upon admission by their physician, not all of them scored in the clinical range on the various depression measures/scales. As a result of the obtained test scores, the participants were dichotomized, or placed into either the depressed group or the not depressed group and the Chi-

square test was employed to investigate how the depressed group performed with respect to the variables of interest. In their original form, test scores would have been categorized as continuous variables. However, by establishing a cut-off score (e.g., all those obtaining a T-score of 60 or higher on the MMPI-A (D) were classified as depressed and those scoring 59 or lower were not depressed) as a way to identify participants as depressed or not depressed, this resulted in a loss of information. In other words, a loss of information resulted when the continuous variable was rescaled to a lower level (i.e., to an ordinal variable). The advantages and disadvantages of rescaling a measure was summarized by Riegelman and Hirsch (1996, p. 268) in the following manner, "...rescaling to a lower level reduces statistical power making it harder to establish statistical significance, and thus, reject a false null hypothesis. What we gain by rescaling to a lower level is the ability to circumvent making certain assumptions, such as uniform intervals, about the data that are required to perform certain statistical tests." Despite the methodological limitations indicated, several significant results were obtained. When results did not reach an acceptable level of significance, many were noted to be in the hypothesized direction.

Theoretically, one would have expected all of the participants to have been classified as depressed on all scales/measures since none were included in this study who

were not given a depression diagnosis by their physician. As the results indicated, this was not the case. One explanation of this discrepancy between what is expected to occur in theory versus reality focuses on the use of cutoff scores. That is, studies comparing diagnosis with test score have shown that the use of cutoff scores to maximize accuracy leads to a high rate of false negatives (i.e., being identified as not depressed on the measure but having received a diagnosis of depression (e.g., Asarnow & Carlson, cited in Kendall, Cantwell, & Kazdin, 1989, p. 136). Mis-diagnosis and inappropriate use of hospitalization have also be cited as plausible explanations for the discrepancy between theory and reality. For example, for this study, physician diagnosis was treated as an external criterion representing the most "correct" diagnostic placement for the participant despite evidence indicating that there are problems inherent in the use of clinician-derived judgments (Johnson et al., 1992). In addition, with regard to inappropriate use of hospitalization, Eamon (1994) reported that "often inpatient treatment [for children and adolescents] cannot be justified on the basis of the admitting diagnosis" (p. 588). Support that the latter, as reported by Eamon, was indeed a factual occurrence was noted in 1988 by Weithorn. Following a review of national surveys and studies, Weithorn found that fewer than one-third of youngsters admitted for inpatient mental health treatment were diagnosed with a severe or acute mental disorder such

as psychosis, serious depression, or organic disorder. The behavior of these youngsters also was not such that they required an inpatient setting because they were a serious threat to themselves or others. For the most part, these youngsters could be more aptly classified as reacting to troubled or inadequate family situations, or being rebellious, disruptive, or non-compliant. Why then, are youngsters receiving inpatient treatment who may not be appropriate for this level of care? Both Eamon and Weithorn concur that private and public (mainly Medicaid) insurance practices have restricted many of the opportunities some individuals have in obtaining mental health services at the appropriate level of care. For example, private insurance tends to pay for inpatient treatment, but offers little to no coverage for outpatient services. And Medicaid, because reimbursement is low and often difficult to obtain, is not accepted by many private practitioners. But because Medicaid will pay for hospitalization, this unfortunately forces many with this type of insurance to use hospitalization even though a less restrictive level of care on an outpatient basis would be more appropriate.

A review of the adolescent depression literature in light of the results of this study provided some insight into the reasons some of the results may have emerged in the manner in which they did. Regarding the Rorschach, for example, Exner (1982) reported that the data from this projective assessment were not designed to allow for the

specific detection of depression as contrasted with generalized distress. Given this, clinicians are strongly encouraged to evaluate the Rorschach's indicators of depression with other information in the structural summary, as well as with data obtained from other sources (i.e., additional psychological tests, behavioral observation). Lipovsky, Finch, and Belter (1989) did not find Rorschach indicators of depression to be strongly related to depression. In their study, the ability to determine whether a participant was depressed or not depressed was more accurately assessed with the use of objective measures. The non-significant findings of the TAT may be explained by the fact that the TAT was not designed to be a specific measure of depression, and as such, one may do better to think of it as a general index of distress. The accurate assessment of depression, or any other affect, is , however, difficult with the TAT. Despite widespread use of this measure, the TAT has been criticized on grounds that it lacks validity and that research results are not easily generalizable (Cooper, 1981); Sharkey & Ritzler, 1985; Vane & Guarnaccia, 1989). Although the eight TAT cards selected for use in the current study were the ones reported in the literature as provoking the most affect, researchers have been known to include any combination and number of cards in their studies (Keiser & Prather, 1990). Instructional set has also been cited as a factor contributing to the validity issue of the TAT (Lundy, 1988). In terms of race, the fact

that the African American participants (versus Caucasian participants), male or female, in the current study were not classified as significantly depressed by any of the measures may relate to findings that cultural differences exist concerning the manner in which depression is expressed. It has been reported that individuals in African American and Hispanic cultures tend to discourage the direct affective expression of depression (Murphy, Witkower, & Chance, 1970). One way to circumvent the undue cultural influence in responses is to establish cross-cultural norms for projective and objective tests.

Finally, although there is value in evaluating adolescents in light of findings derived from the adult depression literature, it is clear that in order to truly advance the knowledge base in the area of adolescent depression that research which focuses on the unique characteristics of this population and which uses measures designed specifically for them is necessary. Armed with more accurate, adolescent-derived, information clinicians involved with this population will be able to make the best decisions about diagnosis and treatment.

LIST OF REFERENCES

LIST OF REFERENCES

Achenbach, T. M. (1978). Psychopathology of childhood: Research problems and issues. Journal of Consulting and Clinical Psychology, 46, 478-488.

Achenbach, T. M. & Edelbrock, C. S. (1983). Manual for the Child Behavior Checklist and revised Child Behavior Profile. Burlington, VT: University Associates of Psychiatry.

Adcock, A. G., Nagy, S., & Simpson, J. A. (1991). Selected risk factors in adolescent suicide attempts. Adolescence, 26, 817-828.

Adebimpe, V. R. (1981). Overview: White norms and psychiatric diagnosis of black patients. American Journal of Psychiatry, 138, 279-285.

Adebimpe, M. D., Gigandet, J., & Harris, E. (1979). MMPI diagnosis of Black psychiatric patients. American Journal of Psychiatry, 136, 85-87.

Alyward, G. P. (1985). Understanding and treatment of childhood depression. The Journal of Pediatrics, 107, 1-9.

American Psychiatric Association (1980). Diagnostic and statistical manual of mental disorders (3rd ed). Washington, DC: American Psychiatric Association.

American Psychiatric Association (1987). Diagnostic and statistical manual of mental disorders (3rd ed., revised). Washington, DC: American Psychiatric Association.

American Psychiatric Association (1994). Diagnostic and statistical manual of mental disorders (4th ed). Washington, DC: American Psychiatric Association.

Anastasi, A. (1982). Psychological testing (5th ed.). NY: MacMillan.

Aneshensel, C. S., Clark, V. A., & Frerichs, R. R. (1983). Race, ethnicity, and depression: A confirmatory analysis. Journal of Personality and Social Psychology, 44, 385-398.

Angold, A. (1988). Childhood and adolescent depression II: Research in clinical populations. British Journal of

Psychiatry, 153, 476-492.

Angold, A., Weissman, M. M., John, K., Wickramaratne, P., & Prusoff, B. (1991). The effects of age and sex on depression ratings in children and adolescents. Journal of the American Academy of Child and Adolescent Psychiatry, 30, 67-74.

Archer, R. P. (1992). MMPI-A: Assessing adolescent psychopathology. NJ: Lawrence Erlbaum Associates.

Archer, R. P., Ball, J. D., & Hunter, J. A. (1985). MMPI characteristics of borderline psychopathology in adolescent inpatients. Journal of Personality Assessment, 49, 47-55.

Archer, R. P., & Gordon, R. A. (1988). MMPI and Rorschach indices of schizophrenic and depressive diagnoses among adolescent inpatients. Journal of Personality Assessment, 52, 276-287.

Baron, P. & Joly, E. (1988). Sex differences in the expression of depression in adolescents. Sex Roles, 18, 1-7.

Ball, J. D., Archer, R. P., Gordon, F. A., & French, J. (1991). Rorschach depression indices with children and adolescents: Concurrent validity findings. Journal of Personality Assessment, 57, 465-476.

Beardslee, W. R., Keller, M. B., Lavori, P. W., Staley, J., Sacks, N. (1993). The impact of parental affective disorder on depression in offspring: A longitudinal follow-up in a nonreferred sample. Journal of the American Academy of Child Adolescent Psychiatry, 32, 723-730.

Bertelson, A. D., Marks, P. A., & May, G. D. (1982). MMPI and race: A controlled study. Journal of Consulting and Clinical Psychology, 50, 316-318.

Boggiano, A. K., & Barrett, M. (1992). Gender differences in depression in children as a function of motivational orientation. Sex Roles, 26, 11-17.

Brady, E. U., & Kendall, P. C. (1992). Comorbidity of anxiety and depression in children and adolescents. Psychological Bulletin, 111, 244-255.

Caputo-Sacco, L., & Lewis, R. J. (1991). MMPI correlates of Exner's egocentricity index in an adolescent psychiatric population. Journal of Personality Assessment, 56, 29-34.

Carlson, G. (1984). A comparison of early and late onset of adolescent affective disorder. Journal of Operational

Psychiatry, 15, 46-50.

Carlson, G. A. & Cantwell, D. P. (1979). A survey of depressive symptoms in a child and adolescent population. Journal of the American Academy of Child Psychiatry, 18, 587-599.

Carlson, G. A., & Cantwell, D. P. (1981). Diagnosis of childhood depression - A comparison of Weinberg and DSM-III criteria. Journal of the American Academy of Child Psychiatry, 21, 247-250.

Carlson, G. A. & Cantwell, D. P. (1982). Suicidal behavior and depression in children and adolescents. Journal of the American Academy of Child Psychiatry, 21, 361-368.

Chambers, W. J., Hirsch, M., Paez, P., Ambrosini, P. J., Tabrizi, M. A., & Davies, M. (1985). The assessment of affective disorders in children and adolescents by semistructured interview: Test-retest reliability of the Schedule for Affective Disorders and Schizophrenia for School-aged Children, present episode versions. Archives of General Psychiatry, 42, 696-702.

Clarizio, H. F. (1989). Continuity in childhood depression. Adolescence, 24, 253-267.

Constantino, G. & Malgady, R. G. (1983). Verbal fluency of Hispanic, Black and White children on TAT and TEMAS, a new Thematic Apperception Test. Hispanic Journal of Behavioral Sciences, 5, 199-206.

Constantino, G., Malgady, R. G., Rogler, L. H., & Tsui, E. C. (1988). Discriminant analysis of clinical outpatients and public school children by TEMAS: A Thematic Apperception Test for Hispanics and Blacks. Journal of Personality Assessment, 52, 670-678.

Constantino, G., Malgady, R. G., & Vazquez, C. (1981). A comparison of the Murray-TAT and a new thematic apperception test for urban Hispanic children. Hispanic Journal of Behavioral Sciences, 3, 291-300.

Dahlstrom, W., Lachar, D., & Dahlstrom, L. (1986). MMPI patterns of American minorities. MN: University of Minnesota Press.

Dignon, N., & Gotlib I. H. (1985). Developmental considerations in the study of childhood depression. Developmental Review, 5, 162-199.

Doerfler, L. A., Felner, R. A., Rowlison, R. T., Raley, P. A., & Evans, E. (1988). Depression in children and

adolescents: A comparative analysis of the utility and construct validity of two assessment measures. Journal of Consulting and Clinical Psychology, 56, 769-772.

Downey, G. & Coyne, J. C. (1990). Children of depressed parents: An integrative review. Psychological Bulletin, 108, 50-76.

Eamon, M. K. (1994). Institutionalizing children and adolescents in private psychiatric hospitals. Social Work: Journal of the National Association of Social Workers, 39, 588-594.

Edelbrock, C., Costello, A. J., Dulcan, M. K., Kalas, R., & Conover, N. C. (1985). Age differences in the reliability of the psychiatric interview of the child. Child Development, 56, 265-275.

Emslie, G. J., Weinberg, W. A., Rush, A. J., Adams, R. M., & Rintelmann, J. W. (1990). Depressive symptoms by self-report in adolescence: Phase I of the development of a questionnaire for depression by self-report. Journal of Child Neurology, 5, 114-121.

Exner, J. E., (1978). The Rorschach: A comprehensive system: Volume 2. Current research and advanced interpretation. NY: Wiley.

Exner, J. E. (1991). The Rorschach: A comprehensive system. Vol 2. Interpretation. (2nd ed.) NY: Wiley.

Exner J. E, Thomas, E. E., & Mason, B. (1985). Children's Rorschachs: Description and prediction. Journal of Personality Assessment, 49, 13-20.

Exner, J. E., & Weiner, I. B. (1982). The Rorschach: A comprehensive system. Volume 3: Assessment of children and adolescents. NY: Wiley.

Exner, J. E. & Weiner, I. B. (1995). The Rorschach: A comprehensive system. Volume 3: Assessment of children and adolescents (2nd edition). NY: Wiley.

Feighner, J. P., Robins, E., Guze, S. B., Woodruff, R. A., Winokur, G., & Munoz, R. (1972). Diagnostic criteria for use in psychiatric research. Achieves of General Psychiatry, 26, 57-63.

Frank, G. (1993). C' and depression. Psychological Reports, 72, 1184-1186.

Garrison, C. Z., Jackson, K. L., Marsteller, F., McKeown, R., Addy, C. (1990). A longitudinal study of depressive

symptomatology in young adolescents. Journal of the American Academy of Child and Adolescent Psychiatry, 29, 581-585.

Garvey, M. J., Cook, B. L., Tollefson, G. D., & Schaffer, C. B. (1989). Antidepressant response in chronic major depression. Comprehensive Psychiatry, 30, 214-217.

Garvey, M. J., Tollefson, G. D., & Tuason, V. B. (1986). Is chronic primary depression a distinct depression subtype? Comprehensive Psychiatry, 27, 446-448.

Gibbs, J. T. (1981). Depression and suicidal behavior among delinquent females. Journal of Youth and Adolescence, 10, 159-167.

Gittleman, R. (1980). The role of psychological tests for differential diagnosis in child psychiatry. Journal of the American Academy of Child Psychiatry, 19, 413-438.

Graham, J. R. (1990). MMPI-2: Assessing personality and psychopathology. NY: Oxford University Press.

Greenwald, D. F. (1990). An external construct validity study of Rorschach personality variables. Journal of Personality Assessment, 55, 768-780.

Grigoroiu-Serbanescu, M., Christodorescu, D., Magureanu, S., Jipescu, I., Totoescu, A., Marinescu, E., Ardelean, V., & Popa, S. (1991). Adolescent offspring of endogenous unipolar depressive parents and of normal parents. Journal of Affective Disorders, 21, 185-198.

Gynther, M. D. (1989). MMPI comparisons of Blacks and Whites: A review and commentary. Journal of Clinical Psychology, 45, 878-883.

Gynther, M. D. (1972). White norms and Black MMPI's: A prescription for discrimination? Psychological Bulletin, 78, 386-402.

Gynther, M.D., Fowler, R. D., & Erdberg, P. (1971). False positives galore: The application of standard MMPI criteria to a rural, isolated, Negro sample. Journal of Clinical Psychology, 27, 234-237.

Gynther, M. D., & Green, S. D. (1980). Accuracy may make a difference, but does a difference make for accuracy? A response to Pritchard and Rosenblatt. Journal of Consulting and Clinical Psychology, 48, 268-272.

Gynther, M. D., Lachar, D., & Dahlstrom, W. G. (1978). Are special norms for minorities needed? Development of an

MMPI F scale for blacks. Journal of Consulting and Clinical Psychology, 46, 1403-1408.

Hammen, C., Burge, D., Burney, E., & Adrian, C. (1990). Longitudinal study of diagnoses in children of women with unipolar and bipolar affective disorder. Archives of General Psychiatry, 47, 1112-1117.

Hammen, C. L., & Padesky, C. A. (1977). Sex differences in the expression of depressive responses on the Beck Depression Inventory. Journal of Abnormal Psychology, 86, 609-614.

Harrington, R. C., Fudge, H., Rutter, M., & Pickles, A. (1991). Adult outcomes of childhood and adolescent depression: Links with antisocial disorders. Journal of the American Academy of Child Adolescent Psychiatry, 30, 434-439.

Hartman, A. A. (1970). A basic TAT set. Journal of Projective Techniques, 34, 391-396.

Hawton, K. (1986). Suicide and attempted suicide among children and adolescents. Beverly Hills, CA: Sage.

Haynes, J. P., & Peltier, J. (1985). Patterns of practice with the TAT in juvenile forensic settings. Journal of Personality Assessment, 49, 26-29.

Irvin, F., & Vander Woude, K. V. (1971). Empirical support for a basic TAT set. Journal of Clinical Psychology, 27, 514-516.

Jacobsen, R. H., Lahey, B. B., & Strauss, C. C. (1983). Correlations of depressed mood in normal children. Journal of Abnormal Child Psychology, 11, 29-40.

Kandel, D. B., & Davies, M. (1982). Epidemiology of depressive mood in adolescence. Archives of General Psychiatry, 39, 1205-1212.

Kashani, J. H., Cantwell, D. P., Shekim, W. O., & Reid, J. C. (1982). Major depressive disorder in children admitted to an inpatient community mental health center. American Journal of Psychiatry, 139, 671-672.

Kaufman, A. & Kaufman N. (1985). Manual for the Kaufman Test of Educational Achievement.

Kazdin, A. E. (1981). Assessment techniques for childhood depression: A critical appraisal. Journal of the American Academy of Child Psychiatry, 20, 358-375.

Kazdin, A. E. (1987). Children's Depression Scale: Validation with psychiatric inpatients. Journal of Child Psychology and Psychiatry, 28, 29-41.

Kazdin, A. E. (1990). Childhood depression. Journal of Child Psychology and Psychiatry and Allied Disciplines, 31, 121-160.

Kazdin, A. E., Sherick, R. B., Esveldt-Dawson, K. & Rancurello, M. D. (1985). Nonverbal behavior and childhood depression. Journal of the American Academy of Child Psychiatry, 24, 303-309.

Keiser, R. E. & Prather, E. N. (1990). What is the TAT? A review of ten years of research. Journal of Personality Assessment, 55, 800-803.

Keller, M. B., Lavori, P. W., Endicott, J., Coryell, W., & Klerman, G. L. (1983). "Double depression": Two-year follow-up. American Journal of Psychiatry, 140, 689-694.

Kendall, P. C., Cantwell, D. P., & Kazdin, A. E. (1989). Depression in children and adolescents: Assessment issues and recommendations. Cognitive Therapy and Research, 13, 109-146.

Klinge, V., & Strauss, M. E. (1976). Effects of scoring norms on adolescent psychiatric patient's MMPI profiles. Journal of Personality Assessment, 40, 13-17.

Klovin, I., Barrett, M. L., Bhate, S. R., Berney, T. P., Famuyiwa, O. O., Fundudis, T., & Tyrer, S. (1991). The Newcastle Child Depression Project: Diagnosis and classification of depression. British Journal of Psychiatry, 159, 9-21.

Kovacs, M., & Beck, A. T. (1977). An empirical-clinical approach toward a definition of childhood depression. In J. G. Shulterbrandt & A. Raskin (Eds.), Depression in children: Diagnosis, treatment and conceptual models. NY: Raven.

Kovacs, M., Feinberg, T. L., Crouse-Novak, M. A., Paulauskas, S. L., & Finkelstein, R. (1984a). Depressive disorders in childhood I. A longitudinal prospective study of characteristics and recovery. Achieves of General Psychiatry, 41, 229-237.

Kovacs, M., Feinberg, T. L., Crouse-Novak, M. A., Paulauskas, S. L., Pollack, M., & Finkelstein, R. (1984b). Depressive disorders in childhood II. A longitudinal study of the risk for a subsequent major depression. Achieves of General Psychiatry, 41, 643-649.

Kutcher, S., & Marton, P. (1991). Affective disorders in first-degree relatives of adolescent onset bipolars, unipolars, and normal controls. Journal of the American Academy of Child Adolescent Psychiatry, 30, 75-78.

Lachar, D. (1993). Symptom checklists and personality inventories. In T. R. Kratochwill & R. J. Morris (Eds). Handbook of psychotherapy for children and adolescents. NY: Allyn & Bacon.

Lachar, D., & Gruber, C. P. (1995). Manual for the Personality Inventory for Youth (PIY). Los Angeles: Western Psychological Services.

Lachar, D. Kline, R. B. (1994). The Personality Inventory for Children and the Personality Inventory for Youth. In M. Maruish (Ed.), Use of psychological testing for treatment planning and outcome assessment. Hillsdale NJ: Lawrence Erlbaum.

Lachar, D., Kline, R. B., & Gdowski, C. L. (1987). Respondent psychopathology and interpretive accuracy of the Personality Inventory for Children: The evaluation of a "most reasonable" assumption. Journal of Personality Assessment, 51, 155-164.

Lefkowitz, M., & Burton, N. (1978). Childhood depression: A critique of the concept. Psychological Bulletin, 85, 716-726.

Lewinsohn, P. M., Rohde, P., Seeley, J. R., & Hops, H. (1991). Comorbidity of Unipolar Depression: I. Major Depression with Dysthymia. Journal of Abnormal Psychology, 100, 205-213.

Lipovsky, J. A., Finch, A. J., & Belter, R. W. (1989). Assessment of depression in adolescents: Objective and projective measures. Journal of Personality Assessment, 53, 449-458.

Malgady, R. G., Constantino, G., & Rogler, L. H. (1984). Development of a Thematic Apperception Test for urban Hispanic children. Journal of Consulting and Clinical Psychology, 52, 986-996.

McDonald, R. L., & Gynther, M. D. (1962). MMPI norms for southern adolescent Negroes. Journal of Social Psychology, 58, 277-282.

Mezzich, A. C. & Mezzich, J. E. (1979). Symptomatology of depression in adolescence. Journal of Personality Assessment, 43, 267-275.

Moretti, M. M., Fine, S., Haley, G., & Marriage, K. (1985). Childhood and adolescent depression: Child-report versus parent-report information. Journal of the American Academy of Child Psychiatry, 24, 298-302.

Murphy, H. Wittkower, E., & Chance, N. (1970). The symptoms of depression: A cross-cultural survey. In Al-Issa, I. and Dennis, W (Eds.), Cross-cultural studies of behavior. NY: Holt, Rinehart, and Winston:

Nelson, L. D. (1987). Measuring depression a clinical population using the MMPI. Journal of Consulting and Clinical Psychology, 55, 788-790.

Nolen-Hoeksema, S. (1987). Sex differences in unipolar depression: Evidence and theory. Psychological Bulletin, 101, 259-282.

Obrzut, J. E., & Cummings, J. A. (1983). The projective approach to personality assessment: An analysis of thematic picture techniques. School Psychology Review, 12, 414-420.

Quinton, D., & Rutter, M. (1985). Family pathology and child psychiatric disorder; a four year prospective study. In A. R. Nicol (Ed.), Child psychology and psychiatry: Practical lessons from research experience. Chichester: Wiley.

Riegelman, R. K., & Hirsch, R. P. (1996). Studying a study and testing a test: How to read the heal sciences literature. 3rd Ed. NY: Little, Brown and Company.

Reynolds, W. (1984). Depression in children and adolescents. School Psychology Review, 13, 171-182.

Roberts, R. E. (1992). Manifestations of depressive symptoms among adolescents: A comparison of Mexican Americans with the Majority populations. The Journal of Nervous and Mental Disease, 180, 627-633.

Roberts, R. E. & Sobhan, M. (1992). Symptoms of depression in adolescents: A comparison of Anglo, African, and Hispanic Americans. Journal of Youth and Adolescence, 21, 639-651.

Rohde, P., Lewinsohn, P. M., & Seeley, J. R. (1991). Comorbidity of Unipolar Depression: II. Comorbidity with other mental disorders in adolescents and adults. Journal of Abnormal Psychology, 100, 214-222.

Rounsaville, B. J., Sholomskas, D., & Prusoff, B. A. (1980). Chronic mood disorders in depressed outpatients.

Journal of Affective Disorders, 2, 73-88.

Rutter, M. (1986). The developmental psychopathology of depression: Issues and Perspectives. In M. Rutter, C. Izard, & P. Read (Eds.), Depression in young people: Issues and perspectives. NY: Guilford Press.

Ryan, N. D., Puig-Antich, J., Cooper, T. B. et al. (1987). Safety of single versus divided dose imipramine in adolescent major depression. Journal of the American Academy of Child Adolescent Psychiatry, 26, 400-406.

Schlesinger, L. B., & Fox, C. F. (1980). Achromatic Rorschach perceptions: Some implications for the diagnosis of depression. Perceptual and Motor Skills, 50, 199-202.

Schwartz, F., & Lazar, Z. (1979). The scientific status of the Rorschach. Journal of Personality Assessment, 43, 3-11.

Shain, B. N., King, C. A., Naylor, M., & Alessi, N. (1991). Chronic depression and hospital course in adolescents. Journal of the American Academy of Child Adolescent Psychiatry, 30, 428-433.

Singer, H. K., & Brabender, V. (1993). The use of the Rorschach to differentiate unipolar and bipolar disorders. Journal of Personality Assessment, 60, 333-345.

Smith, G. J. W. & Danielson, A. (1982). Anxiety and defensive strategies in childhood and adolescence. NY: International Universities Press.

Spigelman, A., & Spigelman, G. (1991). Indications of depression and distress in divorce and nondivorce children reflected by the Rorschach Test. Journal of Personality Assessment, 57, 120-129.

Spitzer, R. L., Endicott, J., & Robins, E. (1978). Research diagnostic criteria: Rationale and reliability. Archives of General Psychiatry, 35, 773-782.

Steele, R. E. (1977). Clinical comparison of Black and White suicide attempters. Journal of Consulting and Clinical Psychology, 45, 982-986.

Taylor, M., & Abrams, R. (1973). Manic states a genetic study of early and late onset bipolar illness. Archives of General Psychiatry, 28, 656-658.

Triplett, S., & Brunson, P. (1982). TCB and TAT response characteristics in Black males and females: A replication. Journal of Non-White Concerns, 10, 73-77.

Vredenburg, K., Krames, L., & Flett, G. L. (1986). Sex differences in the clinical expression of depression. Sex Roles, 14, 37-49.

Wechsler, D. (1981). Manual for the Wechsler Adult Intelligence Scale-Revised. NY: The Psychological Corporation.

Wechsler, D. (1991). Manual for the Wechsler Intelligence Scale for Children-Third Edition. NY: The Psychological Corporation.

Weinberg, W. A., Rutman, J., Sullivan, L., Penick, E. C., Dietz, S. G. (1973). Depression in children referred to an education diagnostic center. Journal of Pediatrics, 83, 1065-1072.

Weissman, M., Gershon, E., Kidd, K. et al. (1984a). Psychiatric disorders in the relatives of probands with affective disorders: The Yale University-National Institute of Mental Health Collaborative Study. Archives of General Psychiatry, 41, 13-21.

Weissman, M., Wickramaratne, P., Merikangas, K. et al. (1984b). Onset of major depression in early adulthood: Increased familial loading and specificity. Archives of General Psychiatry, 41, 1136-1143.

Weithorn, M. (1988). Mental hospitalization of troublesome youth: An analysis of skyrocketing admission rates. Stanford Law Review, 40, 773-838.

Whybrow, P. C., Akiskal, H. S., & McKinney, W. T. (1984). Mood disorders: Toward a new psychology. NY: Plenum Press.

Worchel, F., Nolan, B., & Willson, V. (1987). New perspectives on child and adolescent depression. Journal of School Psychology, 25, 411-414.