Predictive Validity of Select Scales of the MMPI-A

on Adolescent Depression

by

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ABSTRACT

The purpose of this study was to evaluate whether five select scales of the MMPI-A (*F*, Scale 2, A-dep, A-lse, and A-aln) are predictive of a diagnosis of a major depressive episode according to the current DSM-IV-TR criteria. Participants were 90 girls and 58 boys in a clinical psychiatric setting. The study examined two separate hypotheses across the five scales. The first set of hypotheses tested whether a significant T-score on each of the five scales would predict a diagnosis of a major depressive episode in clinical adolescents. The second set of hypotheses attempted to step away from the constraints of diagnostic and statistical cut-off criteria and evaluated the ability of discrete T-scores of the MMPI-A in predicting the number of symptoms of a major depressive episode in clinical adolescents. Results indicated that none of the five scales were predictive of a diagnosis of a major depressive disorder in clinical adolescents. All but one scale (Scale 2) was significant in its ability to predict the number of depressive symptoms in clinical adolescents. Implications of this study include the need for a better diagnostic criteria for adolescent depression as well as re-evaluating the cut-off criteria of scales on the MMPI-A. Directions for future research are also discussed.

DEDICATION

To my parents, for all their love and support.

ACKNOWLEDGMENTS

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Chapter 1

INTRODUCTION

Depression is one of the most common disorders encountered by mental

health providers (Barlow, 2008). Research data from the National Institute of

Mental Health (NIMH, 2006) has found that Major Depressive Disorder (MDD)

is the leading cause of disability in the United States for people ages 15-44. The

prevalence of depression is increasingly problematic as research has found that

the mood disorder is associated with a high risk of relapse (Scott, 2000), high

resource utilization and loss of human capital (Berndt et al., 2000). In 1990,

depression was ranked fourth among the most costly of all illnesses worldwide.

Barlow (2008) estimates that by 2010, depression will become the second most

costly. This dramatic rise indicates that depression is widespread, debilitating,

and costly.

Given the prevalence of depression and its impact on those as young as 15

years of age, there has been growing concern regarding adolescent depression in

both the clinical field of psychology and in the public sector (Costello, Erkanli, &

Angold, 2006). The need for research on understanding children's mental health

has increased dramatically in the past decade (Catalano et al., 2003; Mazza &

Reynolds, 2008). Research has shown that depressive illnesses which start in

adolescence may be more serious and difficult to treat than adult onset mood

disorders (Mondimore, 2002). Currently, 4%-8% of adolescents experience

depression in any given year (Costello et al., 2002). Roughly one in five

adolescents have some kind of mental health disorder (McGee et al., 1990) and

one in five adolescents also report at least one episode of major depression by the age of 18 (Lewinsohn, et al., 1993).   Diagnoses of depressive and bipolar affective disorders as well as the number of attempted and completed suicides are also growing in frequency among adolescents (Rutter, 1986).

Research has shown that adolescent depression may predict future difficulties in school delinquency and drop-out, substance abuse, criminal behavior, teenage pregnancies, marital problems and unemployment status (Chiles et al., 1980; Kandel & Davies, 1986; Newcomb & Bentler, 1988). Research has further shown that having an episode of depression early in development may substantially increase the likelihood of episodes later in life (Costello et al., 2002).

The growing awareness regarding adolescent depression has reinforced the need for prevention, detection and early intervention (McWhirter, 2008). Increased concern regarding adolescent depression has also fueled growing attention towards the ability of certain diagnostic tools to adequately and appropriately assess depression among the adolescent population. One diagnostic tool that has frequently been used in diagnosing depressive symptomatology is the Minnesota Multiphasic Personality Inventory (MMPI; Hathaway & McKinley, 1943).

The MMPI, in its various forms and revisions (MMPI; Hathaway & McKinley, 1943; MMPI-2; Butcher, Dahistrom, Graham, Tellegen, & Kaemmer, 1989; MMPI-A; Butcher, et al., 1992), is the most widely used objective personality assessment instrument (Archer & Slesinger, 1999). Although initially developed for use with adults, the original MMPI instrument was also the most

commonly used objective measure for adolescent clients (Archer, Maruish, Imhof & Piotrowiski, 1991). In particular, Scale 2 (Depression) has been extensively researched for use with adults and adolescents.

However, research has yielded mixed results regarding the validity of the MMPI Scale 2, especially among the adolescent population. Archer & Gordon (1988), in assessing the Rorschach and MMPI's ability to detect depression and schizophrenia, found that the MMPI Scale 2 scores were not significantly related to patients' diagnoses. In contrast, Lipovsky et al. (1989) found that the MMPI Scale 2 scores did differ significantly between depressed and non-depressed adolescents. Furthermore, Carter & Dacey (1996) found that, along with the Beck Depression Inventory (BDI; Beck et al., 1961), the MMPI Scale 2 significantly discriminated between depressed and non-depressed adolescents.

As evidenced by previous research with inconsistent results, several significant issues surround the use of the MMPI with the adolescent population. Most notably, the MMPI was not designed for adolescents as the language, item content, and reading level were geared toward adults (Archer, Maruish, Imhof, & Piotrowski, 1991). Additionally, some items in the MMPI were awkward and inappropriate for many adolescents while others did not reflect experiences that are unique to adolescence (Graham, 2000). These issues reflected the need to develop an adolescent version of the MMPI.

In response to the concerns regarding the use of the MMPI among the adolescent population, the MMPI Restandardization Project Committee was created in 1989 and in 1992, the Minnesota Multiphasic Personality Inventory -

Adolescent (MMPI-A) was created and re-standardized with nationally representative adolescent norms for adolescents 14-18 years of age (Butcher et al., 1992). The reading levels of the MMPI-A items range from fifth to seventh grade (Butcher, et al., 1992) and new items were added to address adolescent-specific concerns such as relationship with parents and other adults, school behavior, attitudes towards teachers, peer-group influences, and eating problems (Graham, 2000). It is notable that while the MMPI-A takes into account the adolescent specific concerns in its item development, the same concern has not been addressed in the diagnostic criteria of depression among adolescents.

In the 15 years since its development, the MMPI-A has become one of the most widely used objective personality assessment instrument with adolescent respondents (Archer & Newsom, 2000). In addition to its clinical popularity, the MMPI-A has also been the subject of extensive research (Archer, Handel & Lynch, 2001). Numerous studies have examined the effectiveness of the instrument in discriminating between the normative and clinical samples (Archer, Handel & Lynch, 2001; Butcher et al., 1992). Other studies have focused upon utilizing the MMPI-A among psychiatric inpatients (Hilts & Moore, 2003) and juvenile delinquents (Morton, Farris, & Brenowitz, 2002).

However, there have only been few studies evaluating the validity of the instrument's scales in predicting the diagnosis of depression among adolescents. Results of these studies were more promising than the conflicting results found with the MMPI adult version. Arita & Baer (1998) examined the validity of selected content scales of the MMPI-A, including Adolescent Anxiety Content

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scale (A-anx), Adolescent Depression Content scale (A-dep), Adolescent Alienation Content scale (A-aln), Adolescent Social Discomfort Content scale (A-sod) and Adolescent Health Concerns (A-hea). They found that Scale 2 was significantly correlated with measures of depression as measured by the Reynolds Adolescent Depression Inventory (RAD; Reynolds, 1987) and the Multiscore Depression Inventory (MDI; Berndt, 1986).

Figuered (2001), in his unpublished dissertation, compared the concurrent validity of the MMPI-A in diagnosing depression among a group of females against The Children's Depression Inventory (CDI; Kovacs, 1992), The Child Behavioral Checklist-Parental Version (CBC; Achenbach, 1991) and The Diagnostic Interview Schedule for Children-IV youth version (DISC-IV; NIMH, 1994). Results indicated that Scale 2 of the MMPI-A exhibited the most discriminant power in the identification of adolescent depression.

Archer and Krishnamurthy (1997) examined the differences between adolescents in various treatment settings who were diagnosed with either depressive or conduct disorders. The study found that Scale 2 and A-dep were best able to identify adolescents diagnosed with depressive disorders.

Depression Diagnosis

According to the Diagnostic and Statistical Manual-Fourth Edition, Text Revision (DSM-IV-TR; American Psychiatric Association, 2000, p. 356), the symptom criteria for a Major Depressive Episode are as follows (not including the rule out criteria):

Five (or more) of the following symptoms have been present during the same 2-week period and represent a change from previous functioning; at least one of the symptoms is either (1) depressed mood or (2) loss of interest or pleasure.

(1) depressed mood most of the day, nearly every day, as indicated by either subjective report (e.g., feels sad or empty) or observation made by others (e.g., appears tearful). **Note:** In children and adolescents, can be irritable mood.

(2) markedly diminished interest or pleasure in all, or almost all, activities most of the day, nearly every day (as indicated by either subjective account or observation made by others)

(3) significant weight loss when not dieting or weight gain (e.g., a change of more than 5% of body weight in a month), or decrease or increase in appetite nearly every day. **Note:** In children, consider failure to make expected weight gains.

(4) insomnia or hypersomnia nearly every day

(5) psychomotor agitation or retardation nearly every day (observable by others, not merely subjective feelings of restlessness or being slowed down)

(6) fatigue or loss of energy nearly every day

(7) feelings of worthlessness or excessive or inappropriate guilt (which may be delusional) nearly every day (not merely self-reproach or guilt about being sick)

(8) diminished ability to think or concentrate, or indecisiveness, nearly every day (either by subjective account or as observed by others)

(9) recurrent thoughts of death (not just fear of dying), recurrent suicidal ideation without a specific plan, or a suicide attempt or a specific plan for committing suicide

Despite the prevalence of depression in the adolescent population, the

DSM-IV TR does not have a separate set of criteria for diagnosing depression in

children or adolescents. Of the nine criteria for diagnosing a Major Depressive

Episode, only two have caveats addressing how the disorder may present differently in children. Of those two criteria, only one address a caveat for adolescents (irritable mood). However, numerous developmental theorists have researched and documented the difficult and oftentimes varied tasks and phases during the childhood and adolescent stages. These tasks and phases may at times be developmentally appropriate but may also mask a mood disorder or other dysfunctions and may have vastly different diagnostic implications when compared to the adult sample.

Developmental Theories of Adolescent Depression

G. Stanley Hall coined the term "storm and stress" to describe adolescence as a developmental period that can be filled with emotional turmoil, crisis and behavioral experimentation (Mondimore, 2002; Archer, 2005). Adolescents go through a period of rapidly changing moods and emotional roller coasters before they mature into rational adults. Fortunately, the "storms" that most adolescents go through are usually mild and fleeting. However, these storms may also be masking true mood disorders; periods of depressive crisis during adolescence were often thought to be inevitable (a part of maturation) or problems brought on by the external environment or pathological parents (Mondimore, 2002). In addition, Anna Freud (1958) viewed adolescence as a period of emotional upheavals and behavioral turbulence; thus storm and stress is viewed as universal and inevitable and its absence may in turn indicate psychological problems or risk of psychopathology in adulthood.

Current scholars now suggest that storm and stress, as proposed by Hall and made more extreme by Anna Freud, is not valid for most adolescents (Arnett, 2004). Rather, a "modified" storm and stress view suggests that adolescents may experience some degree of storm and stress, with respect to conflict with parents, mood disruptions, and risk behaviors (Arnett, 2004). The modified view suggests that while not all adolescents experience storm and stress in these areas, adolescence is a time when these issues are more likely to occur than at any other developmental stage.

Erikson's (1968) theory of psychosocial development proposed that people develop their personal identity through eight distinct stages. Each stage represents a developmental task that may have either a positive or negative outcome. If the individual is able to achieve a positive outcome during a particular stage, he or she may move on to the next step with enhanced psychological coping and developmental tools. If the crisis is not well managed, the negative attributes will possibly interfere in the next developmental stage and psychological problems are more likely.

Specifically, Erikson (1968) described adolescence as a time of uncertainty, self-questioning and existential confusion. He proposed that this period of "identity crisis" is inevitable as adolescents search for their role in the world. The possible negative outcome of this stage, *identity diffusion,* results in a person who is constantly riddled with self-doubt and either morbidly concerned with others' opinions of them or defiantly indifferent to them.

In addition to the psychosocial stages, adolescents are also undergoing physiological changes during puberty. Research has shown that puberty can affect their emotional state and social behavior (Berk, 2002). Research has further shown that higher hormone levels are related to greater moodiness, such as anger and irritability for boys, and anger and depression for girls (Buchanan, Eccles, & Baker, 1992).

As such, this period of exploring, questioning, and adjusting can be psychologically stressful. Most adolescents will progress through this developmental stage successfully. It is important, however, to be able to distinguish those who are struggling with either the storm and stress of adolescent development or the stress of psychosocial developmental tasks, and those who are truly experiencing mood disturbances, such as depression. It is important to be able to recognize the normal course of adolescent angst and distinguish it from episodes of depression or other psychopathology. Numerous psychological batteries have been developed to aid professionals in identifying the presence of psychopathology. Among these the MMPI-2 and more recently, the MMPI-A, has been widely used with adolescents to identify personality and psychopathology such as depression.

Proposed MMPI-A Scales Associated with Adolescent Depression

Specific scales in the MMPI-A profiles that were examined include: *F* (Infrequency), Scale 2 (Depression), A-dep (Adolescent Depression Content scale), A-lse (Adolescent Low Self-Esteem Content scale) and A-aln (Adolescent Alienation Content scale). Among the scales, Scale 2 and A-dep are two of the

more obvious scales related to identifying symptoms and/or a diagnosis of depression and also the most frequently researched scales. Scale 2, a clinical scale, developed as a result of Hathaway and McKinley's use of criterion keying method (Archer, 2005). This means that test items (pulled from various sources, such as psychiatric examination forms, textbooks and other scales of personality and social attitudes) were presented to two or more groups; in this case, groups of depressed and non-depressed individuals. Items that were endorsed by the depressed group (and not endorsed by the non-depressed group) were then selected to comprise Scale 2.

On all forms of the MMPI, the *F* (Infrequency) scale was created to detect deviant or atypical ways of responding to test items (Meehl & Hathaway, 1946). The 64 items in the original scale were identified as those endorsed by fewer than 10% of the normative sample. By the time of the MMPI-2 revision, four *F* scale items were dropped because of objectionable content, leaving 60 items.

The MMPI-A *F* scale consist of 66 items that were endorsed in the deviant direction by no more than 20% of the normative sample. When the MMPI-A was created, 27 items were removed from the original MMPI *F* scale as the items' content was inappropriate for adolescents or exceeded the 20% criterion for selection. Thirty seven items were retained and 12 items that was originally on the MMPI but were not scored as *F* were included in the MMPI-A *F* scale because they met the 20% criterion rule. Finally, the MMPI-A *F* scale also contains 17 new items that are unique to the MMPI-A (Butcher et al., 1992).

Clinically, the *F* scale serves two purposes. First, it is an indicator of test-taking attitude and is helpful in distinguishing deviant responses (Graham, 2000). Second, scores on the *F* scale can be used to make inferences about behaviors and other extratest characteristics. In this study, the latter function of the scale will be emphasized as extremely high scores (T-scores greater than 100) on the *F* scale are often indicative of serious psychopathology. T-scores in the 80-99 range may suggest the exaggeration of symptoms and problems as a cry for help (Graham, 2000) and T-scores between 65 and 79 on the *F* scale are often associated with very deviant social, political, or religious convictions. Again, for the purposes of this study, a high *F* score is used as an indicator of the patient's transparency regarding their psychopathology or cries for help.

Scale 2 (Depression scale) of the clinical scales was originally developed by selecting items that were endorsed by people with known and diagnosed pathologies, in this case, depression. Scale 2 assesses symptomatic depression, as indicated by poor morale, lack of hope in the future, and a general dissatisfaction with one's life situation (Hathaway & McKinley, 1942; Graham, 2000). Of the 60 original MMPI items, only 57 were kept in the adolescent form as three were discarded due to objectionable content. Scale 2 items were related to despondency and apathy, excessive sensitivity, and physical problems and complaints, such as psychomotor retardation. Archer et al. (1988) researched high Scale 2 profiles among adolescents at the inpatient setting.

In contrast, A-dep is a content scale, and is composed of items that are face-valid and obvious in terms of their relevancy to psychopathology. As such, it

has been noted that contents scales are easily influenced by an adolescent's tendency to underreport or over-report symptomatology (Archer, 2005). Careful evaluation of the adolescent's responses should be made prior to any interpretation.

The A-dep content scale contains 26 items, having 25 items in common with the adult MMPI-2. Adolescents who score high on A-dep report numerous symptoms of depressions, and frequent crying spells and fatigue problems. They are dissatisfied with their lives and often feel that other people are happier than they are. Many report having self-deprecating thoughts, such as thoughts that they are useless and that life is uninteresting and not worthwhile. Suicidal ideations are possible and they are likely to report loneliness even in the presence of other people. Hopelessness and ambivalence about what happens are common characteristics (Butcher et al., 1992).

The A-lse (Adolescent Low Self-Esteem) content scale contains all 18 items present in the adult version. High scorers report very negative self-opinions, including feeling unattractive, lacking self-confidence, and feeling that they are useless, have little ability, several faults, and cannot do anything well (Butcher et al., 1992). They tend to let others take charge and do not feel capable of planning their own future. High scores among girls seem to be indicative of depression while high scores among boys were found to be associated with suicidal thoughts but not with depression (Williams et al., 1992).

The A-aln (Adolescent Alienation) content scale is a new addition to the MMPI Content Scales, and contains 20 items. People who score high on the A-aln

scale report emotional distance from others and the belief that they are getting a raw deal in life. They feel no one cares about or understands them, do not believe they are liked by others, and do not get along with others. They feel that no one, neither parents nor close friends, understand them and that others are out to get them (Butcher et al., 1992).

The current investigation built upon previous studies and used archival data to examine the predictive validity of selected scales of the MMPI-A. The MMPI-A Scale *F* (Infrequency Scale), Scale 2 (Depression Scale), A-dep (Adolescent Depression Content scale), A-lse (Adolescent Low Self-Esteem Content scale) and A-aln (Adolescent Alienation Content scale) scales were evaluated to test their effectiveness in predicting depressive symptoms among adolescents. Two research questions were explored. First, are the five selected scales able to identify/predict those individuals who meet the criteria for a diagnosis of a major depressive episode based upon of the DSM-IV-TR (2000)? Second, will higher T-scores on the five selected scales indicate a greater number of symptoms of a major depressive episode?

Hypotheses

1. Clinical adolescents who yielded significant scores (T $\geq$65) on the *F* scale would also meet the criteria for a major depressive episode.

2. Clinical adolescents who yielded significant scores (T $\geq$65) on Scale 2 would also meet the criteria for a major depressive episode.

3. Clinical adolescents who yielded significant scores (T $\geq$65) on A-dep would also meet the criteria for a major depressive episode.

4. Clinical adolescents who yielded significant scores (T ≥65) on A-lse would also meet the criteria for a major depressive episode.

5. Clinical adolescents who yielded significant scores (T ≥65) on A-aln would also meet the criteria for a major depressive episode.

6. Clinical adolescents who scored higher on the *F* scale would also endorse a greater number of symptoms of a major depressive episode.

7. Clinical adolescents who scored higher on Scale 2 would also endorse a greater number of symptoms of a major depressive episode.

8. Clinical adolescents who scored higher on A-dep would also endorse a greater number of symptoms of a major depressive episode.

9. Clinical adolescents who scored higher on A-lse would also endorse a greater number of symptoms of a major depressive episode.

10. Clinical adolescents who scored higher on the A-aln would also endorse a greater number of symptoms of a major depressive episode.

Chapter 2

METHODOLOGY

Participants

Participants were part of an existing database of adolescents recruited for

assessment from an inpatient psychiatric facility in the Southwest as part of an

original study conducted in 2005. Reasons for referral/admission to the facility

included problems with anxiety, alcohol/drug intoxication, legal problems,

depression, threatened assault, suicidal ideation, confusion/disorientation,

psychoses, increase in PTSD symptoms, and marital/significant other conflict.

The sample consisted of an ethnically diverse group with 60% female ($n = 90$)

and 40% male ($n = 58$) adolescents who were 13 to 17 years of age at the time of

data collection. Participants were of middle to upper-middle class, and their

ethnic composition was 67.6% ($n = 100$) Caucasian, 13.5% (n = 20) Hispanic,

7.4% (n = 11) African American, 6.1% (n = 9) Asian, and 4.7% ($n = 7$) Native

American. Their educational composition was 2% ($n = 3)$ sixth graders, 2% ($n =

3)$ seventh graders, 14.2% ($n = 22$) eighth grade, 20.3% ($n = 30$) ninth graders,

29.7% ($n = 44)$ tenth graders, 18.9% ($n = 29$) eleventh graders, and 12.2% ($n =

18$) twelfth graders.

Within three days of admission to the psychiatric facility, patients were

administered the Wide Range Achievement Test 3 (WRAT-3) to ensure they met

the requisite seventh grade reading level. Participants who met the basic seventh

grade reading level were given the MMPI-A. MMPI-A profiles included in the

dataset produced valid MMPI-A profiles as defined by ? T scores < 50, F scale T score < 100, and L scale and K scale T scores < 65. MMPI-A profiles which did not meet the criteria had been excluded from the dataset.

Measures

Minnesota Multiphasic Personality Inventory – Adolescent (MMPI-A). The MMPI-A is the revised adolescent version of the original adult-oriented MMPI, and is appropriate for adolescents ages 14 to 18 years of age (Butcher et al., 1992; Williams et al., 1992). In the interest of increasing sample size, the study included 13 year olds as test developers have indicated that the test may be given to 12 or 13 year olds who meet all administration criteria, including adequate reading ability and cognitive and social maturity (Archer, 2005). The MMPI-A differs from the MMPI-2 in terms of the number of items (478 items compared to 567 items in the adult version). Continuity between the two versions was preserved as much as possible during the revision of the original instrument and the development of the adolescent form. The basic validity and clinical scales remained the same, while the content scales were changed where appropriate to suit the adolescent population. Supplemental scales were shortened and mainly addressed alcohol and drug symptomology.

The MMPI-A is most frequently used in psychiatric, medical, alcohol and drug treatment, and correctional settings (Butcher et al., 1992). In research settings, the MMPI-A has been used to examine personality and psychopathology. In clinical settings, it may also be used to assess personality, behavior, and

psychopathology issues that are addressed in treatment planning. The instrument contains 478 true/false items that can be hand scored. Sample items include, "My teachers have it in for me," and "My feelings are not easily hurt," (Butcher et al., 1992).

Subjects for the adolescent normative sample were recruited from junior high and high schools in different geographic locations in the United States including California, Minnesota, New York, North Carolina, Ohio, Pennsylvania, Virginia and Washington State (Butcher et al., 1992). The geographic regions were chosen to maximize the likelihood of obtaining an evenly distributed sample according to geographic region, rural-urban residence and ethnic background (Butcher et al., 1992).

Wide Range Achievement Test 3 (WRAT-3). The WRAT-3, a newer revision of the WRAT -2, is an achievement test which measures basic reading, arithmetic, and spelling ability (Wilkinson, 1993). The reading component consist of 15 letters and 42 individual words that the examinee is asked to name or pronounce. Scoring is dichotomous, with a score of 1 indicating a correct answer and a 0 indicating an incorrect answer (Wilkinson, 1993). The WRAT was used to ensure that participants met the minimum reading requirements to be administered the MMPI-A.

The Adolescent Data Form. The Adolescent Data Form (Fair, 2005) was used in the original study to gather demographic and clinical data on the participants from their medical files. Data compiled from medical charts,

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including presenting problems, criteria for admission, and biopsychosocial history, was transferred onto the Adolescent Data Form by an individual working for the psychiatric facility. The Adolescent Data Form information was spot checked by a second individual to ensure accuracy of data transfer. The Adolescent Data Form included the nine depression items from the DSM-IV that was discussed earlier and a member of the agency had indicated either yes or no depending on whether the adolescent endorsed the depressive symptoms or not. For the purpose of this investigation, information from the Data Form was used for demographical information as well as to identify which and how many of the nine symptoms of depression did the adolescent report. The Adolescent Data Form is presented in Appendix A.

Analyses

As the study's data is non-normally distributed, a Spearman rank correlation was used to determine a univariate relationship between variables. Data was analyzed to test the validity of select scales on the MMPI-A in predicting a diagnosis of major depressive episode among adolescents as well as the number of depressive symptoms. Discrete variables were analyzed using t-tests and categorical variables using chi square testing or the Fisher exact test when appropriate. Specifically, analyses included:

1. A correlation to test the validity of Scale *F* in predicting the diagnosis of a major depressive episode in clinical adolescents.

2. A correlation to test the validity of Scale 2 in predicting the diagnosis of a major depressive episode in clinical adolescents.

3. A correlation to test the validity of A-dep in predicting the diagnosis of a major depressive episode in clinical adolescents.

4. A correlation to test the validity of A-lse in predicting the diagnosis of a major depressive episode in clinical adolescents.

5. A correlation to test the validity of A-aln in predicting the diagnosis of a major depressive episode in clinical adolescents.

6. A correlation to test the validity of Scale *F* in predicting symptoms of a major depressive episode in clinical adolescents.

7. A correlation to test the validity of Scale 2 in predicting symptoms of a major depressive episode in clinical adolescents.

8. A correlation to test the validity of A-dep in predicting symptoms of a major depressive episode in clinical adolescents.

9. A correlation to test the validity of A-lse in predicting symptoms of a major depressive episode in clinical adolescents.

10. A correlation to test the validity of A-aln in predicting symptoms of a major depressive episode in clinical adolescents.

Chapter 3

RESULTS

Information was gathered from an existing data set with 148 ethnically

diverse female (n = 90, 61%) and male (n = 58, 39%) adolescents ranging from 13

to 17 years of age (Table 1). All adolescents were receiving psychological

services at the time of psychological assessment in a clinical setting. Two main

questions were evaluated across five scales of the MMPI-A for a total of ten

hypotheses tested.

Table 1

Demographics for the Final Sample

Gender		Number	Percent
	Female	90	60.8%
	Male	58	39.2%
Highest Grade Completed			
	Sixth	3	2.0%
	Seventh	3	2.0%
	Eighth	21	14.2%
	Ninth	30	20.3%
	Tenth	44	29.7%
	Eleventh	28	18.9%
	Twelfth	18	12.2%
Age			
	Thirteen	16	11.3%
	Fourteen	28	18.7%
	Fifteen	29	19.3%
	Sixteen	27	18.0%
	Seventeen	48	32.7%
Ethnicity			
	Caucasian	100	67.6%
	Hispanic	20	13.5%
	African American	11	7.4%
	Asian American	9	6.1%
	Native American	7	4.7%
	Other or Biracial	1	.7%

Preliminary Analysis

Based upon the DSM-IV-TR (2000) criteria, 94 adolescents (63.5%) met the requirements for a diagnosis of a major depressive episode while 54 (36.5%) did not meet the criteria. Independent-samples *t* tests were conducted to evaluate whether those who met the criteria for a diagnosis of a major depressive episode yielded higher scores (though not necessarily clinically significant T $\geq$65) on each of the five select scales of the MMPI-A. Only A-dep (adolescent depression) was statistically significant, *t* (146) = -2.17, *p* = .03. Participants who met the criteria for a major depressive disorder scored significantly higher on the A-dep scale (*M* = 62.2, *SD* = 13.74) than those who did not meet the criteria for the disorder (*M* = 57.09, *SD* = 13.94).

Comparison of depression diagnosis and MMPI cut-off scores

Of the adolescents who did meet criteria for a diagnosis of a major depressive episode according to the DSM-IV-TR (2000) criteria (n =94, 63.5%), 31.9% (n = 30) of them also met the cutoff for significance on the *F* scale (T-score $\geq$ 65) while 68.1% (n = 64) of them did not meet the cutoff for significance on the *F* scale (Table 2).   Additionally, of those who did not meet criteria for a diagnosis of a major depressive episode (n = 54, 36%), 24.1% (n = 13) met the cutoff for significance the *F* scale. Finally, 75.9% (*n* = 41) of those who did not meet criteria for a diagnosis of a major depressive episode also did not meet the cutoff for significance on the *F* scale.

Table 2

Crosstab of Depression Diagnosis and Infrequency

Infrequency (*F*) Significance		Depression Dx by DSM-IV criteria		
		not depressed	depressed	Total
No	Count	41	64	105
	% within Infrequency	39.0%	61.0%	100.0%
	% within Depression Dx	75.9%	68.1%	70.9%
	% of Total	27.7%	43.2%	70.9%
Yes	Count	13	30	43
	% within Infrequency	30.2%	69.8%	100.0%
	% within Depression Dx	24.1%	31.9%	29.1%
	% of Total	8.8%	20.3%	29.1%
Total	Count	54	94	148
	% within Infrequency	36.5%	63.5%	100.0%
	% within Depression Dx	100.0%	100.0%	100.0%
	% of Total	36.5%	63.5%	100.0%

Of the adolescents who did meet criteria for a diagnosis of a major depressive episode according to the DSM-IV-TR (2000) criteria (*n* =94, 63.5%), 39.3% (*n* = 37) of them also met the cutoff for significance on scale 2 (T-score ≥ 65) while 60.6% (*n* = 57) of them did not meet the cutoff for significance on scale 2 (Table 3). Also, of those who did not meet criteria for a diagnosis of a major depressive episode (*n* = 54, 36%), 35.2% (*n* = 19) met the cutoff for significance on scale 2. Finally, 64.8% (*n* = 35) of those who did not meet criteria for a diagnosis of a major depressive episode also did not meet the cutoff for significance on scale 2.

Table 3

Crosstab of Depression Diagnosis and Depression Scale

Depression (Scale 2) Significance		Depression Dx by DSM-IV criteria		
		not depressed	depressed	Total
No	Count	35	57	92
	% within Scale 2	38.0%	62.0%	100.0%
	% within Depression Dx	64.8%	60.6%	62.2%
	% of Total	23.6%	38.5%	62.2%
Yes	Count	19	37	56
	% within Scale 2	33.9%	66.1%	100.0%
	% within Depression Dx	35.2%	39.4%	37.8%
	% of Total	12.8%	25.0%	37.8%
Total	Count	54	94	148
	% within Scale 2	36.5%	63.5%	100.0%
	% within Depression Dx	100.0%	100.0%	100.0%
	% of Total	36.5%	63.5%	100.0%

Of the adolescents who did meet criteria for a diagnosis of a major depressive episode according to the DSM-IV-TR (2000) criteria ($n =94$, 63.5%), 40.4% ($n = 38$) of them also met the cutoff for significance on the A-dep scale (T-score ≥ 65) while 59.6% ($n = 56$) of them did not meet the cutoff for significance on the A-dep scale (Table 4). Additionally, of those who did not meet criteria for a diagnosis of a major depressive episode ($n = 54$, 36%), 27.8% ($n = 15$) met the cutoff for significance the A-dep scale. Finally, 72.2% ($n = 39$) of those who did not meet criteria for a diagnosis of a major depressive episode also did not meet the cutoff for significance on the A-dep scale.

Table 4

Crosstab of Depression Diagnosis and Adolescent Depression

Adolescent Depression (A-dep) Significance		Depression Dx by DSM-IV criteria		
		not depressed	depressed	Total
No	Count	39	56	95
	% within A-dep	41.1%	58.9%	100.0%
	% within Depression Dx	72.2%	59.6%	64.2%
	% of Total	26.4%	37.8%	64.2%
Yes	Count	15	38	53
	% within A-dep	28.3%	71.7%	100.0%
	% within Depression Dx	27.8%	40.4%	35.8%
	% of Total	10.1%	25.7%	35.8%
Total	Count	54	94	148
	% within A-dep	36.5%	63.5%	100.0%
	% within Depression Dx	100.0%	100.0%	100.0%
	% of Total	36.5%	63.5%	100.0%

Of the adolescents who did meet criteria for a diagnosis of a major depressive episode according to the DSM-IV-TR (2000) criteria (*n* =94, 63.5%), 30.9% (*n* = 29) of them also met the cutoff for significance on the A-lse scale (T-score ≥ 65) while 69.1% (*n* = 65) of them did not meet the cutoff for significance on the A-lse scale (Table 5). Additionally, of those who did not meet criteria for a diagnosis of a major depressive episode (*n* = 54, 36%), 27.8% (*n* = 15) met the cutoff for significance the A-lse scale. Finally, 72.2% (*n* = 39) of those who did not meet criteria for a diagnosis of a major depressive episode also did not meet the cutoff for significance on the A-lse scale.

Table 5

Crosstab of Depression Diagnosis and Adolescent Low Self-Esteem

Adolescent Low Self-Esteem Significance (A-lse)		Depression Dx by DSM-IV criteria		
		not depressed	depressed	Total
No	Count	39	65	104
	% within A-lse	37.5%	62.5%	100.0%
	% within DepressionDX	72.2%	69.1%	70.3%
	% of Total	26.4%	43.9%	70.3%
Yes	Count	15	29	44
	% within A-lse	34.1%	65.9%	100.0%
	% within DepressionDX	27.8%	30.9%	29.7%
	% of Total	10.1%	19.6%	29.7%
Total	Count	54	94	148
	% within A-lse	36.5%	63.5%	100.0%
	% within DepressionDX	100.0%	100.0%	100.0%
	% of Total	36.5%	63.5%	100.0%

Of the adolescents who did meet criteria for a diagnosis of a major depressive episode according to the DSM-IV-TR (2000) criteria (n =94, 63.5%), 26.6% (n = 25) of them also met the cutoff for significance on the A-aln scale (T-score ≥ 65) while 73.4% (n = 69) of them did not meet the cutoff for significance on the A-aln scale (Table 6).   Additionally, of those who did not meet criteria for a diagnosis of a major depressive episode (n = 54, 36%), 22.2% (n = 12) met the cutoff for significance the A-aln scale. Finally, 77.8% (n = 42) of those who did not meet criteria for a diagnosis of a major depressive episode also did not meet the cutoff for significance on the A-aln scale.

Table 6

Crosstab of Depression Diagnosis and Adolescent Alienation

Adolescent Alienation (A-aln) Significance		Depression Dx by DSM-IV criteria		
		not depressed	depressed	Total
No		42	69	111
	% within A-aln	37.8%	62.2%	100.0%
	% within Depression Dx	77.8%	73.4%	75.0%
	% of Total	28.4%	46.6%	75.0%
Yes	Count	12	25	37
	% within A-aln	32.4%	67.6%	100.0%
	% within Depression Dx	22.2%	26.6%	25.0%
	% of Total	8.1%	16.9%	25.0%
Total	Count	54	94	148
	% within aaincat	36.5%	63.5%	100.0%
	% within DepressionDX	100.0%	100.0%	100.0%
	% of Total	36.5%	63.5%	100.0%

Hypothesis Testing

The first set of hypotheses addressed whether a relationship exists between each of the five predictors (*F*, Scale 2, A-dep, A-lse, A-aln) and a diagnosis of a major depressive episode according to the DSM-IV (2000) criteria. A Spearman rank correlation was used to determine univariate relationships between variables. Using the cutoff scores ($T \geq 65$) to categorize *F*, Scale 2, A-dep, A-lse, and A-aln, a correlation matrix was constructed (Table 7).

Table 7

Correlation between Depression Diagnosis and Five Scales

Depression Dx	*F*	Scale 2	A-dep	A-lse	A-aln
Correlation	.083	.041	.127	.032	.049
Sig. (2-tailed)	.315	.617	.124	.696	.557
N	148	148	148	148	148

**. Correlation is significant at the 0.01 level (2-tailed).

Hypothesis one predicted that adolescents in a clinical population who met the clinical cutoff for *F* would also meet criteria for a diagnosis of a major depressive episode. The clinical cutoff score for *F* was not significantly correlated with a diagnosis of a major depressive episode, $r = .08$, $p = .32$. The first hypothesis was not supported by the study data.

Hypothesis two predicted that adolescents in a clinical population who met the clinical cutoff for Scale 2 would also meet criteria for a diagnosis of a major depressive episode. The clinical cutoff score for Scale 2 was not significantly correlated with a diagnosis of a major depressive episode, $r = .04$, $p = .62$. The second hypothesis was not supported by the study data.

Hypothesis three predicted that adolescents in a clinical population who met the clinical cutoff for A-dep would also meet criteria for a diagnosis of a major depressive episode. The clinical cutoff score for A-dep was not significantly correlated with a diagnosis of a major depressive episode, $r = .13$, $p = .12$. The third hypothesis was not supported by the study data.

Hypothesis four predicted that adolescents in a clinical population who met the clinical cutoff for A-lse would also meet criteria for a diagnosis of a major depressive episode. The clinical cutoff score for A-lse was not significantly correlated with a diagnosis of a major depressive episode, $r = .03$, $p = .70$. The fourth hypothesis was not supported by the study data.

Hypothesis five predicted that adolescents in a clinical population who met the clinical cutoff for A-aln would also meet criteria for a diagnosis of a major depressive episode. The clinical cutoff score for A-aln was not significantly correlated with a diagnosis of a major depressive episode, $r = .05$, $p = .56$. The fifth hypothesis was not supported by the study data.

None of the five predictor variables were significantly correlated with a diagnosis of a major depressive episode so the first five hypotheses were not supported by the study data. However, A-dep, A-lse and A-aln were found to be significantly correlated to all of the other four predictor scales. Additionally, F was also found to be significantly related to A-dep, A-lse, and A-aln but not Scale 2.

The second set of hypotheses addressed whether higher T-scores on each of the five predictor scales would be significantly correlated to higher numbers of symptoms of a major depressive episode. A Spearman rank correlation was used to determine univariate relationships between variables. A correlation matrix was constructed to compare the T-score for each of the five scales and the total number of symptoms of a major depressive episode endorsed (Table 8).

Table 8

Correlation between Total Number of Depressive and Five Scales' T-scores

Number of depressive symptoms	*F* T-score	Scale 2 T-score	A-dep T-score	A-lse T-score	A-aln T-score
Correlation Coefficient	.207*	.080	.235**	.191*	.182*
Sig. (2-tailed)	.012	.331	.004	.020	.027
N	148	148	148	148	148

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

Hypothesis six predicted that adolescents in a clinical population who had higher scores on the *F* scale would endorse a greater number of symptoms of a major depressive episode. The clinical score for *F* scale was significantly correlated with a higher number of symptoms of a major depressive episode, $r = .21$, $p = .01$. The sixth hypothesis was supported by the study data.

Hypothesis seven predicted that adolescents in a clinical population who had higher scores on the Scale 2 would endorse a greater number of symptoms of a major depressive episode. The clinical score for Scale 2 was not significantly correlated with a higher number of symptoms of a major depressive episode, $r = .08$, $p = .33$. The seventh hypothesis was not supported by the study data.

Hypothesis eight predicted that adolescents in a clinical population who had higher scores on A-dep would endorse a greater number of symptoms of a major depressive episode. The clinical score for A-dep was significantly

correlated with a higher number of symptoms of a major depressive episode, $r =$ .24, $p = .004$. The eighth hypothesis was supported by the study data.

Hypothesis nine predicted that adolescents in a clinical population who had higher scores on A-lse would endorse a greater number of symptoms of a major depressive episode. The clinical score for A-lse was not significantly correlated with a higher number of symptoms of a major depressive episode, $r =$ .19, $p = .02$. The ninth hypothesis was supported by the study data.

Hypothesis ten predicted that adolescents in a clinical population who had higher scores on A-aln would endorse a greater number of symptoms of a major depressive episode. The clinical score for A-aln was not significantly correlated a higher number of symptoms of a major depressive episode, $r = .18$, $p = .03$. The tenth hypothesis was supported by the study data.

Chapter 4

DISCUSSION

Lifetime depression rates increase significantly from 3% during childhood to 14% in adolescents ages15-18 (Lewisohn, Rohde, & Seeley, 1998). In any given year, 4-8% of adolescents experience MDD, making it more prevalent than asthma and most other chronic medical problems of this age group (Jackson & Lurie, 2006). Depressed adolescents are at increased risk for numerous co-morbidities, including interpersonal conflict and unsatisfactory social relationships, conduct problems, personality disorders, substance abuse, obesity, and educational and occupational underachievement (Zalsman, Brent, & Weersing, 2006).

Overview of Study and Findings

The current study attempted to build upon previous research as well as to supplement the existing data on the utilization of the MMPI-A as a diagnostic tool for depression. The purpose of this study was to evaluate whether five select scales of the MMPI-A (Butcher et. al., 1992) (*F*, Scale 2, A-dep, A-lse, and A-aln) are predictive of a diagnosis of a major depressive episode in adolescents in a clinical population according to the DSM-IV-TR (2000). The study examined two separate hypotheses across the five scales. The first set of hypotheses tested whether a significant score on each of the scales would predict a diagnosis of a major depressive episode in clinical adolescents. The first set of hypotheses compared the clinical cut-off T-scores on each of the selected five scales of the

MMPI-A with the diagnosis of depression as dictated by the criteria for a major depressive episode. The second set of hypotheses attempted to step away from the constraints of diagnostic and statistical cut-off scores and evaluated the predictive validity of discrete scores of the MMPI-A in predicting the number of symptoms of a major depressive episode in clinical adolescents. In this second set of hypotheses, the cut-off criterion of $T \geq 65$ was not utilized as indicated by the MMPI-A protocols. Instead the actual T-score itself was compared to the summation of all of the adolescents' endorsed depressive symptoms with the hypothesis that higher T-scores would predict higher number of depressive symptoms for a total of 9 possible symptoms endorse

Results of the first set of hypotheses were not significant. Significant scores that met the clinical cut-off on the five select scales of the MMPI-A were unable to predict a diagnosis of depression in clinical adolescents. The lack of significant findings could be interpreted in two different ways. First, it is possible that the cut-off criteria for a significant score on the MMPI-A as it currently stands is not sensitive enough to predict a diagnosis of adolescent depression in the clinical setting. Interpretative manuals for both the MMPI-2 and the MMPI-A have recommended looking at sub-clinical scaled scores as suggestive of traits or trends (Graham, 2000; Greene, 1991). Thus a re-evaluation of the cut-off for clinical significance of the MMPI-A may be warranted to assess for the scales' sensitivity and specificity in identifying a diagnosis of depression in clinical adolescents. Additionally, it is possible that the item content of each of the five scales are no longer valid or relevant to today's adolescent population. An update

of the item content and/or re-evaluation of the items' appropriateness for continued use may be indicated. Future research would benefit greatly from updating and revising the item content to be more pertinent to today's adolescent population as the first (and only) version of the MMPI-A was developed in the late 1980s.

Second and perhaps more importantly, it is also possible that the criteria for a diagnosis of depression based upon the DSM-IV-TR criteria is neither adequate nor appropriate to assess a diagnosis of or the symptoms of a major depressive disorder in adolescents. Numerous researchers and developmental theorists have reported on the uniqueness of the adolescent experience and how depression may present differently between adolescents and adults. The American Academy of Child and Adolescent Psychiatry (AACAP, 2007) identified differences in the way adolescents experience and express depression, even when compared to their younger counterparts. Compared to children, adolescents with a diagnosis of a major depressive disorder (MDD) tend present with more sleep and appetite disturbances, delusions, suicidal ideations and attempts, and functional impairment (AACAP, 1998). Compared to adults, adolescents present with more behavioral problems and fewer neurovegative symptoms (AACAP, 1998). Hamrin and Magorno (2010) also noted that children and adolescents with depression often have somatic complaints, such as headaches, stomachaches and other vague physical complaints without an apparent or definable cause.

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In spite of the documented differences in the presentation of adolescent depression, the diagnostic criteria for a diagnosis of a major depressive episode is still one geared for the general population and does not take into account the developmental differences. Of the nine symptoms of a major depressive episode, only two have caveats addressing differences in children (irritability and failure to make weight gains) and only one addressing differences in adolescents (irritability). It is likely that the lack of significance in the first set of hypotheses is better accounted for by the inadequacy of the current diagnostic criteria for diagnosing depression in adolescents. During the restandardization and scale development of the MMPI-A, Butcher et al. (1992) made sure to account for adolescent-specific concerns. No such modifications or considerations have been made to the DSM-IV-TR (2000) diagnostic criteria for depression in adolescents.

The second set of hypotheses yielded significant results across all scales except one (Scale 2). The significant results on the four scales (*F,* A-dep, A-lse, A-aln) support the previously suggested need to re-evaluate the cut-off criteria for clinical significance on the MMPI-A as the four scales were able to positively predict greater numbers of depressive symptoms in a group of clinical adolescents. The lack of significance on Scale 2 may be attributed to how it was developed as well as what it has been suggested of measuring. Unlike the content scales of the MMPI-A, Scale 2 of the clinical scales was originally developed by the criterion keying method (Hathaway & McKinley, 1942) and selected items that were endorsed by people with known and diagnosed pathologies

(depression). The differences in the development of the scale may have had an impact on the results of the study.

Additionally, Scale 2 was meant to identify symptomatic depression, as indicated by poor morale, lack of hope in the future, and a general dissatisfaction with one's life situation (Hathaway & McKinley, 1942; Graham, 2000). However, it has also been suggested that Scale 2 is indicative of how comfortable and secure people feel about themselves and the environment, with higher scores indicating dissatisfaction (Greene, 1991). Thus it is possible that the developmentally appropriate discomfort and insecurity that is prevalent in adolescence is either masked or confounded by true depressive symptoms. Scale 2 has also been described as measuring exogenous depression, which is situational by nature. The ebb and flow of exogenous depressive symptoms may also account for the lack of significance. These findings again support the need for more appropriate diagnostic criteria specific to the adolescent experience and expression of depression. The lack of significance on Scale 2 may also indicate the need to re-examine the differences that may result in how the content and clinical scales were developed.

The results from the second set of hypotheses may also suggest the need to change the way we diagnose depression. The current criteria for a major depressive episode require the endorsement of either the first symptom (depressed or irritable mood) or second symptom (diminished interest) with a total combined score of five symptoms endorsed. According to the current edition of the DSM-

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IV-TR, if a person endorses seven symptoms but does not endorse either of the first two symptoms, they do not meet criteria for a diagnosis of a major depressive episode. It may be more clinically appropriate to use a summation of the total number of depressive symptoms endorsed as the diagnostic criteria of a major depressive episode.

Limitations and Directions for Future Research

Because this study utilized a pre-existing data set, the limitations that existed in the original study are also inherent in the current study. While the design and implementation of the original study was fulfilled without any significant difficulties, there were some limitation and challenges encountered which may have influenced the current study. All adolescents who participated in the original investigation were being treated at a psychiatric facility on either an inpatient or out-patient basis. A large proportion of the adolescents who participated were being treated with psychotropic medications on a locked inpatient ward which possibly could confound data as these participants may have had more severe or distinct symptomatology. Additionally, although participation was voluntary, it may be possible that some participants believed their participation or lack thereof may have some impact on their treatment at the facility which again could confound the data. Participants may also have secondary motives for exaggerating their symptoms and/or masking symptoms in order to influence the duration and outcome of their treatment. Finally, while some of these results indicate significance within a clinical population, the lack of

data from a non-clinical sample does not allow for comparisons between populations. The lack of a comparative non-clinical sample also prevents the results of this study to be generalized to the general population. Future research would benefit from gathering data from a non-clinical population for comparison purposes as well as allow for generalizability of the study results.

Another limitation inherent in the study was the lack of additional measures to assess adolescent depression. The current study examined only one measure's ability to predict a major depressive episode by comparing it with the diagnostic criteria dictated by the DSM-IV-TR. The lack of additional measures to provide comparative or confirmatory information make it difficult to determine if the results of the current study are due to the inadequacy of the diagnostic criteria of the DSM-IV-TR for depression or MMPI-A's clinical significance criteria lacking sensitivity to capture symptoms of a major depressive episode. Future research may benefit from having multiple measures to assess for adolescent depression, such as the Beck Depression Inventory (Beck, 1961), the Children's Depression Inventory (Kovacs, 1992), or the Reynolds Adolescent Depression Scale (Reynolds, 1987).

Summary and implications

The purpose of this study was to evaluate whether five select scales of the MMPI-A (Butcher et. al., 1992) (F, Scale 2, A-dep, A-lse, and A-aln) are predictive of a diagnosis of a major depressive episode according to the DSM-IV-TR (2000). The study examined two separate hypotheses across the five scales.

The first set of hypotheses tested whether a significant score on each of the scales would predict a diagnosis of a major depressive episode in clinical adolescents. Results indicated that none of the five scales were predictive of a diagnosis of a major depressive disorder in clinical adolescents. Results of the first set of hypotheses suggest the need for a separate and distinct set of diagnostic criteria for recognizing and identifying the symptoms and/or diagnosis of a major depressive episode. Research has shown that all too often the symptoms of depression in adolescents are masked by or misunderstood for other problems (usually behavioral), or seen as vague somatic complaints in order to avoid or exaggerate a physical ailment (AACAP, 2007). The results of the current study reinforce the need to evaluate adolescent depression according to its own set of standards and criteria.

The second set of hypotheses attempted to step away from the constraints of diagnostic and statistical cut-off scores and evaluated the predictive validity of discrete scores of the MMPI-A in predicting the number of symptoms of a major depressive episode in clinical adolescents. All but one scale (Scale 2) was significant in its ability to predict the number of depressive symptoms in clinical adolescents. Results from the second sets of hypotheses suggest the need to re-evaluate the clinical significance criteria of scales on the MMPI-A in order assess for sensitivity as well as specificity in identifying depressive symptoms.

Overall the results of both sets of hypotheses strongly suggest the need to distinguish adolescent depression as its own disorder with separate diagnostic criteria. Results also suggest the need to re-examine not only the rationale for the

established cut-off score for clinical significance but also the efficacy of the

continued use of the cut-off score in identifying depressive symptoms. Sensitivity

and specificity of the scales should be analyzed and clinical significance should

be re-evaluated. Finally, the results of the current study indicate the need for

further research in the assessment of adolescent depression in general and the

efficacy of the MMPI-A in particular in assessing adolescent depression.

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APPENDIX A

ADOLESCENT DATA FORM

Patient #	Agency #	Age	Gender Male ☐ Female ☐
	Coder #	Highest grade completed	
Race Asian American ☐	White, Non-Hispanic ☐	African American ☐	Pacific Islander ☐
Native American ☐	Hispanic ☐	Other ☐	
Admission (Inpatient) Voluntary ☐	Amended ☐	Cot: DTS/DTO/PAD ☐	Outpatient ☐

Treatment Information

Admitting Problem/Reason for Referral (Circle all that apply):
(1) Anxiety (2) Alcohol/Drug Intoxication (3) Legal Problems (4) Depression
(5) Threatened Assault (6) Suicidal (7) Confusion/Disorientation (8) Psychoses
(9) Increase in PTSD Symptoms (10) Marital/Significant Other Conflict

Stressors/Precipitors (Circle all that apply):
1) Marital/Significant Other Conflict/Breakup (2) Homelessness (3) Loss of Job
(4) Work/School Problems (5) Legal Problems (6) Illness/Death of Family/
Significant Other (7) Assault (8) Drug/Alcohol/Binge problem (9) DWI
(10) Chronic Medical/Physical Problem (11) Financial Problems (12) Acute
Medical/ Physical Problem (13) Medical Non-compliance (14) Other _____

Present Social History:
Current suicidal ideation   Yes ☐   No ☐
Plan or intent to harm self   Yes ☐   No ☐
Suicidal attempt within past 3 months   Yes ☐   No ☐

Group Membership Coding
Non-Suicidal ☐
Suicidal Risk ☐
Suicidal ☐

Clinical Disposition/ Provisional Diagnosis (description)
Axis I:

_____

Axis II:

_____

Chemical Dependency Hx: Current Substance Abuse   Yes ☐   No ☐
Cognition Impairment: No ☐   Yes ☐   Psychotic   No ☐   Yes ☐
DELUSIONS: Grandiose ☐   Jealousy ☐   Somatic ☐   Paranoia ☐
Control ☐   Religious ☐
HALLUCINATORY: Auditory ☐   Olfactory ☐   Tactile ☐   Visual ☐
Command ☐

<u>MMPI-A Item Endorsement</u>

Item # 177 Yes _____ No _____   Item# 283 Yes _____ No _____
Item # 399 Yes _____ No _____

<u>MMPI_A Basic Scales</u>

<u>?</u>	**<u>VRIN</u>**	**<u>TRIN</u>**	**<u>F1</u>**	**<u>F2</u>**	**<u>F</u>**	**<u>L</u>**	**<u>K</u>**	**<u>Hs</u>**
<u>D</u>	**<u>Hy</u>**	**<u>Pd</u>**	**<u>Mf</u>**	**<u>Pa</u>**	**<u>Pt</u>**	**<u>Sc</u>**	**<u>Ma</u>**	**<u>Si</u>**

<u>Content Scales</u>

<u>A-anx</u>	**<u>A-obs</u>**	**<u>A-dep</u>**	**<u>A-hea</u>**	**<u>A-aln</u>**	**<u>A-biz</u>**	**<u>A-ang</u>**	**<u>A-cyn</u>**
<u>A-con</u>	**<u>A-lse</u>**	**<u>A-las</u>**	**<u>A-sod</u>**	**<u>A-fam</u>**	**<u>A-sch</u>**	**<u>A-trt</u>**	

<u>Supplementary Scales</u>

<u>Mac-R</u>	**<u>ACK</u>**	**<u>PRO</u>**	**<u>IMM</u>**	**<u>A</u>**	**<u>R</u>**

Depression Criteria (integration of symptoms from major depressive disorder and dysthymia from DSM-IV-TR)

1. Depressed (or irritable mood) on most days
    (1) Present (0) Not Present
2. Markedly diminished interest or pleasure on most days
    (1) Present (0) Not Present
3. Significant weight loss or gain; OR increase or decrease in appetite on most days
    (1) Present   (0) Not Present
4. Insomnia or hypersomnia on most days
    (1) Present (0) Not Present
5. Psychomotor agitation or retardation on most days
    (1) Present (0) Not Present
6. Fatigue or loss of energy on most days
    (1) Present (0) Not Present
7. Feelings of worthlessness/low self-esteem; OR excessive or inappropriate guilt on most days
    (1) Present (0) Not Present
8. Diminished ability to think or concentrate; OR indecisiveness on most days
    (1) Present (0) Not Present
9. Recurrent thoughts of death; OR recurrent suicidal ideation without specific plan; OR suicide attempt; OR specific plan for committing suicide on most days
    (1) Present (0) Not Present
10. Feelings of hopelessness on most days
    (1) Present (0) Not Present

    Number of symptoms endorsed: ___