Examination of the BASC-2 SRP-A Scales with Native American Youth

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CHAPTER I

INTRODUCTION

There are many factors that affect social, emotional, psychological and educational functioning of Native American youths. One of the most influential factors has been the impact of European migration and U.S. government policy on the Native American culture and people (Choney, Berryhill-Paapke & Robbins, 1995). These historical experiences, together with ongoing discrimination and racism, continue to have a profound effect on Native Americans (Choney et al., 1995; Garrett & Pichette, 2000). As a result of historical factors, many Native Americans develop substance abuse problems; internalizing problems; high suicide rates; increased exposure to violence; and high rates of posttraumatic stress disorder, and many Native Americans lack the adaptive skills necessary for adaptive functioning (Choney et al., 1995). Native American youths have the highest high school dropout rate of any ethnic group, and they have higher rates of unemployment (Schwarzbaum & Thomas, 2008; Wilder, Jackson & Smith, 2001). Native Americans are at increased risk of having lower socioeconomic status (Wilder & Sudweeks, 2003). Low SES is a well-known risk factor contributing to the above difficulties and exacerbates the effects of these problems (Ortiz, Flanagan & Dynda, 2008). Native American children are also often over identified for placement in special education due to misinterpreted cultural differences and lack of cultural sensitivity by assessment instruments and practioners (Lau & Blatchley, 2009; Ortiz, 2008).

Behavior rating scales are broadband mental health screeners that are widely used in assessments for social, emotional and behavioral problems (Shapiro & Heick, 2004). These

broadband mental health screeners assess a variety of symptoms and behaviors and are useful for identifying appropriate and inappropriate behaviors in multiple settings (Sattler & Hoge, 2006). One such instrument is the Behavior Assessment System for Children 2nd Edition (BASC-2; Reynolds & Kamphaus, 2004). The BASC-2 is empirically validated and designed to gather multimethod and multi-respondent information that allows for cross-setting comparisons. Often parents, teachers and the child will rate behaviors on a Likert type scale that describes the frequency, duration, and/or intensity of thoughts, feelings and behaviors.

When using any assessment measure, such as the BASC-2, practitioners must take care to ensure that their evaluations are non-discriminatory. Non-discriminatory assessments use reliable and valid procedures and tools to provide fair outcomes for students and reduce as much bias as possible. Standardized assessments are often culturally loaded and do not take cultural differences into account, and members of ethnic and cultural minority groups often score lower on them than do members of the cultural majority (Ortiz, 2008). Assessments should be developed with norm samples representative of the general population. These samples should include a reasonable number of representatives of each ethnicity to minimize bias.

Many assessment measures evaluate adaptive skills to facilitate identification of individual strengths. Adaptive skills are skills that facilitate functioning in every day life, such as language, reading, writing, money skills, forming relationships, interacting with people, and basic self-care skills (Sattler & Hoge, 2006). Adaptive skills interact with other variables in a child's life, including intelligence, culture, socioeconomic status, family and environment. Children who struggle with adaptive skills often have difficulty with functioning in social situations, adapting to change, overcoming difficulties and can struggle in school (Harrison & Raineri, 2008). Adaptive skills are necessary for all children to overcome challenges and struggles that are typical throughout life. Cultural plays a large role in determining what adaptive skills are appropriate at different levels; thus, accepted adaptive skills will be dependent on cultural norms.

The Behavior Assessment System for Children 2nd Edition (BASC-2; Reynolds &

Kamphaus, 2004) is a multimethod, multidimensional system that is used to evaluate children and young adults ages 2 through 25. The BASC-2 can be used to facilitate direct observations of behavior, to assist with gathering intake information and also to measure self and others' perceptions of an individual's behavior, including both adaptive and clinical dimensions. The self-report forms measure self-perceptions and self-reported behaviors in home, school and community settings. BASC-2 forms measure psychological and emotional functioning, and also adaptive skills. Once completed, the BASC-2 responses are compared to those of a normative sample in order to evaluate how the child or youth compares to same age individuals within the norm group. The normative group on which the BASC-2 was developed constituted an extremely large sample that was, in general, demographically representative of the U.S. population according to the U.S. Census (Reynolds & Kamphaus, 2004). However, it included a very small number of Native American youths, raising questions regarding the equivalence of BASC-2 scores for Native American individuals. The BASC-2 has not yet been subjected to cross-cultural validation with Native American samples. Until the BASC-2 is validated with a variety of cultural groups the impact of culture on the measurement of the constructs is unclear and cultural equivalence cannot be assumed.

Acculturation is the degree to which a person identifies with and follows both majority and traditional cultural values. Acculturation can be conceptualized as an individual-level process describing the degree to which a Native American person accepts and adheres to both majority and traditional cultural values (Choney et al., 1995). Having a positive view of one's identity and being actively involved with one's culture serves as a protective mental health factors against addiction, substance abuse and internalizing problems (Moran, Fleming, Somervell & Manson, 1999). An individual's level of acculturation can give insight into psychological and sociocultural difficulties (Berry, Phinney, Sam & Vedder, 2006). The most widely accepted model of acculturation is a two-dimensional construct, with one dimension representing a person's degree of identification with the majority group and the other dimension representing his or her level of

identification with ethnic group. Since there are varying theories of acculturation, many instruments have been developed to measure this construct. Yet generally, these measures have not been well validated; thus they often have poor reliability and low consistency with other measures of acculturation (Matsudaira, 2006; Rudmin, 2009). Recent reviews of acculturation instruments have concluded that universal acculturation instruments intended to measure acculturation in persons across a variety of cultures are not successful, whereas instruments that focus on one cultural group are much stronger and have more validity and reliability (Matsudaira, 2006; Rudmin, 2009).

The Bicultural Ethnic Identity scale (BEIS; Moran et al., 1999) is a two-dimensional acculturation measure that was developed and validated with a large sample of Native American youth. The BEIS is based on the orthogonal cultural identification model that supports a bidimensional theory of acculturation. This theory holds that a person's identification with the values, beliefs, and practices of any one culture is independent of his or her identification with any other culture (Oetting & Beauvais, 1991). The BEIS produces two scale scores, one for the Indian subscale and one for the White subscale.

There are specific challenges associated with working with Native Americans. While there are many similarities among Native people, there are also many differences (Choney et al., 1995; Fisher, Hoagwood, Boyce, Duster, Frank, Grisso, et al., 2002; Weaver, 2009). There is an immense amount of cultural variation within the Native American community. There are over 500 tribes in the United States (Humes, Jones & Ramirez, 2011), and each tribe has its own culture. Historically, Native Americans have been treated poorly by the United States government and by researchers. As a consequence they are less likely to be willing to participate in research endeavors than are members of other cultural minority groups, likely due to their mistrust (Darou, Hum & Kurtness, 1993). Given this history, it is incumbent on researchers who work with Native Americans to spend more face-to-face time with members of the Native community, to be very patient and flexible, and to work with the Native people in a collaborative way and with respect.

The present investigation will examine the responses of Native American youths on the BASC-2 Self-Report of Personality – Adolescent Form (BASC-2-SRP-A) to test for differences in the patterns of scale scores against the normalization sample. Data will be gathered from a sample of Native American youth in Oklahoma. These data will be compared with the BASC-2 SRP-A responses in the normalization sample used in the development of the BASC-2 (described in the manual, Reynolds & Kamphaus, 2004). This investigation will also examine levels of acculturation and evaluate if there are differences in BASC-2 SRP-A scale scores across levels of acculturation.

Research Questions

1. On the BASC-2 SRP-A, are there differences in composite scale scores for Native Americans compared with those of a random sample of individuals drawn from the normative sample?

2. If differences exist, which of the BASC-2 composite scales account for those differences?

3. If any statistically significant differences in composite scores are found between the Native American and normative samples, are these differences large enough to be theoretically meaningful (i.e., are they likely to be clinically significant)?

4. Are any differences observed in BASC-2 SRP-A composite scale scores across samples related to ethnic identity, as measured by the BEIS?

CHAPTER II

REVIEW OF THE LITERATURE

Risk Factors for Native Americans

There are many factors that affect social, emotional, psychological and educational functioning of Native American youths. One of the most influential factors has been the impact of European migration and U.S. government policy on the Native American culture and people. As the United States expanded west, the European settlers increasingly perceived the Native Americans as a barrier to progress. Initially, racial genocide used to manage the Native American "problem". Over time this practice was replaced by forced removal and relocation of Native Americans from their ancestral land. Their forced relocation from the land severely disrupted the Native American culture and way of life. In the Native American traditions the land and earth were cherished as representing all things that produced and sustained life, embodied their existence and identity, and created an environment of belonging. By the mid-1800s, U.S. government and military officials and Christian reformers were advocating "civilization" and assimilation of Native Americans to White culture. Boarding schools and missions were created to educate young Native Americans in the Christian religion and in Euro-American society. In these institutions, Native American young people were not allowed to practice any Native American traditions, speak their traditional languages or keep any ties to their native culture. The boarding schools and missions were extremely detrimental to Native American cultural heritage for many generations (Choney, et al., 1995).

The Dawes General Allotment Act of 1887 was intended to break tribal land holdings and divide tribal unities by establishing reservations west of the Mississippi River where the Native peoples were made to live (Garrett & Pichette, 2000). There are still Native American reservations in the United States; however, life on the reservations is not like the original way of life of Native Americans and the differences between the two ways of life have created many difficulties for the people (Garrett & Pichette, 2000). For instance, the forced relocation of the Native Americans to reservations led to vast changes in the social order of Native communities. Whereas traditionally, women had been responsible for caring for the land, the shrinking of Native lands put an end to hunting as a major means of obtaining food, and after the relocation the men began to work the fields, while the women were limited to work in the home. The traditional communal living arrangements were replaced with nuclear households. Many Native tribes previously had been matrilineal but were transformed in patrilineal societies. These and other substantial social changes led to a significant loss of social and political status traditionally held by women. Native Americans were not afforded U.S. citizenship until 1924, and they were not allowed to practice their Native religions freely until the passage of the American Indian Religious Freedom Act (PL 95-31) in 1978. The American Indian Religious Freedom Act affirmed the right of Native peoples to have access to sacred places used in religious ceremonies; to possess ceremonial items that are restricted by United States Law, such as eagle feathers and peyote; and to participate in sacred ceremonies without outside interference. (Choney et al., 1995; Duran & Duran, 1995; Herring, 2001; Weaver, 2009).

These historical experiences, together with ongoing discrimination and racism, continue to have a profound effect on Native Americans (Choney et al., 1995; Garrett & Pichette, 2000). This multigenerational hurt has been identified by the term *soul wound*- which can be defined as a wound that has resulted from historic trauma, ungrieved losses, internalized oppression, loss of identity and culture, and learned helplessness that has caused much suffering (Duran & Duran, 1995; Duran & Ivey, 2006; see also Brave Heart, 1998). Integration of the effects of extreme

oppression into Native culture has been called *intergenerational posttraumatic stress disorder* (Duran & Duran, 1995). As a result of living with this deep hurt and trauma, many Native Americans develop substance abuse problems, particularly with alcohol; internalizing problems, such as depression and anxiety; high suicide rates; increased exposure to violence; and high rates of posttraumatic stress disorder, and many Native Americans lack the adaptive skills necessary for adaptive functioning (Choney et al., 1995; see also Costello, Farmer, Angold, Burns & Erkanli, 1997; Garrett & Pichette, 2000; Goldston, Molock, Whitbeck, Murakami, Zayas & Nagayma Hall, 2008; Rieckmann, Robin, Chester, Rasmussen, Jaranson & Goldman, 1997; Trimble, 1990; Rieckmann, Wadsworth & Deyhle, 2004; Zvolensky, McNeil, Porter & Stewart, 2001). Native American youths have the highest high school dropout rate of any ethnic group, and they have higher rates of unemployment (Schwarzbaum & Thomas, 2008; Wilder, Jackson & Smith, 2001). As with many other minority groups, Native Americans are at increased risk of having lower socioeconomic status (Wilder & Sudweeks, 2003). Low socioeconomic status is a well-known risk factor contributing to the above difficulties and exacerbates the effects of these problems (Nomura, Marks, Grossman, et al., 2012; Ortiz, Flanagan & Dynda, 2008).

At school, Native American children are at a higher risk of placement in special education, particularly in the learning disability, mental retardation (intellectual disability) and emotional or behavioral disorder categories (Artiles & Trent, 1994; Booker, 2009; Lau & Blatchley, 2009; Wilder & Sudweeks, 2003). Cultural differences may be misinterpreted in comprehensive assessments that are used for placement of children into special education; thus, many students may appear to have educational difficulties, lack of intelligence, psychopathology and behavioral problems when they do not (Lau & Blatchley, 2009; Palacios & Trivedi, 2009; Rogers, 1998).

Broadband Mental Health Screeners

The use of behavior rating scales has dramatically increased over the past 10 years. Behavior rating scales are now used frequently in assessments for emotional and behavior problems (Shapiro & Heick, 2004). A PsycInfo search of the psychology literature reveals that the BASC-2 has been used in many research studies and dissertations across a variety of settings where psychological and educational services are provided, including mental health clinics and schools.

Rather than focusing only on a particular referral concern or reported problem behavior, broadband mental health screeners assess a wide variety of symptoms and behaviors. These rating scales are useful for identifying both appropriate and inappropriate behaviors in a variety of settings, and they produce multiple scores that indicate functioning across a number of areas (Sattler & Hoge, 2006). Screeners such as the Achenbach System of Empirically Based Assessment (ASEBA; Achenbach & Rescoria, 2000; 2001; 2003) and the Behavior Assessment System for Children, Second Edition (BASC-2; Reynolds & Kamphaus, 2004) are designed to collect and facilitate the integration of information about an individual form multiple respondents, such as parents, teachers, and the target individual, allowing for cross-setting comparison of data (Achenbach & Rescorla, 2000; 2001; 2003; Reynolds & Kamphaus, 2004; Weist, Rubin, Moore, Aldelsheim & Wrobel, 2007). Parents and teachers may be asked to rate the frequency, duration and/or intensity of a series of descriptive statements about behaviors and feelings. The self-report forms, on which the children or youth rate their own feelings and perceptions of their behavior, also are useful for eliciting information directly from the target individuals. It is generally recommended for self-reports to only be used with youths age eight or older, since younger children are less able to reflect and report their own behavior and feelings (McConaughy & Ritter, 2008; Sattler & Hoge, 2006).

Empirically-constructed screeners such as the ASEBA and BASC-2 have many advantages. They assess both adaptive competencies (strengths) and social, emotional and

behavioral difficulties (areas of need). These instruments result in quantitative data that can be statistically analyzed. Standard scores are interpreted by comparison with a normative sample that is demographically similar to the child or youth being assessed. Several broadband screeners (e.g., the ASEBA and the BASC-2) were developed using extensive normative samples of individuals representative of the gender, age, racial/ethnic composition and geographic region of the U.S. population (McConaughy & Ritter, 2008), and these measures are relatively easy to administer and score. Yet even though such screeners are valuable, they also are associated with a number of limitations. The use of screeners alone is not sufficient for making categorical classifications or diagnoses; rather, they are meant to be used as part of a multimethod comprehensive assessment for developing an initial understanding of those areas that warrant further evaluation (McConaughy & Ritter, 2008). Such measures do not identify specific causes, environmental circumstances or biological conditions that contribute to a child or youth's problems, nor do they indicate interventions or treatments that would be effective for ameliorating the problems. Also, because these instruments rely on the perceptions of raters, the scores may be influenced by the raters' memory, values, attitudes about the child or youth, and motivation to respond (McConaughy & Ritter, 2008). Moreover, individuals from cultural backgrounds that differ significantly from those of the normative sample may be at risk of being assigned standard scores that are biased (Lau & Blatchley, 2009).

Importance of Non-Discriminatory Assessment

Non-discriminatory assessment is the process of assessment that ensures reliable and valid procedures and assessment tools, produces fair outcomes for students and reduces as much as possible any discriminatory aspects that may exist in the evaluation (Ortiz, 2008). Historically, people from different cultural backgrounds, ethnic minorities and students who speak English as a second language, or are English Language Learners, have produced lower scores and different performance on various types of psychological measures, particularly cognitive assessments. Their lower test performance may not necessarily be due to psychopathology, cognitive or other

deficiencies, but instead could be attributable to either a lack of language skills to understand the test or questions or to a mismatch in background cultural knowledge required to do well on these tests, as a result of having a very different cultural perspective from the participant samples on which the tests originally were developed (Ortiz, 2008). Cultures vary in rates, diagnostic patterns, expression and outcome of psycholopathology; therefore, it would be impossible to reliably and validly measure psychological symptoms and difficulties for all cultures with the same instrument (Marsella, 1989). In the school setting, the first legal standards were set for assessments to be fair, equitable and nondiscriminatory with the passage of the Individuals with Disabilities Act (PL 94-142) in 1974. This legal standard meant that tests and evaluation materials were not to be discriminatory based on race or culture, and that tests were required to be administered in a child's native language or other form of communication (Ortiz, 2008; Rogers, 1998). There is no absolute way to completely eliminate some level of bias in assessments; however, the purpose of nondiscriminatory assessment is to remove as much bias as possible and take into account cultural, language, background and any other kind of differences.

Nondiscriminatory assessments are multimethod assessments that occur across a variety of settings. Information is collected about the student from variety sources, across all settings the child is in and environmental, linguistic, cultural, situational and experiential factors are considered. There are many facets to nondiscriminatory assessment, which could be discussed at great length. For the purpose of this study, the aspect of nondiscriminatory assessment that is most salient is the bias that pertains to culture, acculturation, background and experience. Assessments are biased when culturally based influences are not accounted for (Ortiz, 2008). It is not enough for a practitioner to only acknowledge cultural differences and influences, they must also understand them and understand what kind of implication they will have on the assessment (Ysseldyke, Burns, Dawson, et al., 2008; Ortiz, Flanagan & Dynda, 2008).

Within standardized psychological instruments that have been standardized, normed and evaluated there can still exist biases. Highly developed standardized tests are appropriate for

those in which it was developed on, but if a youth comes from a background that was not adequately included in the development and normalization than a bias can exist. Most psychological instruments are normed on the mainstream representation of the United States, but if a child does not fit within that mainstream cultural ideation than the assessment will not be nondiscriminatory, further the test would not be culturally relevant and limits the applicability of the instrument (Marsella, 1989; Notari-Syverson, Losardo & Lim, 2003; Ortiz, 2008; Rogers, 1998). Tests can be "culturally loaded" in how they are worded, what is referenced in questions and what types of responses are considered within normal and appropriate limits (Notari-Syverson et al., 2003; Ortiz, 2008; Reid, 1995). Many assessments have specific norm groups in which comparison about the youth are made. If a youth is compared to a norm group that does not fit than the comparison will be invalid and the comparison cannot be used for any kind of determination. Also, even if a norm group has equal percentage representation as in the general population, the actual number of participants may still be too small to detect any meaningful differences (Sattler & Hoge, 2006). Not having a norm group that is representative of the person being assessed leads to inability to fully interpret accurately the information obtained from the assessment (Allen & Walsh, 2000). Standardized instruments should have established cross-cultural invariance before the instrument is used with a population that well represented in standardization. The instrument should be given be evaluated with the population it was not originally developed with and compared to see if the psychometric properties of the instrument are similar and then it can be determined if the instrument has value in both populations or just the original population it was developed with (Byrene, Oakland, Leong, van de Vijver, Hambleton, Cheung, et al., 2009; Paunonen & Ashton, 1998; Reid, 1995).

Another area of consideration in nondiscriminatory assessment is examining bias that may exist in diagnostic criteria. This is especially important for the BASC-2. The BASC-2 uses cutoff scores to identify average, at-risk and clinically significant for a variety of behaviors. If a youth is clinically significant in a particular area it could lead to further evaluation and

exploration of a particular disorder. Cutoff scores for one cultural group (group that has the same set of values, experiences, practices and beliefs) may not necessarily apply to another cultural group. Cultural models also impact the frequency, expression and types of behaviors in any given situation. Tolerance for behaviors vary across cultures, without taking this into consideration youths from different cultural backgrounds may be under or over diagnosed (Mesquita & Walker, 2003). Studying the differences of cultural group behaviors can help evaluate if certain behaviors are more accepted in one culture or another.

Related to this issue is cultural bias in individual test items (Sattler & Hoge, 2006). An example would be rating a youth to determine if they "were a good sport" or not. The term "good sport" may not exist in all cultures and it that particular skill may or may not be valued and it can mean many different things to people from different backgrounds. This type of cultural bias has been reported in previous studies with Native Americans and will vary significantly with each different tribal or geographical region (Rosenberg, Oesterheld & Haber, 1997; Whitbeck, Johnson, Hoyt & Walls, 2006). Also, parents and caregivers may not trust the school and may not want to reveal negative information about their child (Lau & Blatchley, 2009). Cultural beliefs define a person's frame of reference when answering questions on rating scales. Rating scales are dependent on one's interpretation and perception of the question. What is appropriate and expected are dependent on a person's culture, background and experience.

Various professional ethics and practice codes have specific guidelines and criteria for conducting nondiscriminatory assessments. The American Psychological Association (APA) ethical guidelines require psychologists to use assessment instruments with individuals from populations on whom the instrument had been investigated (APA, 2010). If a psychologist administers a test on an individual from a distinct cultural group whose normative performance on that test in not known, the APA ethics code requires the psychologist to explicitly address the limitations and strengths of their test results in their interpretation of the client's performance. Besides describing the strengths and weaknesses of the tests they use, psychologists must also

address other considerations that will affect the outcomes of their assessments, including situational, personal, linguistic and cultural differences (APA, 2010). Those psychologists who participate in test construction are required to eliminate bias to the maximum extent possible (APA, 2010). The National Association of School Psychologists (NASP) standards for conducting nondiscriminatory assessment also stipulate that school psychologists actively pursue background knowledge of the student, including experiential and cultural differences, and that school psychologists take into account these considerations when selecting, administering, and interpreting their assessment results (NASP, 2010).

Importance of Adaptive Skills

Adaptive behavior is defined as consisting of specific conceptual, social and practical skills that facilitate functioning in everyday life. Conceptual skills include directing oneself and language, reading, writing, arithmetic and money skills. Social skills include interacting with other people, forming meaningful relationships, and social reasoning and comprehension. Practical skills include basic self-care; including dressing, bathing and toileting, and household care such as washing dishes or preparing food. Adaptive skills are necessary for children and youths to function and maintain themselves independently and meet behavioral expectations within society or a given culture (Sattler & Hoge, 2006).

Adaptive skills interact with a number of variables including intelligence, culture, socioeconomic status, family and environment and are what helps an individual survive and become successful (Sattler & Hoge, 2006). Children and youths who have difficulty with adaptive skills often struggle with personal care, functioning in the home, school or community environment, developing healthy and meaningful relationships and coping with adverse and/or unexpected life events (Harrison & Raineri, 2008). All children and youths go through hardships as they grow and develop into adulthood and strong adaptive skills make transitions and life events easier to deal with and overcome. In comprehensive assessments of children and youth is important to identify strengths and weaknesses in adaptive skills. This identification allows the

child or youth's strengths to be used to help them and informs the clinician of what adaptive skills should be further developed. Adaptive skills can be viewed as a mechanism for support of children and youths (Harrison & Raineri, 2008).

Historically, adaptive skills were assessed only with children when an intellectual disability was suspected; however, adaptive skills are extremely important for all children and youth. Generally, adaptive skills are higher when intelligence is higher, but as previously stated, there are many variables that contribute to adaptive skills development (Harrison & Raineri, 2008). It is also important to note that behaviors that are considered adaptive at one particular age may no longer be considered adaptive at a different age. Thus, adaptive skills appropriateness vary dependent on developmental level. Another very important component in adaptive skills is environment and culture, what is considered adaptive behavior is variable based on the situation or context. Behavior that is considered adaptive in a small town environment may not be adaptive in the school environment (Sattler & Hoge, 2006). On the same token, behavior that is considered in the Native American culture may not be considered adaptive in the mainstream American society. Also, varying cultural groups may have group strengths or weaknesses. If a particular culture is known to have a certain strength, then that can be built upon while the known weaknesses can be further developed before it become detrimental to the child or youth.

Behavior Assessment System for Children (2nd Edition)

The Behavior Assessment System for Children (BASC-2) is a multimethod, multidimensional system that is used to evaluate children and young adults ages 2 through 25. The BASC was originally published in 1992 and revised in 2004; for the purpose of this study only the BASC-2 will be discussed. The BASC-2 can be used to facilitate direct observation of behavior, to assist with gathering intake information and also to measure self and others' perceptions of an individual's behavior, including both adaptive and clinical dimensions. It consists of several components, including a student observation system, used for recording directly observed classroom behaviors; a structured developmental history form, which assists

with gathering background information; and various norm-referenced rating scales, including self-report surveys, teacher report surveys, and parent/caregiver report surveys (Reynolds & Kamphaus, 2004).

Although the structured developmental history form and student observation system are used with individuals of all ages, several forms exist for each rating scale (self-report surveys, teacher report surveys, and parent/caregiver report surveys) according to the target individual's age in order to enhance the reliability of scores for individuals at various developmental levels. For the parent/caregiver and teacher report surveys, rating forms are produced for four age ranges: Preschool (ages 2-5); Child (ages 6-11); Adolescent (ages 12-21); and College (ages 18-25), designed specifically for students in technical school, colleges and/or universities. For the self-report of personality survey (SRP) separate forms are provided for three age ranges: Child (ages 8-11), Adolescent (ages 12-21) and College (ages 18-25; Reynolds & Kamphaus, 2004). Taken together, all the parts of the BASC-2 are intended to be used to aid practitioners and clinicians in evaluation, diagnosis and treatment planning for various emotional and behavioral disorders.

The BASC-2 self-report forms. The SRP surveys measure self-perceptions and self-reported behaviors in the home, school and community settings. Individual's respond to statements on the initial section of the self-report forms by choosing either *True* or *False;* they respond to the remaining statements on a 4-point scale, in which responses represent *Never, Sometimes, Often* or *Always.* There are 139 items on the Child form, 176 items on the Adolescent form and 185 items on the College form.

The Child self-report form results in 14 primary scale scores: Anxiety, Attention Problems, Attitude to School, Attitude to Teachers, Atypicality, Depression, Hyperactivity, Interpersonal Relations, Locus of Control, Relations with Parents, Self-Esteem, Self-Reliance, Sense of Inadequacy and Social Stress. It produces five composite scale scores: Emotional Symptoms Index, Inattention/Hyperactivity, Internalizing Problems, Personal Adjustment and

School Problems. The Child form does not include content scales (Reynolds & Kamphaus, 2004).

The Adolescent SRP produces a total of 16 primary scale scores – all the primary scale scores reported on the Child form, and also scales for Sensation Seeking and Somatization. It produces five composite scale scores: Emotional Symptoms Index, Inattention/Hyperactivity, Internalizing Problems, Personal Adjustment and School Problems. It has four content scales, which are: Anger Control, Ego Strength, Mania and Test Anxiety.

The College self-report form yields 16 primary scales, which differ somewhat from those produced when administering the Adolescent form. The primary scales are: Alcohol Abuse, Anxiety, Attention Problems, Atypicality, Depression, Hyperactivity, Interpersonal Relations, Locus of Control, Relations with Parents, School Adjustment, Self-Esteem, Self-Reliance, Sensation Seeking, Sense of Inadequacy, Social Stress and Somatization. Its four composite scales are: Emotional Symptoms Index, Inattention/Hyperactivity, Internalizing Problems and Personal Adjustment. The content scales are the same as those produced for the Adolescent form (Reynolds & Kamphaus, 2004).

Besides measuring problems in psychological and emotional functioning, the BASC-2 self-report forms also measure four adaptive skills – interpersonal relations, relations with parents, self-esteem and self-reliance – and produce a norm-referenced Adaptive Skills composite score. The Interpersonal Relations scale measures success in relating to others and enjoyment in relationships and social interaction. The Relation with Parents scale measures the respondent's perception of being valued in the family, the parent-child relationship, and parental trust and concern. The Self-Esteem scale measures self-satisfaction with both physical and internal characteristics. The Self-Reliance scale measures self-confidence and confidence in decision making ability (Reynolds & Kamphaus, 2004).

The self-report forms also produce five validity indices: the F index, the Response Pattern index, the Consistency index, the V index and the L index. On self-report scales, the F scale score indicates and excessively negative response set. This type of response set might indicate an

attempt to fake bad, or it might indicate high psychological distress, and it indicates that further assessment may be justified. The Response Pattern Index is used to identify patterns of responding or random responses that were given without regard to the content of the statements. The Consistency Index is used to identify different responses to items that ask about similar behaviors or perceptions. The V index is intended to determine if there are invalid responses due to poor reading comprehension, failure to follow directions, or poor contact with reality. The L index is the "fake good" index, intended to detect attempts to make oneself appear more acceptable than they might actually be. These indices are important in helping the clinician or practitioner determine the accuracy of the responses (Reynolds & Kamphaus, 2004).

Normative samples. Once completed, the BASC-2 responses are compared to those of a normative sample in order to evaluate how the child or youth compares to children within the norm group. The BASC-2 scale scores are reported as T-scores with a mean of 50 and a standard deviation of 10, and also as percentiles. Several normative samples are available to use when scoring of the BASC-2. The samples are: general – combined sex, general – separate sex, clinical and clinical with certain disabilities. For the Clinical scales, for which high scores indicate less adaptive functioning, T-scores of 70 or above are defined as being in the *clinically significant* range, scores of 60-69 are in the *at-risk* range, and scores below 60 are in the *average* range (Reynolds & Kamphaus, 2004). On the other hand, for the Adaptive Skills scales, for which high scores indicate healthier functioning, T-scores of 30 or below are considered to be in the *clinically significant* range, scores of 31-40 are in the *at-risk* range and scores above 40 are in the *average* range (Reynolds & Kamphaus, 2004). Generally, scores in the clinically significant range usually indicate maladaptive functioning and most often warrant further assessment. Scores in the at-risk may or may not indicate a problem for the child or youth and should be further explored.

BASC-2 Validation with Native Americans and Other Samples

With any assessment instrument, it is extremely important to investigate the methods by

which it was developed, with which populations it was normed, and to what extent it is a reliable measure. The BASC-2 was developed over the course of two years using a very large normalization sample of over 13,000 participants. Reynolds and Kamphaus (2004) targeted obtaining samples that were varied in a number of characteristics including socioeconomic status (SES), which was based on parent education level; race/ethnicity; gender; age; geographic region; and classification in special education or gifted/talented programs. The BASC-2 manual includes tables showing that the BASC-2 norm samples are adequately varied in most of these characteristics.

Of particular note, however, for this study is the sample representation of race and ethnicity on the self-report form. Participants in the BASC-2 normative sample were categorized into one of four race/ethnicity categories: African American, Hispanic, White and Other. In the general norm sample only 5.4-5.6% of the participants were represented in the *Other* category, which included Asian Americans, Indian Americans, Native Americans and other races and ethnicities that were not African American, Hispanic, or White (Reynolds & Kamphaus, 2004). The underrepresentation of these other racial/ethnic groups is potentially problematic for children and youths who are a part of these ethnic groups, as they are not well represented in the normative sample. This is a very concerning issue since the expectations and acceptability of behaviors and adaptive skills are dependent on culture and environment, and the nature and form of psychopathology influenced by culture (Draguns & Tanaka-Matsumi, 2003).

In addition, test reliability coefficients for students in minority groups may differ from those for students in the dominant culture (Wilder & Sudweeks, 2003). The measurement equivalence of an instrument across cultures cannot be assumed. Rather, each instrument must be evaluated with specific cultural groups before it can be used reliability with that group (Varela, Sanchez-Sosa, Biggs & Luis, 2008). Since the BASC-2 norm sample did not include an adequate representation of Native Americans, the reliability of the BASC-2 for Native Americans cannot be assumed to be the same as that for the normalization sample. Their differences should be

evaluated to determine if there is enough of a difference to warrant a separate normalization sample in when comparing Native American students to peers. Lack of cross-validation with culturally diverse populations has created an over emphasis on internal validity instead of addressing issues of external validity by using stronger research knowledge on ethnically and culturally diverse populations (Sue, 1999).

Other researchers have recognized the absence of other ethnic groups in the BASC-2 norm sample as a problem for practice as well. Some research studies have been conducted to help alleviate this issue; however, there is not a large literature base for this research, as only small amounts have been done. Also, since the BASC was revised in 2004, some literature uses the original BASC and some uses the BASC-2. Overall, the literature is lacking in the examination of specific ethnic group differences.

Cho, Hudley and Back (2003) compared Korean American adolescents to the norming sample for the original BASC and found the SRP was only moderately reliable for use with Korean American adolescents. In addition to this finding, it was also discovered the Korean American sample was similar to the norm sample based on average scale scores on all but two of the scales: Relations with Parents and Social Stress. While only two scales showed differences, these differences contributed to the overall Emotional Symptoms Index and to the other composite and content scales. It is also important to note that in this study items were deleted as recommended by the analysis in order to increase subscale reliability. With item deletion, all the subscales except Attitude to Teachers achieved reliability in the acceptable range (Cho et al., 2003).

In a second investigation of the original BASC with Korean American youth, it was found that Korean American children were significantly deviant from the American standardization sample, and it appeared this deviation was due to cultural factors and not psychopathology (Jung, 2000). Korean children rated themselves significantly more impaired on 6 out 7 BASC SRP scales (Depression, Sense of Inadequacy, Relations with Parents,

Interpersonal Relations, Self-Esteem and Self-Reliance) than Korean American or Caucasian children. These scales represent mainly internalizing types of problems and it is likely greatly affected by Korean collectivist culture where family is valued over the individual self. Cultures vary in how particular behaviors and expressions are accepted and in what expectations are put forth for children. Sociocultural variations in the context of child development interact and impact children's behavior, self-expression and experiences. These cultural differences in expectations and what is acceptable should be considered instead of assuming the existence of psychopathology (Jung, 2000).

Research examining the Spanish version of the BASC-PRS-C with Hispanic children ages 7 to 9 noted serious flaws with the internal consistency when compared to the normalization sample, including extremely low Cronbach's alphas from .05 to .49. Thus, certain scales could not be interpreted, including Attention Problems, Withdrawal and Adaptability. The statistical analyses revealed that 11% of the correlations among the scales from the Hispanic group were different from standardization group; ideally the correlations of scales for the Hispanic group would be very similar to the standardization group. The composite scales were more similar to the standardization sample than individual scales (McCloskey, Hess & D'Amato, 2003). McCloskey et al. (2003) suggested these correlational differences could be accounted for by cultural and linguistic variables. There is not a large amount of research in the literature that examines cross-cultural equivalence of the BASC-2. This is alarming and disappointing, given how often the BASC-2 is used.

Culture, Ethnicity and Acculturation

Culture has been defined as "the embodiment of a worldview through learned and transmitted beliefs, values, and practices, including religious and spiritual traditions. It also encompasses a way of living informed by the historical, economic, ecological, and political forces on a group" (APA, 2003, p. 380). Native American youth often are caught between two cultures, the Native American culture and the dominant Caucasian/European culture. As youths, they are

already struggling with issues pertaining to developing their identity and Native Americans in particular struggle with cultural identification (Choney et al., 1995).

In relation to the issue of culture, ethnic identity and acculturation is a construct that has been developed in attempts to better understand and study the impact of cultural differences on human functioning (Berry, 1997; Berry et al., 2006; Matsudaira, 2006; Phinney, 1990; Rudmin, 2009; Winterowd et al., 2008; Zimmerman, Ramirez-Valles, Washienko, Walter & Dyer, 1996). The discussion of culture, acculturation, and other related terms presented here is presented as related to the present study.

The American Psychological Association (APA) defines ethnicity as "the acceptance of the group mores and practices of one's culture of origin and the concomitant sense of belonging… Individuals may have multiple ethnic identities that operate with different salience at different times" (APA, 2003, p. 380). *Ethnic identity* has been conceptualized as that part of a person's identity that results from attachment and identification with a particular cultural group (Zimmerman et al., 1996). Phinney (1990) points out that the term *identity* in relation to ethnic identity is individual specific; where each person develops his or her own ethnic identity based on his or her cultural experiences. In addition, ethnic identity measures often are only representative of one culture and a person's relationship with more than one culture is not considered.

Acculturation is the degree to which a person identifies with and follows both majority and traditional cultural values (Choney et al., 1995). Acculturation has been conceptualized in a variety of ways, and there are conflicting models of acculturation; it *acculturation* has been used to describe group-level changes (Berry, 1997; Berry, Phinney, Sam & Vedder, 2006), individual-level changes (Rudmin, 2009) or both (Matsudaira, 2006). Choney et al. (1995) conceptualizes acculturation of Native Americans as an individual-level process describing the degree to which a Native American person accepts and adheres to both majority and tribal cultural values. Most published acculturation measures assess individuals and are used to guide clinicians obtaining a

better understanding of the individual for appropriate mental health service delivery (Matsudaira, 2006; Rudmin, 2009).

Having a positive view of one's identity and being actively involved with one's culture serves as a protective mental health factors against addiction, substance abuse and internalizing problems (Moran et al., 1999). Higher levels of ethnic identity have been found to promote self-esteem in Latino youths (Umaña -Taylor, 2007) and would likely also improve self-esteem in Native Americans. Healthy levels of cultural involvement are also a protective factor in preventing suicidal behavior among Native American youth (Goldston et al., 2008). Rieckmann et al. (2004) also found that increasing a Native youth's sense of cultural awareness and identity would help increase factors of mental well-being and resilience, which in turn would help decrease the chances of depression. Zimmerman et al. (1996) found positive relationships with culture decreased the likelihood of alcohol and substance abuse and increased self-esteem. Having a strong, positive relationship and outlook of both Native and majority cultures promote psychological and sociocultural adaption, including healthy friendship patterns and developing support systems. Whereas, being involved in neither or being confused about where one fits within the cultures decreases adaptability (Berry et al., 2006; Bryant & LaFromboise, 2005).

Acculturation is important in relation to mental health services because an individual's level of acculturation can give insight into psychological and sociocultural difficulties (Berry et al., 2006; Rudmin, 2009). Several models of acculturation have been proposed, however, the most widely accepted model of acculturation (Berry et al., 2006; Moran et al., 1999; Oetting & Beauvais, 1991) holds that acculturation is a two-dimensional construct, with one dimension representing a person's degree of identification with the majority group and the other dimension representing his or her level of identification with the ethnic group. In this model an individual's perceptions regarding the dominant and the ethnic traditions are measured separately and scores on one dimension do not influence scores on the other. This is especially salient for Native

Americans since about half of all Native Americans identify as Native American and another race (Humes et al., 2011). Acculturation models with only one dimension are not adequately able to fully measure the complexity of acculturation (Kang, 2006; Lee, Sobal & Frongillo, 2003). In addition, recent research suggests it may be important to measure identification with both the majority group and the individual's ethnic group (Albright & LaFromboise, 2010).

According to Berry et al.'s (2006) and Oetting and Beauvais' (1991) two-dimensional model of acculturation, an individual may fall into one of four classes of acculturation: bicultural, assimilated, separated, or marginal. *Bicultural* individuals strongly identify with both the majority and traditional cultures. *Assimilated* individuals strongly identify with the majority culture and weakly identify with their traditional culture. *Separated* individuals weakly identify with the majority culture and strongly identify with their traditional culture. Finally, *marginal* individuals weakly identify with both the majority and traditional cultures. These four classes of acculturation are outlined in Table 1 (Moran et al., 1999; Phinney, 1990).

Table 1

Terms Used for Four Acculturation Orientations, Based on Degree of Identification

Identification with Majority Group	Identification with Ethnic Group	
	Strong (Hi)	Weak (Lo)
Strong (Hi)	Acculturated Integrated Bicultural	Assimilated
Weak (Lo)	Ethnically Identified Ethnically Embedded Separated Dissociated	Marginal

Note. (Phinney, 1990, Table 1, p. 502)

Research has indicated different patterns of adaptive functioning in individuals who fall into these four categories of acculturation. Bicultural youth demonstrate healthier psychological and sociocultural adaptation than young people of marginalized acculturation status (Berry et al.,

2006; Garrett & Pichette, 2000; Phinney, 1990). In research with Native American youth, Oetting and Beauvais (1991) found that adolescents classified as marginal in their ethnic identity scored the lowest on a broad measure of psychological well-being. In contrast, adolescents identified with at least one culture, either the dominant culture (assimilated) or their Native ethnic culture (separated), scored higher than marginalized youth, and Native American youth classified as bicultural evidenced the highest levels of psychological well-being (Oetting & Beauvais, 1991). In other studies, higher levels of acculturation also have been associated with superior educational achievement, more mature patterns of conflict resolution and positive personality characteristics (Garrett & Pichette, 2000). Youths who struggle with their identity and self-concept, on the other hand, are at greater risk of having low self-esteem and of holding negative attitudes toward both their own ethnic group and the majority group (Phinney, 1990).

Measurement of Acculturation in Formal Assessment

Culture can moderate the effectiveness of educational and psychological measures (Cuellar, 2000). Acculturation has been identified as a "moderator variable that affects [the validity of] assessment instruments whenever [they are] applied to persons who are culturally different from the population for which the instrument has been developed and used" (Dana, 1986, p. 483). Thus, it is essential to evaluate the acculturation of clients when administering formal measures of psychological or educational assessments, both to help gauge the appropriateness of the assessment instruments for these individuals and also to aid in interpreting the test results (Dana, 1986; Matsudaira, 2006; Marsella, 1989; Merrell, Ervin, & Gimpel, 2006; Rudmin, 2009). Many in the professional psychology community have recognized the importance of understanding the beliefs, values, and practices of cultural and ethnic minority clients in order to provide them with adequate psychological services, including assessment (APA, 2003; Choney et al., 1995; Jones, 2009; NASP, 2000; Winterowd et al., 2008; Zimmerman et al., 1996).

A variety of instruments have been created to measure acculturation in accordance with the various acculturation models (Matsudaira, 2006; Phinney; 1990; Rudmin 2009), including the

Native American Acculturation Scale (NAAS; Garrett & Pichette, 2000), the Acculturation for American Indians (Choney et al., 2005), the Native American Acculturation Scale (Hoffman, 1983), the Multigroup Ethnic Identity Measure (Phinney, 1992) and the Bicultural Ethnic Identity Scale (Moran et al., 1999).

Unfortunately, many acculturation measures are psychometrically limited, demonstrating poor reliability and low consistency with other measures of acculturation (Matsudaira, 2006; Rudmin, 2009). Recent reviews of acculturation instruments also have concluded that universal acculturation instruments intended to measure acculturation in persons across a variety of cultures are not successful, whereas instruments that focus on one cultural group are much stronger and have more validity and reliability (Matsudaira, 2006; Rudmin, 2009). Both reviews concluded that the empirical evidence supports acculturation scales based on the two-dimensional theory of acculturation, especially because using two linear scales allows for the assessment of biculturalism, which is the strongest level of acculturation (Rudmin, 2009).

The Bicultural Ethnic Identity Scale

Moran et al.'s (1999) Bicultural Ethnic Identity Scale (BEIS) is an orthogonal, two-dimensional acculturation measure that was developed and validated with a large sample of Native American youth. The BEIS is a modification of the Orthogonal Cultural Identification Scale (OCIS) developed by Oetting and Beauvais (1991). The OCIS was based on the orthogonal cultural identification model, a bidimensional theory of acculturation which holds that a person's identification with the values, beliefs, and practices of any one culture is independent of his or her identification with those of another culture (Oetting & Beauvais, 1991). On the OCIS, individuals respond to questions asking about their identification or lack of identification with each culture without relation to the other culture. Oetting and Beauvais' original instrument contained two scales, a White subscale and an Indian subscale, each composed of four very broad questions: (1) Do you live in the...way of life? (2) Will you be a success in the...way of life? (3) Does your family live in the...way of life? and (4) Is your family a success in the...way of life? The total

OCIS therefore contained eight questions, to which the participant responded by selecting one of four Likert type response options: *A Lot, Some, Not Much or Not at All*. Total scores for each scale range from 4 to 16 and scores on each scale are independent of each other, resulting in two continuous scores. Cronbach coefficient alphas for these four items on the two scales were reported to be .89 for the Indian scale and .87 for the White scale with a sample of Native American high school students (Oetting & Beauvais, 1991). According to criteria set fort by Sattler and Hoge (2006), these are strong reliabilities for a research instrument. Subsequently, Bryant and LaFromboise (2005) used the OCIS with a sample of Lumbee American Indian high school students and found a significant different between Indian and White subscale scores. They also found that Native American and White culture and Native American and White identification are independent.

One strength of the OCIS is its flexibility. The questions are phrased in such a way that participants rate their own understanding of, say, the Native American "way of life" and the European American "way of life", without attempting to define these "ways of life". This deliberate vagueness in terminology allows the OCIS to be used with Native Americans from varying cultural and tribal backgrounds (Oetting & Beauvais, 1991; Moran et al., 1999). Oetting and Beauvais' (1991) scale seemed to be a useful instrument for assessing acculturation; however, the instrument asked only "way of life" questions and did not include any questions including an individual's involvement in cultural practices (Moran et al., 1999).

Because the OCIS does not include any questions addressing an individual's involvement in cultural practices, Moran et al. (1999) expanded the instrument including questions about involvement with family cultural activities, language, spiritual traditions and cultural events—practices that aligned the instrument with behavioral factors reported in the literature as important for the assessment of acculturation (Berry, 2006; Choney et al., 1995; Phinney, 1990, Rudmin, 2009). This instrument modification expanded the number of items in each scale to eight, resulting in a total of 16 questions. After conducting a pilot study and soliciting feedback from

focus groups, the questions were refined to create the final version of the scale (Moran et al., 1999). The instrument was administered to 1,592 Native American youths in grades 9-12. The updated 16 item instrument, entitled the Bicultural Ethnic Identity Scale (BEIS), is more consistent with acculturation theory than was the OCIS, continues to be worded in such a way that allows for flexible use with a variety of Native American cultural and tribal backgrounds, and was specifically designed for use with youths. The BEIS has a reported Cronbach's alpha reliability of .92 for the White scale and .91 for the Indian scale (Moran et al., 1999). Its structure was evaluated using a cross-validation factor analysis of two independent random subsamples of Native American participants. A principal axis factor analysis with varimax rotation was conducted with one sample of participants. This analysis suggested a two factor model when using Kaiser's criterion for eigenvalues greater than 1. Factor loadings of .30 or higher were retained on the two factors. The factors were labeled Indian identity and White identity. The factor structure from the exploratory factor analysis was subsequently examined using confirmatory factor analysis with the remaining subsample of participants. The CFA produced a final Confirmatory Fit Index of .913 (Moran et al., 1999). In sum, the BEIS is an acculturation scale with a sound theoretical base and strong psychometric characteristics for use with Native American youth.

Challenges

Native Americans are considered members of a minority culture (Humes et al., 2011). There are many considerations to be aware of when using minority populations in research. In addition to these considerations a minority group, Native Americans have specific differences; in that they are different than other minority groups and there is an immense amount of variation between Native American people and these differences must be considered (Choney et al., 1995; Fisher et al., 2002). Within the Native American group of people there are over 500 different tribes; within each of these tribes are a different set of beliefs and customs. Many tribes have similarities but they all have differences that contribute to who they are (Choney et al., 1995;

Weaver, 2009). Native Americans are more dispersed in small and large cities and also live in isolated tribal communities. This dispersion of the population can make it extremely difficult to identify where Native Americans are located. The Native American population is less likely to participate in research than other minority groups (Rochat, 2008). These differences in participation are most often due to Native American mistrust of researchers and Europeans, who often conduct research. Native Americans have been deceived, hurt and used by the United States government and researchers, so it is natural they would be less likely to want to participate (Choney et al. 2005; Darou et al., 1993). The combination of high cultural variation amongst the tribes, geographic dispersal, and low levels of participation in research makes it extremely difficult to identify a representative sample of Native Americans from all the tribes across the nation. Because of these constraints, in order to conduct valid research with this specific population it requires more resources than research with the general population. These extra resources may need to include more face to face interviews with members of the population, oversampling and more in depth procedures for identification of members of the population (Rochat, 2008). Native Americans value relationships and developing a relationship with community and leaders is necessary. Researchers must show respect to the local authorities, elders and community members and be very patient and flexible. It also very important to Native Americans to receive feedback from the research and follow up sessions are not optional (Darou, Hum & Kurtness, 1993). Chief (1940), who developed the first acculturation scale, even recognized these issues in her initial research, and recommended that the person that administers the scale be someone the students are "thoroughly acquainted and whom they respect" (p. 25). This speaks volumes to the tribal values that must be respected when collecting data with a Native American population.

Purpose of Study

The present investigation will examine the responses of Native American youths on the BASC-2 SRP-A to test for differences in the patterns of scale scores against the normalization

sample. Data will be gathered from a sample of Native American youth in Oklahoma. These data will be compared with the BASC-SRA responses, of a random sample of youths from the normalization sample used in the development of the BASC-2 (described in the manual). This investigation will also examine the participants' levels of acculturation and determine whether or not there are differences in BASC-2 SRP-A scale scores across levels of acculturation.

Research Questions

1. On the BASC-2 SRP-A, are there differences in the composite scale scores for Native Americans compared with those of a random sample of individuals drawn from the normative sample?

2. If differences exist, which of the BASC-2 composite scales account for those differences?

3. If any statistically significant differences in composite scores are found between the Native American and normative samples, are these differences large enough to be theoretically meaningful (i.e., are they likely to be clinically significant)?

4. Are any differences observed in BASC-2 SRP-A composite scale scores across samples related to ethnic identity, as measured by the BEIS?

CHAPTER III

METHODS

Participants

Participants included two groups of youths between the ages of 12 to 18 years. They consisted of two samples: (1) a sample of 162 Native American youth recruited for the purposes of this investigation, and (2) a sample of 200 other youth randomly selected from the normalization group used in the initial development of the BASC-2 SRP-A.

Native American sample. The 162 youths in the Native American sample consisted of 70 males (43.2%) and 92 females (56.8%). Participants represented various tribal affiliations and were drawn from four public schools and a Native American boarding school in Eastern Oklahoma. Of the 162 Native American students, all identified as Native American, and 125 (77.2%) indicated they had a tribal identification card that formally recognized their tribal membership. Most participants in the Native American sample identified with more than one tribe; their tribal affiliations can be found in Table 3. A majority of the Native American sample also identified as members of a second ethnic group, as shown in Table 2.

For the purpose of this study, public school youth were considered Native American only if they were identified as Native American by their school's Title VII director. All students attending the Native American boarding school were identified as Native American, because possessing Native American identification was a requirement for enrollment.

Table 2

Racial/Ethnic Composition of All Samples

	Native American Sample[a]		BASC-2 SRP-A Comparison Sample		BASC-2 SRP-A Normalization Sample[b]	
Racial/Ethnic Group	N	%	N	%	N	%
Native American	162	100	4	2	Included in Other	
Hispanic	11	6.8	32	16	301	15.8
African American	7	4.3	29	14.5	294	15.5
White	108	66.7	122	61	1202	63.3
Asian	5	3.1	9	4.5	Included in Other	
Other	5	3.1	4	2	103	5.4

[a]For Native American sample, students indicated all ethnic groups/races with which they identified, making the total percentage greater than 100%. [b]Data taken from Reynolds & Kamphaus, 2004, p.120, Table 11.4

Table 3

Tribal Affiliation of Native American Sample

Tribe	N	%
Apache	3	1.9
Cherokee	96	59.3
Cheyenne Arapaho	5	3.1
Chickasaw	7	4.3
Choctaw	23	14.2
Citizen Potawatomi	1	0.6
Comanche	5	3.1

Delaware East	1	0.6
Iowa	4	2.5
Kaw	11	6.8
Kickapoo	2	1.2
Kiowa	5	3.1
Muscogee Creek	17	10.5
Osage	13	8
Otoe Missouri	13	8
Pawnee	11	6.8
Ponca	36	22.2
Sac Fox	1	0.6
Seminole	8	4.9
Seneca Cayuga	2	1.2
Shawnee	2	1.2
Tonkawa	2	1.2
United Keetoowah Cherokee	11	6.8
Wyandotte	1	0.6
Other Tribe	11	6.8

Note. Students indicated all tribes with which they identified, resulting in a total percentage of tribes greater than 100%.

Table 4

Age Distribution of All Samples

	Native American Sample		BASC-2 SRP-A Comparison Sample		BASC-2 SRP-A Normalization Sample[b]	
Age	N	%	N	%	N	%
12	26	16	37	18.5	303	15.9
13	28	17.3	37	18.5	325	17.1
14	16	9.9	38	19	272	14.3
15	32	19.8	24	12	273	14.4
16	27	16.7	25	12.5	281	14.8
17	19	11.7	27	13.5	326	17.2
18	14	8.6	12	6	120	6.3

[b]Data taken from Reynolds & Kamphaus, 2004, p. 117, Table 11.3

Table 5

Highest Parent Education Level for Both Samples

	Native American Sample		BASC-2 SRP-A Comparison Sample	
Education Level	Mother	Father	Mother	Father
	%	%	%	%
Grade 11 or Less	6.2	5.5	14.5	14
12^{th} grade or GED	24.1	39.5	31.5	30
1-3 years College or Technical School	46.3	33.3	31.5	17.5
4 or more years of College/Technical School	20.4	12.3	19	21

Note. In the Native American sample, five students did not respond to mother's education level and 15 students did not respond to father's education level. In the comparison sample, seven students did not respond to mother's educational level and 35 students did not respond to father's education level.

Comparison group. The comparison group was a subset of 200 individuals randomly drawn from the general-population normalization sample used in the development of the BASC-2. This sample consisted of youths ages 12-18, 106 males (53%) and 94 females (47%). As indicated in Table 2, the comparison group participants identified as members of several racial and ethnic groups. Only 2% of this sample identified as Native American.

The normalization sample for the BASC-2 was representative of the U.S. population with respect to sex, SES (by parent education level), race/ethnicity, geographic region, special and gifted/talented education and enrollment in private or public school (Reynolds & Kamphaus, 2004). The normalization sample for the BASC-2 SRP-A form included 1,900 youths aged 12-18 (Reynolds & Kamphaus, 2004, p. 117, Table 11.2), with equal numbers of male and female participants. The racial/ethnic characteristics and ages of the participants drawn from the SRP-A normalization sample are reported in Table 2. Any Native American participants in the original normalization were included in the Other category and it is not reported how many participants were Native American for the entire normalization sample. However, in the random sample obtained for comparison use, there were 4 Native American participants (2%).

Measures

BASC-2 SRP-A. The BASC-2 self-report adolescent form (SRP-A) is designed for youths ages 12 to 21. It consists of 176 items that include 16 primary scales, four content scales and five composite scales. The primary scales include 12 clinical scales (Attitude to School, Attitude to Teachers, Sensation Seeking, Atypicality, Locus of Control, Social Stress, Anxiety, Depression, Sense of Inadequacy, Somatization, Attention Problems, and Hyperactivity), for which high scores indicate poorer functioning, and four adaptive scales (Relations with Parents, Interpersonal Relations, Self-Esteem and Self-Reliance), for which high scores indicate healthier functioning. High scores on the four content scales (Anger Control, Ego Strength, Mania and Test Anxiety) and on the five composite scales (Emotional Symptoms Index,

Inattention/Hyperactivity, Internalizing Problems, Personal Adjustment and School Problems) suggest more impaired functioning. The BASC-2 manual (Reynolds & Kamphaus, 2004, p. 74, Table 8.10; pp. 79-81) describes these scales as follows:

Primary Scales:

- The *Attitude to School* scale measures negative feelings towards school including alienation, hostility and dissatisfaction.
- The *Attitude to Teachers* scale measures negative feelings towards teachers including resentment, dislike, distrust and beliefs that teachers are unfair, uncaring or demand too much.
- The *Sensation Seeking* scale measures the tendency to take risks and seek excitement.
- The *Atypicality* scale measures the tendency of bizarre thoughts and behaviors that are considered "odd."
- The *Locus of Control* scale measures the belief that events, rewards and punishments are controlled by external events or people and not controlled by him/her.
- The *Social Stress* scale measures feelings of stress in personal relationships, including being excluded from social activities.
- The *Anxiety* scale measures the tendency to be nervous, fearful and worried about problems, either real or imagined and the tendency to be overwhelmed by problems.
- The *Depression* scale measures feelings of sadness, unhappiness, and belief that nothing goes right.
- The *Sense of Inadequacy* scale measures the youth's perceptions of inability to achieve goals, lack of success in school and general inadequacy.
- The *Somatization* scale measures the tendency to be overly sensitive, complain or feel minor physical discomforts and problems.

- The *Attention Problems* scale measures if the youth tends to be easily distracted and has difficulty concentrating.
- The *Hyperactivity* scale measures the tendency to be over active, rush through work and act without thinking.
- The *Relations with Parents* scale measures feelings towards parents and the youth's perception of how parents feel about them.
- The *Interpersonal Relations* scale measures the youth's perception of their own personal social relationships.
- The *Self-Esteem* scale measures feelings of self-esteem, self-respect and self-acceptance.
- The *Self-Reliance* scale measures beliefs in personal dependability, decision making and problem solving ability.

Content Scales:

- The *Anger Control* content scale measures the tendency to become irritated quickly and impulsively and regulate affect and self-control.
- The *Ego-Strength* content scale measures the expression of a strong self-identity and emotional competence.
- The *Mania* content scale measures the tendency of periods of heightened arousal, rapid idea generation and excessive activity.
- The *Test Anxiety* content scale measures irrational worry and fear of taking routine school tests.

Composite Scales:

- The *Emotional Symptoms Index* is the overall indicator of serious emotional difficulties.
- The *Inattention/Hyperactivity* composite measures attention problems and hyperactivity.
- The *Internalizing Problems* composite is a broad measure of inwardly directed distress that reflects internalizing problems a youth may be experiencing.

- The *Personal Adjustment* composite indicates overall level of adjustment.
- The *School Problems* composite is a broad measure of overall adaptation to school.

The BASC-2 manual reports the results of numerous reliability and validity analyses conducted for the SRP-A, with the general normalization sample and also with specific clinical group samples (i.e., ADHD, Learning Disability, Mental Retardation/Developmental Delay, Motor Impairment, and Speech/Language Disorder; Reynolds & Kamphaus, 2004). In the present study, only the general normalization sample was be used for analysis. According to the manual, the internal consistency of the composite scales, as measured using coefficient alpha, ranges from .83 to .96, well within the commonly accepted guideline of .8 or above for a good individually-administered screener measure (Sattler & Hoge, 2006). The coefficient alphas of the individual clinical scales and adaptive scales range from .67 to .88 and from .68 to .88, respectively. The median coefficient alpha is .82 for the 12-14 age range and .79 for the 15-18 age range (see Table 6).

Table 6

SRP-A Reliabilities of Composites and Scales-Combined Male and Female

Composite	Coefficient Alpha		Test-Retest[ab]	
	Ages 12-14	Ages 15-18	Raw	Adj[c]
School Problems	.87	.84	.84	.84
Internalizing Problems	.96	.95	.81	.82
Inattention/Hyperactivity	.84	.83	.79	.82
Emotional Symptoms Index	.95	.94	.81	.81
Personal Adjustment	.90	.89	.76	.74

Scale

Attitude to School	.85	.82	.84	.84
Attitude to Teachers	.84	.79	.70	.73
Sensation Seeking	.69	.70	.77	.76
Atypicality	.83	.82	.75	.79
Locus of Control	.81	.78	.72	.74
Social Stress	.85	.83	.74	.74
Anxiety	.86	.86	.69	.70
Depression	.88	.86	.81	.82
Sense of Inadequacy	.80	.79	.72	.74
Somatization	.67	.67	.71	.67
Attention Problems	.78	.79	.81	.84
Hyperactivity	.76	.74	.68	.69
Relations with Parents	.87	.88	.80	.80
Interpersonal Relations	.79	.78	.75	.75
Self-Esteem	.83	.82	.78	.78
Self-Reliance	.68	.70	.63	.61
Median	.82	.79	.75	.75

Note. Data in this table were drawn from Reynolds and Kamphaus (2004), Table 14.1 and Table 14.4.
[a]Reduced Sample size of 107
[b]Computed over an interval of 13 to 66 days.
[c]Corrected for range restrictions, based on the standard deviation of the BASC-2 and using Cohen's variability based on internal-consistency reliability correction

In the BASC-2 manual, data analysis for the SRP-A was reported separately by age group. For this study the general norms for youths ages 12-14 and 15-18 were considered. Table 6 summarizes the coefficient alphas for the entire sample and the test-retest reliability reported in the manual for 107 youths in the normalization sample, showing that the test-retest reliability ranged from .63 to .84 (raw) and from .61 to .84 (adjusted). The standard error of measurement (SEM) in T-score units for each composite and scale was based on internal-consistency

reliabilities. The SEM for the composites and scales ranged from 2.1 to 5.6 with a median of 4.5 (Reynolds & Kamphaus, 2004, Table 14.5, p. 203).

The BASC-2 manual reports extensive evidence supporting the construct validity of the SRP-A. The validity of the internal structure of the SRP-A composite scales was supported by factor analyses showing strong factor loadings of scales to composites (Reynolds & Kamphaus, 2004). Overall, the scales were moderately correlated with each other, with larger scale intercorrelations within composite scales than within the primary (clinical and adaptive skills) scales. The Sensation Seeking scale demonstrated a lower correlation with the other scales, ranging from r = -.11 (Relations with Parents) to r = .37 (Hyperactivity). Table 7 summarizes the correlation coefficients between all composites and scales, as reported in the BASC-2 manual. The convergent and discriminant validity of the SRP-A scales also were investigated by examining patterns of correlations of the composite and scale scores with other measures of behavior, and by analyzing score profiles on groups of youth with specific clinical diagnoses or classifications.

Table 7

SRP-A Intercorrelations of Composites and Scales, General Norm Sample

		Composites					**Clinical Scales**												**Adaptive Scales**			
		School Problems	Internalizing Problems	Inattention/ Hyperactivity	Emotional Symptoms Index	Personal Adjustment	Attitude to School	Attitude to Teachers	Sensation Seeking	Atypicality	Locus Of Control	Social Stress	Anxiety	Depression	Sense of Inadequacy	Somatization	Attention Problems	Hyperactivity	Relations With Parents	Interpersonal Relations	Self-Esteem	Self-Reliance
Composite	School Problems	--																				
	Internalizing Problems	.47	--																			
	Inattention/Hyperactivity	.55	.58	--																		
	Emotional Symptoms Index	.40	.92	.52	--																	
	Personal Adjustment	-.36	-.70	-.41	-.84	--																
Clinical Scales	Attitude to School	.81	.42	.44	.42	-.40	--															
	Attitude to Teachers	.80	.50	.48	.47	-.47	.59	--														
	Sensation Seeking	.67	.14	.36	.03	.05	.28	.28	--													
	Atypicality	.36	.74	.49	.58	-.44	.27	.37	.20	--												
	Locus of Control	.50	.78	.48	.66	-.57	.40	.54	.23	.53	--											
	Social Stress	.40	.83	.47	.83	-.66	.39	.43	.10	.58	.63	--										
	Anxiety	.21	.79	.41	.75	-.45	.21	.26	.00	.51	.48	.60	--									
	Depression	.39	.85	.43	.86	-.69	.39	.43	.07	.56	.69	.73	.59	--								

	Sense of Inadequacy	.43	.78	.52	.81	-.59	.41	.47	.12	.48	.58	.58	.56	.66	--							
	Somatization	.26	.67	.38	.52	-.37	.24	.27	.09	.43	.41	.43	.53	.46	.41	--						
	Attention Problems	.54	.59	.87	.57	-.51	.49	.51	.25	.44	.49	.47	.38	.48	.56	.37	--					
	Hyperactivity	.42	.43	.87	.34	-.21	.28	.34	.37	.44	.37	.36	.34	.29	.35	.30	.53	--				
Adaptive Scales	Relations with Parents	-.41	-.49	-.34	-.49	.71	-.38	-.46	-.11	-.31	-.57	-.40	-.23	-.49	-.37	-.25	-.43	-.16	--			
	Interpersonal Relations	-.22	-.59	-.31	-.65	.76	-.27	-.33	.08	-.45	-.41	-.68	-.40	-.57	-.46	-.29	-.36	-.20	.33	--		
	Self-Esteem	-.24	-.62	-.27	-.78	.75	-.29	-.30	.06	-.33	-.45	-.58	-.50	-.64	-.52	-.36	-.32	-.15	.39	.49	--	
	Self-Reliance	-.18	-.35	-.29	-.55	.71	-.23	-.31	.09	-.24	-.27	-.30	-.20	-.35	-.40	-.19	-.39	-.14	.37	.43	.32	--

Note. Table reproduced from Reynolds and Kamphaus (2004), Table 14.

Bicultural Ethnic Identity Scale. The Bicultural Ethnic Identity Scale (BEIS; Moran et al., 1999; Oetting & Beauvais, 1991) is a 16-item instrument that separately measures identification with Native American culture and White culture. The BEIS produces scores on two subscales: an 8-item *Indian* subscale and an 8-item *White* subscale. The instrument, originally developed by Oetting and Beauvais (1991) and further expanded by Moran et al. (1999), was developed exclusively for use with Native American youth. Questions on the BEIS address current family cultural activities, future personal involvement in cultural traditions, language use in the home, and importance of religious or spiritual beliefs. All questions are answered on a 4-point Likert type scale. For most items, the four response options are *not at all, a little, some,* and *a lot,* but for several questions the response options are slightly different. For both the White and Indian scales, the minimum possible scores is 8 and the maximum possible score is 32. Cronbach's alpha coefficients were reported of .91 for the Indian subscale and .92 for the White subscale (Moran et al., 1999). The BEIS is reproduced in the Appendix.

Moran et al. (1999) investigated the construct validity of the BEIS with a sample of over 1,500 Native American adolescents using both convergent and discriminant validation methods. First, they computed the correlations between each of the subscale scores (i.e., Indian and White) and questions asking about the importance of (a) "marrying an Indian person" and (b) "living on or having close ties to a reservation" (Moran et al., 1999, p. 417). These correlations were calculated on the assumption that a strong Indian identity would be supported by positive correlations with the Indian scale, and that a weak White identity would be supported by negative correlations with the White scale. Most results supported the instrument's ability to distinguish between Indian and White cultural affiliation. High ratings on the Indian subscale were positively correlated with both "marrying an Indian person" and "living on or having close ties to a reservation", and high ratings on the White subscale were negatively related with "marrying an Indian person". High ratings on the White scale also, however, were positively linked with "living on or having close ties to a reservation".

The construct validity of the bidimensionality of the BEIS was evaluated on the assumption that a strong bicultural identity would be positively related to psychological measures of well-being, operationalized as social competence, personal mastery, self-esteem, and social support (Phinney, 1990). The White and Indian identity scale scores were divided into low and high scores, making a total of four groups. Statistical analyses indicated mean values for psychological well-being that were statistically different across all groups. Moreover, consistent with acculturation theory (Berry et al., 2006), individuals with low identity on both the Indian and White scales received the lowest scores on all four measures of positive psychological well-being. Participants with either high Indian or high White identity, but not both, obtained middle range scores on positive psychological well-being. Respondents with high identity on both Indian and White scales received the highest scores for psychological well-being (Moran et al., 1999).

Procedure

A Native American boarding school located in Eastern Oklahoma and Title VII directors of four public school districts in proximity to Stillwater, Oklahoma were invited to participate in this study by contacting the school administrators. The Native American boarding school and four public schools within two school districts agreed to participate. Students were identified as Native American by their school's Title VII director. Information regarding the study and parent consent forms was sent to the parents of all students identified as Native American with a postage paid return envelope. The researcher collected consent forms as they returned through the mail. One follow-up mailing, containing information about the study and consent forms, subsequently was sent home to parents who did not respond to the initial invitation for their children to participate. A total of 881 letters were mailed, and 207 were returned, for an overall response rate of 23.5%. The three public schools returned a total of 121 letters and the private Native American boarding school returned 86 letters. Of the 207 letters returned, 183 of the responses gave permission for the invited child to participate and 24 responses denied permission for the child to participate. Then, a list of participating students was created for each school. Data collection dates were

determined in consultation with school administration. Participants were given the opportunity to be entered into a drawing for a $25 Visa gift card for completion of participation in the study. Students who chose to be entered into the drawing had their names put into a container for random selection of the gift card. One gift card was awarded per school. Gift cards were given to the contact person at each school to distribute to the winning participant.

On the day of data collection at each school, the researcher visited the school and administered the survey packets to the participating students in a group format. The researcher read aloud the basic information about the study, answered any questions about the study, and obtained written informed assent from the students. The students were informed they could discontinue participation at any time, and they were instructed how to fill out the information in the packet. Assistance in completing the questionnaire was given to any students who requested it. After the participating students completed their packets, they were released to continue their daily activities in the school. Of the 183 students whose parents gave permission for them to participate in the study, informed assent was obtained from 169 students (92.4%).

The survey packets included the BASC-SRP-A, the BEIS, and a student information sheet asking for demographic information (gender, age, SES, and ethnicity). SES was measured using mother and father's highest education level. The placement of the BASC and BEIS scales were counterbalanced to control for possible order effects. In half of the packets the BASC appeared first, followed by the BEIS, and in half of the packets the BEIS appeared first, followed by the BASC. The demographic items appeared last on all packets. The two versions (orderings) of the survey packet were distributed randomly among the participants at each school. Although the students were directed not to write their names on their survey packets, every student was assigned a number for identification purposes. Each student's survey packet was numbered on the bottom right corner of the first page with the student's identification number. The identification numbers were used to identify students only in the event that critical

information was revealed on the BASC-SRP-A that necessitated follow up to safeguard student safety (e.g. for any students whose scores suggested high levels of depression). After data collection, the packets were scored and data entered for analysis. Any students whose responses to critical items from the BASC-SRP-A indicated they were in danger of self-harm were flagged and their parents were contacted for follow up. As soon as this was completed, the database linking the student names and student numbers was destroyed to ensure anonymity of survey data.

Data Analyses

Descriptive statistics were computed for the Native American and normalization samples. These statistics include the means and standard deviations for the BASC scale scores and for the BEIS scores. Using a table produced by Stevens (2009), it was determined a minimum of 100 participants was necessary to achieve adequate power at the significance level of .05. A larger sample was desired to improve stability of data; as a result the goal sample size was larger than 100 participants.

Two distinct sets of analyses were performed. First, to address Research Questions 1-3 a 2-group multivariate analysis of variance (MANOVA) was performed using SPSS version 20 to determine if there were differences between the Native American and normative groups on the five BASC-2 composite scales. For the second set of analyses, in accordance with acculturation theory four cultural identification groups were identified as follows: (1) *Marginalized* (low scores on both the White and the Indian scales), (2) *Assimilated* (high scores on the White and low scores on the Indian scales), (3) *Separated* (low scores on White and high scores on the Indian scales), and (4) *Bicultural* (high scores on both the White and the Indian scales). The Native American sample participants first were divided into these four cultural identification groups using a median split. Applying a median split for this sample, participants with total White scale scores of 25 or lower were classified as having a low White identity (*low-White)*; individuals with

scores of 26 or higher were classified as *high-White*. Participants with total Indian scale scores of 20 or lower were classified as having a low Indian identity (*low-Indian);* youth with scores of 21 or higher were assigned to the *high-Indian* group.

After participants were grouped into identity classifications, a 2-group (Indian versus White identity) by 2-group (Native American versus standardization sample) analysis of variance (ANOVA) was carried out to determine whether or not identity, as measured by the BEIS, interacted with any significant differences among composite scales found in the first analysis. A simple main effects post-hoc analysis was conducted, and theoretical and practical implications were made based on the results.

CHAPTER IV

RESULTS

Research Questions 1, 2 and 3

1. On the BASC-2 SRP-A, are there differences in composite scale scores for Native Americans compared with the normative sample?
2. If differences exist, which of the BASC-2 composite scales account for those differences?
3. If any statistically significant differences in composite scores are found between the Native American and normative samples, are these differences large enough to be theoretically meaningful (i.e., are they likely to be clinically significant)?

A two group multivariate analysis of variance was performed on the five composite scales of Emotional Symptoms Index, Inattention/Hyperactivity, Internalizing Problems, Personal Adjustment and School Problems. The first group was the sample of Native Americans recruited for this study, and the second group was the random sample taken from the BASC-2 normative sample. Preliminary analysis verified that the MANOVA assumption of homogenous covariance matrices was not violated, Box's $M = 17.04$, $F(15, 5356) = 16.78$, $p = 0.33$.

Table 8

Means and Standard Deviations for Composite Scales

Composite Scale	Group	*M*	*SD*
Emotional Symptoms Index	Norm Group	49.9	9.17
	Native American	49.0	9.20
Inattention/Hyperactivity	Norm Group	50.2	10.19
	Native American	53.4	11.85
Internalizing Problems	Norm Group	49.8	9.37
	Native American	50.7	10.31
Personal Adjustment	Norm Group	50.1	9.64
	Native American	51.2	9.67
School Problems	Norm Group	51.2	10.69
	Native American	51.5	10.27

Norm Group N = 200, Native American Group N=162

Results of the MANOVA, displayed in Table 9, indicated significant differences between the Native American and normative samples on a linear combination of the five dependent variables, Emotional Symptoms Index, Inattention/Hyperactivity, Internalizing Problems, Personal Adjustment and School Problems, Wilks' $\Lambda = 0.93$, $F(5, 356) = 5.68$, $p < .001$.

Table 9

Multivariate Analysis Results

	F	Sig.	Structure Coefficients	Standardized Discriminant Function Coefficients
Emotional Symptoms Index	0.79277	0.374	-0.16621	-2.36222
Inattention/Hyperactivity	7.76978	0.006	0.52034	0.80928
Internalizing Problems	0.71935	0.397	0.15833	1.82580
Personal Adjustment	1.08023	0.299	0.19402	-0.41278
School Problems	0.07374	0.786	0.05069	-0.44805

Both the univariate F tests and the structure coefficients indicated that the Inattention/ Hyperactivity composite was the single variable that accounted primarily for the significant differences in the MANOVA results. Both the univariate F and the structure coefficients indicate the Inattention/Hyperactivity composite contributed to the most variance between the Native American and normalization samples. Table 8 shows that the Native American sample reported higher Inattention/Hyperactivity scores (M = 53.4, SD = 11.85) than the normative sample (M = 50.2, SD = 10.19), and that the variation in scale scores was similar across both the Native American and norm groups. Cohen's d statistic (0.29) indicated a small to medium effect size for the Inattention/Hyperactivity composite scale differences between groups.

Research Question 4

4. Are differences in BASC-2 SRP-A composite scale scores across samples related to ethnic identity as measured by the Bicultural Ethnic Identity Scale?

Due to missing data for questions on the Bicultural Ethnic Identity scale, the total number of participants for the analysis of Research Question 4 was N = 157. Each participant was assigned to one of four groups based on a median split. The four groups were (1) *Marginalized* (low scores on White and low on the Indian scales), (2) *Assimilated* (high on the White and low on the Indian scales), (3) *Separated* (low on White and high on the Indian scales), and (4) *Bicultural* (high on White and high on Indian scales). Participants with White scale scores of 26 or higher were assigned to the *high White* group; those with White scale scores of 25 or lower were assigned to the *low White* group. Individuals with Indian scale scores of 21 or higher were assigned to the *high Indian* group; those with Indian scale scores of 20 or lower were assigned to the *low Indian* group.

Table 10 depicts the number of Native American participants classified as having low-White, high-White, low-Indian, and high-Indian acculturation on the BEIS, and it also summarizes the means and standard deviations of the BEIS scores for these four acculturation categories. After the participants were assigned to cultural identification groups, a 2 (High versus Low White) x 2 (High versus Low Indian) ANOVA was conducted. An interaction effect between the White and Indian scale scores was found, $F(1,153) = 4.47$, $p = 0.036$. The results of this analysis are summarized in Table 11.

Table 10

Descriptive Statistics for the BEIS[a]

White Scale	Indian Scale	*M*	*SD*	N
Low	Low	58.3	12.10	32
	High	53.2	11.33	44
High	Low	50.8	11.98	51
	High	53.6	10.75	30

[a]Native American sample, N = 157.

Table 11

Relationship Between BEIS White and Indian Scale Scores

	SS	df	MS	*F*	Sig.	Partial Eta Squared
White Scale	473.593	1	473.593	3.522	0.062	0.023
Indian Scale	47.032	1	47.032	0.350	0.555	0.002
White X Indian	601.421	1	601.421	4.473	0.036*	0.028
Error	20572.073	153	134.458			

* $p < 0.05$

Since the 2-way interaction was significant, a simple main effects post-hoc analysis was conducted to determine the source of the difference. This post-hoc analysis indicated that the significant difference resided within the BEIS White scale. Inattention/Hyperactivity scores from the BASC-2 were significantly different depending on the level of identification with White culture. Students indicating a higher level of identification with White culture were similar to the

BASC-2 normative sample in their Inattention/Hyperactivity composite scores, whereas youth endorsing a lower level of identification with White culture were significantly different from (higher than) the normative sample in Inattention/Hyperactivity. By contrast, differences in identification with Native culture did not significantly impact BASC-2 scores on Inattention/Hyperactivity. A moderate to large effect size was calculated for the White acculturation scale score with regard to Inattention/Hyperactivity, Cohen's $d = 0.64$. Figure 1 represents the statistical interaction found between the BEIS White and Indian acculturation scales across the BASC-2 Inattention/Hyperactivity composite scores.

Table 12

Simple Main Effects for the BEIS White Scale

Indian Scale		SS	df	MS	*F*	Sig.
Low	Contrast	1125.99	1	1125.99	8.37	0.004*
	Error	20572.07	153	134.458		
High	Contrast	3.64	1	3.637	0.027	0.870
	Error	20572.07	153	134.458		

* $p < 0.05$

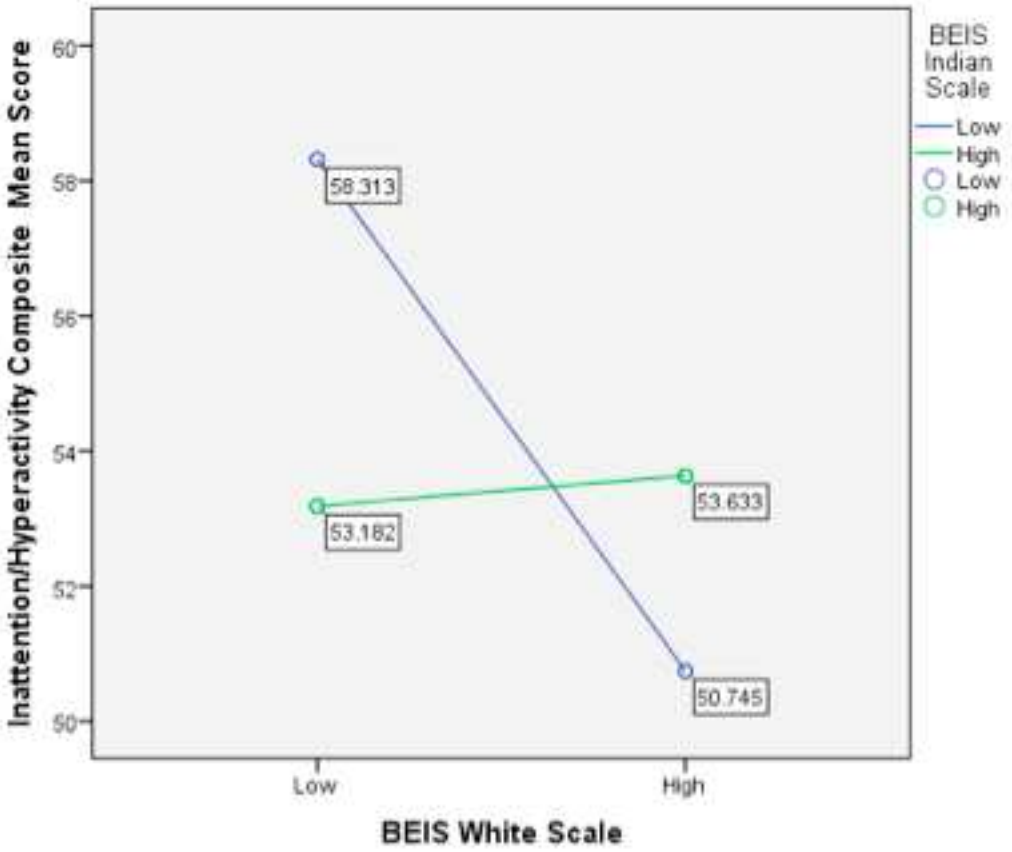

Figure 1. Interaction effect between BEIS White Scale and Indian Scale across the BASC-2 Inattention/Hyperactivity composite.

CHAPTER V

DISCUSSION

In this study, Native American adolescents highly acculturated to White culture scored similarly to a random sample of mixed-race youth drawn from the standardization sample on the BASC-2 SRP-A. By contrast, Native American adolescents less acculturated to mainstream American culture scored higher on the Inattention/Hyperactivity scale. These results suggest that caution should be used when interpreting the BASC-2 SRP-A Inattention/ Hyperactivity scale for Native American youth. To avoid biased interpretation, it is important to consider Native American youths' identification with mainstream (i.e., 'White') culture. While these results do not support the need to develop separate normative comparison groups for Native American youth, they illustrate the importance of assessing acculturation in the course of conducting comprehensive psychological evaluations. Non-discriminatory assessment accounts for cultural and other extraneous influences on evaluation results to remove as much bias as possible.

Within this study, Native American students reported engaging in higher rates of inattention and hyperactivity, which are the key symptoms of Attention Deficit /Hyperactivity Disorder (ADHD). A majority of the research carried out over the past several decades on attention and hyperactivity-related symptoms (and on ADHD proper) was conducted with White samples. Because of this, it has been suggested that the diagnostic criteria established for ADHD reflect not only specific patterns of neurological functioning, but that they are also influenced by

deviation from behavior patterns that are normative in White culture and are thereby culturally biased (Reid, 2005). Children learn which behavioral patterns are acceptable in the home, school, and community, and these expectations are informed by the cultural setting. Because behavioral expectations and norms vary across cultural groups, it is reasonable to expect that self-reports of these behaviors will also vary, and that students who identify with the mainstream culture will also understand and follow the behavioral expectations of that culture. According to this hypothesis, the BASC-SRP-A Inattention/Hyperactivity score may to some extent reflect the degree to which a given individual 'fits' into White culture, and that applying the 'White' criteria and cutoff scores for AD/HD results in culturally loaded scores for individuals who do not adhere strongly to mainstream American culture.

Although the BASC-SRP-A Inattention/Hyperactivity scale is not in itself diagnostic of ADHD, inattention and hyperactivity are the core symptoms of ADHD. ADHD has been under-researched with diverse ethnic and SES groups (Cuffe, Moore & McKeown, 2005; Gingerich, Turnock, Litfin, & Rosén, 1998). The prevalence of symptoms of inattention and hyperactivity has been found to vary across cultures. For instance, compared with Whites, ADHD symptoms are higher among African Americans and lower in Latinos (Cuffe et al., 2005). A 1997 study with Native Americans reported no statistically significant difference in prevalence of ADHD compared with Whites (Costello, et al., 1997). Whitbeck et al. (2006) investigated the prevalence of mental health disorders in Native American populations and reported higher rates of inattention/hyperactivity than found by Costello et al. (1997). Whitbeck et al. (2006) suggested that these higher prevalence rates may be due to several factors, including differences in diagnostic measurement from other prevalence studies and that Native Americans may actually have higher rates of inattention and hyperactivity. However, in order to determine current prevalence rates of inattention and hyperactivity more studies will need to be conducted.

Another possible reason for the lack of equivalence in scores is linguistic—that is, the extent to which test items have similar meanings across cultures (Reid, 1995). Rosenberg et al.'s

(1997) research with Dakota and Lakota tribes indicated that not only did cultural values shape responses to self-report measures, but also the language used in the questionnaires was sometimes difficult for Native Americans to clearly comprehend. Differences in outcome scores for tribal members was impacted by whether or not words or idioms in a question were understandable, whether questions were culturally loaded, or because they expected that their answers would be misunderstood or misinterpreted by examiners unfamiliar with Native customs. In Rosenberg et al.'s study (1997), several items from the subscales used to assess inattention and hyperactivity on the Child Behavior Checklist (Achenbach, 1991) were identified as problematic for Native Americans. For instance, Dakotan/Lakotan people did not comprehend the word 'twitching, as their language did not have a word with equivalent meaning. Another question included both 'anxious' and 'fearful' together, and Dakotan/Lakotan people did not understand how those two concepts were related. It seems unlikely that linguistic differences explain the findings of the present study, however, because in this study acculturative differences were found only in one scale. Had the Native American participants in our study experienced difficulty comprehending words or phrases on the BASC-SRP-A, it seems more probable that they would have had difficulty with more than one scale.

In addition to previous research on prevalence rates, it is known that Native Americans experience more health risk factors known to contribute to higher rates of inattention and hyperactivity (Nomura et al., 2012). Low SES and maternal diabetes during pregnancy each is associated with a doubling of the risk that children will be diagnosed with ADHD by age six. For children with both risk factors, the incidence of ADHD is 14 times higher (Nomura et al., 2012). Given that the prevalence of diabetes has grown among Native American peoples in recent decades (Acton, Burrows, Moore, Querec, Geiss, & Engelgau, 2002), it may be that ADHD has grown more common in the Native American population over this time period. Up-to-date prevalence information would be valuable for helping to distinguish the extent to which ADHD symptoms may be overidentified in Native Americans.

This investigation also demonstrates the advantage of using a bidimensional, rather than a unidimensional measure of acculturation. In recent years orthogonal scales have been used increasingly to measure cultural orientation, because it is felt that single dimension scales cannot adequately measure the complexity of acculturation (Kang, 2006; Lee et al., 2003). Research supports Berry's (1997) theory that acculturation to one's traditional culture and acculturation to mainstream culture are separate constructs—i.e., an individual's level of acculturation to the one culture is not related to his or her level of acculturation to the other culture (Matsudaira, 2006; Rudmin, 2009). Assessing separately a youth's identification with Native culture and his or her identification with mainstream culture gives a clearer indication of how to interpret results when making comparisons with normative samples. An understanding of the client's cultural identification should contribute to all steps of the evaluation and treatment process (APA, 1993; NASP, 2010).

Strengths

The BASC-2 is a widely used and accepted instrument used in both school and community settings and is utilized by a wide variety of practicing professionals; thus, evidence of possible cultural bias should be of interest to many practitioners and researchers. Other strengths of this study include a 100% Native American youth sample drawn from natural community settings. The present sample of 162 Native American youth was relatively large in comparison with the samples used in many other studies of Native Americans, especially considering the challenges associated with conducting research with this population (Rochat, 2008). Over three-quarters of the Native American sample (77.2%) had a verified tribal identification (official Native American tribal identification). The comparison group was drawn from the same sample used in the development and standardization of the BASC-2. As Tables 4 and 5 show, the distribution of ages, gender, parent education, and other racial identifications for the randomly selected BASC-2 normative comparison sample were very similar to those for the Native American comparison sample.

Limitations

The Native American participants within this study constituted a convenience sample drawn from a limited geographical area. Because they were not demographically representative of the population of Native Americans, our findings cannot be interpreted as generalizing to all Native Americans. Further, of the 881 Native American students initially identified, the final response rate was 23.5%. While there is no generally agreed-upon standard for a minimum acceptable response rate, our response rate was considerably lower than the commonly used criterion of 60%, raising the possibility of nonresponse bias (Fowler, 2009). In addition, while this sample of Native American students was of sufficient size to conduct composite-level analyses that were carried out, a larger sample would have allowed for item-level analyses of the BASC-2 SRP-A. Another limitation is that our measure of acculturation, the BEIS, only measured only Native culture and 'White' culture. The BEIS was selected for this study because it was well researched with Native Americans youth, and because at the present time few if any other psychometrically sound instruments exist for Native Americans that measure cultural identification in terms of multiple orthogonal dimensions. Many of the youths in the present study, however, identified with more than these two (Native American and White) cultures. Some participants indicated they were partially African American (4.3%), Asian (3.1%) or Hispanic (6.8%). This study did not measure cultural identification with any additional cultural groups. It may be that identification with these other cultural groups also was related to the differences that were observed in the BASC-2 scores.

Future Research

Future studies of the BASC-2 SRP-A with larger samples of Native Americans could implement more detailed analyses of the scales and with individual items. It would be useful to determine if individual items were rated differently according to cultural differences of interpretation and if these possible score differences might be accounted for by question interpretation or different behavioral expectations within culture. There is also a possibility that in

our analysis, SES was a proxy for acculturation. Albright and LaFromboise (2010) suggested that in Native American populations, young people from higher SES backgrounds may tend to be more acculturated to White majority cultural values than those from lower SES families. The present study could not examine this possibility because it did not measure participants' SES. Future research on the impact of cultural differences on ADHD assessment results should take care to control for SES.

The BASC-2 is intended for use as a screening instrument and was not designed to be used independently of other assessment information and tools for diagnostic purposes. Future studies should follow up with an examination of culture in relation to specialized instruments designed to diagnose symptoms of ADHD in individuals, such as the Conners-3 (Conners, 2008). If examination of specialized diagnostic measures also suggests an interaction between culture and inattention/hyperactivity symptoms, one could conclude with more confidence that the diagnosis of ADHD in Native Americans may indeed be culturally biased. In this case a re-examination of the appropriateness of these instruments with samples of culturally diverse individuals would warranted.

Further, in the present analysis, symptoms of inattention and hyperactivity were assessed together in a single scale. We did not analyze symptoms of inattention separately from symptoms of hyperactivity. It would be interesting to investigate further to determine whether cultural differences are found in both core symptoms of ADHD or only in one of the two symptom sets.

Conclusions

This study examined the BASC-2 SRP-A with a population of Native American youths and compared their responses to a sample from the BASC-2 SRP-A normative sample by examining the composite scale means. The Native American sample was found to have higher mean scores on the Inattention/Hyperactivity scale than the comparison sample. These differences

were further explored by investigating cultural identification with the Bicultural Ethnic Identity Scale. Native American youths who identified with the White culture were similar to the normative sample and Native American youths who did not identify with the White culture were significantly different from the normative sample. Interestingly, identification with the Native American culture did not make a difference in mean scores on Inattention/Hyperactivity. This is an important finding, in that it calls for a great examination of cultural identification when conducting psychological assessments. Not only should a client's native culture be examined, but also their relationship to the mainstream culture and any other culture they may identify with. Cultural identification impacts how one rates themselves and how behavioral expectations are viewed. This study does not support the need for separate normative samples for Native Americans, but it does show the importance of assessing cultural identification and the impact it may have on the conclusions measurement instruments such as rating scales may have in overall assessment.

REFERENCES

Achenbach, T. M. (1991). Manual for the Child Behavior Checklist/4-18 and 1991 Profile. Burlington, VT: University of Vermont Department of Psychiatry

Achenbach, T. M., & Rescorla, L. A. (2000). *Manual for the ASEBA Preschool Forms & Profiles*. Burlington, VT: University of Vermont, Research Center for Children, Youth, & Families.

Achenbach, T. M., & Rescorla, L. A. (2001). *Manual for the ASEBA School-Age Forms & Profiles*. Burlington, VT: University of Vermont, Research Center for Children, Youth, & Families.

Achenbach, T. M., & Rescorla, L. A. (2003). *Manual for the ASEBA Adult Forms & Profiles*. Burlington, VT: University of Vermont, Research Center for Children, Youth, & Families.

Acton, K. J., Burrows, N. R., Moore, K., Querec, L., Geiss, L. S., & Engelgau, M. M. (2002). Trends in diabetes prevalence among American Indian and Alaska Native children, adolescents, and young adults. *American Journal of Public Health, 92,* 1485-1490.

Albright, K. & LaFromboise, T. (2010). Hopelessness among White and Indian identified American Indian adolescents. *Cultural Diversity and Ethnic Minority Psychology, 16,* 437-442.

Allen, J. & Walsh, J. A. (2000). A construct-based approach to equivalence: Methodologies for cross-cultural/multicultural personality assessment research. In R.H. Dana (Ed.), *Handbook of cross-cultural and multicultural personality assessment* (pp. 63-85). Mahwah, NJ: Lawrence Associates Publishing.

American Indian Religious Freedom Act of 1978, Pub. L. No. 95-31 § 92 Stat. 469.

American Psychological Association (2003). Guidelines on multicultural education, training, research, practice, and organizational change for psychologists. *American Psychologist, 58,* 377-402.

American Psychological Association (1993). Guidelines for providers of psychological services to ethnic, linguistic, and culturally diverse populations. *American Psychologist, 48,* 45-48.

American Psychological Association (2010). *Ethical Principles of Psychologists and Code of Conduct.* Washington D.C.: American Psychological Association.

Artiles, A. J. & Trent, S. C. (1994). Overrepresentation of minority students in special education: A continuing debate. *The Journal of Special Education, 27,* 410-437.

Berry, J. W. (1997). Immigration, acculturation, and adaptation. *International Journal of Applied Psychology, 46,* 5-68.

Berry, J. W., Phinney, J. S., Sam, D.L., & Vedder, P. (2006). Immigrant youth: Acculturation, identity, and adaptation. *Applied Psychology: An International Review, 55,* 303-332.

Booker, K. (2009). Multicultural considerations in school consultation. In J.M. Jones (Ed.), *The psychology of multiculturalism in the schools: A primer for practice, training, and research* (pp. 173-1190). Bethesda, MD: National Association of School Psychologists.

Brave Heart, M. Y. H. (1998) The return to the sacred path: Healing the historical trauma and historical unresolved grief response among the Lakota through a psychoeducational group intervention. *Smith College Studies in Social Work, 68,* 287-305.

Bryant Jr., A. & LaFromboise, T. D. (2005). The racial identity and cultural orientation of Lumbee American Indian high school students. *Cultural Diversity and Ethnic Minority Psychology, 11,* 82-89.

Byrene, B. M., Oakland, T., Leong, F. T. L., van de Vijver, F. J. R., Hambleton, R. K., Cheung, F. M. & Bartram, D. (2009). A critical analysis of cross-cultural research and testing practices: Implications for improved education and training in psychology. *Training and Education in Professional Psychology, 3,*94-105.

Chief, E. H. (1940). An assimilation study of Indian girls. *The Journal of Social Psychology, 11,* 19-30.

Cho, S., Hudley, C. & Back, H. J. (2003). Cultural influences on ratings of self-perceived social, emotional, and academic adjustment for Korean American adolescents. *Assessment for Effective Intervention, 29,* 3-14.

Choney, S., Berryhill-Paapke, E., & Robbins, R. (1995). The acculturation of American Indians: Developing frameworks for research and practice. In J.G. Ponterotto, J.M. Casas, L.A. Suzuki & C.M. Alexander (Eds), *Handbook of Multicultural Counseling* (pp. 73-92). Thousand Oaks, CA: SAGE.

Conners, C. K. *(* 2008*). Conners 3rd edition (Conners-3).* Toronto*, Ontario, Canada:* Multi-Health Systems.

Costello, E. J., Farmer, E. M., Angold, A., Burns, B. J. & Erkanli, A. (1997). Indian and White youth in Appalachia: The great Smoky Mountains study. American Journal of Public Health, 87, 827-832.

Cuellar, I. (2000). Acculturation as a moderator of personality and psychological assessment. In R.H. Dana (Ed.), *Handbook of cross-cultural and multicultural personality assessment* (pp. 113-128). Mahwah, NJ: Lawrence Associates Publishing.

Cuffe, S. P., Moore, C. G. & McKeown, R. E. (2005). Prevalence and correlates of ADHD symptoms in the national health interview survey. *Journal of Attention Disorders, 9,* 392-401.

Dana, R. H. (1986). Personality assessment and Native Americans. *Journal of Personality, 50,* 480-500.

Darou, W. G., Hum, A. & Kurtness, J. (1993). An investigation of the impact of psychosocial research on a Native population. *Professional Psychology: Research and Practice, 24,* 325-329.

Dawes General Allotment Act of 1887. § 24 Stat. 388.

Draguns, J. G. & Tanaka-Matsumi, J. (2003). Assessment of psychopathology across and within cultures: Issues and findings. *Behaviour Research and Therapy, 41,* 755-776.

Duran, E. & Duran, B. (1995). *Native American postcolonial psychology.* Albany, NY: State University of New York Press.

Duran, E. & Ivey, A. E. (2006). *Healing the soul wound: Counseling with American Indians and other native peoples.* New York, NY: Teachers College Press.

Fisher, C. B., Hoagwood, K., Boyce, C., Duster, T., Frank, D. A., Grisso, T., ... Zayas, L. H. (2002). Research for mental health science involving ethnic minority children and youths. *American Psychologist, 57,* 1024-1040.

Fowler, F. J., Jr. (2009). (Ed.) *Survey research methods (4th ed.).* Thousand Oaks, CA: Sage.

Garrett, M. T. & Pichette, E. F. (2000). Red as an apple: Native American acculturation and counseling with or without reservation. *Journal of Counseling & Development, 78,* 3-13.

Gingerich, K. J., Turnock, P., Litfin, J. K. & Rosén, L. A. (1998). Diversity and attention deficit hyperactivity disorder. *Journal of Clinical Psychology, 54,* 415-426.

Goldston, D. B., Molock, S. D., Whitbeck L. B., Murakami, J. L., Zayas, L. H. & Nagayama Hall, G. C. (2008). Cultural considerations in adolescent suicide prevention and psychosocial treatment. *American Psychologist, 63,* 14-31.

Harrison, P. L. & Raineri, G. (2008). Best practices in assessment of adaptive behavior. In A. Thomas & J. Grimes (Series & Vol. Ed.), *Best practices in school psychology V: Vol 2.* (pp. 605-616). Bethesda, MD: NASP.

Herring, R. D. (2001). Debunking the Pocahontas paradox: The need for a humanistic perspective. *Journal of Humanistic Counseling, 40,* 185-199.

Hoffman, T. A. (1983). Measures of Native American acculturation. Unpublished manuscript, Psychology Dept., University of Arkansas, Fayetteville.

Humes, K. R., Jones, N. A. & Ramirez, R. R. (2011). Overview of race and Hispanic origin: 2010. 2010 Census Briefs: United States Census.

Individuals with Disabilities Act of 1974. Pub. L. No. 94-142. § 104 Stat. 1142.

Jones, J. M. (Ed.). (2009). *The psychology of multiculturalism in the schools: A primer for practice, training, and research.* Bethesda, MD: National Association of School Psychologists.

Jung, W. S. (2000). Cultural influences on ratings of behavioral and emotional problems, and school adjustment for Korean, Korean American, and Caucasian American children. NAAS Conference Proceedings. Scarbrorough: 2000. p. 2267.

Kang, S. (2006). Measurement of acculturation, scale formats, and language competence: Their implications for adjustment. *Journal of Cross-Cultural Psychology, 37*, 669-693.

Lau, M. Y. & Blatchley, L. A. (2009). A comprehensive, multidimensional approach to assessment of culturally and linguistically diverse students. In J.M. Jones (Ed.), *The psychology of multiculturalism in the schools: A primer for practice, training, and research* (pp. 139-171). Bethesda, MD: National Association of School Psychologists.

Lee, S., Sobal, J. & Frongillo, E. A. (2003). Comparison of models of acculturation: The case of Korean Americans. *Journal of Cross-Cultural Psychology, 34*, 282-296.

Marsella, A. (1989). Ethnocultural issues in the assessment of psychopathology. in S. Wetzler (Ed.), *Measuring mental illness: Psychometric assessment for clinicians* (pp. 231-256). Washington DC: American Psychiatric Press.

Matsudaira, T. (2006). Measures of psychological acculturation: A review. *Transcultural Psychiatry, 43*, 462-487.

McCloskey, D. M., Hess, R. S. & D'Amato, R. C. (2003). Evaluating the utility of the Spanish version of the behavior assessment system for children-parent report system. *Journal of Psychoeducational Assessment, 21,* 325-337.

McConaughy, S. H. & Ritter, D. R. (2008). Best practices in multimethod assessment of emotional and behavioral disorders. In A. Thomas & J. Grimes (Series & Vol. Ed.), *Best practices in school psychology V: Vol 2.* (pp. 697-715). Bethesda, MD: National Association of School Psychologists.

Merrell, K. W., Ervin, R. A. & Gimpel, G. A. (2006). *School Psychology for the 21st Century: Foundations and Practices*. New York, NY: Guilford Press.

Mesquita, B. & Walker, R. (2003). Cultural differences in emotions: A context for interpreting emotional experiences. *Behaviour Research and Therapy, 41*, 777-793.

Moran, J. R., Fleming, C. M., Somervell, P. & Manson, S. M. (1999). Measuring bicultural ethnic identity among American Indian adolescents: A factor analytic study. *Journal of Adolescent Research, 14*, 405-426.

National Association of School Psychologists (2010). *Principles for Professional Ethics.* Bethesda, MD: National Association of School Psychologists.

National Association of School Psychologists. (2000). *Professional conduct manual: Principles for professional ethics: Guidelines for the provision of school psychological services.* Bethesda, MD: Author.

Nomura, Y., Marks, D. J., Grossman, B., Yoon, M., Loudon, H., Stone, J. & Halperin, J. M. (2012). Exposure to gestational diabetes mellitus and low socioeconomic status: Effects on neurocognitive development and risk of attention-deficit/hyperactivity disorder in offspring. *Archives of Pediatrics & Adolescent Medicine, 166,* 337-343.

Notari-Syverson, A., Losardo, A. & Lim, Y. S. (2003). Assessment of young children from culturally diverse backgrounds: A journey in progress. *Assessment for Effective Intervention, 29,* 39-51.

Oetting, E. R. & Beauvais, F. (1991). Orthogonal culture identification theory: The cultural identification of minority adolescents. *The International Journal of the Addictions, 25,* 655-685.

Ortiz, S. O. (2008). Best practices in nondiscriminatory assessment. In A. Thomas & J. Grimes (Series and Vol. Ed.), *Best practices in school psychology V: Vol 2.* (pp. 661-678). Bethesda, MD: National Association of School Psychologists.

Ortiz, S. O., Flanagan, D. P. & Dynda, A. M. (2008). Best practices in working with culturally diverse children and families. In. A. Thomas & J. Grimes (Series and Vol. Ed.), *Best practices in school psychology V: Vol. 5*. (pp. 1721-1738). Bethesda, MD: National Association of School Psychologists.

Palacios, E. D. & Trivedi, P. (2009). Increasing cultural literacy: Historical perspectives and cultural characteristics of minority groups. In J.M. Jones (Ed.), *The psychology of multiculturalism in the schools: A primer for practice, training, and research* (pp. 17-48). Bethesda, MD: National Association of School Psychologists.

Paunonen, S. V. & Ashton, M. C. (1998). The structured assessment of personality across cultures. *Journal of Cross-Cultural Psychology, 29,* 150-169.

Phinney, J. S. (1990). Ethnic identity in adolescents and adults: Review of research. *Psychological Bulletin, 108,* 499-514.

Phinney, J. S. (1992). The multigroup ethnic identity measure: A new scale for use with diverse groups. *Journal of Adolescent Research, 7,* 156.

Reid, R. (1995). Assessment of ADHD with culturally different groups: The use of behavioral rating scales. *School Psychology Review, 24*, 537.

Reynolds, C. R. & Kamphaus, R. W. (2004). *Behavior Assessment System for Children Manual.* (2nd ed.) Minneapolis, MN: Pearson.

Rieckmann, T. R., Wadsworth, M. E. & Deyhle, D. (2004). Cultural identity, explanatory style, and depression in Navajo adolescents. *Cultural Diversity and Ethnic Minority Psychology, 10*, 365-382.

Rochat, R. (2008). The challenges of conducting research to improve the health of American Indians and Alaska natives. *Springer Science+Business Media,12*, S126-S127.

Rogers, M. (1998). Psychoeducational assessment of culturally and linguistically diverse children and youth. In H.B. Vance (Ed.), *Psychological Assessment of Children: Best practices for school and clinical settings* (pp. 355-384). Hoboken, NJ: John Wiley & Sons.

Rosenberg, J., Oesterheld, M. D. & Haber, J. (1997). Acceptability of the Conners Parent Scale and Child Behavior Checklist to Dakotan/Lakotan parents. *Journal of the American Academy of Child and Adolescent Psychiatry, 36*, 55-64.

Rudmin, F. (2009). Constructs, measurements and models of acculturation and acculturative stress. *International Journal of Intercultural Relations, 33*, 106-123.

Sattler, J. M. & Hoge, R.D. (2006). *Assessment of children: Behavioral, social, and clinical foundations.* (5th ed.) La Mesa, CA: Jerome M. Sattler.

Schwarzbaum, S. E. & Thomas, A. J. (2008). *Dimensions of multicultural counseling: A life story approach.* Thousand Oaks, CA: Sage Publications.

Shapiro, E. S. & Heick, P. F. (2004). School psychology assessment practices in the evaluation of students referred for social/behavioral/emotional problems. *Psychology in the Schools, 41*(5), 551-561. doi 10.1002/pits.0176.

Stevens, J. P. (2009). *Applied multivariate statistics for the social sciences*. (5th ed.) New York, NY: Routledge.

Sue, S. (1999). Science, ethnicity, and bias: Where have we gone wrong?. *American Psychologist, 54,* 1070-1077.

Trimble, J. E. (1990). Application of psychological knowledge for American Indians and Alaska Natives. *The Journal of Training & Practice in Professional Psychology, 4,* 45-63.

Umaña-Taylor, A. J., & Updegraff , K. A. (2007). Latino adolescents' mental health: Exploring the interrelations among discrimination, ethnic identity, cultural orientation, self-esteem, and depressive symptoms. *Journal of Adolescence, 30*, 549-567.

Varela, R. E., Sanchez-Sosa, J. J., Biggs, B. K. & Luis, T. M. (2008). Anxiety symptoms and fears in Hispanic and European American children: Cross-cultural measurement equivalence. *Journal of Psychopathology and Behavioral Assessment, 30,* 132-145.

Weaver, H. N. (2009). The colonial context of violence: Reflections on violence in the lives of Native American Women. *Journal of Interpersonal Violence, 24,* 1552-1563.

Weist, M. D., Rubin, M., Moore, E., Aldelsheim, S. & Wrobel, G. (2007). Mental health screening in schools. *Journal of School Health, 77,* 53-58.

Whitbeck, L. B., Johnson, K. D., Hoyt, D. R. & Walls, M. L. (2006). Prevalence and comorbidity of mental disorders among American Indian children in the northern Midwest. *Journal of Adolescent Health, 39,* 427-434.

Wilder, L. K., Jackson, A. P. & Smith, T. B. (2001). Secondary transition of multicultural learners: Lessons from the Navajo Native American experience. *Preventing School Failure, 45*, 119-125.

Wilder, L. K. & Sudweeks, R. R. (2003). Reliability of ratings across studies of the BASC. *Education and Treatment of Children. 26*, 382-399.

Winterowd, C., Montgomery, D., Stumblingbear, G., Harless, D. & Hicks, K. (2008). Development of the American Indian enculturation scale to assist counseling practice. *American Indian and Alaska Native Mental Health Research, 15*, 1-14.

Ysseldyke, J., Burns, M., Dawson, P., Kelley, B., Morrison, D., Ortiz, S., et al. (2008). The blueprint for training and practice as the basis for best practices. In A. Thomas & J. Grimes (Series and Vol. Ed.), *Best Practices in school psychology V: Vol 1*. (pp. 37-69). Bethesda, MD: National Association of School Psychologists.

Zimmerman, M. A., Ramirez-Valles, J., Washienko, K. M., Walter, B. & Dyer, S. (1996). The development of a measure of enculturation for Native American youth. *American Journal of Community Psychology, 24*, 295-310.

Zvolensky, M. J., McNeil, D. W., Porter, C. A. & Stewart, S. H. (2001). Assessment of anxiety sensitivity in young American Indians and Alaska Natives. *Behaviour Research and Therapy, 39*, 477-493.

APPPENDICES

Bicultural Ethnic Identity Scale

1. Do you live by or follow

	Not at All	*A Little*	*Some*	*A Lot*
The White or Anglo way of life	1	2	3	4
The American Indian way of life	1	2	3	4

2. When you are an adult, will you be a success in

	Not at All	*A Little*	*Some*	*A Lot*
The White or Anglo way of life	1	2	3	4
The American Indian way of life	1	2	3	4

3. Does you family live by or follow

	Not at All	*A Little*	*Some*	*A Lot*
The White or Anglo way of life	1	2	3	4
The American Indian way of life	1	2	3	4

4. Is your family a success in

	Not at All	*A Little*	*Some*	*A Lot*
The White or Anglo way of life	1	2	3	4
The American Indian way of life	1	2	3	4

5. Some families have special activities or traditions (such as holiday parties, special meals, religious practices, trips or visits). In your family, how many of activities or traditions are based on

	Not at All	*A Little*	*Some*	*A Lot*
White Culture	1	2	3	4
Indian Culture	1	2	3	4

6. When you are an adult, how involved do you think you will be in

	Not at All	*A Little*	*Some*	*A Lot*
White traditions and beliefs	1	2	3	4
American Indian traditions and beliefs	1	2	3	4

7. What languages were spoken in your home when growing up?

	Rarely/Never	*Sometimes*	*Often*	*Almost Always*
English	1	2	3	4
Tribal Language	1	2	3	4

8. How important is it for you to follow religious or spiritual beliefs that are based on

	Not at All Important	*Not Very Important*	*Somewhat Important*	*Very Important*
Christian beliefs such as Catholic, Baptist, Lutheran, etc.	1	2	3	4
Traditional Indian Beliefs	1	2	3	4

Oklahoma State University Institutional Review Board

Date:	Thursday, February 09, 2012	Protocol Expires:	11/9/2012
IRB Application No:	ED11168		
Proposal Title:	Examination of BASC-2 SRP-A With Native American Youth		
Reviewed and Processed as:	Expedited **Modification**		

Status Recommended by Reviewer(s) **Approved**

Principal Investigator(s):

Victoria M. Foutch
601 S. Washington #113
Stillwater, OK 74074

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Stillwater, OK 74078

The requested modification to this IRB protocol has been approved. Please note that the original expiration date of the protocol has not changed. The IRB office MUST be notified in writing when a project is complete. All approved projects are subject to monitoring by the IRB.

☒ The final versions of any printed recruitment, consent and assent documents bearing the IRB approval stamp are attached to this letter. These are the versions that must be used during the study.

The reviewer(s) had these comments:

The modification request to add revised recruitment and consent documents for use in the Cherokee Nation High School is approved.

Signature :

Shelia N. Kennison

Shelia Kennison, Chair, Institutional Review Board

Thursday, February 09, 2012
Date

VITA

Victoria Marie Foutch

Candidate for the Degree of

Doctor of Philosophy of Educational Psychology
Option: School Psychology

Thesis: EXAMINATION OF THE BASC-2 SRP-A SCALES WITH NATIVE AMERICAN YOUTH

Major Field: School Psychology

Biographical:

Education:

Completed the requirements for the Doctor of Philosophy in Educational Psychology in School Psychology at Oklahoma State University, Stillwater, Oklahoma in July, 2013.

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Name: Victoria Marie Foutch Date of Degree: July, 2013

Institution: Oklahoma State University Location: Stillwater, Oklahoma

Title of Study: EXAMINATION OF THE BASC-2 SRP-A SCALES WITH NATIVE AMERICAN YOUTH

Pages in Study: 76 Candidate for the Degree of Doctor of Philosophy/Education

Major Field: Educational Psychology – School Psychology

Scope and Method of Study: This study compared the responses of Native American youths ages 12-18 on the Behavior Assessment System for Children-2nd Edition (BASC-2) Self-Report-Adolescent (SRP-A) to a random sample of 200 from the BASC-2 normative sample. Two analyses were conducted: the first analysis was a 2X2 MANOVA (n=162) comparing the two samples among composite scales. The second analysis (n=157) examined if composite scale differences were related to ethnic identity as measured by the Bicultural Ethnic Identity scale (BEIS).

Findings and Conclusions: For the first analysis, a two group MANOVA was performed on the 5 BASC-2 SRP-A composite scales and Inattention/Hyperactivity was found to be significantly different across the two samples with a small to medium effect size (Cohen's $d = 0.29$). For the second analysis, participants were split into one of four acculturation groups using a median split. After the groups were identified a 2X2 ANOVA was conducted. Interaction between White and Indian scale scores were found to be statistically significant. A simple main effects post hoc analysis was conducted and revealed significant differences in inattention/hyperactivity composite scale scores were found across high and low levels of identification with the White culture. Students who identified as high with the White scale were similar to the normative sample, while students who identified as low with the White scale were significantly different from the normative sample. Participants' level of identification (low versus high) with their Native culture did not impact their scores on the inattention/hyperactivity composite scale. Ethnic identification with both the mainstream culture and the students' Native culture should be examined when conducting evaluations using the BASC-2 SRP-A.

ADVISER'S APPROVAL: Georgette Yetter