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Reliability Analysis of the BASC-3 SRP with American Indian/ Alaska Native Adolescents

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Reliability Analysis of the BASC-3 SRP with American Indian/Alaska Native Adolescents

by

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Abstract

With a vastly growing diverse population, the current focus on diversity-informed assessment has led to research on whether established instruments are reliable to utilize with specific populations. The American Indian/Alaska Native population (AI/AN) is often a group that is underrepresented in various assessments. The BASC-3 is an important assessment in psychoeducational evaluations thus, the goal of the study is to determine whether the BASC-3 is a culturally reliable assessment to use with AI/AN in educational setting.

Utilizing the computer program Cocron we compared Cronbach alpha levels across three groups (Native Americans, White, manualized clinical sample) and conducted *t*-test to compare raw score mean differences between AI/AN and the White comparative group, as well as between AI/AN and the manualized normative sample. Significant differences in reliability occurred in single scales between the White comparative sample and the manualized normative sample, and between the AI/AN group and the comparative group. Most significantly there were raw score mean differences across multiple scales between the AI/AN group and the normative sample. Overall, results suggested the BASC-3 may not be able to accurately assess the AI/AN

population. Future research would benefit from a larger sample size of AI/AN participants in order to determine appropriate norms for this population.

Keywords: American Indian, Alaska Native, Native American, Behavior Assessment for Children 3rd Edition

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Chapter 1

Introduction

Psychological assessment is considered one of the most important aspects in the field of psychology. Various groups of psychologists use psychological assessments for a broad range of clinical services (Bersoff et al., 2012). For example, a clinical psychologist uses assessments to inform diagnosis and treatment of a patient or a school psychologist utilizes assessments to determine eligibility for special education purposes. Thus, psychological assessments serve as a significant tool in the field and the results can significantly impact the lives of others (Bersoff et al., 2012). Inappropriate uses or interpretation of psychological assessments can lead to a misdiagnosis which subsequently leads to either inappropriate or ineffective treatment (Beunto, 2013). The American Psychological Association (APA) addresses a variety of ethical standards for various educational and psychological testing due to the implications of testing results. These standards include areas such as proper test selection and usage, proper test construction, and proper testing across diverse populations (Leong et al., 2013). In this study, the psychometric properties of the BASC-3 will be examined in terms of its application and relevance to American Indian/Alaska Native adolescents.

Test Construction

Although test construction is one of the most important aspects of psychological assessment, it is also considered a complicated task (Coulacoglou & Saklofske, 2017). Leong et. al. (2013) claim test developers have a responsibility to utilize appropriate psychometric

procedures when constructing a test. The authors state the importance of the developer having an understanding of "test design, standardization, validation, reduction or elimination of bias, and recommendations for use" (p. 271). However, Bersoff et al. (2012) claim that while there is a strong emphasis on test construction there are also issues surrounding revised editions of various assessments. Additionally, there are further concerns surrounding standardized assessments with minority groups (Reynolds & Suzuki, 2013). Various problems may arise when test results differ from one group to another, which can have significant implications for various groups being over diagnosed, underdiagnosed, or inappropriately placed in various programs such as special education services (Reynolds & Suzuki, 2013).

Various concerns regarding assessments with minority groups were divided into the following seven different categories (Reynolds et al., 1999 as cited in Reynolds et al., 2013). The seven categories were "Inappropriate content, inappropriate standardization samples, examiners' and language bias, inequitable social consequences, measurement of different constructs, differential predictive validity, and qualitatively distinct aptitude and personality" (p.87). Thus, the responsibility of the researcher is to investigate these various outcomes with diverse samples using a variety of statistical techniques (Reynolds & Suzuki, 2013).

Psychometrics

Psychometrics refers to the science of measuring procedures and outcomes (Christ & Nelson, 2014). Psychometrics consists of multiple principles which serve as the base for .psychological assessment (Hogan & Tsushima, 2016). Two of the principles include norm groups and reliability. Norm groups are the group from which the normative scores for the specific assessment were derived. Additionally, norm groups vary from assessment to assessment, as some attempt to reflect a national population while other norm groups were collected because they were convenient for the test developer (Hogan & Tsushima, 2016).

Therefore, test developers should be aware of the demographics of their potential test takers, taking into account variables relevant to assessments such as race, ethnicity, and gender; due to the fact that a client's results are compared and interpreted against the normative group from which the specific test was derived (Bornstein, 2017; Lambie et al., 2017). While minorities may be represented in norm groups proportionately to the population, it is possible that the sample sizes are not sufficient to be an accurate representation of the specific population (Reynolds & Suzuki, 2013). As a result, test items and constructs may work for the majority population, however they may not be commonly associated with various minority cultures (Reynolds & Suzuki, 2013).

In addition, reliability is "the stability and consistency of scores from a test or any measurement procedure" (Hogan & Tsushima, 2013, p. 37). Thus, test developers hope to have a reliability coefficient within the .8 to .95 range as reliability ratings within this range are considered good to excellent reliability (Hogan & Tsushima, 2013). However, although test manuals and test developers consistently report their reliability, specific test content may influence the scores and reliability in minority populations (Hogan & Tsushima, 2013; Reynolds & Suzuki, 2013). Thus, administrators should have an awareness of the reliability of any utilized measure (Leong et al., 2013). If there are limitations to the reliability of an assessment, psychologists should limit the conclusions they draw from the results and address the impact culture may have on the instrument itself (Leong et al., 2013; Weis & Rosenfeld, 2012).

Cultural Sensitivity

Understanding test construction and development lays a foundation for understanding if an assessment is appropriate to use with a client or patient. Due to the rising population of ethnic minority groups in the United States, more awareness is being brought to culturally appropriate research (Graves & Aston, 2016). Cowan (2009) reported the need to have cultural knowledge

and cultural sensitivity. Currently, the use of psychological assessment within minority groups in the United States has further increased the importance of culturally sensitive test development (Suzuki et al., 2013). However, there is growing concern about the reliability of assessments used with groups where the test was not initially meant for or normed on (Suzuki et al., 2013). Culture plays a significant role in the life of a client as culture shapes the way one views and interacts in the world (Hunter et al., 2009). In addition, Weis & Rosenfeld (2012) claim a client's culture is the "most accurate description of a group of individuals" (p. 235).

Therefore, due to cultural discrepancies there is growing evidence in which race, ethnicity, and other cultural factors negatively affect clinical and health services (Hunter et al., 2009). Thus, cultural sensitivity and cultural competence are becoming important parts of the psychological assessment process (Suzuki et al., 2013). American Educational Research Association (AERA; 2014) Ethical standard 10.5 states that the assessment administrator selects measures that are suitable for the characteristics and background of the person taking the test. However, minority groups are often limitedly included in psychological research studies, which makes it difficult to have assessments accurately reflect the population at hand (Benuto, 2013). As a result, cultural differences can lead to a myriad of errors (Comas-Diaz, 2012). Comas-Diaz indicated these problems can impact the client by over pathologizing, minimizing, over diagnosing, or underdiagnosing the client's symptoms based on inappropriate perception of the client's culture and functioning.

This creates a dilemma for psychologist and test developers due to the fact there is great difficulty in understanding the best ways to create culturally sensitive and appropriate psychological assessments (Suzuki et al., 2013). Therefore, there is great importance in understanding the various limitations psychological assessment may have on clients from diverse

backgrounds (Suzuki et al., 2013) as the assessment results may not accurately reflect the clients' functioning (Comas-Diaz, 2012). As a result, psychological evaluators must consider and acknowledge the reliability of a given assessment within the frame of the individual's population group thus, recognizing there may be no data supporting the reliability of the given assessment for the client's specific population (Weis & Rosenfeld, 2012). In sum, it is critical for psychologists to begin including and integrating cultural perspectives into their various areas of practice (Tummala-Narra et al., 2018).

American Indian and Alaska Natives

To understand the concerns surrounding American Indian and Alaska Natives (AI/AN) assessment, we must understand the historical context of AI/AN (Duran, 2006). AI/AN have historical traumatic conflict with European Americans (Robbins et al., 2017; Saxton, 2001). For example, the most horrendous acts involve most tribes' experience of systematic genocide (Duran, 2006). As a result, AI/AN make up only 1.3% of the U.S population (U.S. Census Bureau, 2019).

In addition, Saxton (2001) reports AI/AN suffer from various psychological symptoms such as loneliness, grief, and anger as well as sociological factors such as low socioeconomic status and poor education. In addition, Duran states, "Modern society continues to provide instances of negative projections toward Native People. Film and other media persist in negative representation of the Native life-world in modern society" (2006, p. 30) and as a result deeply impacts the emotional level of AI/AN (Duran). Therefore, AI/AN are often diagnosed with a variety of psychological symptoms many of which are connected to their historical context (Duran). In addition, Duran proposed the idea in which the development of psychological tools be controlled by the people who have knowledge of the cultural metaphors thus, increasing the accuracy and reliability of the given measurement.

However, unlike other ethnic minority groups, the history of AI/AN psychology is fairly limited (Graves & Aston, 2016) as this population has often been overlooked (Lettenberger-Klein et al.,2013) and as a result there has been minimal change in the field of psychology in the perception of American Indians and Alaska Natives (Duran, 2006).

Therefore, it is often true that even well recognized assessments with sufficient normative samples rarely include an AI/AN's subsample to establish a normative group for this population (Yetter & Foutch, 2017). Yetter et al. (2017) also recognized the difficulty in obtaining the appropriate number of AI/AN participants for research purposes. Thus, creating barriers to obtaining appropriate amounts of data to help with the assessment issues involving AI/AN students (Demmert, 2005). As a result, a majority of assessments have not been modified or revised to use with an AI/AN population (Weaver, 2005). In addition, Hodge & Limb (2010) report a concern of diversity among various tribes posing another barrier to using psychological tools with AI/AN individuals. Lettenberger-Klein et al. (2013) also highlighted the need to be aware of cultural misunderstanding with an AI/AN population. While Thomason (2011) found in his study that psychologists have expressed the need to use psychological assessments cautiously when working with an AI/AN population. Although research with the AI/AN population may be difficult, Gowen et al. (2012), found that including community members within the AI/AN community during the development of a measure helped the developers understand culturally appropriate issues. Thus, serving as a possible framework for test development in the future.

BASC-3 and AI/AN

The Behavior Assessment System for Children, Third Edition (BASC™–3) is a multimethod, multidimensional system used to evaluate the behavior and self-perceptions of children and young adults ages 2 through 25 years. The BASC-3 Self-Report of Personality is an inventory primarily used in primary and secondary educational settings (Reynolds & Kamphaus,

2015). The BASC-3 is described as a tool to be used for children to young adults who are experiencing, or at risk of experiencing, various behavioral or emotional problems (Reynolds & Kamphaus, 2015). Currently, the third edition of the BASC consists of three components; the self-report of personality is the only component addressing the client's perception of him or herself (Reynolds & Kamphaus). Reynolds and Kamphaus states the BASC-3 components "aid in the clinical diagnosis of disorders that usually first appear in childhood or adolescence" (2015, p. 8). The authors continue to indicate the BASC-3's ability to assess various symptoms cited in the DSM-5. Furthermore, the BASC-3 is cited by Reynolds and Kamphaus, as a proper tool for helping distinguish between various disorders such as conduct disorders or emotional disturbances.

In addition, the standardization sample was designed to "resemble the population with respect to gender, socioeconomic status, race/ethnicity, geographic region, and classification in special education or gifted/talented programs" (Reynolds & Kamphaus, 2015, p. 105). The clinical normative sample was obtained from children with a diagnosis of an emotional or behavioral problem, with a majority of the sample coming from special education services or various community, hospital, or university mental health clinics (Reynolds & Kamphaus). In addition, the manual cites the clinical norm sample for the BASC-3 self-report that included a total of 282 participants; however, of the 282 participants only 35 of those participants did not identify as African American, Asian, Hispanic or White. Furthermore, Reynolds and Kamphaus, report good to excellent internal consistency among the clinical and adaptive scales of the BASC-3 SRP.

Due to the strong psychometrics of the original BASC, Wilder and Sudweeks (2003) conducted a meta-analysis of studies which employed the original BASC with the purpose of

determining whether the BASC score estimates were reliable for diverse subpopulations. The study found that of the 106 dissertations examined, only nine reported the reliability estimates for any subpopulation and none mentioned AI/AN. Wilder and Sudweeks (2003) proposed further research should be done on the BASC to understand the reliability across various subpopulations. In addition, there was a concern proposed by Wilder and Sudweeks, in which researchers and test administrators assumed the reliability for the original BASC was accurate for various subpopulations.

The most current research on the BASC in the AI/AN population was on the BASC-2. The study was conducted by Yetter and Foutch (2017) comparing the scores of the BASC-2 with an AI/AN and a Non-Native sample. Yetter and Foutch proceeded to find various scales on the BASC-2 SRP had insufficient reliability posing the concern that the scales may not be reliable within an AI/AN population. Additionally, Yetter and Foutch proposed the idea of further research being conducted in order to further investigate the reliability of the various scales.

Purpose

Currently, there is no research to support the reliability of the BASC-3 SRP within an AI/AN population. This study will examine the use of the BASC-3 for American Indian/Alaska Native (AI/AN) adolescents. In addition, the BASC-3 SRP reports excellent reliability for the composite scales and adequate to good reliability for the clinical and adaptive scales for the general normative sample (Reynolds & Kamphaus, 2015). However, as stated by Yetter and Foutch (2017) there were multiple scales on the BASC-2 that did not have sufficient reliability with an AI/AN sample.

Due to the consistent use of the BASC-3 in secondary school settings, the goal of the present study was to analyze whether BASC-3 is a culturally reliable assessment for the AI/AN

community. The study compared the mean raw scores of the clinical scales and the adaptive scales in order to understand if the reported BASC-3 norms are reflective of an AI/AN community. In addition, the study will provide an understanding of the reliability of the various scales in the BASC-3 which allows us to understand if there are certain scales and items which inaccurately reflect the AI/AN community. Thus, the results of this study can provide insight into whether the BASC-3 is an appropriate assessment to use in an AI/AN community.

Hypotheses of the Present Study

Hypothesis 1: Internal consistency coefficients of the AI/AN sample and the White comparative sample groups will be significantly different.

Hypothesis 2: Internal consistency coefficients between the AI/AN sample will be significantly different from the clinical normative group.

Hypothesis 3: Internal consistency coefficients will not be significantly different between the White comparative sample group and the clinical normative group.

Hypothesis 4: Means for the AI/AN group will be significantly different from the White comparative sample group.

Hypothesis 5: Means for the AI/AN group will be significantly different from the reported means for the normative sample.

Chapter 2

Methods

Participants

Forty-five (29 male, 16 female) participants were drawn from an American Indian/Native American high school. These students were referred for psychological assessment to determine eligibility for special education services. Additionally, a second sample of 16 (10 male, 6 female) White participants was drawn from a public high school. Participants from this pool were also referred for psychological assessment to determine eligibility for special education services. Permission was granted by a child's parent or guardian for each of the participants to participate in the psychological evaluation. Permission was granted by the school to utilize the archival data collected for the purpose of this research project.

Instrument

Behavior Assessment System for Children, Third Edition- Self report of Personality (BASC-3 SRP-A). The BASC-3 SRP-A is used in primary and secondary school settings as a tool to understand the participant's perception of him or herself (Reynolds & Kamphaus, 2015). The assessment consists of 189 items which provide an idea of behavioral and emotional functioning of the participant. Some items consist of a two-point true or false response while the remaining items use a four-point Likert scale ranging from *Never* to *Always.* The Cronbach's alpha for the various scales range from 0.71 to 0.97.

Procedure

This study was approved by the George Fox University Human Subjects Research Committee and the archival data was collected in the following manner. Students were referred by the school or parent for psychological assessment in order to determine eligibility or continued eligibility for special education services. The school acting in loco parentis of the students approved the use of the BASC-3 SRP-A results for research purposes. The BASC-3 SRP-A is a part of the assessment battery given to the student to determine his or her eligibility for special education services. Permission was granted by the parents of the participant to conduct psychological assessment for the purpose of determining eligibility for special education services. The BASC-3 SRP was administered to each participant by a doctoral student in the field of clinical psychology. The BASC-3 was either conducted in an empty classroom or an office with the time of administration ranging from 10-30 minutes. The BASC-3 was then scored by the administrator of the assessment to determine if the test was taken to the best of the client's ability. To determine this, assessments that received a raw score of great than zero on the V index will not be included in this study.

Chapter 3

Results

A quantitative design was used to describe the results of this study. Descriptive data included in this study are the means and standard deviations of the AI/AN sample, the White sample, and the manual normalized sample. Additionally, the psychometric data included internal consistency of all the scales utilized in the BASC for the AI/AN sample, the White sample, and the manual clinical normalized sample. An item analysis was conducted with both the White sample and the AI/AN sample. Raw score means were not reported for the clinical normative sample thus, a one sample *t*-test was used to compare the manual normative sample with the AI/AN sample. Lastly, an independent sample *t*-test was conducted between the AI/AN sample and the White sample.

Descriptive Statistics

The computer program Cocron (Diedenhofen & Musch, 2016) was utilized to compare Cronbach alpha values between the three groups (See Table 1). The Statistical Package for the Social Sciences (SPSS, version 26.0) was used for analyzing means and standard deviations of the AI/AN sample, the White sample, and the manual normative sample. Differences found in all analyses were considered significant if the .05 level of confidence was reached.

Table 1

Cronbach Alpha Values by Scale for each of the Tree Subsamples

	AI/AN	White	Standardization	Chi Sq	*df*	*p*
Attitude to school	.83	.82	.91	5.01	2	.08
Attitude to teachers	.86	.87	.85	.13	2	.94
Sensation Seeking	.75	.65	.81	2.60	2	.27
Atypicality	.83	.91	.86	2.45	2	.29
LOC	.83	.91	.86	1.29	2	.52
Social Stress	.89	.87	.88	.37	2	.83
Anxiety	.94	.91	.89	2.54	2	.28
Depression	.89	.89	.88	.96	2	.97
Inadequacy	.89	.78	.8	4.14	2	.13
Somatization	.77	.87	.79	2.00	2	.37
Attention Probs.	.9	.83	.85	2.00	2	.37
Hyperactivity	.85	.73	.8	2.15	2	.34
Rel. w/Parents	**.94**	**.84**	**.91**	**6.97**	**2**	**.03**
Interpersonal	.88	.88	.85	.36	2	.83
Self-Esteem	.92	.9	.86	1.71	2	.42
Self-Reliance	.8	.59	.78	4.02	2	.13
Anger Control	.83	.89	.86	1.07	2	.59
Ego-Strength	**.8**	**.65**	**.85**	**6.21**	**2**	**.04**
Mania	.85	.75	.8	1.76	2	.41
Test Anx.	.79	.81	.77	.21	2	.89
Funct. Impairment	.89	.92	.86	1.65	2	.44

Hypotheses

Hypothesis 1

Internal consistency coefficients between the AI/AN sample and the White comparative sample group will be significantly different. This hypothesis was supported with the Attitude to

Parents scale. An independent analysis of the Cronbach alpha levels between the AI/AN sample, the White comparative sample, and the manualized normative sample for all the scales present in the BASC-3 was conducted using *Cocron*. The analysis revealed that there was a significant difference between Cronbach alpha levels between groups for the relationship with parents' scale X^2 (2, N = 233) = 6.97, p = .03. The results showed a significant difference between the NA/AN group and the comparative sample X^2 (1, N = 60) = 4.99, p = .03) (see Table 1).

Hypothesis 2

Internal consistency coefficients between the AI/AN sample will be significantly different from the clinical normative group. This hypothesis was not supported. There were no significant differences in Cronbach alpha levels between the AI/AN sample and the clinical normative group (see Table 1).

Hypothesis 3

Internal consistency coefficients will not be significantly different between the White comparative sample group and the clinical normative group. This hypothesis was not supported. There were significant differences within the Ego Strength scale X^2(2, N = 234) = 6.21, p = .04. Further analysis indicated that the difference was between the comparative sample and the manualized clinical normative sample X^2 (1, N = 189) = 5.85, p = .01 (see Table 1).

Hypothesis 4

Means for the AI/AN group will be significantly different from the White comparative sample group. This hypothesis was not supported. An independent sample *t*-test was used to compare the raw score means for the clinical and adaptive scales between the AI/AN sample with the comparative White sample. Results indicated that there were no significant differences between groups for any of the scales on the BASC-3 (see Table 2).

Figure 1

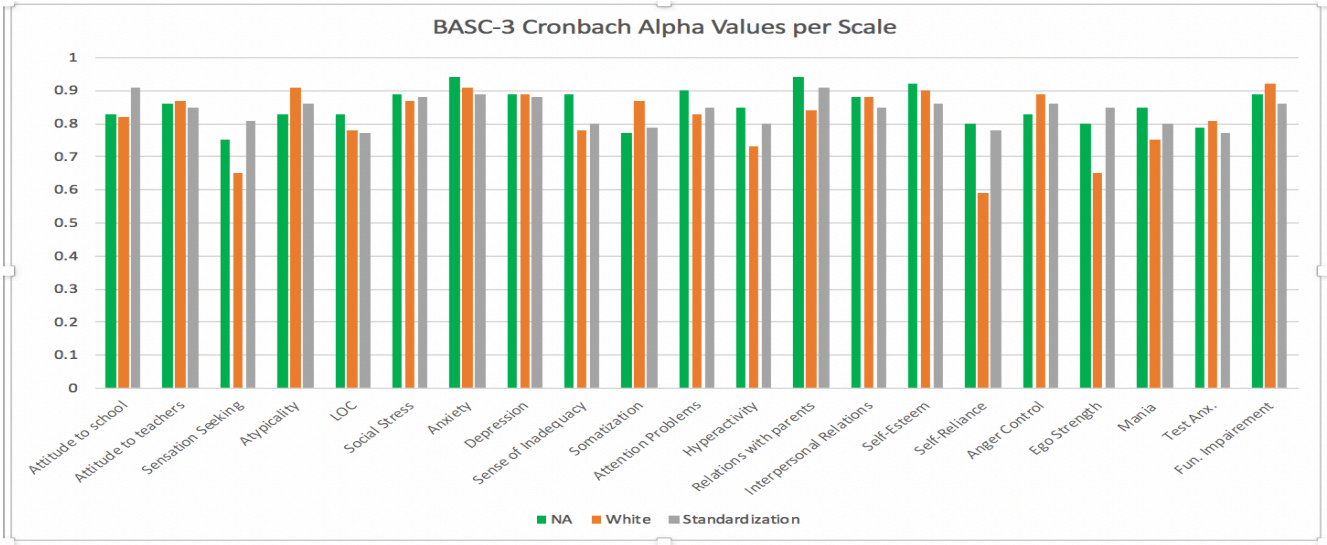

Table 2

Raw Score Mean AI and White Comparative Sample (m(sd))

Scale	AI/AN	White	*t*	*df*	*p*
Attitude to school	8.58 (5.01)	9.25 (5.24)	.40	55	.66
Attitude to teachers	10.56 (5.60)	8.06 (4.74)	-1.57	53	.122
Sensation seeking	10.05 (4.65)	9.13 (4.05)	.70	58	.49
Atypicality	6.07 (5.12)	8.56 (7.65)	-1.45	58	.15
LOC	5.04 (4.73)	4.20 (4.0)	.62	58	.54
Social Stress	9.40 (6.88)	8.00 (5.66)	.70	53	.49
Anxiety	12.90 (9.38)	11.75 (7.89)	.44	56	.67
Depression	7.41 (6.85)	6.56 (6.43)	.43	55	.67
Inadequacy	12.07 (7.85)	9.75 (5.46)	1.09	58	.28
Somatization	2.39 (2.97)	3.69 (4.27)	-1.33	58	.19
Attention Probs.	9.16 (6.17)	11.38 (5.01)	-1.29	57	.20
Hyperactivity	6.93 (4.67)	7.27 (4.46)	-.246	57	.81
Rel. w/Parents	20.68 (8.71)	23.19 (5.61)	-1.07	58	.28
Interpersonal	7.48 (5.44)	6.50 (5.23)	.62	56	.54
Self-Esteem	6.93 (6.18)	5.00 (5.18)	1.11	58	.27
Self-Reliance	13.11 (4.98)	13.31 (3.57)	-.15	58	.88

Hypothesis 5

Means for the AI/AN group will be significantly different from the reported means for the normative sample. This hypothesis was supported. An independent sample t-test was used to compare the raw score means for the clinical and adaptive scales between the AI/AN sample with the manualized normative sample. Results indicated that there were significant differences between groups for the scales of Attitude to Teachers $t(337) = -5.50$, $p = <.001$, Atypicality $t(342) = -2.80$, $p = .01$, Social Stress $t(338) = .70$, $p = .02$, Sense of Inadequacy $t(342) = 1.09$, $p = <.001$, Interpersonal relations $t(340) = 17.73$, $p = <.001$, Self Esteem $t(342) = 9.14$, $p = <.001$, and Self-Reliance $t(342) = 6.81$, $p = <.001$) (see Table 3).

Table 3

Raw Score Means AI/AN and Manualized Normative Sample (m(sd))

Scale	Ai/AN	Normative	*t*	*df*	*p*
Attitude to school	**8.58 (5.01)**	**7.07 (4.38)**	**-2.11**	**342**	**.04**
Attitude to teachers	**10.56 (5.60)**	**6.1 (4.65)**	**-5.50**	**337**	**<.001**
Sensation seeking	10.05 (4.65)	9.71 (5.05)	-.42	342	.67
Atypicality	**6.07 (5.12)**	**4.06 (4.35)**	**-2.80**	**342**	**.01**
LOC	5.04 (4.73)	4.53 (4.05)	-.77	343	.44
Social Stress	**9.4 (6.88)**	**7.12 (5.65)**	**.70**	**338**	**.02**
Anxiety	12.9 (9.38)	12.07 (7.52)	-.65	340	.52
Depression	7.41 (6.85)	5.52 (6.00)	-1.86	339	.06
Inadequacy	**12.07 (7.85)**	**8.23 (5.62)**	**1.09**	**342**	**<.001**
Somatization	2.39 (2.97)	2.55 (3.37)	.30	342	.77
Attention Probs.	9.16 (6.17)	7.73 (5.07)	-1.69	341	.09
Hyperactivity	6.93 (4.67)	6.50 (4.61)	-.578	342	.56
Rel. w/Parents	20.68 (8.71)	22.62 (6.70)	1.72	342	.09
Interpersonal	**7.48 (5.44)**	**19.65 (3.96)**	**17.73**	**340**	**<.001**
Self-Esteem	**6.93 (6.18)**	**13.65 (4.27)**	**9.14**	**342**	**<.001**
Self-Reliance	**13.11 (4.98)**	**17.91 (4.52)**	**6.81**	**342**	**<.001**

Chapter 4

Discussion

The current study focuses on the reliability of the BASC-3 SRP-A and the raw score means for AI/AN adolescents. Psychological assessments rarely include a sufficient sample of AI/AN participants in their normative sample (Yetter & Foutch, 2017) and as a result many psychological assessments may not be appropriate for the AI/AN population. Insufficient normative samples may lead to a number of concerns such as over-pathologizing, or inappropriately diagnosing a patient's symptoms due to a misperception of the patient's cultural background (Comas-Diaz, 2012). Additionally, due to negative projections towards AI/AN, they are often diagnosed with various psychological symptoms as a result of their historical context (Duran, 2006). Thus, Duran proposed that future psychological tools be developed with people who have knowledge of the AI/AN culture which would increase their accuracy and reliability.

The BASC-3 is utilized with individuals ranging from children to young adults who may be experiencing various behavioral or emotional symptoms. The BASC-3 SRP-A is organized into various behavioral and emotional scales to examine various pathologies and perceptions in the client's life. The BASC-3 SRP-A was developed to assess negative and positive aspects of a child's behavior (Kamphaus et al., 2004). Currently, there is minimal research on the BASC-3 and its reliability across various subpopulations. Previous studies found that there may be a concern where test administrators and researchers assume that the reliability of the original BASC was accurate (Wilder & Sudweeks, 2003). Additionally, in a study done with AI/AN

utilizing the BASC-2 it was reported that various scales did not have sufficient reliability coefficients, perhaps indicating that the BASC may not be a reliable measure for the AI/AN populations (Yetter & Fouch, 2017). Building on prior research, this study was able to compare reliability coefficients between an AI/AN sample, a White comparative sample, and the clinical normative sample. In addition, this study was able to compare raw score means among the three groups.

Reliability

Results indicated that there were significant differences in reliability coefficients between the AI/AN group and the White comparative sample within the Relationship with Parents scale (See Figure 1). However, unexpectedly the significant difference was due to the White comparative sample having a lower reliability coefficient, suggesting that the Relations with Parent's scale was unreliable for the White comparative group. Similarly, there was a significant difference in reliability coefficients between the comparative group and the manualized clinical normative sample, which was also unexpected. These results could be attributed to the small sample size of the comparative group as there were only 16 participants. Additionally, the participants for the comparative sample were drawn from a rural area, which suggests that there may be reliability concerns with clients from this population. For the remaining scales there were no significant differences in reliability coefficients between the three groups.

Raw Score Means

The most significant findings of the study were the differences in raw score means between the AI/AN group and the manualized normative sample. Raw score means on seven of the subscales were deemed significantly different. Those scales were Attitude to School, Attitude

to Teachers, Atypicality, Social Stress, Sense of Inadequacy, Interpersonal Relations, Self-Esteem, and Self-Reliance.

Attitude to School & Attitude to Teachers

The significant difference between the Attitude to School & Attitude to Teacher's scales suggest that the AI/AN group perceive their school and teachers more negatively than the normative sample. A study by Webster, Knows His Gun, and High bear (2018), found that culturally focused curriculum positively impacted the AI/AN students. However, historically the academic system for AI/AN would attempt to assimilate this group to fit in with the majority culture. Thus, these results could align within the historical oppression of the academic system for AI/AN.

Atypicality

The significant difference between the AI/AN group and the manualized normative sample suggests that AI/AN experience more symptoms of Atypicality such as seeing and hearing things that others may not. For example, Wendt & Gone (2016) mentioned a patient who reported communicating with a Hawk during a time of depression, which was not atypical for someone from his tribe. However, items on the Atypicality scale may fit within the cultural and spiritual practices of various tribes. In addition, consistent with Lettenberger-Klein et al. (2013), there could be a cultural misunderstanding of the AI/AN practices which could lead to a misinterpretation of the assessment results.

Social Stress

The significant difference between the two groups for the social stress scale suggests that the AI/AN group experiences more social stress than the manualized normative sample. Higher perceived social stress can be attributed to the academic environment of the participants, as

students in the AI/AN group were away from their homes while attending school (i.e in a boarding school). In addition, the environment for the students did not necessarily allow space for many of the cultural practices that these students engage in to relieve stress when they are home. Thus, perhaps perpetuating the historical traumas that AI/AN individuals may experience in the current academic system.

Sense of Inadequacy

There were significant differences between the AI/AN group and the manualized normative sample within the Sense of Inadequacy scale. These results suggest that the AI/AN group experiences more feelings of inadequacy than the normative sample. These results could be attributed to the standard of measurement that exists within the traditional academic system. Yetter and Foutch (2017) noted that AI/AN reservations are a unique and distinctive social and cultural environment. Thus, it is possible that the AI/AN group may experience more feelings of inadequacy due to the inappropriate measures of success within the system as a result of differing social and cultural expectations. In addition, as noted by Duran (2006), historical trauma and negative portrayals of AI/AN deeply impact the emotional levels of this population. Therefore, it is possible that these experiences cause higher feeling of inadequacy for AI/AN students who lacked the social supports of living at home.

Interpersonal Relations

Within the Interpersonal Relations scale, there were significant differences between the AI/AN group and the manualized normative sample, with the AI/AN group endorsing more difficulties with Interpersonal Relations than the normative sample. Thus, suggesting that the AI/AN group have more difficulty being outgoing and well liked compared to the normative sample. The difference in scores can be attributed to the historical treatment of AI/AN in our

society, as Saxton (2001) indicated that AI/AN tend to suffer from psychological symptoms such as loneliness and separation from their tribal community.

Self-Esteem

The significant difference within the Self-Esteem scale indicate that AI/AN have lower self-esteem when compared to the normative sample. This is consistent with prior research indicating that as a result of historical trauma, AI/AN groups may experience more negative psychological symptoms (Duran, 2006). However, it is also worth noting that views of self-esteem may be different than the traditional majority culture. With AI/AN culture being normally collectivistic, the view of one's self is seen in relationship to the other members of one's tribe (Robbins et al., 2017). The BASC-3 SRP Self-Esteem scale does not address any of these factors and as a result, may be over pathologizing the AI/AN population through a misrepresentation of self-esteem within the AI/AN culture.

Self-Reliance

Lastly, significant differences in the Self-Reliance scale between the AI/AN group and the manualized normative sample suggest that the AI/AN group has more difficulty relying on themselves to complete tasks when compared to the normative sample. However, due to the AI/AN group being from a collectivistic culture, self-reliance may be defined or seen differently. The value of relying on oneself is not necessarily as important as various AI/AN tribes place more importance on valuing humility and interconnectedness (Robbins et al., 2017). The Self-Reliance scale addresses the participants individual view of reliance, however, for the AI/AN population this may be more community oriented.

Implications

Overall, this study indicated that although the BASC-3 SRP-A may be reliable for the AI/AN group, however, the comparative norms and the interpretation of the assessment may not

be valid. Despite the historical traumas and negative perceptions in society, AI/AN groups have demonstrated resilience across multiple domains of life (Robbins et al., 2017). Although psychological assessments may deem a patient to be within the clinically significant range for a score, their functioning may not be necessarily impaired when compared to other people within their cultural group. In addition, the study suggests that while the items given are reliable for a given scale, those items may not accurately represent the AI/AN perspective or perception of those scales. Thus, results of this assessment may indicate problems or concerns, when there may be none at all. Therefore, it is possible that AI/AN's may be over pathologized if the results of the assessment are taken at face value. Lastly, due to results indicating that the BASC-3 SRP A is reliable across scales for the AI/AN group, we can determine that the raw score means across the various scales should be seen as an accurate representation of the AI/AN group's perspectives of themselves.

Limitations

When looking at the results, it is worth noting that there were limitations to this study. This study had a limited number of AI/AN participants as there were only 45 usable protocols for analysis. Further, all of the AI/AN students were living away from their homes during the year. Thus, although the reliability of the assessment appears accurate more participants will be able to give a clearer picture of the BASC's reliability, and clearer information regarding the raw score mean differences. In addition, both samples were drawn from a special education clinical samples, which may have impacted the analysis of the reliability and the raw score means, as there were little differences in reliability coefficients between the two groups, and no difference in raw score means. Furthermore, the BASC-3 manual does not report raw score means for their clinical sample, and as a result, comparison of means for the AI/AN clinical sample was compared with the general normative sample reported in the manual. Additionally, no tribal

information was obtained throughout this process and as a result, there is no current information to determine whether these scores differ by tribe.

Future Research

Despite the given limitations, this study provides information regarding the utilization of the BASC-3 with the AI/AN population. For future studies, a larger sample size consisting of students without any clinical diagnosis would enhance future development of appropriate norms for the AI/AN population. In addition, future research should be conducted with schools that have a large AI/AN population in order to provide a comparison of results. Furthermore, due to varying beliefs among AI/AN tribes, future research could look at the reliability and raw scores between tribes to provide a more holistic interpretation of the BASC across the AI/AN population.

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Appendix A

Consents

Dear Ms. Ward and Mr. Cox,

Dr. Knows His Gun and I were analyzing the BASC-3 assessment that we use in our testing with the SPED department and it has come to our attention that the BASC-3 may not be culturally reliable for our population at Chemawa. If granted your permission, we would like to utilize the special education data for research with the goal of identifying if the BASC-3 is a reliable assessment to be administering at Chemawa.

Thank you for your consideration and if you have any questions feel free to contact me at nhiga13@georgefox.edu.

Sincerely,

Nathan Higa M.A

GFU Intern

Appendix B

Curriculum Vitae

Nathan Higa

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Education

PsyD- Graduate School of Clinical Psychology
George Fox University, Newberg, Oregon (Expected Graduation: May 2022)
Dissertation: "Reliability Analysis of the BASC-3 SRP with Native American Adolescents"
Committee: Winston Seegobin PsyD, Kristie Knows His Gun PsyD, Kathleen Gathercoal PhD, Elizabeth Hamilton PhD
M.A in Clinical Psychology- George Fox University, Newberg, Oregon (May 2019)
B.A in Psychology-George Fox University, Newberg, Oregon (May 2017)

Academic Honors and Awards

Dean's Honor List (Fall 2016)
Division 16 top 25 poster (APA 2020)
Diversity Scholarship recipient (2018-2021)
HRSA Grant Practicum Student Recipient (2019-2020)

Clinical Experience

Chemawa Indian School (2018-2020)
• Clinical Psychology Intern
• Practicum 1 & 2
• Responsibilities: Special Education testing and Behavioral Health Counseling
• Primary Supervisor: Kristie Knows His Gun PsyD.

Chemawa Indian Health Services (2019-2020)
• Primary Care Behavioral Health Consultant Intern
• Practicum 2
• Responsibilities: Provided behavioral health services via primary care
• Primary Supervisor: Kristie Knows His Gun PsyD.

Southwest Family Physicians (Fall-Winter 2019)
• Organizational Consultant Practicum Student
• Supplemental Practicum 2

• Responsibilities: Provided consultation service for a primary care clinic looking to develop an integrated behavioral healthcare model
• Primary Supervisor: Julie Oyemaja PsyD.

Evergreen Clinical (2020-present)
• Pre-intern supplemental training
• Responsibilities: Provided long-term therapy ACT therapy to uninsured or underinsured patients.
• Primary Supervisor: Brian Goff PhD.

George Fox University Health and Counseling Center (2020-present)
• Pre-internship
• Responsibilities: Providing 50 percent therapeutic services to general student population and 50 percent to student athletes.
• Primary Supervisor: Luann Foster PsyD.

Research

Conklin, C., Knows His Gun, K., Higa, N., (2018). Native American/Alaska Native Youth: Obstacles to mental health care. Poster proposal accepted for the 2019 APA Annual Convention, Chicago, IL.

Higa, N., Seegobin, W., Knows His Gun., Gathercoal, K., Hamilton, E., (2019). Reliability Analysis of the BASC-3 SRP with Native American Adolescents. Poster proposal accepted for the 2020 APA Annual Convention, Washington, D.C

Teaching Experience

Substitute Professor of Psychology (September 2019)
George Fox Masters of Social work
- The DSM 5

Teaching Assistant (Fall 2019)
George Fox Graduate School of Clinical Psychology
- Psychopathology

Teaching Assistant (Fall 2019)
George Fox Graduate School of Clinical Psychology
- History and Systems of Psychology

Teaching Assistant (Fall 2020)
George Fox University
- Advanced Counseling

Supervision Experience

Pre-practicum Supervisor
Responsibilities: Provided Clinical supervision and training of pre-practicum students
Supervisor: Aundrea Paxton PsyD.

George Fox Health and Counseling Center Practicum I Supervisor (2020-present)
Responsibilities: Provided Clinical Supervision of Practicum I trainee
Supervisor: Amber Nelson PsyD

Specialized Trainings

Strohsal, K. (2019). *Focused Acceptance and Commitment Therapy*. Newberg, OR

Forster, C. (2019, October 16). *Intercultural Communication.* Presentation at George Fox University Grand Rounds, Newberg, OR.

Gil-Kashiwabara, E. (2017, October 11). *Using community based participatory research to promote mental health in American Indian/Alaska Native children, youth and families*. Presentation at George Fox University Grand Rounds, Newberg, OR.

Marlow, D. (2019, March 20). *Foundations of Relationship Therapy – The Gottman Model.* Presentation at George Fox University Grand Rounds.

McMinn, L., & McMinn, M (2018, September 26). *Spiritual formation and the life of a psychologist: Looking closer to soul-care.* Colloquium Presentation at George Fox University, Newberg, OR.

Pengelly, S. (2018, October 10). *Old pain in new brains.* Presentation at George Fox University Grand Rounds, Newberg, OR.

Safi, D., & Millkey, A. (2019, February 13). *Opportunities in Forensic Psychology*. Colloquium Presentation at George Fox University, Newberg, OR.

Sordahl, J. (2017, November 8). *Telehealth*. Colloquium Presentation at George Fox University, Newberg, OR.

Taloyo, C. (2018, February 14). *The history and application of interpersonal psychotherapy*. Presentation at George Fox University Grand Rounds, Newberg, OR.

Vogel, M. (2018, March 14). *Integration and Ekklesia.* George Fox University Colloquium Presentation, Newberg, OR.

Worthington, L (2019, September 25). *Promoting Forgiveness.* Presentation at George Fox University Grand Rounds, Newberg, OR.

Invited Speaking Engagements

Invited Speaker
Multicultural Leadership
Multicultural Committee Panel
George Fox University

Professional Memberships

APA Student Member