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An Exploratory Factor Analysis Of The Collectivist Coping Styles Inventory Using An Adult American Indian Sample

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AN EXPLORATORY FACTOR ANALYSIS OF THE COLLECTIVIST COPING STYLES INVENTORY USING AN ADULT AMERICAN INDIAN SAMPLE

by

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This dissertation, submitted by Micah Louis Prairie Chicken in partial fulfillment of the requirements for the degree Doctor of Philosophy from the University of North Dakota, has been read by the Faculty Advisory Committee under whom the work has been done and is hereby approved.

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ABSTRACT

The present study examined the factors that emerged from the Collectivist Coping Styles (CCS) inventory using an exploratory factor analysis with an adult American Indian sample. The CCS inventory was originally developed using a sample of Taiwanese college students by an American-led research team and published in 2006. The CCS consists of 30 collectivist culture-specific coping items, among other indices (e.g., trauma resolution index). Coping has largely been theorized, and subsequently measured, from a White American individualist perspective. In response, a number of researchers with interests in non-White ways of being have begun broadening this area by examining coping from other cultures' perspectives.

American Indian tribes have largely been conceptualized as collectivistic given the nature of tribal societies (e.g., extended kinship structures) and philosophies (e.g., "We are all related"). As with other non-White populations within the United States, adult American Indian coping styles have mostly been examined and measured through a Western individualistic lens in the literature. Further examining how adult American Indians collectivistically cope with stress may provide a more culturally congruent understanding of how this population copes with stress.

A sample of 228 adult American Indians mostly from the Northern Plains were recruited to take the CCS inventory. An exploratory factor analysis of the 30 coping items from the CCS inventory was conducted using SPSS. A stable and reliable, 28-item, five-factor structure emerged, including (a) Acceptance, Reframing, and Striving; (b) Family Support; (c) Avoidance and Detachment; (d) Religion-Spirituality; and (e) Private Emotional Outlets. Out of the 30 items

from the original CCS inventory, two items did not load, including: “Accepted trauma as fate,” and “Ate in excess (or not eating).”

This study indicated that further investigation into culture-specific ways of coping (e.g., collectivistic coping) are necessary in regard to American Indians in order to capture the full spectrum of coping styles.

CHAPTER I

An Exploratory Factor Analysis Of The Collectivist Coping Styles Inventory Using An Adult American Indian Sample

There are currently 574 state and federally recognized tribal nations in 35 states across the United States (U.S.) (National Congress of American Indians [NCAI], 2020). In 2010, American Indians/Alaska Natives (AI/AN) made up 1.7 percent of the total population of the U.S., which equates to around 5.2 million people (NCAI, 2020). Of all the challenges these tribes face, addressing mental and physical health disparities is among their top priorities. It is well established in the literature that both urban and rural AI/AN experience the poorest overall health outcomes compared to the general U.S. population (Holm et al., 2010; Jacobs-Wingo et al., 2016), including certain cancers (Dockery et al., 2018), cardiovascular diseases (Galloway, 2005), diabetes (Jacobs-Wingo et al., 2016), obesity (Zamora-Kapoor et al., 2019), lung disorders (Singleton et al., 2012), substance abuse (Swaim & Stanley, 2018), mental health (Gone, 2004), and even hearing disorders (Gellert et al., 2017). These health disparities are also reflected among AI/AN children when compared to their White counterparts (Kenney & Thierry, 2014). A number of factors contribute to these disparities, including structural racism (Wallerstein & Duran, 2006), lack of health education, poverty, lack of access to care, colonization, and mistrust of Western and government agents (Jaramillo & Willging, 2021). A universal factor among all of the above mentioned is stress which raises the issues of how individuals, and specifically Is, cope with said stress.

Literature Review

Coping

Though the entire history of coping is beyond the scope of this study and literature review, a primer in coping is necessary to understand how the study of collectivistic coping emerged. Attempts to understand adaptation to distressing events (i.e., defense mechanisms) has been a focus of psychological inquiry since the late 19th century (Freud, 1894 as cited in Somerfield & McCrae, 2000). However, the modern foundations of human coping research (animal models of stress and coping are another line of research not covered here) began in the late 1970s and early 1980s (Folkman & Lazarus, 1980; Pearlin & Schooler, 1978). Pearlin and Schooler's (1978) and Folkman and Lazarus' (1980) seminal works on coping were different from previous coping research in that they focused on how average populations cope with the hassles of everyday life; whereas, previously, coping research only focused on special populations, including individuals experiencing psychopathology and individuals who were extraordinary copers. Pearlin and Schooler (1978) also wrote that up to that time, the research field was using many definitions and conceptions of what coping is that it was important to come up with one working definition and concept. The working definition of coping that Pearlin and Schooler (1978) put forth was, "…any response to external life-strains that serves to prevent, avoid, or control emotional distress" (p. 3). Similarly, Folkman and Lazarus (1980) defined coping as "the cognitive and behavioral efforts made to master, tolerate, or reduce external and internal demands and conflicts among them" (p.223).

Collectivistic Coping

In order to discuss the current topic of study, an understanding of collectivism must first be established. With the emergence of cross-cultural psychology, an exploration of non-White,

non-Western ways of thinking and behaving have become a focus of researchers. In the most recent major survey of collectivistic coping, Kuo (2013) outlined unique, Non-Western, culturally moderated ways of coping among Asian, Asian-Canadian, African American, and Latinx populations. However, Kuo (2013) also wrote that the field of collectivistic coping is, at best, "disjointed and piecemeal."

Collectivistic coping is set apart from individualistic coping through differences in self-construals, or within the context in how individuals view themselves in relation to others. In Western societies, an independent self-construal is highly valued, while in most Non-Western societies, an interdependent self-construal is highly valued (Heppner, 2008; Hobfoll, 2008; Kuo, 2013). These differences in self-construals not only affect the ways in which individuals cope, but also the stressors they perceive. For example, the most feared stressors from a United States sample included accidents leading to injury and natural disasters (Gershuny, Najavits, Wood, & Heppner, 2004), while individuals from an Asian country most feared social isolation (Heppner et al., 2006).

Collectivistic coping theories. Given the relatively new focus of collectivistic coping, there are few theoretical frameworks and the ones that have been proposed are still being developed. The three emerging theoretical frameworks will be discussed in the following paragraphs. One of the older proposed models of collectivistic coping is Hobfoll's (1989) Conservation of Resources (COR). In the COR model, the loss of resources is the primary stressor. Conversely, preventing resource loss and also gaining resources has the opposite effect (i.e., coping). Additionally, Hobfoll (2001) wrote that the individual is inseparable from social layers, including family and "tribe." As a result, resource loss, maintenance, or gain will always be within the context of others. Hobfool (2001) wrote that his use of the term "tribe" was a

generalization of the social organizations that individuals belong to aside from their family to include things such as work, church, neighborhood, and ethnic groups, among others. In other words, resource loss, maintenance, or gain will always affect the family and social organizations that individuals find important. Though COR concept of explicitly including others in the appraisal of perceived stress and coping may seem simplistic, it was one of the first models to include others as equal to the individual in appraising and dealing with stress, whereas, in previous coping research, others had always been viewed as peripheral to the individual.

Another proposed model of collectivistic coping was put forth by Chun, Moos, and Cronkite (2006) called the Cultural Transactional Theory of Stress and Coping (CTTSC). The CTTSC is a much more sophisticated model of how individualism-collectivism and stress-coping interact. Chun, Mood, and Cronkite (2006) wrote that there are five factors at work during the stress-coping process. The first factor at play is the environmental system, which is where the individualistic-collectivistic orientation comes into play. Individualistic individuals will likely consider issues of independence when appraising coping, while collectivistic individuals will likely take social issues into account when appraising stress. The second factor at play is the locus of control, or where the core of problems lies. Individualists are likely to have an internal locus of control, or a belief that problems come from within and so the solutions to those problems must also come from within. Collectivists are likely to have an external locus of control, or a belief that problems come from the outside (e.g., fate, supernatural influence, etc.) and so solutions to problems must also come from the outside. The third factor at play are transitory conditions, or daily stressful events. The theorists of this model propose that the magnitude at which daily transitory conditions interrupt an individual's independence or interdependence is reciprocated with an equal coping response. The fourth factor at play is the

utilization of specific coping strategies in response to stress. The theorists predicted that individualists would engage in primary coping strategies, such as pro-actively confronting the problem head on, while collectivists will engage in secondary coping strategies, such as avoiding a problem or managing their emotions around a problem. Lastly, the fifth factor at play in the CTTSC is wellbeing. In the front end of this model, individualism, and collectivism moderate how individuals interpret events as either stressful, or not stressful. Similarly, individualism and collectivism also moderate how individuals interpret their wellbeing. Wellbeing to an individualist might be measured by a reduction of stress or low stress levels, while wellbeing to a collectivist might be measured by social consequences (e.g., preserving a relationship, maintaining harmony, etc.).

A third proposed theory of collectivistic coping is the Aldwin's (2007) Sociocultural Model of Stress-Coping-Adaptation (SMSCA), which proposes that an individual's response to stress is nested within an individual, social, and large cultural context. The theorist proposed that culture is pervasive throughout the entire coping response and affects individuals in a number of ways, including types of perceived stressors, the magnitude of the perceived stressors, the preference of specific coping styles, and available outside resources (e.g., social support). In sum of SMSCA factors from a macrolevel (e.g., broad cultural) down to a microlevel (e.g., choosing coping techniques) converge into the way an individual perceives and copes with stress.

Empirical evidence. Collectivistic coping literature is sparse. For example, in a search of PscyINFO using the phrase "collectivistic coping," only 95 results were returned. A portion of the literature that exists on collectivistic coping comes from studies among Black populations in the United States and Canada. Up to the current time, Utsey, Adams, and Bolden (2000) have been the only researchers to attempt to develop a collectivistic coping measure for use among

African Americans, which is called the Africultural Coping Systems Inventory. In keeping with the consistent sentiment among collectivistic coping researchers, Utsey, Adams, and Bolden (2000) wrote that here was an obvious dearth of knowledge about the unique ways in which African Americans (i.e., Non-White individuals) perceive and cope with stress. In developing their inventory, the researchers argued that even though contemporary African Americans have been living outside of Africa for at least 300 years, the nature of cultural transmission has left them with African collectivistic characteristics. In support of this assertion, the researchers cited Daly, Jennings, Beckett, and Leashore's (1995) work that showed African Americans employ "group derived ego-strengths" such as family and community support to alleviate their stress, among other ways of coping. Lastly, Utsey, Adams, and Bolden (2000) wrote that at the center of the African worldview is "consubstantiation," or that everything is related.

The most studied population in terms of collectivistic coping are East Asians. Heppner (2008) wrote that though there have been major advancements in coping research, it has come from White United States college students. As a result, Heppner et al., (2006) developed the Collectivist Coping Styles inventory with a Taiwanese population to identify: (a) universal coping styles, (b) collectivistic culture specific coping styles, and to (c) produce a way to measure as many coping styles (individualistic and collectivistic) as possible in a Taiwanese sample. They were guided by Asian values rooted in Buddhism and Confucianism values, including avoidance of family shame, conformity to family values, deference to authority, high achievement, importance of personal harmony, fatalism, and respect for elders. After using an exploratory factor analysis on an original 70 items, 30 items across 5 stable factors emerged, including: (a) acceptance, reframing, and striving; (b) family support; (c) religion-spirituality; (d) avoidance and detachment; and (e) private emotional outlets. These factors were partially

congruent with a study on Asian-American coping styles. Yeh et al. (2006) explored how 11 Asian Americans coped with losing family members in the 9/11 terrorist attacks in New York City. The researchers used qualitative methods to find several themes in how the participants coped, including forbearance, fatalism, family support, and Indigenous healing practices (e.g., Chinese medicine). In another study, Yeh and Wang (2000) explored how Asian American college students coped with the stresses of everyday life. Yeh and Wang's (2000) cross-sectional study of 470 Asian American students found that the students preferred and engaged in collectivistic coping (e.g., family support, community support, etc.) to deal with stress rather than engage in individualistic coping (e.g., individual psychotherapy). In yet another study, Allen and Smith (2015) conducted a cross-sectional study with 94 Polynesian Americans that examined their coping styles and the efficacy of those coping styles. Their results showed that their participants primarily engaged in family support to deal with stress and, to a much lesser extent, engaged in "private emotional outlets" (e.g., psychotherapy). Additionally, they found that engagement in family support was significantly predictive of psychological wellbeing over the use of private emotional outlets (Allen & Smith, 2015).

The populations that were used in collectivistic coping literature have mostly been racially and ethnically homogenous. Only one study in the literature used several racially separate populations to study collectivistic coping. Moore and Constantine (2005) recruited 204 international students from Latin American, African, and Asian countries who were attending a United States institution to determine who much they engaged in two types of collectivistic coping, including forbearance, and seeking social support.

Measurement of collectivistic coping. In doing a literature search on PsychINFO using the phrases "collective coping scale," and "collective coping measure," only a four published

scale studies were found, including The Cross-Cultural Scale (Kuo, Roysircar, & Newby-Clark, 2006), the Africultural Coping Systems Inventory (Utsey, Adams, & Bolden, 2000), the Collectivistic Coping Styles Measure (Moor & Constantine, 2005), and the Collectivist Coping Styles Inventory (Heppner et al., 2006). Aside from the initial development and validation, not much research has been conducted utilizing these measures. The only follow-up study used the Collectivist Coping Styles Inventory (Siu & Chang, 2011). Sue and Chang (2011) recruited 305 university students from Hong Kong and ran a confirmatory factor analysis to determine if the five-factor structure that originally emerged from a Taiwanese sample held up and it did.

American Indian Issues

Collectivism. One pertinent question is whether AI/AN are collectivistic. This is a complicated issue because, given that there are 574 state and federally recognized tribal nations in the United States (NCAI, 2020), the notion of a pan-Indian cultural characteristic (e.g., assuming all AIs are collectivistic) would be the same as ignoring the cultural variations among AI tribes. Additionally, establishing collectivism as a cultural characteristic among all, or even a smaller portion, of AI tribes would be a nearly impossible task for at least two reasons, including: (a) the field of collectivism research is relatively new and has primarily focused on non-United States populations (i.e., there is no quantitative data supporting collectivism among all tribes), and (b) the levels of assimilation into European-American culture by individual tribal members is so varied (Prairie Chicken, 2018) that it is impossible to for even an individual to be culturally representative of their tribal nation. However, even with these difficulties of establishing collectivism among AIs, there is historical and recent evidence that many Northern Plains tribal people were and are interdependent on their tribes. The notion of interdependence is at the core of several tribal nation's philosophies in the Midwest region. For example, in Lakota

philosophy the notion of "mitakuye oyasin," which translates to "all are related," points to the importance of an individual's relationship to not only other humans, but also to the interconnectedness of the natural world (e.g., animals, insects, land, etc.) (Marshall, 2002). Similarly, the Anishinaabe of the Great Lakes region have a phrase, "gakina-awiiya," which also translates to "we are all related," and has the same philosophical notions of interconnectedness (Norrgard, 1997).

As mentioned previously, though these tribes have interconnectedness/collectivism woven into their core philosophies, there is no way to solidly quantify how individual members abide by these teachings. One factor that affects individual tribal members' adherence to their traditional tribal teachings is assimilation into European-American culture. One early study on how assimilation affected tribal communities was conducted in the 1950s. Boggs (1958) examined parent-child interactions in two "Ojibwa" communities where one community was isolated and mostly AI and the other community was integrated with a large White population. Boggs (1958) wrote that the isolated Ojibwa parents engaged in significantly more traditional parent-child interactions (e.g., breast feeding) than did the assimilated Ojibwas who primarily bottle fed their infants. Additionally, Deloria (2006) wrote about the loss of traditional cultural engagement among AIs:

> Even on the most traditional reservations, the erosion of the old ways is so profound that many people are willing to cast aside ceremonies that stood them in good stead for thousands of years and live in increasing and meaningless secularity (p.xvii).

Despite commentary on the disconnection between individual AIs and their traditional teachings and cultures, there is evidence of a return to traditional protocols and teachings by some tribal people.

In early 2016, Energy Transfer Partners' Dakota Access Pipeline (DAPL) was slated to begin construction near the Northern boundary of the Standing Rock Indian Reservation in Southcentral North Dakota. The proposed 1,172-mile pipeline was set to run from the oilfields in Northwest North Dakota to Patoka, Illinois for refining (Liu, 2016). Members of the Standing Rock Sioux Tribe (SRST) contended that the construction project would destroy important cultural sites and would threaten their water supply should an oil spill occur. The evidence of collectivistic action began in late summer of 2016 when SRST tribal members first called upon other Lakota subtribes to support them in their protest (Tilsen, 2019). The Lakota nation is comprised of seven subtribes, including the Oglala, Sicangu, Mnicoujou, Hunkpapa, Sihasapa, Itazipco, and the Oohenonpa (Hassrick, 1964). Tilsen (2019) wrote that as an Oglala he felt obligated to answer the call of his Hunkpapa (i.e., SRST) relatives to be with them in their time of distress. Hassrick (1964) wrote that pre-reservation era Lakota were independent for most of the year except for annual gatherings for ceremonial and security purposes. In sum, there is evidence of contemporary AIs engaging in collectivistic actions in response to dangers faced by their fellow tribal members. Given this evidence, it is worth exploring collectivistic coping among contemporary AIs.

American Indian Coping. Given the large health disparities among AIs, including high rates of diabetes, heart disease (Galloway, 2005), alcohol related deaths, historical trauma (Evans-Campbell, 2008), and suicide (Jones, 2006; Warne & Lajimodiere, 2015), understanding the coping processes of AIs is important to understand. One issue that needs to be established is that there is a dearth of literature regarding collectivistic coping among AIs. If collectivism was mentioned in the literature, it was mentioned in the context of an assumption about AI cultures with no empirical support. Additionally, a clear understanding of the breadth of coping

strategies used by AIs was limited in that most of the literature on AI coping styles used scales developed using White college samples. Nonetheless, there has been steady advancement of coping knowledge among AIs in the past three decades.

One of the few studies that attempted to explicitly capture the collectivistic coping strategies of a rural adolescent Indigenous population took place in Alaska (Fok, Allen, Henry, & Mohatt, 2012). The researchers were interested in how the participants employed individualistic coping strategies as compared to collectivistic coping strategies. Specifically, the researchers looked at the differences in the use of self-mastery versus communal-mastery. In the case of this study, the researchers adapted a self-mastery questionnaire into a communal-mastery questionnaire. The results of this study showed that adolescents who highly identified with their traditional culture were significantly more likely to engage in communal-mastery coping than adolescents who identified with their traditional culture to a lesser extent, which is consistent with previous research on cultural identification (McDonald, Ross, & Rose, 2014).

Another between groups study compared the utilization of coping strategies between AI adolescents and White adolescents (Eitle & Eitle, 2014). Specifically, the researchers wanted to understand the differences in the utilization of coping strategies and also how coping strategies moderated substance use among the two adolescent groups. It should be noted that the coping strategies were assessed using a measure that was developed by primarily using a White sample (Carver, 1997). The results showed AI and White adolescents largely used the same coping strategies, such as planning, positive reframing, humor, and venting, among others. However, White adolescents were significantly more likely to use active coping and self-blame and AI adolescents were significantly more likely to use denial.

In yet another study examining AI adolescents, Stumblingbear-Riddle and Romans (2012) sought to understand the role of acculturation, self-esteem, subjective wellbeing, and social support in resilience in the participants. Though this study does not specifically mention "collectivistic coping,' they employed a modified scale they called "American Indian Enculturation Scale," which captures the same notions of collectivistic coping, such as social support, among others. The results showed significant positive correlations between family and friends social support and wellbeing, indicating that collectivistic coping strategies had positive psychological outcomes in AI adolescents.

In sum, the literature on how AIs engage in coping strategies is sparse and is largely restricted to adolescents. Additionally, most of the studies attempt to understand coping from an individualistic perspective. Given that AIs likely hold more collectivistic philosophies, a realistic picture of how they cope must include explicit collectivistic coping strategies.

Current Study

The current study began the initial steps of validating the Collectivist Coping Styles inventory using an adult American Indian sample. The initial steps of validating the Collectivist Coping Styles inventory included conducting an exploratory factor analysis via a principal components analysis and determining the reliability of the measure with an adult American Indian sample. It is standard practice not to make hypotheses about the results of exploratory factor analyses because they are purely data driven approaches to understanding latent constructs. However, the primary research question is, "How many interpretable factors will emerge from items on the Collectivist Coping Styles inventory when using an adult American Indian sample?"

CHAPTER II

Methodology

Participants

228 American Indian adults were recruited for participation in this study to begin initial validation of the Collectivist Coping Styles inventory. The only screening criteria were that the participants were: 1) 18 years of age or older; and 2) identified as American Indian (i.e., Native people from the United States). Participants were recruited via social media websites (e.g., Facebook, Twitter, etc.) and heavily relied on snowball sampling (e.g., word of mouth). Suggested samples sizes for conducting an exploratory factor is wide ranging with suggestions from as little as 3 participants per item up to 10 participants per item (Mundfrom, Shaw, & Ke, 2005). In going with the conservative ratio of 10 participants per item (with 30 items), 300 participants were initially sought for this study, but fell short by 72 participants.

Measures

Demographic Questionnaire. The demographics questionnaire consisted of nine items, including if the respondent's primary racial/ethnic identity is American Indian, tribal affiliation, age, gender, highest level of education completed, if the respondent or the respondent's primary caregiver attended boarding school, if they participate in cultural activities, and if their primary caregiver encouraged them to participate in cultural activities.

Collectivist Coping Styles inventory (CCS). Heppner et al. (2006) used a sample of Taiwanese college students to develop and validate the CCS. The CCS measures ways in which individuals collectively cope with specific traumatic experiences from an Asian perspective. The CCS is a 49-item measure with 30 items specifically focused on ways of coping. Heppner et al. (2006) discovered a stable 5-factor structure through exploratory and confirmatory factor

analyses that included: (a) Acceptance, Reframing, and Striving; (b) Family Support; (c) Religion-Spirituality; (d) Avoidance and Detachment; and (e) Private Emotional Outlets. In additional to the coping styles, the CCS also has indices that measure trauma interference, trauma resolution, and trauma distress; these additional indices were not used for the purposes of this study.

American Indian Biculturalism Inventory – Northern Plains (AIBI-NP). The AIBI-NP (McDonald, Ross, & Rose, 2014) is a 24-item self-report questionnaire that assesses levels of traditional American Indian and European American cultural identification. The items are on a Likert scale that ranges from 1 ("no comfort") to 4 ("complete comfort"). The individuals being assessed were categorized into one of four cultural identifications including traditional American Indian, European-American, bicultural (i.e., highly acculturated to both traditional American Indian culture and European-American culture), or marginalized (i.e., lowly acculturated in both traditional American Indian culture and European-American culture). The two subscales of the AIBI-NP are American Indian Cultural Identification (AICI) and European American Cultural Identification (EACI).

Procedure

The proposal for this study was approved by the primary investigator's dissertation committee and the University of North Dakota Institutional Review Board. Participants were recruited via social media posts and snowball sampling to take the 15- to 20-minute-long online survey via Qualtrics. The survey consisted of informed consent, one screening question, a demographics questionnaire, the CCS inventory, and the American Indian Biculturalism Inventory. Eligibility for this study included participants: 1) being at least 18 years of age, or older; and 2) identifying primarily as American Indian (i.e., a person Indigenous to the United

States). After participants provided informed consent and identified as being primarily American Indian, they were allowed to continue on with the 15 – 20-minute-long survey. After completing the survey, they were allowed to provide their email addresses if they wanted to be entered into a drawing for twenty $20 Amazon.com gift cards. After data collected was completed, the primary investigator downloaded the data from Qualtrics and began cleaning and re-coding the data for analysis.

Data Analysis Plan

To address the research question, "Is the Collectivist Coping Styles inventory valid for use with adult American Indians?" both an exploratory factor analysis and reliability analysis were conducted using SPSS 26.0.

Factor analysis is a statistical procedure used to determine whether latent variables (i.e., factors) exists among a set of observable variables (e.g., measure items). This study's observable variables were the 20 items from the CCS.

The data were screened for any outliers and missing data. The data did not contain any outliers. The data from 11 participants were removed due to participants not answering any items from the CCS, which left data from 228 participants, which is below the ideal 300. Additionally, there were missing data from five items from various participants. All the missing data resulted in less than 5 percent missing data per series, indicating that the missing data were unlikely to have an effect on the factor analysis. Missing data points were handled by replacing the missing data points using the series mean function in SPSS. Taken together, there was a ratio of 7.8 cases per variable to conduct the factor analysis.

CHAPTER III

Results

Participant Demographics

Participant responses were downloaded from Qualtrics and analyzed using SPSS 26.0. Of the 239 participants who initiated the survey, 95.4 percent ($N = 228$) completed all, or most, sections of the survey. Data from 11 participants were removed from the data base due to incomplete surveys (e.g., participants did not complete any of the CCS items). Demographic information collected from participants can be found in Table 1.

Table 1. Demographics

($N = 228$)	n	%
Gender		
Female	162	71.1
Male	64	28.1
Other	2	.92
Age range		
18 – 30	67	29.4
31 – 40	71	31.1
41 – 50	39	17.1
51 – 60	32	14.0
61 - 70	13	5.7
71 - 80	6	2.6
Tribal Region		
Northern Plains	149	65.4
Pacific Northwest	9	3.9
Southwest	19	8.3
California	6	2.6
Eastern	7	3.1

Table 1. Demographics (cont.)

Southern Plains	12	5.3
Great Lakes	18	7.9
Alaska Native	7	3.1
Not reported	1	.4
Education		
Less than high school	7	3.1
High school graduate	12	5.3
Table 1 continued		
Some college	53	23.2
Associate's	25	11.0
Bachelor's	68	29.8
Master's	42	18.4
Doctoral	17	7.5
Professional	4	1.8

Exploratory Factor Analysis

A principal components analysis (PCA) was conducted to determine the suitability of the data for factor analysis. The Kaiser-Meyer-Olkin test of sampling adequacy was .84, and the Bartlett's Test of Sphericity was significant ($\chi^2(435) = 3313.96$, $p.<.001$) indicating that the data were suitable for factor analysis despite the smaller than usual sample size. Several missing values from the database were handled using SPSS' Series Mean function, which replaces missing variables with the mean of the series. A PCA was used to determine the communalities of the CCS variables which are presented in Table 2. Communalities are the percentage of variance that can be explained by all the possible factors in a PCA. Variable CCS25 ("Ate in excess, or not eating") fell below the standard cutoff point (0.3) for low communality indicating that it could likely be removed from the pool of variables.

Table 2. Communalities

Variable	Initial	Extraction
CCS1	1.00	.804
CCS2	1.00	.721
CCS3	1.00	.593
CCS4	1.00	.479
CCS5	1.00	.340
CCS6	1.00	.561
CCS7	1.00	.806
CCS8	1.00	.616
CCS9	1.00	.504
CCS10	1.00	.593
CCS11	1.00	.485
CCS12	1.00	.375
CCS13	1.00	.565
CCS14	1.00	.520
CCS15	1.00	.721
CCS16	1.00	.814
CCS17	1.00	.775
CCS18	1.00	.411
CCS19	1.00	.582
CCS20	1.00	.544
CCS21	1.00	.312
CCS22	1.00	.470
CCS23	1.00	.803
CCS24	1.00	.616
CCS25	1.00	.144
CCS26	1.00	.464
CCS27	1.00	.496

Table 2. Communalities (cont.)

CCS28	1.00	.568
CCS29	1.00	.567
CCS30	1.00	.784

A principal components analysis indicated an eight-factor structure among the CCS variables based on eigen values greater than 1; however, a freely available web-based parallel analysis engine (Patil, Surendra, Sanjay, & Donavan, 2017) suggested a five-factor structure given the number of variables and number of participants. The principal components analysis was re-conducted with the number of fixed factors set to 5. The results are presented in Table 3.

Table 3. Principal Components Analysis

Total Variance Explained

	Initial Eigenvalues			Extraction Sums of Squared Loadings		
Component	Total	% Of variance	Cumulative %	Total	% Of variance	Cumulative %
1	6.927	23.885	23.885	6.927	23.885	23.885
2	3.991	13.761	37.646	3.991	13.761	37.646
3	2.606	8.985	46.630	2.606	8.985	46.630
4	1.815	6.257	52.888	1.815	6.257	52.888
5	1.552	5.353	58.240	1.552	5.353	58.240
6	1.308	4.509	62.749			
7	1.006	3.469	66.218			
8	.874	3.013	69.231			
9	.797	2.748	71.979			
10	.714	2.460	74.439			

11	.662	2.282	76.721
12	.638	2.201	78.922
13	.629	2.169	81.092
14	.610	2.105	83.196
15	.519	1.789	84.986
16	.510	1.759	86.744
17	.484	1.669	88.414
18	.474	1.636	90.050
19	.435	1.500	91.550
20	.362	1.249	92.799
21	.353	1.218	94.017
22	.326	1.123	95.139
23	.317	1.094	96.233
24	.271	.936	97.169
25	.207	.713	97.882
26	.186	.643	98.524
27	.161	.554	99.078
28	.139	.479	99.557
29	.128	.443	100.000

Note: *Extraction method – Principal components analysis*

The fixed five-factor structure accounted for 58.240 percent of the total variance with Factor 1 accounting for 23.885 percent of the explained variance, Factor 2 accounting for 13.761

percent of the explained variance, Factor 3 accounting for 8.985 percent of the explained variance, Factor 4 accounting for 6.257 of the explained variance, and Factor 5 accounting for 5.353 of the explained variance. These variances were rotated using a varimax rotation and are presented in Table 4.

Table 4. Rotated Component Matrix

CCS Item	F 1	F 2	F 3	F 4	F 5
CCS 24	.737				
CCS 28	.724				
CCS 29	.691				
CCS 11	.651				
CCS 14	.623				
CCS 26	.620				
CCS 4	.608				
CCS 5	.432				
CCS 30		.824			
CCS 17		.815			
CCS 15		.790			
CCS 6		.718			
CCS 3		.554		.472	
CCS 22		.545			
CCS 8			.761		
CCS 10			.752		
CCS 19			.722		

CCS 20		.716		
CCS 13		.711		
CCS 12		.568		
CCS 21				
CCS 1			.880	
CCS 7			.872	
CCS 2			.832	
CCS 27			.594	
CCS 9	.424		.503	
CCS 16				.893
CCS 23				.886
CCS 18				.523

Note. *Factor loadings <.3 were suppressed. Factor loadings based on a principal components analysis with a varimax rotation for 29 items from the Collectivist Coping Styles inventory (CCS) (N = 228)*

The results of the rotated component matrix revealed a relatively stable five-factor structure. Ten CCS variables loaded onto the first factor and had loadings that ranged from .737 to .337. Three items from the first factor, including CCS 5, CCS 22, and CCS 27, cross-loaded onto other factors. CCS 5 [“Waited for time to run its course”] loaded on Factor 1 at .432 and on Factor 2 at .345. The CCS 5 variable was retained on Factor 1 given its larger loading on said factor. CCS 22 [“Maintained good relationship with people around me.”] loaded onto Factor 1 at .337 and on Factor 2 at .545. The CCS 22 variable was retained on Factor 2 given its larger loading on said factor. CCS 27 [“Thought about the meaning of the trauma from the perspectives of my religious beliefs”] loaded on Factor 1 at .367 and on Factor 4 at .594. The CCS 27 variable was retained on Factor 4 given its larger loading on said factor.

After parsing cross-loaded variables, a total of 8 variables were retained on Factor 1, which was named Acceptance, Reframing, and Striving, including CCS 24 (.737) [“Realized that often good comes after overcoming bad situations.”], CCS 28 (.724) [“Told myself that I could make my plans and ideas work.”], CCS 29 (.691) [“As a starting point, tried to accept the trauma for what it offered me.”], CCS 11 (.651) [“Analyzing my feelings provided me with ideas about how to proceed.”], CCS 14 (.623) [“Told myself that I could think of effective ideas.”], CCS 26 (.620) [“Realized that the trauma served as an important purpose in my life.”], CCS 4 (.608) [“Believed that I would grow from surviving the traumatic event.”], and CCS 5 (.432) [“Waited for time to runs its course.”].

Eight variables loaded on Factor 2, which was named Family Support, and had loadings that ranged from .824 to .345. Three variables from Factor 2 cross-loaded onto other factors, including CCS 5, CCS 22, and CCS 9. Variables CCS 5 and CCS 22 cross-loaded onto Factor 1 and were addressed in previous paragraphs. CCS 9 [“Placed trust in my elders’ traditional wisdom to cope with the trauma.”] loaded onto Factor 2 at .424 and on Factor 4 at .503. CCS 9 was retained on Factor 4 given its larger loading on said factor. After parsing cross-loaded variables, a total of 6 variables were retained on Factor 2, including CCS 30 (.824) [“Through family assistance and support.”], CCS 17 (.815) [“Shared my feelings with family”], CCS 15 (.790) [“Knowing that I could ask for assistance from my family increased my confidence.”], CCS 6 (.718) [“Followed the norms and expectations of my family about handling traumatic events.”], CCS 3 (.554) [“Followed the guidance of my elders.”], and CCS 22 (.545) [“Maintained good relationships with those around me.”].

Six variables loaded onto Factor 3, which was named Avoidance and Detachment, and had loadings that ranged from .761 to .568. No variables on Factor 3 cross-loaded onto other

factors. All six variables were retained on Factor 3, including CCS 8 (.761) [“Saved face by not telling anyone.”], CCS 10 (.752) [“Pretended to be OK.”], CCS 19 (.722) [“To save face, only thought about the problem by myself.”], CCS 20 (.716) [“Kept my feelings within myself in order not to worry my parents.”], CCS 13 (.711) [“Avoided facing my pain for a short time to resolve the trauma in the long run.”], and CCS 12 (.568) [Not vented my negative feelings to some people around me.”].

Six variables loaded on Factor 4, which was named Religion-Spirituality, and had loadings that ranged from .880 to .472. Two variables from Factor 4 cross-loaded onto other factors, including CCS 3 and CCS 9, which were both discussed in previous paragraphs. Ultimately, five variables were retained on Factor 4, including CCS 1 (.880) [“Through prayer or other religious rituals.”], CCS 7 (.872) [“Found comfort from my religion or spirituality.”], CCS 2 (.832) [“Found guidance from my religion.”], CCS 27 (.594) [“Thought about the meaning of the trauma from the perspectives of my religious beliefs.”], and CCS 9 (.503) [“Placed trust in my elders’ traditional wisdom to cope with the trauma.”].

Three variables loaded onto Factor 5, which was named Private Emotional Outlets, and had loadings that ranged from .893 to .523. No variables from Factor 5 cross-loaded onto other factors. All three variables were retained on Factor 5, including CCS 16 (.893) [“Saved face by seeking advice from a professional (e.g., counselor, social worker, psychiatrist) I did not know personally.”], CCS 23 (.886) [“Actively sought advice from professionals (e.g., counselors, social workers, psychiatrists.”], and CCS 18 (.523) [“Chatted with people about the trauma on the internet in order to gain support.”].

Reliability of the Collectivist Coping Styles Inventory

The (a) Acceptance, Reframing, and Striving; (b) Family Support; (c) Avoidance and Detachment; (d) Religion-Spirituality; and (e) Private Emotional Outlets factors were analyzed for internal consistency using the SPSS Reliability analysis. Several scale statistics, included number of factor items, total cases, Chronbach's alpha, factor mean, and factor standard deviations, are reported in Table 5.

Table 5. Reliability Statistics

Descriptive Statistics of the CCS

Factor	N of items	N of cases	α	Factor Mean	Factor SD
(1) Acceptance, Reframing, and Striving	8	227	.833	28.30	8.48
(2) Family Support	5	227	.873	21.78	7.92
(3) Avoidance and Detachment	6	227	.800	17.76	6.47
(4) Religion-Spirituality	5	226	.831	18.37	6.64
(5) Private Emotional Outlets	3	228	.767	7.56	4.13

Factor 1, Acceptance, Reframing, and Striving, was shown to have good reliability with a Chronbach's alpha of .833. The Chronbach's Alpha If Item Deleted ranged from .833 to .801 for all items indicating that all the items on the factor have good internal consistency.

Factor 2, Family Support, was shown to have good reliability with a Chronbach's alpha of .873. The Chronbach's Alpha If Item Deleted ranged from .869 to .823 for all items indicating all items on the factor have good internal consistency.

Factor 3, Avoidance and Detachment, was shown to have good reliability with a Chronbach's alpha of .800. The Chronbach's Alpha If Item Deleted ranged from .813 to .756 for all items indicating all items on the factor have good internal consistency.

Factor 4, Religion-Spirituality, was shown to have good reliability with a Chronbach's alpha of .831. The Chronbach's Alpha If Item Deleted ranged from .854 to .766. In this case if item CCS 1 ("Through prayer or other religious rituals") were removed from the factor the overall reliability of the factor could be improved from .831 to .854. If CCS 1 is examined on the Rotated Component Matrix (Table 4) it is shown to have a high factor loading of .880. Given its high factor loading and potential for improving factor reliability, removing CCS 1will not likely improve the overall factor structure of the CCS.

Factor 5, Private Emotional Outlets, was shown to have acceptable reliability with a Chronbach's alpha of .767. The Chronbach's Alpha If Item Deleted ranged from .906 to .502. In this case if item CCS 18 ("Chatted with people about the trauma on the Internet in order to gain support.") were removed from the factor the overall reliability of the factor could be improved from .767 to .906. If CCS 18 is examined on the Rotated Component Matrix (Table 4) it is shown to have an acceptable factor loading of .523. Given its acceptable factor loading, potential for improving factor reliability, and small number of items on Factor 5 (3 items), removing CCS 18 will not likely improve the overall factor structure of the CCS.

CHAPTER IV

Discussion

The purpose of this study was to initiate the first steps in validating the Collectivist Coping Styles inventory for use with adult American Indians, which included conducting an exploratory factor analysis and determining the reliability of the factors. It is standard practice not to hypothesize about the outcomes of an exploratory factor analysis due to the exploratory nature of the statistical procedure. However, the primary research question, "How many factors will emerge from the exploratory factor analysis?" is addressed in the following paragraphs along with study limitations and future directions. Additionally, the differences in factor structure that emerged from this study and the Heppner et al. (2006) study are discussed in the following paragraphs and can be referenced in Appendix A.

An acceptable dimensional and reliable five-factor structure emerged from an exploratory factor analysis (EFA) of the Collectivist Coping Styles inventory when using a sample of 228 adult American Indians. Twenty-eight of the original thirty items from the Collectivist Coping Styles inventory were retained to improve the dimensionality and reliability of the instrument with the adult American Indian sample. Additionally, the five factors that emerged from the EFA were in line with the original five factors regarding themes (e.g., family support, etc.).

The Acceptance, Reframing, and Striving (ARS) factor on the revised CCS (CCS-R) accounted for slightly more variance of the factor structure than the original factor (23.885% vs. 20.14%). Both factors (e.g., the revised and original) accounted for the most variance among both factor structures. One curious point about the factor comparisons is that the original factor had 11 items while the revised factor had 8 items. Item 12 (Not vented my negative feelings to some people around me) originally loaded onto the ARS factor but loaded onto the Avoidance

and Detachment (AD) factor on the revised CCS. Theoretically, based on the nature of the language, it makes sense that item 12 is an avoidance coping technique rather than an acceptance, reframing, or striving style of coping. Item 22 (Maintained good relationships with people around me) originally loaded onto the ARS factor but loaded onto the Family Support (FS) factor on the revised CCS. Again, theoretically and based on the nature of the language, it makes sense that item 22 loaded onto the FS factor rather than the ARS factor. Regarding these two mentioned items (i.e., 12 and 22), it begs the question, what caused the differences in how these items loaded onto different factors (i.e., the original CCS vs. the revised CCS)? The difference may have arisen from several things, including coding errors in the original CCS study, improper statistical analyses in the original or current CCS study, or differences in how the samples interpreted the items. The original Taiwanese sample consisted of college students who took the survey for extra credit, while the American Indian sample were largely highly educated (most had a baccalaureate or more education). And yet another simpler explanation may be the smaller-than-usual sample size of the current study. Lastly, item 21 (Accepted trauma as fate) loaded onto the original CCS but not the revised AD factor. A possible reason is that American Indians refuse to accept their traumas as fate.

The Family Support (FS) factor on the CCS-R accounted for more variance than the original FS factor (13.761% vs. 10.13%). The FS factor on both the CCS-R and the CCS accounted for the second most variance among both factor structures. Item 9 (Placed trust in my elders' traditional wisdom to cope with the trauma) loaded onto the original CCS FS factor, but loaded onto the Religion-Spirituality (RS) factor on the CCS-R. That item 9 loaded onto the RS factor on the CCS-R makes sense philosophically as American Indian elders are the spiritual guides of many American Indian cultures. Item 22 (Maintained good relationships with people

around me) loaded onto the original CCS' ARS factor, but loaded onto CCS-R's FS factor, which again makes sense as many American Indians, especially the largely Northern Plains American Indian sample, are largely surrounded by individuals from their kinship structures. Lastly, in regard to specific items, item 25 (Ate in excess, or not eating) loaded onto the Private Emotional Outlets (PEO) on the original CCS, but did not load onto any factors on the CCS-R. This again may be attributed to the fact that the kinship structures of American Indian have largely remained intact and so there would not be a need for an individual American Individual to cope by eating in private when they would have relatives around to eat with.

The last of interest in regard to the results of this study are the differences in variances the factors accounted for when the original CCS was compared to the CCS-R. Specifically, the Avoidance and Detachment factor on the CCS-R accounted for the third-most variance (8.985%) while accounting for the fourth-most variance on the original CCS (5.68%). This suggests that American Indians engage in more avoidance and detachment coping than other non-American Indian populations, which is in line with previous research (Carver, 1997; Prairie Chicken, 2018).

Limitations

The largest limitation of the current study is the smaller-than-usual sample size. American Indian populations are known to be somewhat wary of participating in research due to a long history of abuse and impropriety on the part of Western-trained researchers, which may be partly responsible for the difficulty in recruiting the ideal number of participants. For example, the general rule-of-thumb for conducting an exploratory factor analysis is 10 participants per item, which, in the case of the current study would have required 300 participants. More participants may or may not have put the results of the current study more in line with the

original CCS factor structure. Another limitation is the representativeness of the average American Indian sample, which was largely female, young, and highly educated. The mentioned demographics may have skewed the participants' interpretation of the items or purpose of the study. Additionally, it is questionable how the results of this current study generalize to the greater American Indian public. Lastly, the method of data collection (i.e., anonymously over the internet) was not ideal. There was no rigorous method available to the researcher to screen the quality of who was provided the participant responses in the Qualtrics survey. Ideally, the researcher would be able to validate the individual participants taking part in this study in-person, but due to certain constraints (e.g., limited funding) this was not feasible.

Future Directions

The typical process of scale validation would include conducting analyses that show high correlations with theoretically similar scales. In the case of collectivistic coping styles, there are few developed and validated scales to run those types of validation studies, but this may be an option in the future as this sub-field of research expands. Another step in validating scales in conducting a confirmatory factor analysis. In the case of the current study, a confirmatory factor analysis was not conducted simply due to the fact that American Indians are not a sub-sample of the original Taiwanese sample. Additionally, a confirmatory factor analysis is typically conducted with a sample that was not used in the exploratory factor analysis in order not to "double dip" the data. So, in the future, if more data was collected with an American Indian sample, a researcher may conduct a confirmatory factor analysis using the factors and items discovered in the current study's exploratory factor analysis. Lastly, it would be ideal for researchers with the resources to use a mixed methods approach to develop an American Indian

specific coping scale as the current scale may not be capturing the range of American Indian culture-specific ways of coping.

In sum, an acceptably dimensional, stable, and reliable 28-item five-factor structure emerged from the exploratory factor analysis conducted in this study. The results of this study may be clinically useful in helping American Indians identify effective coping strategies

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Appendix A

Original versus revised item factor loadings

Item #	Question		
1	Through prayer or other religious rituals.	OF4	RF4
2	Found guidance from my religion.	OF4	RF4
3	Followed the guidance of my elders (e.g., parents, older relatives).	OF2	RF2
4	Believed that I would grow from surviving the traumatic event.	OF1	RF1
5	Waited for time to runs its course.	OF1	RF1
6	Followed the norms and expectations of my family about handling traumatic events.	OF2	RF2
7	Found comfort from my religion or spirituality.	OF4	RF4
8	Saved face by not telling anyone.	OF3	RF3
9	Placed trust in my elders' traditional wisdom to cope with the trauma.	**OF2**	**RF4**
10	Pretended to be OK.	OF3	RF3
11	Analyzing my feelings provided me with ideas about how to proceed.	OF1	RF1
12	Not vented my negative feelings to some people around me.	**OF1**	**RF3**
13	Avoided facing my pain for a short time to resolve the trauma in the long run.	OF3	RF3
14	Told myself that I could think of effective ideas.	OF1	RF1
15	Knew that I could ask assistance from my family increased my confidence.	OF2	RF2
16	Saved face by seeking advice from a professional (e.g., counselor, social worker, psychiatrist) I did not know personally.	OF5	RF5
17	Shared my feelings with my family.	OF2	RF2
18	Chatted with people about the trauma on the Internet in order to gain support.	OF5	RF5

19	To save face, only thought about the problem by myself.	OF3	RF3
20	Kept my feelings within myself in order not to worry my parents.	OF3	RF3
21	Accepted the trauma as fate.	**OF1**	**X**
22	Maintained good relationships with people around me.	**OF1**	**RF2**
23	Actively sought advice from professionals (e.g., counselors, social workers, psychiatrists).	OF5	RF5
24	Realized that often good comes after overcoming bad situations.	OF1	RF1
25	Ate in excess (or not eating).	**OF5**	**X**
26	Realized that the trauma served as an important purpose in my life.	OF1	RF1
27	Thought about the meaning of the trauma from the perspectives of my religious beliefs.	OF4	RF4
28	Told myself that I could make my plans and ideas work.	OF1	RF1
29	As a starting point, tried to accept the trauma for what it offered me.	OF1	RF1
30	Through family assistance and support.	OF2	RF2

Note: OF = Original Collectivist Coping Styles inventory factor. RF= Revised Collectivist Coping Styles inventory factor. ***Bolded*** *= Discrepancy between item loadings on original vs. revised factors.* ***X*** *= Removed item. It should also be noted that this is not a 1:1 factor comparison as the factors accounted for different variances across the original and revised factor structures.*