Cultural Identity, Explanatory Style, and Depression in Navajo Adolescents

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This study investigated the interrelationships among cultural identity, explanatory style, and depression in Navajo adolescents. A total of 332 (197 female, 135 male) Navajo adolescents completed 7 self-report measures. These data were used to create, via structural equation modeling, a series of factor models and full structural models. Analyses indicated that current factor structures for explanatory style and depression are adequate for use with Navajo adolescents. Increased control and predictability and limited duration of stressful encounters were both predictive of decreased symptoms of depression. Higher levels of Navajo cultural identity had a modest effect in terms of reducing depression. Other factors, such as perceived discrimination and urban/reservation domicile, are important to study to provide an increased understanding of depression among Navajo adolescents.

• *American Indian • adolescent • depression • cultural identity*

A growing body of literature exists regarding the nature, causes, consequences, and correlates of mental illness among European American youth, but very little is known about mental illness among American Indians. We currently lack basic information about symptomatology, theoretically sound conceptual models, and interventions for American Indian adolescents. Adverse sociodemographic factors including poverty, vio-

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lence, and cultural trauma (forced relocation and acculturation, societal prejudice, and systematic genocide) suggest that American Indians are at heightened risk for mental illness and chronic stress (Hawkins & Blume, 2002; Paniagua, 1994; SixKiller-Clarke, 2002). Depression is the most common diagnosis among teenage girls who seek services through Indian Health Service mental health outpatient clinics (Beiser & Attneave, 1982). Learning problems, conduct disorders, substance abuse, running away, and suicide attempts are also reported at very high rates and are thought to be consequences of depression and alienation in American Indian adolescents (Choney, Berryhill-Paapke, & Robbins, 1995; U.S. Office of Technology Assessment, 1990). Finally, interpersonal stress and depression have been identified as risk factors for suicide among American Indian youth (Dinges & Duong-Tran, 1993; Dinges & Joos, 1988).

Although these limited data suggest that depression and its consequences may be a significant mental health problem, research on depression in American Indian adolescents suffers from two primary limitations that prevent firm conclusions in this regard. First, studies focusing on American Indians have tended to adopt unmodified conceptualizations of mental illness developed for European American samples and have failed to examine cultural variables that might affect depression in American Indian youth (Jose et al., 1998). Second, significant variations exist among American Indian tribes, limiting the generalizability of findings and suggesting the need for tribe-specific, locally based projects. In the current study, we focused on adolescents living on a reservation in the Southwest.

Cultural Identity

Cultural identity is an important factor to consider regarding the mental health status of ethnically diverse individuals (Garza & Lipton, 1984; Helms, 1992; Rowe, Behrens, & Leach, 1995). For example, it has been suggested that African Americans who have a strong, positive African American identity are likely to have better mental health than those whose racial identity is less positive (Butler, 1975; Pyant & Yanico, 1991). This relationship has not been demonstrated empirically within American Indian communities. Two significant factors in the absence of research related to cultural identity and mental health in these communities are within-group heterogeneity (i.e., differences among individuals and tribes) and the contextual nature of ethnicity. Thus, ethnic identity may change depending on environmental conditions, specific events or experiences, individual processes, and participation in political and social institutions (Stanfield & Dennis, 1993).

Navajo cultural identity is understood to incorporate the values, beliefs, and lifestyle choices that protect Navajo individuals throughout their lives (White, 1998). Composed of family, spiritual, and environmental components, this identity structure guides decision making and interactions. The goal of Navajo cultural identity is to reinforce the teachings of Navajo forefathers and foremothers and to "make life unique and beautiful so that Navajo individuals may see the corn pollen road of life and walk on the Holy Peoples Path of Life" (Aronilth, 1991, p. 20). More specifically, Navajo cultural identity has been defined as including three key components: family, spirituality, and environment. The family component, referred to as *K'ei* (relations) among the Navajo, signifies an individual's personal identity (belonging to a family) and his or her responsibility within the community that he or she represents (White, 1998). The spiritual component establishes an individual's connection to spirits through his or her clan, Indian name, involvement in traditions and ceremonies, and personal relationships with Navajo deities and divine nature (Reichard, 1950). Finally, the environmental component captures the importance of respect for, use of, and appreciation for the natural processes of the universe (Aronilth,

1991). Thus, the three components interact to form the basis of a Navajo individual's worldview. According to Aronilth (1994), lack of cultural identity among Navajo youth has a significant impact on rates of depression and anxiety.

Depression and the Navajo

Defining depression is profoundly complex, especially in the case of adolescents from non-Anglo cultural backgrounds. According to Topper (1987), many Navajo believe that spiritual imbalance is the cause of illness. Thus, the etiology and understanding of depression from a Navajo perspective may be quite different than is the case from a White Western perspective. Reichard (1950) noted that, among many Navajo, mental disease is identified as the consequence of breaking taboos. Thus, when individuals do not respect restrictions and expectations, problems may surface. In general, for many Navajo it is understood that illness will occur when the clockwise rotating wind within an individual ("wind soul") is out of harmony with other spiritual forces in the universe (Topper, 1987).

According to the Navajo way, a person may suffer symptoms of depression because he or she is out of balance and in need of care (J. M. Martin, personal communication, May 11, 1999). When Navajo individuals neglect their responsibilities to spiritual beings, they may find themselves sick, anxious, unproductive, or depressed. They may also suffer from mood disturbance when they are shunned by others because of their lack of adherence to expectations. According to J. M. Martin (personal communication, May 25, 1999), these expectations are sets of beliefs related to how "Navajo" a person is, as well as his or her place in Navajo society. Thus, individuals may be shunned by others if cultural and spiritual expectations are violated, leading to isolation, depression, and anxiety. Further, interpretation of the term from English to Navajo suggests that there is no direct translation for *depression*. Navajo language and culture focus on mental health or *hozho nashado,* which refers to having the ability to "love and work" (White, 1998). Thus, descriptions of low mood, irritability, and other symptoms related to depression are often obscure, in that individuals manifest, experience, and interpret their symptoms in unique, culturally bound ways.

Although research suggests higher than average rates of suicide, drug and alcohol problems, physical abuse, depressive symptomatology, and alienation from family and community among American Indian youth (Beauvais, 1992; LaFromboise & Howard-Pitney, 1995; Manson, Beals, Dick, & Duclos, 1989), there is an absence of current, comprehensive depression prevalence rates (Manson, Ackerson, Dick, Baron, & Fleming, 1990). Among Navajo youth, there is a paucity of information regarding depression, substance abuse, and mental health status. Participative opinions, however, point toward high prevalence rates. For example, most adolescents who seek mental health treatment at Navajo area Indian Health Services facilities are diagnosed as depressed (White, 1998). Evidence also suggests that depression among Navajo adolescents contributes to suicide, suicide attempts, and delinquency (Grossman, Milligan, & Deyo, 1991). Depression is consistently cited in the literature on American Indian youth as a regular, almost common occurrence, yet there is little empirical evidence for this assertion and almost no research regarding the etiology of this disorder. In addition, little is known about familial, sociocultural, and other variables that probably play a role in the development and maintenance of the disorder (LaFromboise, 1988).

Explanatory Style

According to Bechtold, Manson, and Shore (1994), "many, if not most, Indian/Native

children and adolescents live in environments and under circumstances involving significant stress" (p. 101). Rates of aggression, violent crime, and accidental deaths are higher on reservation lands than in the general U.S. population (Centers for Disease Control and Prevention, 2003; Robin, Chester, Rasmussen, Jaronson, & Goldman, 1997). American Indian adolescents also face numerous chronic stressors, including poverty, discrimination, and forced acculturation. Although significant variance surrounds the definition and measurement of stress, this construct continues to resurface in the literature on American Indian youth.

According to Lazarus and Folkman (1984), a transactional model can be used to understand the interaction among stressful events and the perceptions or explanations individuals have about these events. When people find themselves in a stressful environment, they are in a process of constantly reappraising or explaining their relationships with that environment. Explanatory style refers to attributions of what caused a stressful event and appraisals made about the situation and its potential relevance. According to Seligman and Peterson (1986), attributional style can be defined as the habitual manner in which a person explains the causes of positive and negative events. The literature on attributions suggests three dimensions: internal versus external, stable versus unstable, and global versus specific (Joiner & Wagner, 1995).

Appraisal is defined as a nonstatic evaluation of an event that is taking place. The current literature identifies six appraisal dimensions: (a) salience, (b) predictability, (c) control, (d) novelty, (e) duration, and (f) causality (Vitaliano, Russo, Weber, & Celum, 1993). More specifically, salience can be described as the personal importance of an event. If the stressful encounter is not salient, then there will be little or no emotion, and distress is unlikely. Predictability is understood as anticipation of a stressful event, and although this dimension is not well researched, it appears that decreasing uncertainty of stressful events is associated with more effective coping and positive well-being. Control refers to individuals' perceptions regarding their ability to influence or master a stressful encounter. Perceived control is associated with improved psychological functioning (Deuser & Anderson, 1995; Jenkins & Pargament, 1988). Beliefs individuals have about the controllability of a stressful encounter influence their decisions to master or change circumstances (Compas, Banez, Malcarne, & Worsham, 1991). Novelty is simply one's familiarity with a situation. Again, there is a limited amount of empirical evidence regarding the psychological impact of perceptions of novelty. Duration is the length of exposure to a stressful encounter. It has been established that increased exposure or duration is related to poorer psychological functioning over time (Lazarus & Folkman, 1984). Causality is an individual's explanation regarding what led to or prompted a particular event.

An extensive body of literature suggests that a negative explanatory style is associated with self-reported and clinical depression among Anglo adolescents (Joiner & Wagner, 1995). More depressed children are likely to explain or appraise failure experiences as internal or caused by them ("It's my fault"), as long lasting, and as occurring across situations (global). These same children appear to attribute successful events to external ("Someone else made it happen") and event-specific ("It's just this situation") causes.

Overall, explanations made with regard to an individual's interaction with his or her environment are likely to be culturally driven. According to Deyhle and Swisher (1996), cultural beliefs, attitudes, and behaviors can be observed in communication patterns, interrelational styles, and social values. It appears likely that cultural identity influences an individual's explanatory process. These constructs also correspond to factors proposed in the indigenous stress and coping model, which expands the vulnerability hypothesis and work of Dinges and Joos (1988) to include cultural buffers as moderators between stress and health sta-

tus (Walters, Simoni, & Evans-Campbell, 2002). Thus, stressful experiences such as loneliness or abandonment may be appraised or explained differently by American Indians than by European Americans, given their significant history of oppression and collectivistic orientation. According to O'Nell (1996), loss of interconnectedness and attachment is extremely significant, because history has threatened these "Indian" ways of being. Therefore, Navajo youth may make causal attributions or appraisals related to loss or separation that are influenced by this history.

Cultural beliefs may also influence explanatory processes in terms of causality and control. According to Frisbie (1992), traditional Navajo religion is concerned with living in harmony with supernatural powers (i.e., the universe is filled with living forces that have innumerable powers allowing them to act both against and in favor of human beings). From this perspective, it seems that "powerful others" may shift control appraisals toward an external response set. In addition, these expectations and cultural teachings affect individuals' perceptions regarding what led to or prompted an event (causality). According to Topper (1987) and J. M. Martin (personal communication, May 25, 1999), causation may be the result of neglecting one's responsibilities or of disharmony associated with other spiritual forces in the universe. This imbalance may be connected with family, community, and environmental factors that Navajo youth may or may not be directly aware of without seeking help or consultation through a "medicine person" or "hand trembler" (diviner). Unfortunately, although theoretically driven, these relationships have not been examined empirically.

Further examination of the character and origin of depression among American Indians is the foremost step in understanding the meaning of this concept and potential directions for intervention (Shore & Manson, 1981). Although there are several well-established determinants of depression, explanatory processes have been repeatedly examined as a critical construct within Anglo populations. The present study examined the constructs of cultural identity, explanatory style, and depression in Navajo youth residing in the Navajo Nation. Both the absence of literature on and the lack of operationalization of these constructs in American Indian communities point to the need for explanatory and confirmatory approaches designed to provide a better understanding of their factor structures. Further, in keeping with current theoretical conceptualizations of stress and the indigenous stress and coping model, we examined relationships among explanatory style, depression, and Navajo cultural identity (Walters et al., 2002). In hypothesized partial and full structural models, cultural identity served as an independent variable, and explanatory style and depression were dependent variables. Thus, on the basis (in part) of the indigenous stress and coping model, Navajo youth with strong cultural identities are likely to have more positive explanatory styles and should therefore experience fewer symptoms associated with depression.

Method

Participants

Three hundred thirty-two Navajo youth (135 male, 197 female) participated in this study. One hundred sixteen (35%) of the participants were in the 10th grade, 125 (38%) were in the 11th grade, and 91 (27%) were in the 12th grade; all were enrolled in public school in the Navajo Nation. Participants ranged in age from 14 to 20 years, with 41% 14 to 16 years of age and 59% 17 to 20 years of age. Participant lists were generated through a systematic random sample stratified according to gender and grade. Researchers met with selected students and sent home consent forms to be signed by parents or guardians. Students who returned signed consent forms then completed written questionnaires at school. Par-

ticipants received two coupons for meals at a local restaurant after completing their research materials.

Measures

BIOGRAPHICAL QUESTIONNAIRE. The biographical questionnaire contained 31 self-report items and was used to capture demographic data, including age, class standing, gender, religious preference, and acting-out behaviors.

DIMENSIONS OF STRESS SCALE. The Dimensions of Stress Scale (DSS) is a 24-item self-report questionnaire designed to assess appraisals of personal relevance and control, stressor properties, and self-attributions (Vitaliano et al., 1993). Each part of the scale begins with a stated problem or stressful event that the participant is asked to imagine while responding to statements regarding his or her perspective and response to the stressor. For this project, two vignettes were presented, one of a family argument and another prompting appraisal related to poor academic performance. The six DSS scales (8 items each) are (a) duration (the perceived length of the stressor), (b) predictability (the level to which the person can predict the outcome of the event), (c) control (the extent to which the person has control over the outcome), (d) causality (the extent to which the stressor is perceived as being attributed to the person), (e) salience (personal relevance), and (f) novelty (the extent to which the event is new). In the present sample, internal consistency estimates for the DSS ranged from .44 to .70.

NAVAJO CULTURAL IDENTITY MEASURE. Navajo cultural identity was assessed with the Navajo Cultural Identity Measure (NCIM; White, 1998). This instrument, developed by a Navajo researcher, is composed of 152 items covering three dimensions of Navajo cultural identity: family, spirituality, and environment. The NCIM was developed through personal interviews and interpretations of Navajo philosophical and spiritual material, and it is based on the ideals, values, and standards of the *Hozhooji Nahagha* ("Beauty Way Ceremony"). The NCIM contains six scales measuring family, spiritual, and environmental knowledge and family, spiritual, and environmental attitudes. Internal consistency estimates for the instrument ranged from .82 to .95 in this sample.

CHILDREN'S DEPRESSION INVENTORY. The Children's Depression Inventory (CDI; Kovacs, 1985) is a 27-item self-report questionnaire designed to assess cognitive, behavioral, and neurovegetative signs of depression in children. Although the CDI is not designed as a diagnostic tool, the instrument's author suggests a cutoff score of 11 for determining depression. According to Reynolds (1986), the CDI has an alpha reliability coefficient of .87. The internal consistency was .87 for the total CDI scale used in this analysis.

MINNESOTA MULTIPHASIC PERSONALITY INVENTORY. Participants also completed the Minnesota Multiphasic Personality Inventory–Adolescent Form (MMPI-A; Butcher et al., 1992). In view of the primary purpose of this study, Scale 2 (Depression) and the depression content scale were used to assess the correlation between components of Navajo cultural identity and depression. Internal consistency estimates have been shown to range from .40 to .89 across the basic validity and clinical scales (Butcher et al., 1992). More specifically, in the normative sample, Scale 2 (Depression) had internal consistency coefficients of .65 for boys and .66 for girls. Test–retest reliability coefficients ranged from .62 to .82 across the content scales; the retest coefficient of the depression content scale, which was used in this study, was .82. Internal consistency coefficients in this sample were .60 for the clinical scale and .75 for the content scale.

DSM–IV QUESTIONNAIRE FOR DEPRESSION. The *Diagnostic and Statistical Manual of Mental Disorders* (4th ed.; *DSM–IV*; American Psychiatric Association, 1994) questionnaire

was developed specifically for this project. This 37-item true–false measure was based on *DSM–IV* criteria for major depression. The format of the questionnaire allowed students to simply circle true or false next to symptoms listed after the prompt "Every day over the last two weeks I have. . . ." Internal consistency for the scale was good, with the alpha coefficient calculated at .83.

Data Analysis

Structural equation modeling (SEM) was the primary analytic strategy used in this study. SEM allows for multiple measures of a given construct and accounts for measurement error while allowing for analysis of mediating relationships (Robitschek & Kashubeck, 1999). A confirmatory factor analysis with a maximum-likelihood estimation method was programmed with EQS structural modeling software (Bentler, 1995). Model fit was evaluated and adjustments made to the factor structure to determine the best model for the data.

The data were examined for normality of distribution, adequacy of covariance, and minimal standards for sample size. This process revealed that some of the measured variables were not distributed normally, a violation of the normality assumption required for SEM (Tabachnick & Fidell, 1996). As a result, linear *z*-score transformations were used to equate the variance of the variables while retaining each indicator's distributional qualities. Proposed measurement models were tested for each factor included in the final structural model. Goodness of fit was determined through chi-square analyses, the Bentler and Bonett (1980) nonnormed fit index (NNFI), and the Bentler comparative fit index (CFI). Even though chi-square statistics have a tendency to reject adequate models with large sample sizes, chi-square tests comparing the covariance matrix of the specified model with the observed variables are reported as a matter of standard practice (Hu & Bentler, 1995). The CFI is an estimate of the extent to which sample variance and covariance are reproduced by the proposed model; values greater than .90 indicate adequate fit (Bentler, 1995; Bollen & Long, 1993). Theoretically sound measurement models with adequate statistical fit were used to generate partial and full structural models in an attempt to further explore relationships among the latent variables.

Results

Subscale scores and internal consistency estimates were generated for each of the instruments used in the study. Means, standard deviations, and internal consistency reliability estimates used are reported in Table 1 for the five scales from the DSS, the CDI total scale, the *DSM–IV* questionnaire total scale, the MMPI-A clinical and content scales for depression, and six NCIM subscales.

Navajo Cultural Identity Measure Model

A two-factor correlated Navajo cultural identity model was proposed and tested. The model, presented in Figure 1, included cultural knowledge and cultural attitude. Each of these factors was based on three subscales measuring family, environmental, and spiritual domains of Navajo cultural knowledge and Navajo attitudes. A modest correlation of .47 was observed between the knowledge and attitude factors. In the case of both scales, the highest loadings were for the spiritual subscales (.82 for knowledge and .90 for attitudes). The indexes for this model suggested an excellent fit, $\chi^2(8, N = 332) = 43.30$, $p = .0000$, NNFI = .92, CFI = .96. The chi-square value was significant but less than twice the number of degrees of freedom for the model, a common benchmark for evaluating fit with chi-square tests. The other fit indexes also indicated a good fit between the data and the proposed model of Navajo cultural identity.

TABLE 1 Subscales: Number of Items, Means, Standard Deviations, and Alpha Coefficients

Scale and subscale	*No. of items*	*M*	*SD*	α
Dimensions of Stress Scale				
Control	8	21.47	5.10	.67
Salience	8	19.86	5.62	.70
Duration	8	19.49	4.94	.61
Causality	8	19.27	4.66	.62
Predictability	8	16.63	3.83	.42
Depression				
CDI total	27	10.00	7.56	.87
DSM–IV	24	7.53	4.99	.83
MMPI-A clinical	50	20.29	5.05	.60
MMPI-A content	24	9.83	4.42	.75
Navajo Cultural Identity Measure				
Family attitude	27	106.67	16.69	.92
Family knowledge	26	12.06	6.37	.89
Environmental attitude	18	67.16	14.34	.95
Environmental knowledge	18	5.00	3.91	.82
Spiritual attitude	32	118.00	23.46	.95
Spiritual knowledge	31	8.76	5.67	.86

Note. CDI = Children's Depression Inventory; *DSM–IV* = *Diagnostic and Statistical Manual of Mental Disorders* (4th ed.); MMPI-A = Minnesota Multiphasic Personality Inventory Adolescent Form.

Explanatory Style Measurement Models

Confirmatory factor analysis was used to examine the fit of several proposed measurement models for the explanatory style construct. Factor loadings indicated that the DSS novelty subscale made little or no contribution to the hypothesized factor; the nonsignificant loading and the low alpha coefficient (.44) suggested that this subscale did not contribute common variance to the construct of explanatory style. It was dropped from the model.

The final measurement model for explanatory style is presented in Figure 2. This model included two factors: (a) positive explanatory style (consisting of the DSS duration, predictability, and control scales) and (b) negative explanatory style (consisting of the DSS causality and salience scales). Positive explanatory style comprised stressful event perceptions relating to a shorter duration and a predictable encounter that could be influenced by an individual (control). Negative explanatory style included the salience or increased importance of the stressful situation and personal responsibility

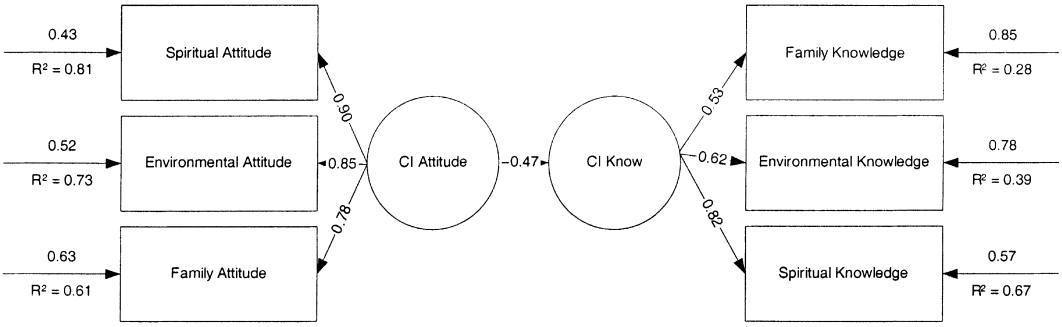

Figure 1. Cultural identity model: $\chi^2(8, N = 332) = 43.30$, $p = .00$, nonnormed fit index = .92, comparative fit index = .96. CI Attitude = cultural attitude; CI Know = cultural knowledge.

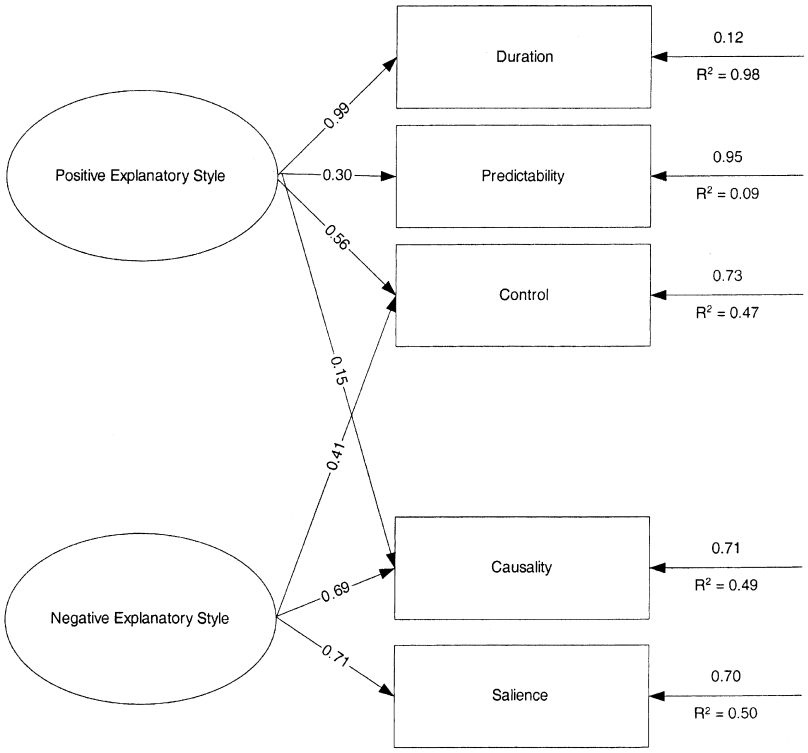

Figure 2. Explanatory style model: $\chi^2(3, N = 332) = 4.41$, $p = .22$, nonnormed fit index = .98, comparative fit index = 1.00.

(causality). Two observed variables, causality and control, were allowed to load on each of the factors. The highest loading for the positive explanatory style factor was observed for the duration subscale(.99), and the highest loading for the negative explanatory style factor was observed for the salience subscale(.71). The cross loadings of causality and control in this model may indicate that increases in personal responsibility translate to more positive explanations for events among some Navajo youth.

These results also suggest that perceptions of control influence both positive and negative styles for appraising situations. Allowing these two variables to cross load on the two explanatory style factors allowed the model to converge and provided the best fit with the sample data. The fit indexes, $\chi^2(3, N = 332) = 4.41$, $p = .22$, NNFI = .98, CFI = 1.00, suggested an excellent fit between the data and the proposed model.

Depression Measurement Models

Figure 3 presents a one-factor depression model that included four observed variables from the *DSM–IV* questionnaire, total CDI, and MMPI-A content and clinical scales. The *DSM–IV* questionnaire had the highest loading on the depression factor (.84), and the MMPI-A clinical scale had the lowest loading (.28). The fit indexes, $\chi^2(2, N = 332) = 16.60$, $p = .0003$, NNFI = .87, CFI = .96, indicated an adequate fit between the proposed model and the data.

Partial and Full Latent Structural Models

Figure 4 presents a latent variable model of the relationship between explanatory style and depression in which it was hypothesized that individuals with positive explanatory styles would have lower depression scores. The standardized regression coefficient of −.50 indicated that an increase in positive

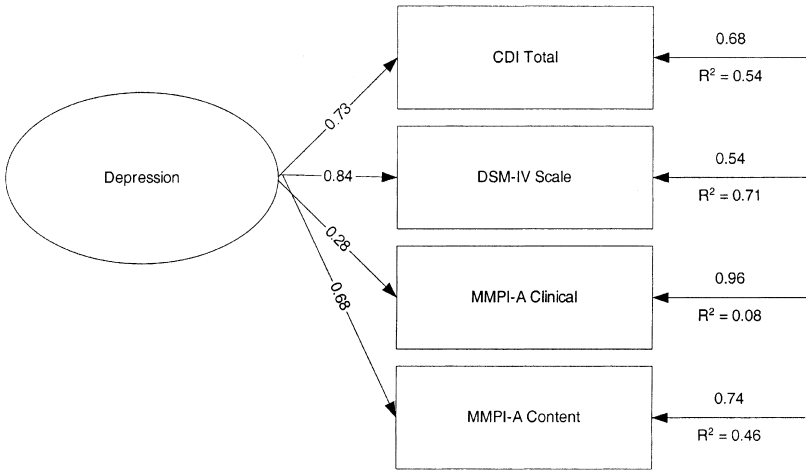

Figure 3. Depression model: $\chi^2(2, N = 332) = 16.60$, $p = .00$, nonnormed fit index = .87, comparative fit index = .96. CDI = Children's Depression Inventory; DSM-IV = *Diagnostic and Statistical Manual of Mental Disorders* (4th ed.); MMPI-A = Minnesota Multiphasic Personality Inventory Adolescent Form.

explanatory style is associated with a decrease in self-reported depressive symptoms. The negative explanatory style factor was also tested but was not significant (standardized regression coefficient: .02), and the Wald test suggested dropping this path as a result of the lack of contribution to the structural model. The fit indexes, $\chi^2(24, N = 332) = 89.99$, $p = .00$, NNFI = .87, CFI = .91, suggested an acceptable fit between the data and the proposed latent structural model.

The relationship between cultural identity and explanatory style was tested with the latent variable model presented in Figure 5. The knowledge factor had a standardized regression coefficient of .28, whereas the attitude factor predicted the positive explanatory style factor with a standardized regression coefficient of .20. The fit indexes,

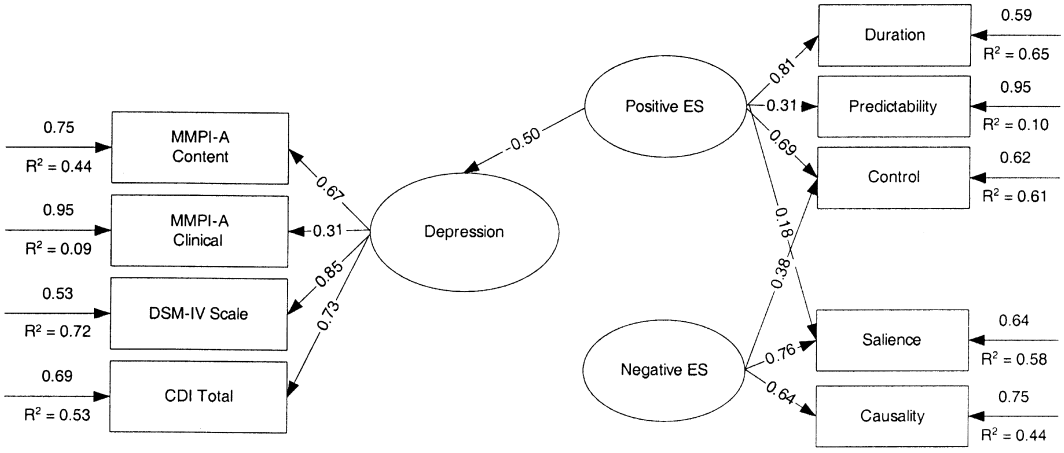

Figure 4. Explanatory style (ES) and depression model: $\chi^2(24, N = 332) = 89.99$, $p = .00$, nonnormed fit index = .87, comparative fit index = .91. MMPI-A = Minnesota Multiphasic Personality Inventory Adolescent Form; DSM-IV = *Diagnostic and Statistical Manual of Mental Disorders* (4th ed.); CDI = Children's Depression Inventory.

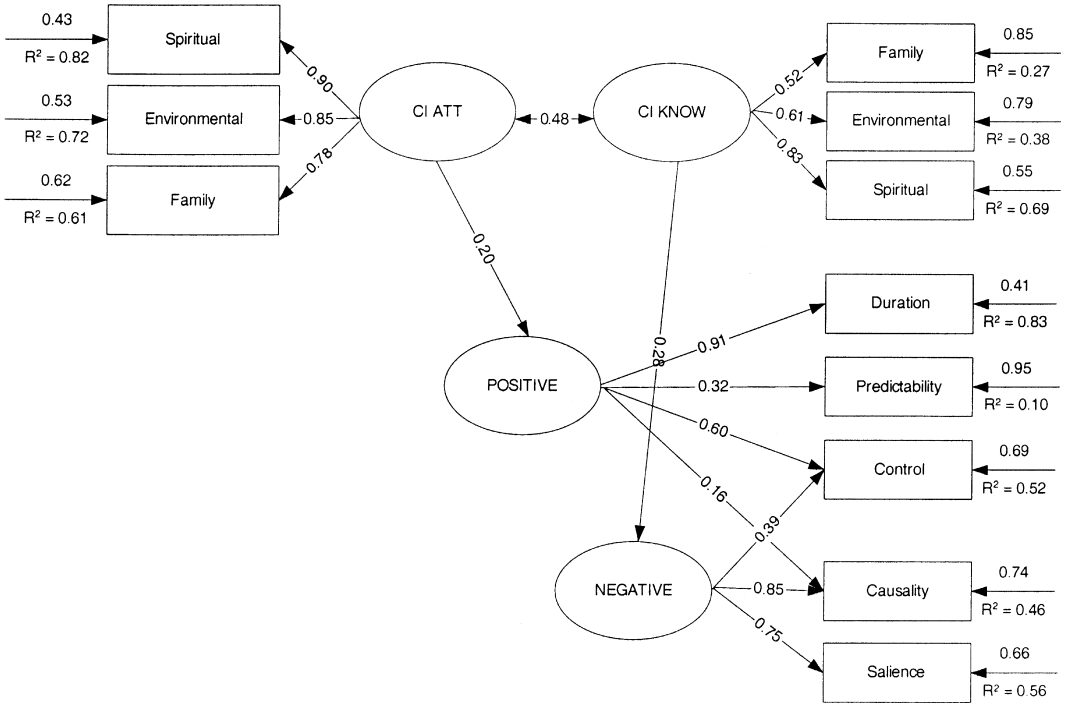

Figure 5. Cultural identity and explanatory style model: $\chi^2(39, N = 332) = 103.41$, $p = .00$, nonnormed fit index = .92, comparative fit index = .94. CI ATT = cultural attitude; CI KNOW = cultural knowledge.

$\chi^2(39, N = 332) = 103.41$, $p = .00$, NNFI = .92, CFI = .94, suggested an adequate fit with the sample data. The findings point to a significant but weak relationship between attitude and situational explanatory factors; however, the relationship between cultural knowledge and positive explanatory factors was stronger for Navajo youth.

The final full latent structural model shown in Figure 6 tested the relationships among (a) cultural identity, (b) explanatory style, and (c) depression. In this final model, the highest standardized regression coefficient in relationship to depression was positive explanatory style, at −.47. This relationship suggests that as Navajo adolescents experience increased predictability and control in regard to temporary stressful events, they are less likely to report symptoms of depression. In addition, cultural attitude predicted positive explanatory style, with a regression coefficient of .23. In turn, cultural attitude predicted depression, with a standardized regression coefficient of −.11. The fit indexes, $\chi^2(83, N = 332) = 230.50$, $p = .00$, NNFI = .88, CFI = .91, indicated an acceptable goodness of fit between the sample data and the latent variable model. The relationship between cultural attitude and the positive explanatory style factor was significant, as was the relationship between cultural knowledge and negative explanatory style. The relationship between cultural attitude and depression in Navajo adolescents was significant but weak, most likely owing to the effect of positive explanatory style mediating this relationship.

Discussion and Conclusion

In this study, we examined the factor structure and interrelationships of the constructs of cultural identity, explanatory style, and depression in Navajo youth. Previous work

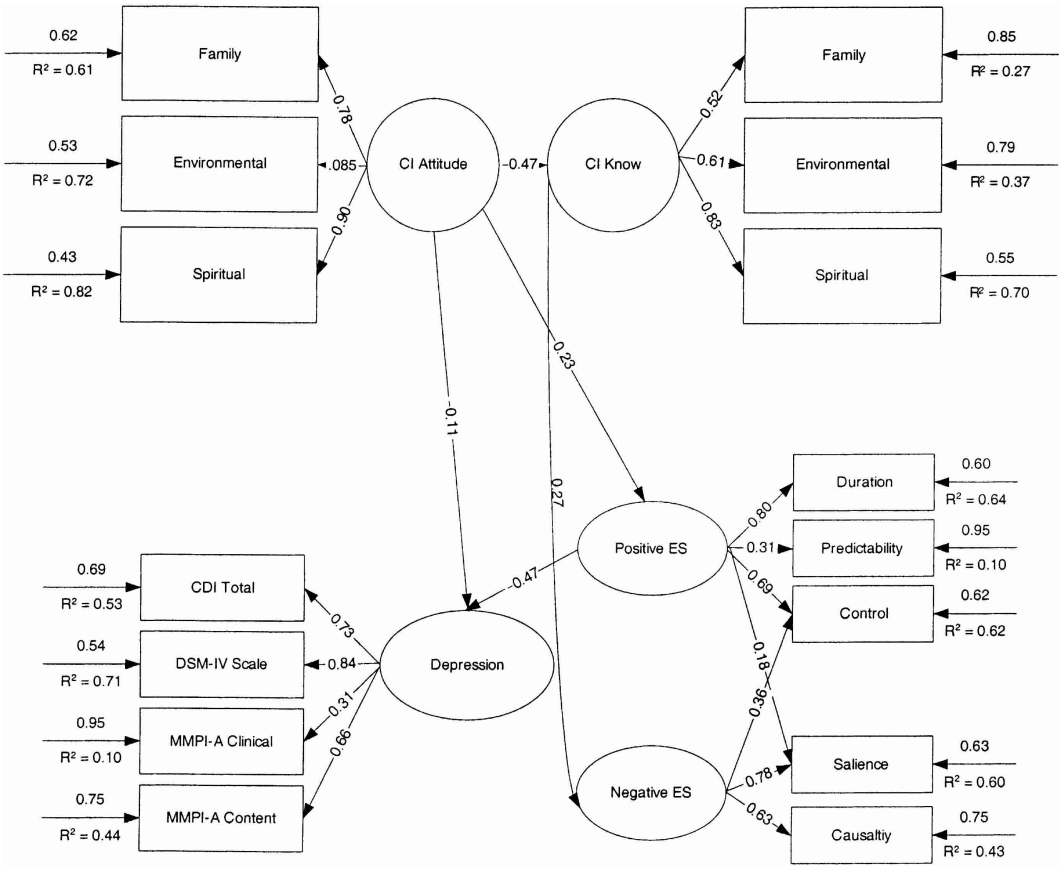

Figure 6. Full latent structural model: $\chi^2(83, N = 332) = 230.50$, $p = .00$, nonnormed fit index = .88, comparative fit index = .91. CI Attitude = cultural attitude; CI Know = cultural knowledge; ES = explanatory style; CDI = Children's Depression Inventory; DSM-IV = *Diagnostic and Statistical Manual of Mental Disorders* (4th ed.); MMPI-A = Minnesota Multiphasic Personality Inventory Adolescent Form.

suggested that depression, substance abuse, learning problems, suicide, and other self-destructive behaviors are significant problems for American Indian youth. Although sound prevalence rates of depression are not available for Navajo youth, research suggests that 2%–5% of European American adolescents suffer from major depressive disorder (Lewinsohn, Hops, Roberts, Seeley, & Andrews, 1993) and many of these youth experience recurring symptoms throughout their adolscence. (Lewinsohn, Clarke, Seeley, & Rohde, 1994). According to Nolen-Hoeksema, Girgus, and Seligman (1992), "At any given time, approximately 10%–15% of children in the general population will report a moderate to severe level of depressive symptoms" (p. 405). As reported by the U.S. Office of Technology Assessment (1990), depression and alienation are significant problems for American Indian adolescents, and several studies have suggested high rates of self-reported depression (Bachman et al., 1991). In the present sample of 135 male and 197 female Navajo adolescents from four different high schools, 14% of the participants exceeded the CDI cutoff score of 20 suggested for use with unselected or general samples (Kovacs, 1992).

Further analyses of the depression construct for the structural modeling portion of this study included observed variables from the MMPI-A (clinical and content scales), CDI, and *DSM–IV* questionnaire. The final

depression construct supported a one-factor model based on these four observed variables that corresponded with the hypothesized model. Although results were consistent with expectations, it is significant to note that the European American understanding of the etiology and experience of depression employed in this study may not have fully captured additional symptoms or unique conceptualizations relevant to our sample. For example, symptoms of depression may manifest as stomachaches, other medical ailments, or even spiritual discontent and lack of harmony and balance. Further, there is no direct translation in the Navajo language for "depression." Consequently, some of the meanings inherent in descriptions of symptoms may also be unique to this population.

The final explanatory style construct resulted in two factors: (a) positive explanatory style and (b) negative explanatory style. In this model, the duration variable from the DSS had the highest loading. Further, the control and causality variables loaded on both positive and negative explanatory sets, suggesting their significance in the explanatory process. These findings and the associated positive explanatory factor coincide with the available literature on depression in which perceived control, shorter exposure to stressful events, and increased predictability have been associated with more effective coping and positive well-being among Euro-American youth (Deuser & Anderson, 1995; Lazarus & Folkman, 1984). These results further correspond with the available literature on European American youth, according to which perceived control plays a significant role in decision making around stressful encounters and is associated with improved psychological functioning (Compas, Orosan, & Grant, 1993; Jenkins & Pargament, 1988). According to Compas, Connor-Smith, Saltzman, Thomsen, and Wadsworth (2001), coping incorporates both primary control, wherein efforts are directed toward changing the situation or one's emotions, and secondary control, wherein adapting to the situation is required.

Furthermore, there is an extensive literature suggesting that a negative attributional style including internal, stable, and global attributions is associated with self-reported and clinically diagnosed depression among Anglo adolescents (Joiner & Wagner, 1995). The self-responsibility or causality variable used in this study may have captured the internal locus and the increased salience of the stressful encounter that are likely to result in elevated levels of distress (Vitaliano et al., 1993; Weiner, 1980). Thus, these observed variables correspond with a negative explanatory set. In addition, causality is described by attribution theory as an explanation made by an individual regarding responsibility for an event, as well as the individual's ability to influence the event. According to Vitaliano and colleagues (1993), among European Americans, appraisals of causality and control influence one another. The cross loading of these two constructs also corresponds with Weiner's (1980) assertion that causality itself may be separated into locus, duration, and controllability in the explanatory process. Navajo youth may experience increased personal responsibility as positive because they perceive greater influence or control over the event without seeking traditional healing through a medicine person or diviner, which would draw the problem to their family's attention and demand more resources. Thus, the results of this study suggest that the relationships among control, causality, and explanatory style are also critical for Navajo youth.

In addition, a significant relationship was found between positive explanatory style and depression. More specifically, Navajo adolescents who perceive higher levels of control, shorter event durations, and more predictability in stressful encounters may be less likely to suffer from depression. The relationship between the positive style factor and depression accounted for a significant portion of the variance (25%) in the model, suggesting that this factor is important in

conceptualizing explanatory processes and their associations with depression among Navajo youth. This finding corresponds with literature on European American youth showing that attributional style is correlated with depression in the case of both depression diagnoses and self-reported depressive symptoms (Joiner & Wagner, 1995; Lewinsohn, Joiner, & Rohde, 2001). Further, the results of this study correspond with previous studies showing that the interaction between negative events and explanatory style is predictive of depression among older adolescents but may not hold in younger populations (Nolen-Hoeksema et al., 1992).

In this sample, the salience, or importance, associated with a stressful encounter was less predictive of experiences of depressive symptomatology. This may have been related to structural issues, including poverty, racism, substance abuse, depression, and alienation, faced by American Indian youth (U.S. Office of Technology Assessment, 1990). Their history of facing multiple stressors may lead Navajo youth to become somewhat desensitized in terms of distinguishing how one stressful encounter differs from another. Further, it is possible that the stressful situations used in this study to prompt responses (family argument and poor academic performance) were not as meaningful to Navajo youth as would have been Navajo conceptions of stress such as an "imbalance . . . precipitated by indulging in excesses, having improper contact with dangerous powers, deliberately or unwittingly breaking other rules, or by malicious intentions of unpredictable deities or evil humans [witches]" (Frisbie, 1992, p. 460).

These findings correspond with the results of the full structural model including cultural identity, explanatory style, and depression factors. The correlation between the cultural knowledge factor and negative explanatory style was .27, whereas the cultural attitude factor had a correlation of .23 with positive explanatory style.

Again, a decrease in self-reported depressive symptomatology was seen with increased positive explanations regarding the control, predictability, and duration of stressful events. According to French and Picthall-French (1998), the emphasis among the Navajo on "oneness" with nature and the traditional "corn pollen road of life" or "beauty way" may serve to insulate those who are fully enculturated from the "harsh realities of their environment" (p. 104). Thus, as the present findings suggest, increasing a Navajo youth's sense of cultural awareness and identity may serve to decrease isolation and increase skills and factors associated with resiliency and mental well-being. According to Deyhle (1995), youth who maintain strong Navajo cultural ties are more successful among their own society and in the Anglo world.

These findings also suggest that increased knowledge of the Navajo belief system may be associated with more personal responsibility in relation to stressful events. For many Navajo, this knowledge is gleaned over time through experience, interactions with cultural leaders, and participation in traditional events. Further, it is up to the individual to live within cultural expectations once he or she has attained the knowledge (Farella, 1993). The Navajo youth in this sample may have been responding in terms of their individual developmental level; that is, they were not fully educated regarding all of the "ways" of the Navajo, yet they were aware of the importance of obtaining this knowledge. Perhaps Navajo youth perceive the role of diagnosing and addressing spiritual disturbances as the responsibility of their Navajo forefathers and foremothers, where they may turn when experiencing mood disturbance or anxiety.

Several limitations of the present study warrant attention. For example, very little literature is available regarding explanatory style, cultural identity, and depression across ethnic groups, and there is a complete lack of literature regarding appraisals and Navajo youth. In addition, a portion of this project was exploratory in nature; that is, culturally appropriate definitions of the constructs described have not been clearly established in the literature. Similarly, existing

instruments designed to capture these constructs have little or no available data from a Navajo sample, making the potential for cultural bias a significant factor in interpreting findings (Dana, 1998).

Methodological limitations of this study included the cross-sectional design and the self-report nature of the data. Although necessary to gain access to the sample population, participants were identified only by number, eliminating the potential for tracking participants over time. Consequently, potential interpretations and findings are limited; that is, a cross-sectional study cannot determine whether increased Navajo cultural identity is a consequence of or a predisposing factor for depression. Further, the self-report measures used may have reflected response bias stemming from socially desirable responding, a lack of awareness of the mental and emotional processes participants were asked to identify, and attempts to respond in ways confirming or disconfirming what participants believed was the proposed hypothesis. Longitudinal prospective studies that incorporate multidimensional representations of constructs (behavioral observations and ratings by significant others) are necessary to confirm whether or not the relationships identified here are consistent across situations and developmental stages.

Overall, the findings of this study illustrate that there are important relationships among the constructs of cultural identity and explanatory style and their potential influence on depression in Navajo youth. Given the current understanding that historical factors and cultural abuse may be related to intergenerational mental health struggles for American Indians (McNeil, Kee, & Zvolensky, 1999), further research regarding these dynamic processes is warranted. Subsequent research should examine additional instruments to determine their applicability to Navajo and American Indian populations. Empirically sound studies are also necessary to provide an understanding of the unique manifestation of explanatory processes, depression, and Navajo cultural identity so that these constructs may be appropriately operationalized. Finally, future research should explore the sequence and interaction of explanations for, and responses to, stress as generated among American Indian adolescents.

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