

# A COGNITIVE-BEHAVIORAL TREATMENT FOR DEPRESSION IN RURAL AMERICAN INDIAN MIDDLE SCHOOL STUDENTS

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*Abstract: Rural American Indian (AI) middle school students with depressive symptoms who participated in a culturally modified version of the Adolescent Coping with Depression (CWD-A) course (n = 8) reported significant improvement in depressive symptoms at post-intervention and at 3-month follow-up. There was also a nonsignificant but clinically relevant decrease in participants' anxiety symptoms. Students reported satisfaction with the intervention, and it was potentially more cost-effective and less stigmatizing than the individualized treatment-as-usual interventions to which it was compared. These results suggest the CWD-A is a promising approach for reducing depressive and anxiety symptoms in rural AI students and should be further evaluated with a larger sample of students.*

Many youth in the United States, particularly American Indian (AI) youth, reside in rural and often medically underserved communities. According to the 2000 U.S. Census Bureau, 39% of persons who identify, at least in part, as American Indian or Alaska Native (AI/AN) reside on reservations or in other rural communities (U.S. Census Bureau, 2010). Particularly concerning for AI youth living in reservation and rural communities is their limited access to mental health services (Ringel & Sturm, 2001; Stamm et al., 2003; U.S. Department of Health and Human Services [USDHHS], 2001).

Anxiety, disruptive behavior, mood disorders, and substance use disorders are the most prevalent mental health diagnoses in persons ages 13 to 18 years, with lifetime prevalence rates of 32%, 19%, 14%, and 11%, respectively (Merikangas et al., 2010). Lifetime prevalence of major depressive disorder/dysthymia in adolescents was estimated as 11.7% in the National Comorbidity Study (Merikangas et al., 2010). Findings from the 2010 National Survey on Drug Use and Health were that 8% of youth ages 12-17 years met criteria for a major depressive episode in the past year (USDHHS, 2012). Diagnostic rates of these problems in AI youth appear to equal or exceed rates in youth of other racial/ethnic groups (USDHHS, 2001; Whitbeck, Yu, Johnson, Hoyt, & Walls,

2008), although current data are scarce and at least one older study (Beals et al., 1997) reported lower rates of any anxiety disorder for AI adolescents from the U.S. Northern Plains compared to non-AI youth of similar ages.

Relative to diagnostic estimates of depressive disorders, studies using depressive symptom checklists typically find even higher rates of depression in adolescents—ranging from 20% to 50% of those surveyed, with increasing prevalence in girls, but not boys, at older ages (Kessler, Avenevoli, & Merikangas, 2001). In a national school-based study, Saluja et al. (2004) reported that AI/AN 6th, 8th, and 10th grade students had the highest percentage of elevated depressive symptoms (29%) compared to all other racial/ethnic groups. However, specific estimates should be interpreted with caution, given the variability in findings as well as the lack of research on the phenomenological aspects of depression and symptom expression in AI youth generally, and specifically across different AI communities (Manson, 1995). Of positive note is that the Center for Epidemiologic Studies-Depression (CES-D; Radloff, 1977) checklist has been empirically supported for use with AI adolescents and young adults in several studies (Kim, DeCoster, Huang, & Chiriboga, 2011; Thrane, Whitbeck, Hoyt, & Shelley, 2004; Whitbeck, Yu, McChargue, & Crawford, 2009);

Depression in adolescents has serious consequences, including increased risks for suicide, comorbid substance use disorders, adulthood reoccurrence, and general life impairment (Brooks, Harris, Thrall, & Woods, 2002; Glied & Pine, 2002; USDHHS, 2010). These concerns are even greater for AI/AN youth, who have the highest rates of suicide in the U.S. of all racial/ethnic groups (Centers for Disease Control and Prevention, 2009; Suicide Prevention Research Center, 2011). AI/AN youth are at higher risk for depression, substance abuse, and suicide due to their relatively higher levels of economic and social disadvantage, exposure to alcohol and drug use, exposure to suicide and other violent behavior, and acculturation stress, as well as the extraordinary history of relocation, discrimination, and trauma of Native people (Goodkind, LaNoue, & Milford, 2010; Holm, Vogeltanz-Holm, Poltavski, & McDonald, 2010; LaFromboise, Albright, & Harris, 2010; Suicide Prevention Resource Center, 2011; USDHHS, 2001).

Despite the need for effective and early interventions for preventing and reducing depression, anxiety, and related problems in AI youth, very few intervention outcome studies have been conducted. Gone and Alcántara (2007) reported that only two interventions to date have been sufficiently tested to warrant designation as “evidence-based” for use with AI populations: An adaptation of the 16-week Coping with Depression course (Lewinsohn, Holberman, & Clarke, 1989) conducted by Manson and Brenneman (1995) was effective in reducing depression in older AIs living in the Pacific Northwest, and the Zuni Life Skills Development Curriculum, which lasted one year and included nearly 100 sessions (LaFromboise & Howard-Pitney, 1995), was effective in reducing suicidal ideation and hopelessness in AI students from a Southwest tribal school.

A recent pilot study with 24 AI youth from three Southwestern tribes demonstrated the feasibility and effectiveness of a culturally adapted intervention for reducing trauma-related anxiety and depression symptoms (Goodkind et al., 2010).

All three of the interventions described are based on cognitive-behavioral therapy (CBT) principles and skills, which emphasize decreasing negative thoughts, feelings, and associated affective states; decreasing risk behaviors; and increasing positive activities, including psychosocial and coping/self-regulation skills. Because empirically supported CBT interventions for depression are psychoeducational, skill based, adaptable, have a positive focus, and may be conducted in groups, some (e.g., Goodkind et al., 2010) have argued that adapting and testing CBT approaches with AI youth holds considerable promise, despite potential cultural barriers (see Gone & Alcántara, 2007 for a discussion of these issues, including the role of the therapist in the community and the role of science and evidence-based practices, among others). Additionally, school-based courses for improving mood and social functioning may provide a less stigmatizing approach for AI youth and their families as compared to other outpatient treatments for depression (Cuijpers, Muñoz, Clarke, & Lewinsohn, 2009; Manson, 1992; LaFromboise & Howard-Pitney, 1995).

In the current study, we report on the effectiveness of a culturally adapted Coping with Depression course for Adolescents (CWD-A; Clarke, Lewinsohn, & Hops, 1990) in reducing depressive and anxiety symptoms in a group of AI middle school students from a rural Northern Plains tribal school. The CWD-A is a group-based course shown effective in reducing depressive symptoms and improving psychosocial functioning in nonminority youth (see Cuijpers et al., 2009). The intervention team selected the CWD-A to adapt for AI students in the school setting for several reasons: (1) its empirical support with adolescents and with AI adults; (2) its flexibility and adaptability; (3) its brief (16 sessions) and, thus, potentially cost-effective approach; (4) its focus on improving both depressive and anxiety symptoms; and (5) its potential for being acceptable to AI youth and their families. The adaptation is described in the Methods section.

We hypothesized that students who participated in the CWD-A course would have significantly less depression and anxiety from pre- to post-intervention and at 3-month follow-up; that participants would report satisfaction with and acceptance of the course; and that students' improvements in depression and anxiety would equal or exceed outcomes for a group of comparison students receiving individualized treatment-as-usual (TAU) interventions for their depressive symptoms.

## METHODS

### Participants

Participants were 16 AI middle school students identified as having depressive symptoms from a rural Northern Plains reservation school that served a community with low socioeconomic status. The CWD-A group consisted of 8 students and the treatment-as-usual group, hereafter call the TAU group, consisted of 8 students. Participants in the CWD-A group ranged from 11 to 14 years of age ( $M = 12.38$ ,  $SD = .92$ ) and participants in the TAU group ranged from 12 to 14 years of age ( $M = 12.5$ ,  $SD = 1.07$ ). There were 3 girls and 5 boys in each group. The CWD-A group consisted of 5 sixth graders, 2 seventh graders, and 1 eighth grader; the TAU group consisted of 4 sixth graders, 2 seventh graders, and 2 eighth graders. There were no differences at pre-intervention between students in the CWD-A group and the TAU group in age, grade in school, gender, or on the two symptom inventories.

### Procedure

#### Community, Educator, and Parent Involvement

This study was a collaboration of school and community stakeholders; the course was provided within the school with the support of the community. Prior to the beginning of the study, the primary investigator (PI) contacted educators, community mental health professionals, school administrators, and an outside expert on AI/AN mental health and asked them to independently review materials and provide input on the study design, course materials, and program evaluation. The study was then approved by the University of North Dakota Institutional Review Board, the local school administrators, and the tribal community school board (according to community protocol for a school-based intervention). Publication and presentation of the course material and study results was agreed upon by the PI and local school administration. All course- and study-related publications and presentations have been shared with the local school administrators for community dissemination.

#### Modified Coping with Depression for Adolescents Course Materials

The PI, in consultation with educators, school and community mental health professionals, as well as an expert in AI mental health issues, modified the CWD-A course (Clarke et al., 1990) to be used with AI middle school students. The CWD-A course is a CBT intervention; therefore, it is structured and time-limited. The course is based on cognitive (Rush, Beck, Kovacs, & Hollon, 1977), self-control (Rehm, 1977), behavioral (Lewinsohn, Youngren, & Grosscup, 1979),

interpersonal (Weissman et al., 1979), and social skills (Bellack, Hersen, & Himmelhoch, 1981) treatment approaches, with a strong focus on skill development. The CWD-A course was developed for groups of six to eight students to be taught in 16 2-hour sessions.

Many of the modifications made for the current study were based on Kahn, Kehle, Jenson, and Clark's (1990) modifications for middle school students, but utilized the most recent version of the CWD-A course. Kahn's primary modifications included simplification of terms, examples, role-plays, practice assignments, and removal of the relaxation and parent training components. Kahn's modified course was taught in 12 50-minute sessions. For this study, additional modifications for cultural sensitivity and relevance were made, including offering it as part of the regular school schedule (class credit was provided), changing examples and role-play situations to reflect culturally appropriate and relevant activities, and adding discussions about the cultural impact of skills such as assertiveness, eye contact, constructive criticism, and self-disclosure.

The name of the course was changed to the Skills Development Class, to remove stigma from attending the group. The class was taught in 13 35- to 40-minute sessions, held twice each week for 7 weeks, followed by 2 booster sessions held within 1 month post-intervention. Booster sessions included a general review of materials covered during the class. Students were provided small snacks to encourage a relaxed atmosphere, as well as small rewards for meeting their goals or completing homework. A certificate of completion was provided to students at the end of the class.

Detailed information on the class can be found in the treatment manual and is available upon request from the author. Intervention materials and a complete report of findings and recommendations for future implementation were distributed to school and community professionals. In addition, caregivers were encouraged to meet, ask questions, and share feedback with the PI at the Spring Parent Fair held at the school.

### **Measures**

The Children's Depression Inventory (CDI; Kovacs, 1992) is a 27-item self-report questionnaire that is widely used to measure depressive symptoms in youth. Students indicate which symptoms are most true for them during the past two weeks and score each symptom as either 0 (e.g., *sad once in a while*), 1 (*sad many times*), or 2 (*sad all the time*). The psychometric properties of the CDI have been empirically supported for use in both nonminority and African American youth (Craighead, Smucker, Craighead, & Ilardi, 1998; Saylor, Finch, Spirito, & Bennett, 1984) and AI Northern Plains youth (Hamill, Scott, Dearing, & Pepper, 2009; Scott et al., 2008; Scott & Dearing, 2012). Analyses in the current study were based on raw scores, but raw scores were also transformed to *T* scores to examine clinical significance levels. *T* scores at or above 65 were considered to show "clinically significant" depressive symptoms.

Longitudinal research on the CDI has found small decreases in scores, due to testing effects, over successive administrations with one-year lag times (Twenge & Nolen-Hoeksema, 2002); however, we have not found any published evidence that decreases in scores across briefer periods of time, e.g., less than 6 months, are confounded by testing effects. Twenge and Nolen-Hoeksema (2002) also reported in their meta-analysis that they found no evidence that decreases in CDI scores across time are due to social desirability bias (i.e., the tendency to answer in a manner viewed as favorable by others).

The Multidimensional Anxiety Scale for Children (MASC; March, 1997) is a 39-item self-report measure of anxiety in children and adolescents. The measure utilizes a four-point Likert-type scale. When converted to *T* scores, scores at or above 65 are considered to show “clinically significant” anxiety symptoms. The MASC has adequate test-retest reliability, discriminative validity, and concurrent validity with nonminority youth (March, 1997; Baldwin & Dadds, 2007), and emerging evidence suggests it is adequate for use with African American (Kingery, Ginsberg, & Burstein, 2009) and Southwestern AI adolescents (Goodkind et al., 2010).

An additional measure, developed by the PI and administered during the exit interview, evaluated students’ perceptions of the effectiveness of the intervention and their acceptance of and satisfaction with the class. The students responded, using a 10-point Likert scale, as to how much their mood improved due to the CWD-A class, with higher scores indicating a stronger belief that the class improved their mood. The students then placed a check mark by each skill that they remembered learning and rated the helpfulness of that skill. Students were then asked by the investigator to respond to three primary questions: (1) “What did you think of the class?” (2) “What did you think about how the class was taught?” and (3) “What did others think about you being in this class?” Last, students were asked if they had participated in a treatment program or if they had seen a counselor while in the class.

### **Participant Selection**

First, all students attending grades 6-8 of the middle school (N = 131), including special education classes, were screened in the regular classroom setting for depressive symptoms with the CDI (Kovacs, 1992) as part of a schoolwide biyearly depression screening. Students with raw scores of 15 or higher on the CDI, indicating moderate levels of depression, were considered for inclusion in the CWD-A class. Thirty-six students (27% of those screened) met inclusion criteria after this step.

Next, caregivers of all 36 students who met inclusion criteria were contacted via letter or follow-up phone call. Information regarding their child’s depression screening, local counseling services, and information on the CWD-A class and study was provided. If a caregiver provided written consent for his/her child’s participation, the PI contacted the child, provided information

about the class, and asked if he/she assented to participate. All students whose caregivers provided written consent assented to participate in the class. Caregiver consent and student assent were completed for 19 (53%) of the 36 students. Students were then randomly assigned, using a block design to ensure equal numbers of boys/girls and grade levels, to one of two conditions: (1) CWD-A group or (2) TAU group. Ten students were assigned to the CWD-A group and 9 students were assigned to the TAU group. After group assignment, one student in the CWD-A group withdrew, leaving 9 students in the CWD-A group. Midway through the class, one student in the CWD-A group chose not to continue in the group; the student was provided the remainder of the materials individually and was not included in the analysis. One student in the CWD-A group completed the post-intervention CDI measure and exit interview, but did not complete the post-intervention anxiety measure and was included in all but the anxiety measure analysis. In the TAU group, one student withdrew due to school absenteeism. A total of 16 students (8 CWD-A group, 8 TAU group) were included in the final analyses.

Students in the CWD-A group attended the class during the second quarter of the Fall semester. Students in the TAU group were offered services in the community, either at their local Indian Health Service clinic or with the school counselor, during the Fall semester. Sixty-three percent (5 of 8) of students in the TAU group received some level of individualized counseling services during the year. Specific interventions provided to these students were not evaluated. Further, it should be noted that, due to the small size of the community and limited resources, therapists involved in the CWD-A class provided some of the individualized services to students in the TAU group. In the fourth quarter of the school year, 75% (6 of 8) of students in the TAU group went on to take the CWD-A class.

### **Therapists**

Classes were team-taught by two therapists: One was an Indian Health Services mental health professional with a masters degree in social work; the second, a graduate student with a masters degree in clinical psychology employed by the school. The IHS professional was of AI ethnicity and led the class. Both therapists had previous experience working with adolescents. Both received additional training in the CWD-A class, as well as weekly supervision, by the PI and a PhD-level clinical psychologist who consulted with the school. The class can be taught by one or two therapists and can be delivered by a variety of mental health professionals.

### **Design**

All students who had caregiver consent and provided assent to participate ( $N = 19$ ) completed the CDI and MASC at pre-intervention. At the end of the 7-week CWD-A class, the remaining students ( $N = 16$ ) again completed the CDI and MASC. Students in the CWD-A group also

participated in an exit interview. Three months after post-intervention measures were completed, students again completed the CDI and MASC ( $N = 16$ ). Students who had elevated depression scores at follow-up ( $T$  score  $> 65$  on the CDI) were contacted, as were their caregivers, and referrals for local counseling services were made.

### Data Analysis

Two repeated measures ANOVAS using SPSS 14.0 were conducted to examine the between-group by measurement time (pre-intervention, post-intervention, and 3-month follow-up) interaction effects for the students' CDI and MASC scores. Using GPOWER 3.0, we determined that, at a power of 0.80 with an alpha level of 0.05, our sample size of 15 was sufficient to detect only a large effect (eta-squared of .14 or greater). We therefore report both the significance level of the findings and the overall effect sizes.

## RESULTS

### Post-intervention and 3-month Follow-up Changes in Depressive and Anxiety Symptoms

#### Depressive Symptoms

A mixed repeated measures ANOVA was used to analyze group (CWD-A group vs. TAU group) differences in changes on the CDI from pre- to post-intervention to 3-month follow-up (measurement time effect). There was no significant interaction effect of group and time, but there was a significant main effect of time, indicating that students in both groups reported significantly lower scores on the CDI from pre- to post-intervention to 3-month follow-up,  $F(2, 28) = 10.09$ ,  $p < .01$  ( $\eta^2 = .419$  demonstrating a large effect size). Follow-up tests found a significant difference between the pre-intervention and post-intervention scores,  $t(15) = 2.843$ ,  $p < .05$ , as well as a significant difference between the pre-intervention and 3-month follow-up scores,  $t(15) = 5.256$ ,  $p < .001$ , indicating a decrease from pre- to post-intervention that was maintained at follow-up for both groups of students. Means and standard deviations for the CDI scores at pre-intervention, post-intervention, and 3-month follow-up periods are presented in Table 1.

Three students (33.3%) in the CWD-A group and 3 students (37.5%) in the TAU group had scores at or above the clinically significant level for depression symptoms ( $\geq 65$ ) at pre-intervention. At post-intervention, 2 students in each group continued to have clinically significant scores, but by 3-month follow-up, only 1 student in each group continued to have clinically significant levels of depressive symptoms.

**Table 1**  
**Means and Standard Deviations for the Children’s Depression Inventory (CDI) and the**  
**Multidimensional Anxiety Scale for Children (MASC) by Group and Assessment Time**

	CWD-A Group				TAU Group			
	<i>n</i>	Pre	Post	3-month Follow-up	<i>n</i>	Pre	Post	3-month Follow-up
CDI Total Depression Score								
Mean	8	21.00	14.38	14.13	8	20.37	13.25	11.25
<i>SD</i> <sup>a</sup>		(5.29)	(9.93)	(8.11)		(4.10)	(9.87)	(6.41)
MASC Total Anxiety Score								
Mean	7	51.57	43.29	40.14	8	44.25	37.00	46.00
<i>SD</i>		(14.44)	(23.01)	(24.14)		(23.93)	(23.34)	(16.94)

<sup>a</sup> *SD* = Standard deviation

### Anxiety Symptoms

There were no significant group differences or changes in scores on the MASC from pre- to post-intervention to 3-month follow-up, although the moderate effect size of the interaction ( $\eta^2 = .105$ ) suggested the groups differed from pre-intervention to follow-up. Although we did not have sufficient power to test for group differences at only two time points, the means in Table 1 show that students in the CWD-A group maintained their gains at 3-month follow-up, but the TAU group scores returned to pre-intervention levels at 3-month follow-up.

### Post-Intervention Interview

All students who completed the CWD-A class ( $n = 8$ ) also completed a post-intervention interview. Students’ perceptions of improvements in their depressive symptoms were rated on a scale from 1 (*The class helped improve my mood not at all*) to 10 (*...helped very much*); the average rating was 7. Next, students were asked which skills, out of a list of 20, they remembered learning in the class and were asked to rate the skills as being either “not helpful,” “somewhat helpful,” or “really helpful.” On average, students reported recalling 75% of the class topics, and indicated that approximately 50% of the class topics were “somewhat helpful” and 25% were “really helpful.” Students’ favorite class topics involved learning to interact with others (friendly skills, starting conversations), topics repeated throughout the class (mood diary, active listening, goal setting), and specific class exercises (brainstorming, hearing positive things about yourself).

Students also were asked their general impressions about the class. Most said they would take the class again and provided comments indicating general satisfaction with it (e.g., “It was fun,” “It was good,” “It was easy”). Some said that answering questions in front of other students was the most difficult part of the class. Many thought the class would work well for other students, including AIs. Students liked various elements of the class, including the 2- to 3-person group activities, the workbook, the rewards, and having the class during the regular school day. Five students reported discussing the class with family, friends, or teachers. Three reported that they talked with their family about the class and what they were learning, sharing that their caregivers supported the class. All but one said that they would recommend the class to their friends.

### **Treatment Fidelity**

Average attendance for the 8 CWD-A group students who stayed in the class throughout the quarter was 11.4 of 13 regular sessions and 1.6 of 2 booster sessions. The PI and the school’s consulting clinical psychologist verified that therapists delivered the CWD-A components accurately and with fidelity. The CWD-A Course Therapist Compliance Measure (Clarke et al., 1990) was used to measure compliance with the treatment protocol. Four sessions (approximately 25%) were randomly selected for compliance ratings. Compliance was adequate, with 80% of treatment components found to be in perfect compliance and 20% of treatment components found to be in partial compliance.

## **DISCUSSION**

### **Depression**

The current study aimed to determine if the CWD-A class, which has been found to be effective among other populations, could be modified for use with rural AI middle school students experiencing moderate to severe depressive symptoms, and whether the modified class would be feasible and acceptable as a treatment modality within a rural AI reservation community. Unlike previous studies (Kahn et al., 1990; Lewinsohn, Clarke, Hops & Andrews, 1990) in which the effectiveness of the CWD-A intervention was compared to a no-treatment control group, our study compared students in a school-based CWD-A class to students receiving individualized TAU interventions in the school or community.

As hypothesized, students in the CWD-A group had a significant decrease in depressive symptoms at post-intervention, which was maintained at 3-month follow-up, as did students in the TAU group. In terms of clinically meaningful findings, we found that the number of students in

both groups that had clinically elevated CDI scores ( $T$  score  $\geq 65$ ) decreased from pre-intervention to follow-up, with only 1 student in each group continuing to have clinically elevated scores at 3-month follow-up.

This finding is consistent with a study by Weisz et al. (2009) that compared a group CBT approach to individualized TAU in the general population. Decreases in depression were seen across both groups, but group CBT was found to be less costly and was timelier in decreasing depressive symptoms.

Although depressive symptoms in youth, as with adults, may decrease over time without intervention, depression in youth is a serious risk factor for future depressive episodes and other serious consequences; therefore, increasing access to effective and nonstigmatizing interventions is a priority, especially for at-risk youth (Brooks et al., 2002; Stamm et al., 2003). This modified CWD-A course, a group skills-based intervention, led to a significant decrease in depressive symptoms while demonstrating time savings, as therapist time was utilized more efficiently in the group setting than it would have been in individual counseling sessions, and required fewer school and community resources, which is of particular importance in communities with limited mental health resources.

### **Anxiety**

Results revealed a nonsignificant but clinically relevant decrease in the CWD-A group's anxiety symptoms. As hypothesized, there was a moderate effect size of the interaction, suggesting that the CWD-A and TAU groups differed from pre-intervention to follow-up, with only students in the CWD-A group maintaining a decrease in anxiety at 3-month follow-up. These results were evident despite the fact that anxiety symptoms were not specifically discussed with students in either group, nor were caregivers contacted regarding concerns about their child's anxiety. Other studies (e.g., Stark, Reynolds, & Kaslow, 1987) have indicated decreases in anxiety during treatment focused on decreasing depressive symptoms. Perhaps the CWD-A course, or other skills-based CBT group interventions, are more amenable to reducing anxiety than are individual treatment modalities that target depressive symptoms. Further research on the phenomenological aspects of anxiety and depression among AI youth may help elucidate these findings. Based on our observations and students' reports, it seems plausible that the class may have led to lowered anxiety by helping students manage anxiety-provoking situations and gain positive practice experiences, while students in the TAU group might not have been exposed to these experiences. However, without more detailed information on the TAU interventions, specific conclusions cannot be made.

## Students' Perceptions of the Class

In the post-intervention interview, students reported that the CWD-A class was helpful in improving their mood, noted a preference for 2- to 3-person activities, and indicated that family and friends were typically supportive. For example, one student responded by asking when the class would be offered again, indicating that he/she would like to learn more skills by taking it again. Student feedback suggested that the number of class sessions could be increased or the amount of materials limited to provide for more repetition of materials. In addition, offering the class multiple times may be acceptable to students and could potentially lead to better outcomes. Students found the class to be an acceptable treatment modality, consistent with research by others on group CBT approaches with AI youth experiencing trauma symptoms (Goodkind, et al., 2010).

Furthermore, the school counselor and third author of this report noted that some students who had refused individual counseling in the past agreed to attend the class, and caregivers who had not previously consented to individual counseling services for their child agreed to their child's participation in the class. This finding suggests that, at least for some students and their caregivers, the CWD-A class, held within the school setting, may be less stigmatizing than individual counseling services, and perhaps more consistent with AI culture and values (LaFromboise & Howard-Pitney, 1995) and the collectivistic perspective of many AI communities (Brislin, 2000).

It is possible that the group setting was inhibiting for some students, especially given that they knew one another relatively well. In this study, however, CWD-A class leaders consistently reminded students that they did not have to discuss any information that they felt uncomfortable sharing, and that choosing to discuss private and sensitive feelings was their decision. Nonetheless, whenever CWD-A is implemented, group leaders should monitor and refer students who appear to need individualized attention. Conversely, the fact that the students knew one another well may have enhanced the intervention, given the importance of high group cohesion in predicting positive outcomes in CWD and other group therapies (e.g., Hoberman, Lewinsohn, & Tilson, 1988).

## Strengths and Limitations

The current study adds to the literature base on the feasibility of the CWD-A course by examining its effectiveness and acceptability among rural AI middle school students. This study demonstrated a promising way to provide services in a rural, underserved community. The acceptability of this modified CWD-A course among AI students expands the potential use of this well-established treatment for youth with depressive symptoms. Furthermore, results also suggest that the CWD-A course may have some impact on anxiety symptoms, although this finding needs to be examined in more detail and with a larger sample of students. A final strength of this study was

the strong collaboration between the school and local mental health professionals in implementing this class. Parents, teachers, administrators, community members, and school and community mental health professionals worked together to review the design, implementation, and evaluation of the CWD-A class. This newly modified version of the CWD-A class is now available for other researchers and mental health professionals to use within this and other communities.

This small pilot study was limited, and further research is needed to support our findings and provide more evidence for using this approach with other AI youth. Due to the small sample size, we had reduced statistical power to test statistical effects, but we believe that our findings could be supported with a larger sample size. Further, results from this specific community may not generalize to other AI students, particularly those not living in rural reservation communities.

In addition, given the size of this community and the limited access to mental health services, therapists who provided the CWD-A class also provided individual TAU interventions within the community, perhaps decreasing some of the differences between the groups. Given our lack of detailed information on these TAU components, our ability to compare and differentiate these groups was further complicated, and specific conclusions about the TAU interventions or how they might compared to the CWD-A course cannot be drawn.

Another concern was the high percentage of students with depressive symptoms during the screening process who declined participation in the study/class (47% of eligible students). This finding might suggest a low level of acceptability with the screening and recruitment process among families in the community, or it might be related to other factors, including the possibility that CDI scores might be influenced by social desirability bias. However, at least one study has reported that social desirability bias was not evident in youth with elevated depression scores on the CDI (Logan, Claar, & Scharff, 2008). Nonetheless, concerns about adolescent response bias should be acknowledged, and, consistent with evidence-based assessment practices, multiple sources of information should be considered in making diagnostic and treatment decisions for adolescents who may be depressed. With that said, 53% of eligible students did opt to participate, considerably higher than Goodkind et al.'s (2010) participation rate (31%) in a similar school-based group CBT intervention for AI youth. Future studies could be conducted to better understand those who declined participation, to determine barriers to treatment, and to investigate whether there are any differences between students' families who chose to participate versus those who declined (e.g., in terms of their readiness for change in treatment).

Another limitation was the lack of "real-life" indicators of symptom change. A more detailed examination of factors such as grades, attendance, work completion, and school attitude may be helpful, as well as caregiver and teacher reports of students' symptoms.

Last, Beauvais and LaBoueff (1985) discuss the role of acculturation and its importance in understanding and working with diverse groups of people. Future research may benefit from examining how an individual's identification with his/her own culture as well as with the majority culture impacts the effectiveness of CBT interventions.

## Conclusions

Results suggest that this modification of the CWD-A course is a promising treatment intervention for rural AI middle school students with depressive symptoms in this particular Northern Plains reservation community. Students in both groups demonstrated a significant decrease in depressive symptoms, with some students moving out of the range of clinical significance. There was also a trend for students in both groups to have a decrease in anxiety symptoms from pre- to post-intervention, although only students in the CWD-A group continued to demonstrate a trend toward lower anxiety symptoms at 3-month follow-up. Although more research is clearly needed, this study contributes to the literature on CBT for youth in underserved rural communities, informing the acceptability and feasibility of cultural adaptations to a CBT depression intervention for youth. While students in both the CWD-A and TAU groups reported a decrease in depressive symptoms, the effectiveness and acceptability of the group intervention suggests that this culturally modified version of the CWD-A course may be a promising treatment alternative, as it utilizes fewer school resources than individual treatment and may be a less stigmatizing treatment approach in rural AI communities.

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