

A Randomized Controlled Trial of a Depression Prevention Curriculum for Rural Middle School Girls: Initial Findings and 6-Month Follow-up

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Abstract

This study describes the development and immediate effects of a school-based, cross-age (high school), peer-led, targeted intervention to reduce and prevent the onset of major depression among girls ages 13-15 attending a rural middle school in Northern Florida. The intervention, Talk 'n' Time, is based on cognitive behavioral and positive youth development principles. This study is a single-blind randomized controlled trial of a school-based targeted intervention to reduce depressive symptoms and prevent the onset of major depression among middle school girls. Participants in the intervention arm of the study attended 12 weekly 90-minute sessions after school. Participants in the control arm of the study were placed on a monitored waitlist. Participants were recruited through an in-school special assembly for 6th, 7th, and 8th grade girls, posters with cultural diverse girls, and through mailings sent to the same group demographic. Depression symptoms and severity were assessed at baseline and again at 14 days post-intervention. Approximately 8% of participants dropped out before providing complete data, but there was no evidence of attrition bias. Mean scores from a repeated measure analysis indicated that intervention participants showed significantly greater reductions in depressive symptoms relative to controls from pre to post and 6-month follow-up. These results tentatively suggest that this school-based, peer-led, depression prevention program can improve rural middle school girls' depression symptoms. Innovative programs are needed to reduce the risk of and prevent the acquisition of major depression among middle school girls, particularly those that are marginalized and resource poor in rural communities. This program implements several innovations to its design of depression reduction and prevention in rural middle school girls. Future directions for research and practice are discussed.

Keywords: Depression; Prevention; Rural; High-risk; Middle school-based; Manualized intervention; Peer led; Telehealth

Introduction

Prevalence estimates of major depression among adolescents have been reported to be between 7 and 9 percent [1,2]. This is a significant problem, as depression in this group has been associated with increased risk for academic failure, interpersonal problems, suicide attempts, and legal problems in adolescents [1,2]. Despite this, few studies have focused on rural adolescents and depression. Thus, knowledge with regard to prevalence, intervention and prevention effectiveness is limited. However, some studies have given us some indication that there is need for further investigation among this population. Burns, et al. [3] found that baseline depressive symptoms were significantly related longitudinally to follow-up incidences of depression among rural youth [3]. Research from this cross-sectional analysis of over 700 adolescents from a rural outpatient clinic revealed a significant relationship ($p=.001$) between depression scores and negative behaviors including drug abuse, tobacco abuse, alcohol abuse, unsafe sexual activity, and violence. This study also found significant relationships between depression scores and history of physical and sexual abuse, poor exercise, body mass index (BMI), interpersonal problems with peers, problems with family, and poor school performance [3]. Researchers have also begun to identify a strong link between developmental stressors and an increased risk of depression during adolescence [4-7]. Moreover, Monroe and Harkness [6], note that an increased emphasis should be placed on the role that life

stressors likely play in the association between a premier episode of major affective disorder, and subsequent sensitization to further stressors [6]. In a study examining adversities in adolescence (e.g. parental drinking, parental mental illness, violence in the family home, and parents' marital struggles), researchers found that the experience of adversity was significantly linked to the occurrence of a depressive episode by age 20 [7]. Furthermore, although this research is not specifically focused on rural adolescents, it does lend itself to the importance of depression prevention during this age and stage of development.

At-risk adolescents, who are in early stages of their depression trajectories, may be able to avoid these associated behaviors through prevention or early intervention. Thus, the current study sought to evaluate a manualized depression prevention curriculum, Talk 'n' Time, which was developed in response to a lack of accessible, empirically supported programs aimed at depression prevention among at-risk rural middle schoolers. Of note, rural adolescents are disproportionately under-insured and rural communities often lack adequate numbers of health and mental health professionals [8-13]. Because rural youth typically lack resources and access to needed services, prevention programs may be instrumental in ameliorating the impact of depression on individuals within these communities. This study aims to evaluate the impact of a modified version of a previously studied depression prevention program [16] for its usefulness with at-risk rural middle school girls. The resulting program, Talk 'n' Time, is expected to improve depressive symptoms of participants in the treatment condition of this pilot study.

Much of the research concerning the characteristics of effective depression prevention programs for young people in general may also apply to rural middle school aged adolescents, as the conceptual model for depression prevention among these populations should be consistent. In general, depression prevention programs tend to achieve more robust results if they are carefully targeted to youth at risk (as defined by a variety of operational indicators) rather than all youth in the population. Depression prevention programs are also more effective if they target higher proportions of female and ethnic minority participants, both of which are groups at greater risk of depression [14]. Programs of shorter duration (6-12 sessions) and programs assigning homework report better outcomes than other interventions [14]. Finally, programs addressing varying mediators of depression (negative cognitions, pleasant activities, problem-solving and social skill development) report comparably effective outcomes. While the above findings are important to consider when thinking about depression prevention for rural youth, rural communities present additional challenges that must be addressed. For example, rural areas tend to be more impoverished and have greater proportions of ethnic minorities [17-21]. Along with greater proportions of low-income families, rural communities lack access to the healthcare facilities and services that are typical within urban communities [8,10-13]. Additionally, the influence of middle schoolers social networks on their behavior is different for rural and urban youth. Specifically, social networks in rural youth are more likely to have a stronger influence over member behavior because the networks may be more interconnected, all encompassing, and exclusive [22]. One commonly proposed solution to this lack of access to services in rural communities is to deliver mental health services through the school system [23,24]. However, multiple barriers exist to developing and implementing school-based mental health prevention, intervention, and screening programs in rural areas. For example, there is a dearth of culturally sensitive programs, and rural areas tend to have greater proportions of ethnic minorities. Additionally, the current inadequate funding for rural mental health services coupled with the shortage of mental health professionals suggests that qualified practitioners would likely not be available to develop or run school-based mental health programs.

Talk 'n' Time: Depression, Prevention, Design and Implementation

Talk 'n' Time is an adapted version of an evidence-based depression prevention program for at-risk urban adolescents [16,25]. The prevention program teaches cognitive-behavioral (CB) principles to adolescents who have experienced sub-diagnostic depression or sadness in the past, with the goal of providing coping tools and preventing the full onset of major depressive disorder (MDD). The Talk 'n' Time curriculum shares common characteristics with a variety of youth-oriented evidence-based depression prevention programs [26]. Specifically, the techniques featured within this intervention are rooted in Cognitive-Behavioral Theory, and have been shown in the literature to be effective at reducing depressive symptoms in multiple populations [14]. During the development of Talk 'n' Time, several important modifications were made to the original curriculum to address considerations related to the rural setting and community culture [25], as well as the gender and age of participants (13-15 year old girls). Talk 'n' Time changes the original curriculum to address the qualities of social networks of rural youth. Within rural settings, the increased amount of influence that social networks have over adolescents, as well as the interconnected nature of those networks can

be a source of social support. However, a destructive social network or disturbances within a supportive social network may contribute to the early onset of depression in rural youth. To best address this potential barrier, Talk 'n' Time includes a series of positive youth development (PYD) principles, as recommended by the US Department of Health and Human Services. Some of the principles implemented through Talk 'n' Time include: fostering an ability to overcome obstacles, promoting clear thinking and reasoning, fostering a sense of positive agency, promoting the creation of a positive identity, and teaching the ability to understand and control emotions [27]. Although the effects of PYD skills on depression have not been evaluated, it is likely that middle school girls equipped with these skills would be better able to communicate and cope in a more positive way. Due to the shortage of mental health services and professionals in rural areas it is difficult, if not completely impossible, for the scarce mental health practitioners to deliver depression prevention programs in the communities' schools. As previously noted, the shortage of funds and practitioners within rural areas likely results in practitioners being faced with providing limited or no services to community members with the most acute issues. Like many rural communities, the county where Talk 'n' Time was developed and piloted has less than half the mental health professionals per capita of the nearest urban county. While teachers may serve as a viable option for mental health service delivery within some rural communities, teachers in the state Florida are restricted in the services they can provide, as a result of large class sizes and the pressure incurred as a result of state-wide academic audits. In an attempt to meet the mental health needs of rural youth without requiring the services of teachers or mental health practitioners, Talk 'n' Time utilizes the community's natural resources and leaders. These individuals could be the school's parent liaison, a parent, or in the case of this study, older peers (also known as cross-aged peer facilitators). In addition, Talk 'n' Time utilizes older cross-aged peers to deliver the manualized intervention to the younger (middle school-aged) adolescent participants. Cross-age programs are peer-helping programs in which high school students serve as mentors to younger children [28]. In the past, programs led by older peers have achieved impressive outcomes targeting other risk behaviors [29-31], but have not been tested for their impact on depression prevention. High school peers may have greater influence on middle school participants who are experiencing a peak in their need for autonomy from adults, but these facilitators may also require more training and more explicit manuals to maintain intervention fidelity than mental health professionals. High school peers, particularly in Florida, can be motivated to act as facilitators for programs because of the community volunteer requirements necessary to qualify for Bright Futures scholarships. Further, some peer facilitators may qualify to receive college credit for completing training and facilitating the program. Through the use of participatory action research (PAR), stakeholders (including the high school peer leaders) gave qualitative feedback regarding the age and cultural appropriateness of the manual [25]. Through this, stakeholders suggested that the existing training manuals were too complex (due to reading level and mental health jargon) for high school students to follow and did not reflect the sociocultural (e.g. illustrations and examples used) realities of the population of interest. Thus, the program needed to incorporate more age- and culturally-appropriate training for the cross age peers, the language in the manual needed to be addressed prior to testing in regard to whether older peers could deliver a high fidelity evidence-based intervention, and the manual needed to include better sociocultural representations of the rural population. This feedback was incorporated into the manual prior to the training sessions with the cross-aged peers and the

implementation of Talk 'n' Time for the pilot study [25]. These modifications were designed to make the program relevant to rural middle schoolers smaller social networks, to make it appealing to minority youth, to make it accessible to younger students and youth with lower reading levels, and to be more feasible with regard to program delivery. Talk 'n' Time is a manualized, 12-week prevention intervention that was piloted as a peer led after-school program. The 12-week intervention consists of twelve 90-minute group sessions designed to be delivered once a week. Talk 'n' Time was advertised within the community as a program designed to equip rural middle school girls at-risk for depression with the tools necessary to become emotionally confident, capable, and self-reliant young adults who make healthy choices, as we theorize that this is instrumental in preventing the onset of Major Depression. The key components of the intervention include: identifying and changing negative thought patterns, understanding and controlling mood, creating new positive behaviors (e.g. participating in and identifying new pleasurable activities), understanding peer pressure and how to respond to it, media images of females, social skills development and networking, problem-solving, and psycho-education regarding the cognitive behavioral triangle of thoughts, beliefs, and behaviors. Session facilitation methods include small group discussion, classroom interactive exercises, and outdoor activities. Each session follows a basic format with three sections: 'What' (discussion of event and associated feelings and actions), 'So What' (discussion of event purpose and learning opportunities presented), and 'Now What' (applying skills). At the end of each session, key learning point handouts are given to participants as well as homework practice assignments that address similar session content.

Methodology – Peer Group Facilitators

Participant recruitment and screening

Potential peer group facilitators (ages 16-18) were recruited from the local high school's Family, Career, & Community Leaders of America (FCCLA) program. The research staff presented the opportunity to the female students enrolled ($n = 88$) in all sections ($n = 5$) of this course offered on the campus and gave interested students applications ($n = 30$) to apply to become a peer group facilitator. FCCLA students interested in the program completed a volunteer participation packet. The Talk 'n' Time volunteer participation packet included a letter outlining the purpose of the project and informing the applicant that the project had been approved by Florida State University Institutional Review Board and their local school board's research review committee, the Peer Group Facilitator application, consent/assent forms, 2 letters of recommendation forms, and a depression assessment measure (CES-D). Applicants were instructed to complete the Peer Group Facilitator packet and return it to the Talk 'n' Time School Liaison by November 22, 2010. Talk 'n' Time research staff then obtained the completed Peer Group Facilitator applications from the school liaison for review and final selection of Peer Group Facilitators. Peer Group Facilitators were selected based on their responses on the Peer Group Facilitator application, letters of recommendations, and CES-D score. Peer Group Facilitator applicants with a CES-D score of 20 or greater were excluded from the applicant selection pool and were referred to their school guidance counselor. Further, a letter was sent to their parents indicating that their child may be in need of more intensive intervention services based on their score on one of the assessment tools included in the Peer Group Facilitator Packet. Within the letter, the name of the school guidance

counselor and her contact information was provided. The school guidance counselor also made appropriate referrals based on school protocols to the child's or family's local primary care physician.

Training

Participants

Twelve peer group facilitators were selected from the FCCLA applicant pool (30). The average age of the peer facilitators who attended the training was 16.5 ($SD = 1.59$). The ethnic-racial composition of the peer facilitators was 75% African American and 5% Non-Hispanic White. Selected high school peer group facilitators, ($n = 12$), teacher supervisors ($n = 2$) and sponsors ($n = 2$) took part in a 3-day intensive training with national youth empowerment trainers and the research team to learn about implementing CBT and PYD techniques in groups.

Manual modifications

The training and facilitator manuals modifications were completed prior to the onset of Talk 'n' Time facilitator training. Along with the research team, the youth empowerment trainers presented the Talk 'n' Time curriculum in a session-by-session format and engaged the training participants through role-playing vignettes. Through the vignettes, training participants were encouraged to further consider the concepts, ideas and activities covered in each of the training sessions. As mentioned previously, peer group facilitators, teacher supervisors, and sponsors were invited to provide qualitative feedback regarding suggestions and improvements for the training and facilitator manuals; much of which was incorporated into the manual with the research team's guidance.

Training location

The training took place at the local middle school, where the facilitators would be implementing the intervention. Peer group facilitators were required to read and memorize sections of the peer facilitator manual. During the 3-day training, peer group facilitators and the research team took part in mock group sessions in which the peer group facilitators first observed the first author delivering selected sessions to the group. The peer group facilitators then were required to take turns delivering their assigned session to the group and were rated on their level of adherence (i.e., no adherence to total adherence on 0-2 point scale) and level of competence (80% competence on a 3-point competence scale), to each session delivered.

Final selection

After the training, the research team, teacher supervisors, and sponsors reviewed the peer group facilitator applications a final time and discussed how each selected applicant performed, participated, and handled the demands of the training. From these discussions 6 peer group facilitators were selected for the implementation phase of the project.

Peer group facilitator supervision

During the randomized control trial intervention phase, peer group facilitators spoke with a member of the research staff prior to each session via telecam to discuss session content and concerns of the facilitators. After each session, the peer group facilitator also received

personalized feedback from a research staff person who viewed the session live. Finally, each peer group facilitator was rated using the training rating scales on their level of adherence and level of competence for each session. During the intervention phase, each session was observed live via telecam by a trained Master's level research staff member. The peer group facilitator supervisor (Middle School Personnel) was also onsite in case a need arose for emergency intervention.

Measures

Quantitative

The CB knowledge survey

The TALK 'n' TIME CB Knowledge Survey is a 15-item, true/false measure designed to test knowledge of Cognitive Behavioral (CB) principles. It was used as a pre and post-test measure for the peer facilitators before and after training. The items on this test were drawn directly from the CBT manual [32]. Examples of items on the Facilitator Survey include "Your moods are mainly created by your thoughts and actions," "You change your thinking by talking back to your negative self-talk," and "Sadness is a normal and healthy response to some events."

The TALK 'n' TIME training satisfaction survey

This survey was given to all peer facilitators after they completed the training. It is a 19-item measure scored on a Likert-type scale from 1 (Strongly Disagree) to 5 (Strongly Agree). The first 15 items allow the participants to rate aspects of the training. These items include statements such as "Prepared me to complete my specific job responsibilities as a Peer Group Facilitator," "Allowed me to test training skills that I was being taught," and "Sparked and maintained my interest." The remaining four items ask about the peer facilitators' recommendations regarding the training materials and the trainers and are rated on the same scale as the first 15 items. This section includes items such as "These trainers should keep providing the training with these training materials," and "The training material is good but the trainers should be changed."

Qualitative

TALK 'n' TIME cultural relevance feedback form

Both the peer facilitators and the faculty supervisors/sponsors were asked to review the intervention manual and complete an intervention feedback form after day one of the training and at the end of the training. Peer facilitators and faculty supervisors/sponsors were given a 12 page review sheet that followed the intervention sessions. At the top of each review page was the session number that coincided with the intervention session. Below the session number, students and faculty were given the following instructions: "The intervention manual should capture real feelings and events that occur commonly in the lives of youth in your community," followed by a series of questions; (1) What suggestions do you have for this sessions?, (2) Did you make any changes to wording or terminology used in this session? If so, please outline the change made and on what page, (3) Did you make any changes to the pictorial representation of key concepts or the use of scenarios that depict real life experiences of adolescents living in your area? If so, please outline the changes made and on what page.

TALK n TIME training debriefing interview

After the training, peer facilitators were asked to provide oral responses to a series of 8 open-ended questions. These items included "How relevant do you think the examples used to teach the lessons in each session are to the girls that it is intended for?" and "Which (if any) of the session activities would you have liked more training on before you practiced delivering it?" The questions were designed to assess the peer facilitators' perception of the relevancy of the intervention sessions to the intended audience, the adequacy of the training provided to lead the sessions and suggestion on how to improve either, if necessary.

TALK n TIME post-intervention facilitator experience debriefing interview

Finally, post-intervention, facilitators gave qualitative data on their perceptions of barriers and aids in implementing the intervention. The Debriefing Interview was administered to peer facilitators after they had conducted the final intervention session. Peer facilitators were asked to provide written responses to a series of 9 open-ended questions. These items included "What were the most important things you learned in facilitating Talk 'n' Time?" and "How could we improve training or pre-session review so that it would better prepare you to be a Talk 'n' Time Facilitator?" The questions were designed to assess the peer facilitators' perception of the barriers and aids in implementing the intervention.

Results

Quantitative

Pre and post-test CB knowledge survey

The mean score of peer facilitators on the pre-test was 10.22 (SD = 2.33), as compared to 12 (SD = 1.73) on the post-test. This difference was significant, and represents an improvement in CB knowledge, $t(8) = -2.78, p < .05$. Because the CBKS has 15 true/false questions, a score of about 7 or 8 would be expected from a subject who knew nothing about CBT. The maximum score on this scale is 15. The individual items from the CBKS were selected to assess knowledge of a variety of cognitive and behavioral concepts such as automatic thoughts, pleasurable activity involvement, and negative self-talk. Correlations between test items were computed as a measure of reliability with the Kuder-Richardson formula 20 (KR 20) [33]. This statistic is a form of Chronbach's alpha utilized for dichotomous data (i.e, true/false). The KR 20 for data from this study was 58.

Training satisfaction survey

An internal consistency reliability was calculated on the 15-item scale. The results yielded a Cronbach's alpha for the 15-item scale of .83, indicating strong internal consistency of the items in the scale. After reviewing the item-total correlations, all items were retained in the final scale as there was no theoretical or statistical reason to eliminate any one item. Overall, participants rated the training with high satisfaction. None of the participants endorsed any item with a rating less than "Agree" on the five point scale of "Strongly Agree" to "Strongly Disagree." All participants responded that they strongly agreed with the statements, "The training I have received so far has been worthwhile," "The training I have received so far is something I am very happy I decided to do," "The training I have received so far

sparked and maintained my interest,” “The training I have received so far offered an opportunity for me to share my experiences,” “The training I have received so far was tailored to meet my learning style (the way I learn best),” “The training I have received so far inspired me,” and “The trainers were knowledgeable about the materials.” All but one of the participants strongly agreed with the statements, “The training I have received so far prepared me to complete my specific job responsibilities as a peer group facilitator,” “The training I have received so far assisted me to develop skills in interacting with my younger adolescent peers,” “The training I have received so far taught me skills to help me improve the quality of life of the students I support,” “The training I have received so far was delivered at a comfortable pace so I could understand the content,” and “I expect to use the information from this training, not just as a facilitator but also in other areas of my life.” Finally, all but two of the participants responded that they strongly agreed with the statements “The training I have received so far provided information I need to perform my duties as a peer group facilitator,” and “The training I have received so far gave me a chance to have my questions answered.”

Qualitative

TALK ‘n’ TIME cultural relevance feedback form

Feedback from the peer facilitators, faculty supervisors, and sponsors was used to adapt the intervention sessions, concepts, activities, and homework assignments. The following were suggested changes to the intervention that were incorporated to the manual: giving incentives to the participants for attendance and homework, eliminating the use of the word “depression” and replacing it with “feeling sad, bad, or down;” utilizing more pictures and charts to give the participants a visual depiction of concepts, ideas, and applications; adding an outline of all materials that will be needed for each session so that facilitators can have all materials ready when the participants come to sessions; an activity to be associated with each session instead of just handouts/discussions; adding a discussion of the pros and barriers to coming to group; having a check-in and check-out at the beginning and ending of each session, respectively; as well as several grammatical and mechanical changes.

TALK ‘n’ TIME training debriefing interview

The Post-Training Debriefing Interview was intended to augment the results of the quantitative satisfaction survey by eliciting qualitative responses to 8 questions about the facilitator training. First, respondents were asked which session activities were easy for them to lead. Responses varied widely. Some of the activities that participants reported were easy to lead included the “M&M game,” the “Me Commercials” activity, and the “Me Box” activity. Instead of listing specific sessions or activities, two peer facilitators gave more general statements like, “The activities that were not as emotional were easier,” and “All of the activities that involved making the right choices; I felt I was good at leading.” The second question in the interview was “Which session activities were hard for you to lead?” Responses to this item also varied and included, “Some of the worksheets; I feel like I didn’t explain in a way for them to understand;” “Session 1 was hard because we were just getting to know one another and everyone was uptight;” and “I felt that the handout [based] lessons were harder to lead than the actual activity [based] lessons.” Respondents were also asked which (if any) of the session activities would you have liked more training on before you practiced delivering it. Responses to this item mostly

reflected that the facilitators felt well-trained. A typical response was, “I felt comfortable with all the activities I led” or “I had no trouble leading...sessions.” However, one peer facilitator reported wanting more training on the “M&M game,” but did not outline any additional specific information. Next, the peer facilitators were asked to identify the session activities they felt worked well during the training and to explain why they thought the activities worked. Only one peer facilitator identified an activity by name (the “Me Commercial” activity). Other peer facilitators gave more general statements that reflected a more comprehensive understanding of the program such as:

“When we worked in small groups it seemed to work better than the larger group activities; we seemed to have more time to get the activities finished,” “I think the activities that were a lesson and then a game were the best. It kept the group members attention better and helped them to apply what they were learning.” Peer facilitators were also asked to identify session activities that did not work well and to explain why they thought the activities turned out that way. Responses to this question varied, and reflected difficulty in keeping the attention of the group when there was down time. Responses to this interview item included: “Some of the worksheets that taught decision making strategies, I feel the group got bored with.” “The paper masks did not work as well as we wanted as most of the other facilitators didn’t really get the point of the activity.” “Anytime the other facilitators were all free to talk they tended to interrupt one another in the early stages but then towards the end it got better;” “Anytime it was just a lesson and discussion without an activity the session did not go as well and did not keep their attention.” Next, the peer facilitators gave feedback about how relevant they felt the lessons in each session were to the group and also gave feedback about how relevant they thought the examples used to teach the lessons were in each session. In both cases, all respondents reported feeling that the material was relevant. Typical responses, “I feel they were relevant to the girls and they were able to ... apply them”. The peer group facilitators were also asked whether they were concerned about any particular girl in their group after the completion of the program. An example response from one of the facilitators was, “I am not concerned about anyone in the group, I feel like I have seen some great changes in the individual girls and the group all together.”

The final question asked of the peer facilitators was “What kinds of experiences in your own life do you feel you drew upon during this training?” Again, responses to this question were varied. Some of the facilitators reported feeling like they had similar experiences to the girls in the groups that they were leading. Some quotes from the facilitators are, “When the girls talked about other girls talking bad about them I knew what that was like and was able to relate and give them suggestions on how to deal with girls like that,” “I had no previous experiences that really could have prepared me for Talk ‘n’ Time other than the training we received,” and “I have been through many of the same situations as these girls and I was able to apply how I dealt with the situations in my working with them.”

TALK ‘n’ TIME post-intervention facilitator experience debriefing interview

The 9-question Post-Intervention Debriefing Interview was administered to peer facilitators after program completion to elicit qualitative data regarding the facilitators’ perceptions of the barriers and aids in implementing the intervention. The first question that facilitators answered was, “How did you feel about being a Talk ‘n’ Time facilitator?” All responses were positive in nature. They included,

"I really enjoyed being with the girls and hearing them talk about their various problems that I could help with," "I loved it in the end but it was a bit scary at first," and "I loved it! It was so much fun & I felt like I was making a difference with the girls." During the interview, facilitators were asked if they would be a Talk 'n' Time facilitator again. Most respondents said that they would, although several mentioned practical barriers such as time constraints and scheduling conflicts. Examples of responses to this question are, "Yes, I would facilitate the program again if I had the opportunity," "Most definitely! I love this program & I love working with the girls," and "I really enjoyed being a facilitator but I am not sure I will have time next year to commit to it as it requires a lot of time commitment."

When asked whether they would recommend being a Talk 'n' Time facilitator to one of their friends, all of the peer facilitators said that they would. An example of a thoughtful response to this inquiry is, "Yes, I totally would, but not just to anybody. I would recommend it to someone who I know would really love these girls." The peer facilitators also responded to the question, "What were the most important things you learned in facilitating Talk 'n' Time?" Answers to this item varied widely and included, "I learned how to deal with the girls in many different circumstances; like when they're mad or in bad moods or even when they are really excited and how to calm them down so we could do the activity," and "I learned to be patient and you never know what someone is going through unless you take the time to find out and listen to them."

When the peer facilitators were asked about what impact they felt the program had on the girls in their groups, their responses all reflected that they believed the program had a positive effect. Some examples of responses are, "It gave the girls hope to overcome their own situations and negative thoughts," "I think this program allowed these girls to be open and to open themselves up for the first time," "I think they began to feel better about themselves and think more highly about themselves," and "It showed them how to be themselves and be strong." Next, the facilitators were asked to think about what impact they may have had personally on the girls in their groups. Most peer facilitators reported either that they believed they had a positive impact or that they weren't sure but hoped that they made a difference. Some of the facilitators' responses were, "I truly think I had a positive impact on the girls," "I just hope that I was able to let them know how much I cared about them," and "I am praying that I made a difference because I don't want these girls to make some of the mistakes I have."

The peer facilitators also gave statements about what surprised them in their roles as Talk 'n' Time facilitators. Responses varied, but several responses reflected surprise at the amount of life experience or hardship that the girls had experienced. These statements included, "I was surprised at some of the things the girls talked about and the stories that they would tell about their lives," "I was surprised at all they had been through at such a young age," "The girls treated me as if I was an adult; not as if I was a peer," "The thing that surprised me was the different experiences that we all were able to share together no matter how different we seemed at first," and "I was really surprised at how much these girls go through on a daily basis." Similar to post-training, the peer facilitators were asked how training or pre-session review could be improved so that it would better prepare them to be Talk 'n' Time facilitator and their responses reflected that they felt well-trained. Some of the responses were, "I think we were trained really well and I felt prepared based on the training we got," "I think the training was great but I think the facilitators also need to meet weekly or a day before the group to go over the sessions and get everything

together," "I really thought the training was great." However, one facilitator indicated that, "I would have liked for us to go into more details into the curriculum in the training." Finally, the peer facilitators were asked if they were concerned about any particular relationship between girls in the group. Again, only one respondent reported any concerns. The response of that respondent was, "Some groups of friends seem to bring out the worst in one another." More typical responses included, "I feel like all the girls in the group bonded throughout the program and through each session," and "I think the relationships between the group members got stronger over time."

Methodology – randomized control trial

A randomized controlled trial of a new prevention intervention, Talk 'n' Time, was conducted with institutional review board approval at a rural middle school. This paper reports on the immediate results of that trial (pretest and post-test) and 6 month follow up.

Setting and sampling frame

This study was conducted at a state-funded middle school in a rural county in the Southeastern United States. At the time of the study, a total of 249 seventh graders were enrolled at this school and 47% of them were girls. There were 224 eighth graders enrolled, 51.3% of whom were girls. Overall, there was a potential sampling frame of 234 girls enrolled in the 7th and 8th grades. The racial-ethnic composition of the 7th and 8th grade cohort is as follows: 56% African American, 43% Caucasian, and 1% Hispanic (7th grade); 57% African American, 41% Caucasian, and 2% Hispanic (8th grade). All 7th and 8th grade girls between the ages of 13-15 attending the school were eligible to apply to participate in the Talk 'n' Time program.

Inclusion and exclusion criteria

Applicants were eligible for inclusion if they met all of the following criteria: 1) they were girls enrolled in 7th or 8th grade, 2) they were between the ages of 13 and 15, and 3) They scored 10 or above on The Center for Epidemiological Studies Depression Scale (CES-D) or they endorsed questions 1 or 3 (depressed mood or anhedonia) as moderate or severe for the current month on the Kiddie-Schedule for Affective Disorders and Schizophrenia (K-SADS). Applicants were excluded if they met formal criteria for depression on the K-SADS or expressed suicidal intent or ideation.

Participant screening and recruitment

The Talk 'n' Time program was introduced by school staff and the research team to all 7th and 8th grade girls in two special assemblies held in the school's auditorium during the first week of the spring semester. During these assemblies, 7th and 8th grade girls were provided a description of the program. After the assemblies, interested girls were given an application packet from a school staff member. Each application packet contained the initial baseline survey and the approved informed consent and assent forms and letter describing the purpose of the program and informing potential participants and parents that the program had been approved by Florida State University Institutional Review Board and their local school board's research review board. Within two days after the application close date, the research team reviewed all the applications to select and contact potentially eligible participants for a final eligibility interview. People conducting these interviews had extensive training in diagnostic interviewing and had earned master's degrees in either psychology or

social work. Participants were contacted via telephone to set-up this final eligibility interview, which was a diagnostic interview using The Kiddie-Schedule for Affective Disorders (K-SADS) to determine depression caseness and severity. Once the eligibility interview was completed the interviewee was given a \$5.00 honorarium. Within seven days of the completion of the initial eligibility interview stage, letters were sent to each of the applicants indicating whether they had been selected to participate in the program and providing further instructions.

Participants

The participants were 34 rural middle school girls (approximately 15% of the overall sampling frame) that met the inclusion criteria for the study. The average age of the 20 participants in the treatment group was 13.85 (SD = 1.09). The racial-ethnic composition of the treatment group was 80% Black, 15% White, and 5% Hispanic. The average age of the 14 participants in the monitored waitlist control group was 13.64 (SD = 0.84). The racial-ethnic composition of that group was 86% Black, 7% White, and 7% Hispanic.

Measures

The program was evaluated by comparing between-group change in depressive symptoms, which were measured prior to the implementation of the intervention (baseline), 14 days post-intervention (post-test), and at 6 month post-intervention (follow-up).

Depressive symptoms

A one-page self-report screener containing the Center for Epidemiologic Studies-Depression Scale (CES-D) was used to screen for depressive symptomology. The CES-D is a 20-item self-report measure of depressive symptomatology that has good psychometric properties [34] and that effectively assesses depression in adolescent populations [35]. It can be completed and self-scored easily by adolescents. Depression caseness and severity was measured for this study by the adapted Schedule for Affective Disorders and Schizophrenia for School-Aged Children (K-SADS; [36]), which consists of 16 items that measure DSM-IV depressive symptoms with excellent kappas ($k=0.73-1.00$), test-retest reliability ($r=0.60$ to 0.90), and convergent validity with clinician ratings (mean $r=0.75$).

Demographics

Demographic information collected for this study included age, date of birth, race/ethnicity, number of members in household, parental level of education, and social network information.

Design and Procedure

Initial data collection

First, baseline data were collected from participants during the eligibility determination phase. Participants took home and completed a paper and pencil survey that included a consent and assent form, demographic questions, the CES-D, coping skills items, The Major Life Events Scale, and items from the Network of Relationships Inventory. Prior to beginning the Talk 'n' Time program, participants were interviewed (by phone) using the K-SADS for eligibility determination and to provide the baseline measure for depression. After this interview, all students received a letter informing them of their

eligibility status. For those accepted into the intervention arm of the study, the letter gave details as to the program start date (description of the day and time of the week), the room in which they were to report on the start date, and the length of the program. For those who were selected and assigned to the control group, the letter indicated that due to limited space the student would be placed on a waiting list for the program but would be monitored throughout the program. Students with K-SADS scores indicating major depression and/or suicidal ideation were referred to the school guidance counselor, who made referrals to primary care physicians or local medical clinics as indicated by school policy. A letter was also sent home to the parents that provided contact information for the guidance counselor and indicated that their child may be in need of more intensive intervention services.

Randomization

Once all of the participants were selected, a research assistant who did not do any of the assessments randomly placed eligible participants into one of two groups using a random number table: A group receiving the 12-week Talk 'n' Time intervention or a monitored waitlist control group

Intervention implementation and fidelity

Six trained high school (juniors and seniors) peer facilitators and 3 alternates delivered the intervention. The sessions were held after school at the middle school campus. Sessions were supervised by a teacher supervisor, as required by the school system. To ensure intervention fidelity, each session included a detailed, step by step, time-guided intervention manual with checklists for peer facilitators. Additionally, video conferences with the research team reviewed program objectives and content with peer facilitators immediately before each session, viewed each session live to evaluate intervention fidelity, provided feedback to peer facilitators immediately after each session (session debriefing), and identified any participants who evidenced risk to self or others for referral in accordance with school policy.

Post-test and 6 month data collection

Trained interviewers, who were blind to study assignment, completed follow-up interviews at post-treatment, and 6 months follow-up. Participants (intervention and waitlist controls) who completed the post-program and follow-up interviews were given a \$5.00 honorarium for each interview and were also given the opportunity to attend a program sponsored event.

Results

Descriptive statistics for variables of interest were analyzed and are discussed. A repeated measures analysis of variance was also performed to test whether there was a change in depression scores over time before-treatment, post-treatment, and six months after-treatment with a comparison between intervention and control groups investigating mean differences.

Characteristics of the Sample

The mean age of both groups was similar: the control group mean was 13.64 (SD = .84) and the intervention group mean was 13.85 (SD = 1.09; see Table 1). There were no significant differences found between

the mean age differences of the intervention and control group, $t(32) = .597, p = .555$. 82.3% of our sample was African American, 11.7% was Non-Hispanic White, and 6% were Hispanic/Latino. There were equal numbers of Hispanic youth ($n=1$) in the control and intervention groups, but there were more African Americans and Non-Hispanic Whites in the intervention group ($n=14;3$, respectively) than in the control group ($n=12;1$, respectively). However, this difference was not significant. Related, all females aged 13-15 within the community were invited to participate in the study, yet the strict inclusion and exclusion criteria set by the research team resulted in an unintended oversampling of African Americans. This is likely because the selection of participants was based on these criteria from the potential applicant pool. The applicants were primarily African American and therefore those eligible from the applicant pool were primarily African American. Additionally, it is important to note that none of the participants (either in the intervention or control group) had previously been exposed to depression treatment, either through medication or psychotherapy.

Variable	Means		Standard Deviations	
	Control	Intervention	Control	Intervention
Age	13.64	13.85	0.842	0.898
Grade	7.625	7.5	0.496	0.488

CESD	14.1	15.4	8.1	10.23
KSADS Posttest	4.5	1.93	3.34	2.49

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Table 1: Means and Standard Deviations of Variables ($n=32$)

Depression scores

Participants assigned to the two conditions did not differ on demographic factors, treatment services received for emotional/behavior problems during the past year, or the baseline outcomes measure. On average, intervention participants showed significantly greater reductions in depressive symptoms than did control group participants from baseline to 6 months follow-up, $F(1) = 9.320, p = .005$ (see table 2).

Depression Scores	Levene's Test for Equal Variances		T-Test for Equality of Means							
	f	Sig.	t	df	Sig. tailed	(two Mean dif.	Std error dif	95% Confidence Interval of the difference		
								Lower	Upper	
KSADS Baseline	2.45	0.389	0.652	0.389	0.521	0.77	1.18	-1.67		3.2
KSADS Post-test	0.772	0.131	-2.2	0.389	0.038	-2.57	1.17		-4.98	-0.156

Table 2: Independent Samples T-Test Mean Comparisons: Difference in Depression Scores ($n=32$)

Discussion

This article describes the design, immediate outcomes, and 6 month follow-up of a peer-led, culturally and aged-appropriate, depression prevention program that provides additional guidance to middle school girls perceived to be at higher risk for developing major depressive disorder (MDD). The pre/posttest survey findings indicated statistically significant improvement in the peer facilitator's CB and Youth Development Knowledge after completing the TALKnTIME training. All participants responded that they strongly agree or agree with all the statements on the Training Satisfaction Survey indicating that the peer facilitators were overall satisfied with the training and that they felt the training prepared them to complete their duties as a peer facilitator. The data from the training debriefing interview seem to give additional support and depth to the training satisfaction survey in that most all of the peer facilitators indicated that they felt well prepared to deliver most sessions after the training. Some peer facilitators did however indicate difficulty in leading group activities when the group was too large. During training, there were 12 peer facilitators, 2 school staff, and 4 trainers who all played mock roles as adolescent girls; two girls led each session which left a total of 14 active mock participants during each session. Due to this, when the program

went live we limited each group to six participants per two peer facilitators. The post-program interview provides some support that facilitators are generally satisfied with their training, that they perceive the program (including their role in it) as effective in improving the psychological well-being of the program participants, and that they have derived some personal satisfaction from their own participation. The overall pattern of results of this pilot study provides preliminary support for the effectiveness of the intervention, as Talk 'n' Time was associated with reductions in the depressive symptoms of rural middle school girls. Results from this study, while undeniably promising, should be interpreted with some limitations in mind. First, the sample size was quite small, so the results are not necessarily generalizable. However, our sample did represent approximately 15% of the sampling frame; which seems to be consistent with the mental health prevalence estimates in the literature that report a range of 12% to 19% in rural youth [17,37]. Although, some individuals did not complete the intervention, it should be noted that this only represents an 8% attrition rate which is considered low for a 13-15 year old adolescent girl population and could be seen as indirect support for the assertion that the treatment acceptability was high for the Talk 'n' Time intervention. Additionally, although none of these individuals dropped out due to dissatisfaction with the program, it still reduced the sample

and had the potential to create further differences between groups. The small sample size may also reflect that the referral procedures used did not yield as many potential participants as originally planned. Several of the students mentioned that they had reservations about being part of the group, but asked if they could submit an application after hearing what the participants were doing in the program. This highlights a need to modify recruitment strategies and the presentation of the program in the future. Another limitation of the present study is that the peer facilitators were given more support than is likely to be available outside of the research context, especially in rural areas. For example, it is unlikely that peer facilitators would get regular feedback on their performance from a practicing clinician. However, the effect size for the difference in depression scores between the intervention and control groups was quite large, suggesting that the program is likely to remain effective when the extra supports provided by the research team are no longer available. Even considering the limitations, the preliminary findings are promising and indicate that the intervention resulted in significant post-treatment improvements in depression scores within the intervention group when compared to the control group. These results tentatively suggest that peer-led depression prevention school-based programs can improve rural middle school girls' depression symptoms post-intervention with lasting effects at 6-month follow-up.

Recommendations for Future Research

Innovative programs are needed to reduce the risk and prevent the acquisition of major depression among middle school girls, particularly those that are marginalized and resource poor in rural communities. Talk 'n' Time is a promising intervention that may help to fill this hole in care for at-risk rural youth. Of course, additional research is necessary to further assess the efficacy of Talk 'n' Time. There are follow-up studies planned for 6 months and 12 months post-intervention. The results of these endeavors should provide some information about the persistence of the positive immediate gains. The promising initial results of Talk 'n' Time can be partially attributed to the use of participatory action research methods, which can be used to tailor generic programs and interventions to be more appropriate and effective for particular populations. For example, one strength of Talk 'n' Time is its shift of focus from the use of specialty mental health providers and teachers to a focus on "natural resources" (e.g. high school peers) from the community in order to address the shortage of professionals in rural areas. A separate but related strength is that Talk 'n' Time was tailored to rural communities using feedback from stakeholders residing in a rural community who are demographically similar to other rural residents. Participatory action research practices such as these likely contributed to the initial success of the Talk 'n' Time intervention. These methods can and should be used when tailoring interventions for marginalized or underserved populations.

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