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## A Process Evaluation of an HIV/STI Intervention for Rural African American Youth

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### Abstract

We evaluated the fidelity and implementation of an HIV/AIDS and sexually transmitted infections intervention for rural African American youth. Using a community-based evaluation approach, community partners and researchers monitored four core process-evaluation components: reach, fidelity, dose delivered, and dose received. Researchers collected evaluation data through session observations, facilitator debriefing interviews, a youth focus group, and a satisfaction survey. For reach, more than half of the participants attended the 13 sessions. Participation varied between 62% and 100%. For fidelity, not all sessions were implemented as intended; multiple modifications occurred across sessions. For dose delivered, some lessons were missing materials and content was omitted; facilitators omitted content when there was insufficient time to complete a lesson. For dose received, engagement varied across lessons but youth reported high levels of satisfaction with the intervention. This formative process evaluation enabled us to identify and address multiple challenges to implementation.

### Keywords

adolescents/youth; African Americans; HIV/AIDS prevention; research evaluation; research; rural

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Despite more than 30 years in the fight against HIV/AIDS, we still face challenges in reaching populations affected by the virus. The difficulty of reaching geographically isolated or rural populations results in limited access to HIV/AIDS-prevention education, HIV

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testing, and health care for individuals living with HIV and AIDS (Southern AIDS Coalition [SAC], 2008). Structural challenges such as limited transportation and the lack of medical providers and facilities contribute to the difficulty of reaching rural residents (Castaneda, 2000). In these geographically dispersed communities, it is especially challenging to implement HIV/AIDS outreach programs and other sexual-risk-prevention interventions. Multisectoral collaborations and partnerships are often required to reach these underserved communities. In this article, we present results of a process evaluation of an HIV/AIDS-prevention intervention targeting rural African Americans in which we used community-based participatory research methodology involving an academic–community partnership to reach rural areas burdened with high infection rates.

African Americans in rural areas are disproportionately affected by the HIV/AIDS epidemic, particularly those who live in the rural south. Southern states represent approximately 67% of all AIDS cases among rural populations (SAC, 2008). Fifty-two percent of African Americans living with AIDS and 58% of newly diagnosed AIDS cases reported in 2006 were among African Americans in the south (SAC, 2008). In addition, for the past 20 years, sexually transmitted infection (STI) rates have been consistently higher in the south compared to other regions; southern states report higher infection rates of chlamydia, gonorrhea, and syphilis (SAC, 2012).

Adolescents are disproportionately affected by STIs, accounting for nearly half of all STI cases (Centers for Disease Control and Prevention [CDC], 2011). Moreover, STI rates have continued to rise in this vulnerable population; between 2009 and 2010, gonorrhea rates increased 0.9% for females and 2.1% for males (CDC, 2011). Increases in STI rates put adolescents at higher risk for HIV as well. These high rates are especially concerning for African American adolescents, who have the highest rates of STIs and HIV among adolescents of all races (CDC, 2011, 2012).

Although these STI statistics are not specific to rural adolescents, previous reports have shown that for the past two decades STI rates have been higher in the south (SAC, 2008). Despite these statistics, most HIV/AIDS-and STI-prevention interventions are designed for and conducted with individuals living in northern urban areas (Smith & DiClemente, 2000). In southern states like North Carolina, the highest incidence of HIV/AIDS is in rural counties (Adimora et al., 2003). To address the disparate rates of HIV among rural African Americans in eastern North Carolina, we developed a prevention intervention: Teach One Reach One (TORO). The program was implemented in two rural counties where African Americans composed 34% and 58% of the county populations but represented 82% and 86% of people with HIV/AIDS (Corbie-Smith et al., 2011).

We describe the process evaluation of the TORO program. We focus on four key components of process evaluation: reach, fidelity, dose delivered, and dose received, providing a detailed description how each of these components was evaluated. We conducted a process evaluation for two primary reasons. First, process evaluations provide a description of the program and the program operations so that others can easily replicate the intervention (Royse, Thyer, Padgett, & Logan, 2006). Second, process evaluations provide information to assess and improve intervention content, delivery, and implementation (Jenkinson,

Naughton, & Benson, 2012). To our knowledge, this study describes the first community-based HIV/AIDS- and STI-prevention intervention implemented among African American youth living in the rural south. Our goal was to evaluate the implementation of this pilot prevention intervention.

## Method

### Intervention Background and Description

We developed TORO in the context of a community-based participatory research partnership (Corbie-Smith et al., 2010). The intervention was developed through Project GRACE (Growing, Reaching, Advocating for Change, and Empowerment) to address HIV/AIDS and STI disparities in rural African American communities in eastern North Carolina. Project GRACE is a consortium of academic–community collaborations between partners that share the common goal of eliminating health disparities in African American communities (Corbie-Smith et al., 2010). The rising rates of HIV in the southeastern United States in general and in rural North Carolina in particular was one of the major health concerns shared by members of these communities (Corbie-Smith et al., 2010).

The Project GRACE consortium and steering committee provided quality control checks on academic–community decision making about strategies used to address HIV/AIDS disparities. Our research team has published detailed articles describing the community-based participatory research approach (Corbie-Smith et al., 2010), and also an article that describes our community–academic partnership development (Corbie-Smith et al., 2011).

Our previous formative and capacity-building work in the community revealed concern particularly about risk behaviors among the youth (early sexual initiation, substance use, delinquent behaviors; Akers, Muhammad, & Corbie-Smith, 2011). Key stakeholders and community partners agreed that the community needed an intervention to reduce sexual risk behaviors among African American youth residing in rural communities (Corbie-Smith et al., 2010). Our community partners and the youth agreed that the intervention should target preteens and those in early adolescence to educate them while they are young and prior to exposure to risk behaviors (Coker-Appiah et al., 2009). Community members emphasized the need for a multigenerational intervention that involved parents or other influential adults who would reinforce the information provided to the youth (Corbie-Smith et al., 2010).

We designed TORO using a lay health advisor (LHA) model, in which research participants are considered as natural helpers and are trained to share their gained knowledge and expertise with their friends. Our research team created separate curricula for youth and parents that were administered simultaneously. The youth curriculum focused on abstinence, condom use, and healthy dating relationships. The parent curriculum focused on parental monitoring, communication about sexual health, and healthy dating. In this article, we focus on a process evaluation of the youth curriculum only.

We piloted the intervention from October through December 2008. A full description of the development of the intervention is published elsewhere (Corbie-Smith et al., 2010). Briefly, the intervention consisted of 13 sessions; each session was led by a trained facilitator and

cofacilitator. The sessions were scheduled to last for approximately 90 minutes. All sessions were held at a predominantly African American church in one of the two intervention counties. The participants attended sessions every Saturday for 9 weeks; four of the sessions were doubled (lessons taught back-to-back in a single day). Participants were not penalized for missing a session; however, they could not miss more than four sessions or face termination from further intervention participation. Weekday make-up sessions were offered for those who could not attend the Saturday session.

### **Facilitator Selection and Training**

Our community partners played a pivotal role in the hiring and training of the local resident facilitators. The facilitator positions were advertised in two local newspapers, within our partnering agencies, and by word of mouth. The interviewing team consisted of a subcommittee of the steering committee, an executive director of a partnering agency, and the TORO project coordinator. The research staff and the subcommittee developed the interview guide; revisions were made based on recommendations from the subcommittee. The candidates participated in a two-round interviewing process. The first round focused on screening and matching of skills, and the second round focused on facilitating a mock TORO session. The interviewing team made candidate recommendations once the interviewing process was completed; they submitted the list of candidates to the full steering committee for a vote and approval.

The hired facilitators were introduced to the organizational structure of Project GRACE and were considered community partners in eliminating HIV/AIDS disparities, because they were also residents of the communities where the intervention was implemented. Our community partners and project staff jointly developed and conducted a 5-day facilitator training workshop, which included didactic and interactive trainings. During the workshop, facilitators learned about the overall purpose of the study, research protocol, and research integrity. They reviewed HIV and STI information such as modes of transmission, prevention methods, and HIV stigma. The training also included content about intervention facilitating styles, methods for encouraging group participation, and handling group interruptions. The facilitators were trained to teach both the youth and parent curricula. They were required to deliver a 1-hour mock presentation of an intervention lesson and received additional intensive training on the research protocol and procedures (e.g., recruitment, obtaining consent, participant tracking).

Over the course of the intervention, the university-based project staff and several community partners conducted 1- to 2-day refresher workshops for facilitators in which they discussed ways for improving cofacilitation, identifying content delivery challenges, practicing the delivery of challenging content, and improving their overall facilitation effectiveness. We tailored the content and number of refreshers according to the facilitators' expressed needs. The project staff also provided a 1-hour conference call training on collecting process-evaluation data during the intervention sessions. The community partners were trained on how to use each evaluation instrument and what to look for during the lesson delivery. Community partners were paired with a project staff member during their initial observation to ensure that they understood the process for monitoring the session.

## Youth Participants

We recruited 12 African American youth (referred to as youth ambassadors in the intervention curriculum)—7 boys and 5 girls—who resided in the target counties. The mean age for the youth was 10 years. The youth were recruited by community partners through local community-based organizations, community events, and churches. The eligibility criteria for youth ambassadors were as follows: (a) self-identified as African American, (b) resided in either of the two intervention counties, (c) agreed to participate voluntarily, (d) were between 10 and 14 years of age, and (e) identified at least five ally pairs (i.e., caregiver/youth pairs). All of the recruited dyad pairs, which consisted of the caregiver and his or her youth, were informed that they would not be eligible for participation if they were unable to identify ally pairs, and they were required to provide the names and contact information of their allies. The parents provided written consent for youth participation and the youth signed assents. The youth also provided informed consent prior to intervention participation. They received cash incentives for their participation in the study. All procedures were approved by the University of North Carolina Institutional Review Board.

## Process Evaluation Components

We assessed treatment fidelity (whether the youth curriculum was administered as planned) and identified challenges to the intervention delivery. We included four core elements for the process evaluation: reach, fidelity, dose delivered, and dose received (Saunders, Evans, & Joshi, 2005). Reach is the proportion of the priority target audience that participates in the intervention sessions. Reach and recruitment are generally described as two distinct evaluation components. Recruitment entails the approach used to attract participants, barriers to recruitment, and maintenance of participant involvement (Saunders et al., 2005). We focused on reach, which was measured using participant attendance logs.

A formal evaluation of the recruitment was not conducted and will not be reported in detail here. Briefly, recruitment occurred in the two intervention counties using local resident recruiters who were hired through advertisements in the local communities. Adherence to the recruitment plan consisted of documenting when and where recruitment took place, who they spoke with, number of contacts made, and whether the person consented or declined participation.

Fidelity, a theory-driven element, assessed the quality of implementation and to what extent the intervention components were implemented as planned. The framework we used to guide intervention content and delivery was social learning theory (Bandura, 1977). More specifically, we assessed facilitator effectiveness with the delivery of the session content (e.g., familiar with material, confident in material delivery, confident in modeling behaviors). Dose delivered assessed whether all of the intended intervention content was delivered to the participants, whether intended methods and strategies were used, whether the methods and materials were appropriate, time spent on content, and facilitator satisfaction with intervention implementation. Dose received assessed participant reactions to intervention content, extent of participant engagement, and satisfaction with their intervention experience. One way we assessed how participants responded to specific

aspects of the intervention was to observe their verbal and nonverbal expressions (i.e., facial expressions, body posture) throughout the sessions.

### Process Evaluation Instruments

Data were gathered from multiple sources, including structured session observations, debriefings with intervention facilitators, youth satisfaction surveys, and a youth focus group. Table 1 shows the data sources and instruments used to gather information about each of the four core evaluation components. The project staff and community partners created the instruments. We used these instruments and a focus group with participants to gather community input on how the intervention could be improved. The use of the various forms of data collection allowed for triangulation of the data to increase the credibility and validity of the findings (Padgett, 1998). For example, data from the observation guide, LHA debriefing guide, and focus group, which are described below, were used to extract findings pertaining to fidelity, dose delivered, and dose received. We describe all data collection instruments below.

The observation guide was used to record the fidelity of session delivery and the participants' reaction to the lesson. Project staff and community partners served as observers. All 13 lessons were observed. Using the guide, observers documented the start and end time of each activity, as well as the start and end time of the informational content delivered. For each section within a lesson, the observers documented whether participants appeared interested in the content, the comprehensibility of the content, any missing materials, and effectiveness of the facilitator delivery.

The session observers conducted the debriefing with the facilitators (LHA coordinators) following each session using the LHA coordinator debriefing guide. This guide consisted of 18 items (see Appendix A), which included questions about the relative ease of teaching the content, the participation and engagement level of the youth, content or activities that worked well, needed revisions to the content or activities, and any other logistical issues. The debriefing lasted for approximately 25 minutes. The participant satisfaction survey consisted of 11 items; each youth participant completed the survey after the final session. Participants were instructed to respond to the questions using a 5-point Likert scale (1 = strongly agree, 2 = agree, 3 = disagree, 4 = strongly disagree, 5 = doesn't apply to me).

Project staff conducted a focus group with all youth for additional insight on how participants experienced the intervention and to obtain recommendations on how to improve TORO. Participants also discussed expectations about the intervention and the value gained from their participation. Staff conducted the focus group after the final session. A youth attendance log was used to record each participant's attendance; the facilitator marked the youth as present, absent, or withdrawn at the beginning of each session.

The data from the observation guide and the LHA coordinator debriefing guide were primarily used to measure fidelity, dose delivered, and dose received. More specifically, the observation guide and the LHA coordinator debriefing guide were used to assess participant response and engagement with the lesson content, the intervention fidelity, appropriateness of content and activities, and successes and challenges with the content and delivery. The

focus group was also used to assess dose received (engagement and satisfaction). The participant satisfaction survey was used to assess fidelity (facilitator effectiveness) and dose received (satisfaction). The youth attendance log was used to measure reach.

## Data Analysis

The LHA debriefing guide interviews and the youth focus group were audio-recorded and transcribed verbatim. The data were coded and analyzed using Atlas.ti (2011), a qualitative data-management software. We used an inductive approach to content analysis and the constant comparative method, which is central to the grounded theory framework (Glaser & Strauss, 1967; Strauss & Corbin, 1998). We read the transcripts several times in their entirety to allow for full immersion of the data (Borkan, 1999). All relevant text that referred to treatment fidelity was highlighted as a data-reduction technique. Next, we used the open coding process by reading the transcripts line by line to identify themes related to the four key process evaluation areas that were pertinent to improving or modifying the intervention content and delivery (Padgett, 1998).

Major categories and codes were derived by using key words in the text. We discussed the identified themes and grouped them into thematic categories, a process known as axial coding (Padgett, 1998). We developed a thematic codebook based on the axial coding and reviewed the codebook by discussing and defining thematic categories and codes. Two members of the research team who were involved with all aspects of data collection, data preparation, and codebook development coded and compared coded data to test interrater reliability. Discrepancies in coding were discussed until a consensus was reached between the coders. After coding, the coders conducted queries to assess the relationship between codes relevant to the four evaluation components. We examined the queries and conducted a careful inspection of the content pertinent to our evaluation. We concluded that even with a modest sample size, the LHA debriefings and focus group provided rich information and consistent themes across transcripts. Thus, no additional debriefings or focus groups were necessary.

We used different approaches to analyze the data collected from the other evaluation instruments. We aggregated and analyzed the observation guide data by creating tables to quantify the amount of omitted content, activities, and materials. The percentage for each response item was calculated for the satisfaction survey. The response-item percentages were calculated by hand because of the relatively small number of surveys. Finally, the proportion of youth attendance was also calculated by hand based on the recorded attendance for each session.

## Results

### Reach

The research goal was to reach 15 dyad pairs. We recruited 15 dyads; however, only 12 pairs were eligible to participate in the program. Three dyads were unable to participate because they did not have an adequate number of allies recruited before the program began. We found no significant differences in attendance patterns between girls and boys. A maximum

of 4 participants were ever missing from a single session. Several of the participants joined the study later in the intervention because of prior obligations; an increase in attendance was noted in Sessions 5 through 13. Youth attendance varied between 62% and 100%. More than half of the participants attended each of the 13 sessions.

### Fidelity

Overall, the implementation process was not consistently facilitated as intended and the underlying objectives of each lesson's content and activities were not always achieved. The quality of the implementation was compromised because of participants' frequent late arrival. Six out of the 13 sessions started 10 to 30 minutes late. Starting the sessions later than intended affected the facilitators' content and activity delivery. They frequently made decisions to shorten or omit content to complete the lessons in the allotted time. Another challenge was that some content required more time to cover than allotted because the youth had difficulty grasping concepts or they extended the discussion. Spending more time than allotted on particular sections resulted in facilitators reducing the time spent discussing other content and role-modeling behavioral skills, and reduced the time youth had to practice new skills. Despite these time constraints, facilitators and session observers often noted successful facilitation of the content, role modeling, and skill practicing (e.g., negotiating risky situations and condom use) by the youth.

Observers documented several areas where the facilitators could have been more effective when delivering the intervention. First, facilitators inconsistently took advantage of “teachable moments.” For example, when a participant's feedback or question referenced a previously learned skill, facilitators sometimes failed to explicitly make the connection between earlier content and the current discussion (observation guide [OG] 2). Second, observers highlighted the facilitators' inconsistency in encouraging youth participation. Some youth were slow to respond and less alert at the beginning of sessions and required encouragement to get their active and sustained participation (OG 2). Third, facilitators sometimes lacked preparation, as reflected in their seeming unfamiliarity with the lesson. Observers noted that facilitators occasionally read a lesson verbatim from the facilitator guide rather than facilitating its content. This caused the facilitators to appear less confident with the content and the delivery seemed less effective at engaging participants or increasing knowledge and skills (OGs 5, 8, 9).

Equally important, the observers noted specific actions that the facilitators took to enforce implementation fidelity. For example, the facilitators reminded participants to arrive promptly to sessions, complete weekly assignments, and follow the group rules to avoid delays and interruptions. The facilitators were very effective in modeling behavioral skills and in assisting the youth as they practiced each skill. They often provided additional examples or scenarios to help the participants understand concepts, because the participants were expected to apply these concepts and skills in future sessions. Facilitators were skilled at detecting when participants did not understand the content and were able to modify instructions as needed. These modifications often improved youth comprehension and participation. The facilitators were also attuned to the group's participation level and



incorporated different strategies to reenergize the group to increase participation (e.g., brief stretching exercises, providing candy).

### Dose Delivered

Data collected through the lesson observation guides indicated that a variety of implementation changes occurred across the lessons. The changes in the content covered were primarily a result of omitted lesson content and activities and modified classroom and dyad activities (caregiver–youth joint activity). Nine lessons had missing materials (i.e., posters, worksheets, game materials), eight lessons had omitted content and activities, and six lessons had modified class and dyad activities. Facilitators extended certain lesson components beyond the time allotted. The maximum time overage for a given component was 30 minutes (OG 4). On average, components were extended 10 to 15 minutes over the allotted time. One facilitator commented about moving quickly to complete the lesson because they spent additional time clarifying content, saying, “At the end I did have to rush. I think that was just because we gave them time or we took the time for them to ask questions.”

Conversely, some facilitators discussed the issue of having too much time for certain sections of the lesson. One facilitator commented about specific sections within the lesson where too much time was allotted: “Some sections I felt like it was too much time allotted for, like introduction. Didn't really need five minutes for that part because we only had one new person.” In most of the lessons, the introduction, homework review, homework assignment, and wrap-up sections required less time than the 5 minutes allotted. According to the recorded times on the observation guides, these sections were completed in 1 to 4 minutes. On average, sections containing the most content-dense material were completed 5 to 10 minutes under the time allotted. One content-dense section was completed 20 minutes under the allotted time (OG 6).

Another time issue was the difference in the time between completing the youth and the caregiver sessions. The youth usually completed their session prior to the caregivers; as a result, the youth experienced delays before starting the dyad activity. During periods of delay, the facilitators reviewed previously taught concepts and allowed the youth to practice behavioral skills, such as condom application (OG 11).

For most sessions, we found the content to be appropriate for the youth, but there were some comprehension challenges documented by the session observers. Table 2 shows the major comprehension challenges experienced by the youth from the perspective of the observer and facilitator. For example, data from the observation guide documented the difficulty the youth had in understanding decision-making concepts. The observer noted that the youths' responses indicated that they understood possible consequences associated with certain decisions, but they were unable to identify the problem and alternative decision choices during a decision-making activity (OG 2). Thus, the observer indicated that the decision-making model concept appeared too advanced for the youth. Contrary to the observation comments, the facilitators believed that the youth experienced challenges with understanding decision making because of the advanced vocabulary used and not because the concept was too advanced (LHA debriefing guide 2).

Several terms in the decision-making content were noted as challenging for some of the participants. The lesson observers documented that the facilitators spent additional time clarifying the meaning of certain terms. The importance of participants understanding the vocabulary is noted in a comment from one facilitator:

Being able to give definitions of certain words that the kids [youth] may ask that's not so much sticking strictly to the topic. Being able to veer off the topic maybe just a little if they have any questions about what certain word, words are and the functions or whatever.

Another facilitator also mentioned the challenge that some participants had with specific terms:

Some of the things they did not understand is an obstacle, a challenge, and the reason I knew that is because of course they asked me what those words meant. And one of the participants said he was confused, and I elaborated but I wasn't supposed to.

Facilitators and observers were also able to recognize when the material and activities needed to be altered to improve its effectiveness with the youth, such as simplifying instructions and incorporating activities to augment content comprehension; they often suggested ways in which content and activities could be improved. For instance, the quote below provides an example of how a facilitator suggested incorporating a role-play activity to enhance the youths' understanding of healthy and unhealthy relationships:

I guess have the kids to actually role play, say for instance a healthy relationship. Maybe put a girl and a guy [boy] together and have them actually role play what's a healthy relationship, and then what's unhealthy, and then have maybe the class to determine through the role play if it's healthy or unhealthy.

Other suggestions to improve content and activities included changing the method for certain activities to increase participation: "I probably would have them to write more. I think the, the visual and the physical of actually writing, and plus also it will help more of the kids to participate." Also, making the lessons more interactive was a common theme among facilitators. The facilitators emphasized adding more role playing and hands-on activities to increase the understanding of various concepts within the lesson and to increase participation.

The facilitators acknowledged the fluidity between sessions, whether single or double sessions, which reinforced the content for the youth. In the following comment was noted the recognition of the connectedness between sessions: "I thought how family, friend, and community could help was a good activity, and it was good that this session reflected back on healthy relationships." The facilitator gave additional feedback regarding the logical flow of the content:

That was a good tie-in from the previous week. To go from setting personal boundaries into risky situations was a good segue. I don't know if we tied it in as much as we could or should have, but I thought it was a good segue from setting personal boundaries to risky situations.

Overall, facilitators reported that they were satisfied with the implementation of the sessions. Some referred to well-implemented sessions as lessons that were completed in their entirety and delivered as designed, whereas others reported being satisfied with implementation even when the lesson was modified or had omitted content or activities. Well-implemented sessions were also defined as sessions that the youth “connected with,” displayed attentiveness to, and engaged with in high levels of participation, offering “good” feedback. For example, during a debriefing a facilitator commented,

I feel the session went well. The kids participated. Everybody was involved. Every last child actually had something to say and I think, you know, as far as the timing being a little bit behind, we worked everything in and got everything accomplished.

### Dose Received

The session observers and facilitators were astute to the engagement level of the youth. They described youth engagement as giving good feedback, asking questions, and being eager to respond to questions. The following comment describes youth engagement from one facilitator's perspective: “Asking questions, answering any questions that the facilitator had, participating in the activities, and also volunteering to write on the board is what we had today; a lot of volunteers.” Most facilitators agreed that it was difficult to maintain the attention of the youth, particularly when double sessions were delivered. The format of delivering two sessions in one day was mentally wearing for them: “I think this session didn't go as well as the first one. I guess the kids were tired, agitated, but still they did communicate with the lesson.”

The facilitators and observers also paid attention to the facial and body expressions of the participants. For example, observers noted when the youth maintained eye contact with the facilitator, nodded their heads to signal they understood, and smiled and laughed to indicate relating to the lesson. Observers also documented expressions of disinterest such as playing with cell phones, being fidgety, wondering stares, and frequent requests to use the restroom (OGs 4, 12). Restroom interruptions were most frequent when double sessions were implemented; observers reported consistent restroom interruptions for three out of the four double sessions.

We also captured the reaction of the youth to specific aspects of the intervention in the LHA debriefings. One facilitator referenced a comment made by a participant regarding the use of support systems to avoid risky situations: “When they said they wanted their families to warn them of dangerous situations, I thought that was something we should take note of—that children still want to be parented.” Another facilitator commented on the reaction and response that the youth had during a condom-use demonstration activity:

I think they got more involved with it. At first it was like, “Eww!” You know? Some of them was actually backing back like, “We've really got to do this, we really have to touch them?” and then they really all got into it and it was like, “Okay, we learned this is how you do it.” And they were asking questions. It made me know that they was paying attention because they was asking, “Well, why can't we use it again?” and “What if you flip it over and turn it to the other side?” I mean, so those are questions that you want them to ask.

In addition to the positive reaction that the youth had to the lesson content and activities, the satisfaction surveys indicated that many of the youth were satisfied with their overall intervention experience. Satisfaction with each of the 13 lessons was high, representing the upper quartile of the satisfaction scale. Several examples of items scored at the 90th percentile or greater included the belief that other youth would enjoy taking the lessons, they would tell friends to participate in the program, they were satisfied with the lessons, and they liked participating in the program. The youth also commented on their experience with the intervention in the focus group. One of the participants expressed deciding to participate in the intervention because of wanting “to learn not to get HIV/AIDS.” When asked what they expected the training to be like, participants said things such as “important and fun,” “educational,” “boring,” “to be all about sex,” and “wasn't expecting to make friends.”

The participants indicated that the most memorable parts of the intervention were learning how to put on a condom, learning what a female condom looks like, and learning about how to have safe sex. According to one youth, the most important thing about the training was “how not to get a disease that can affect you for the rest of your life.” When asked how they would explain what a TORO ambassador is, a youth responded, “If you go outside and you get to playing and you see your friends, you can go back in the house and get your own [TORO] binder and teach them about it.” One youth pointed out that he had already educated one of his friends: “My friend said the wrong term, and I had to tell him what was the right term for that particular body part.” Finally, when asked how they would improve TORO, the majority of the youth stated that they would increase the duration by adding more weeks to the intervention so they could have time to learn more safe-sex information.

## Discussion

We evaluated the implementation of an HIV/AIDS- and STI-prevention intervention for rural African American youth. The TORO process evaluation, which incorporated input from community partners, project staff, and participants, showed that the overall implementation of the intervention was successful. The omissions and modifications found were less significant when considering all the content and activities that were delivered as intended. This study adds richness to the existing literature in that it is the first study to use a community-based participatory research approach to evaluate a rural HIV/AIDS and STI intervention. To our knowledge, no other study targeting rural African American youth has used an evaluation design in which community partners were involved in identifying and resolving intervention-implementation challenges.

In addition, training the entire research team to use multiple evaluation tools to capture intervention successes and challenges contributed to the thoroughness of the evaluation. The facilitators and project staff reported that most sessions were delivered as intended to the targeted population. The delivery process, however, was not without minor flaws (see Table 3 for a summary of problems and solutions). Many of the problems and solutions highlighted in Table 3 were jointly identified and resolved with the input of our community partners. Because of the formative nature of the process evaluation, we were able to solve many issues during the implementation phase, which allowed us to maintain the overall integrity and impact of the intervention.

We recognized several important factors that are instrumental for successful implementation. First, it is vitally important to have effective facilitators. Effective facilitators know when and how to modify the lesson content if necessary. Although we trained the facilitators to follow each session as outlined, the TORO facilitators intuitively knew when to modify the lessons to improve youth comprehension and participation; for example, they knew when they needed to spend additional time clarifying concepts and vocabulary. This clarification helped to achieve the lesson objectives.

Second, timing is very important to implementing an intervention in its entirety. TORO contained some lesson components that were allotted too much time or too little time (as determined through this evaluation). Also, the time discrepancy between the youth and caregiver sessions resulted in the youth waiting to start the dyad activity. We are unable to elaborate on why this discrepancy existed because we did not evaluate both curricula for this article; however, we suggest that when implementing separate sessions for two groups simultaneously, both sessions be balanced in the amount of content and that the sessions start at the same time.

Third, the diverse evaluators and the different evaluation instruments contributed to the strength of this evaluation. This was particularly evident for the dose-delivered results regarding comprehension challenges. In Table 2, for example, the data showed corroboration and contradiction but offered a comprehensive perspective on why the youth experienced difficulties with certain aspects of the lesson. The variation of facilitator and observer feedback attests to the benefits of having a diverse evaluation team to identify challenges and successes across the lessons. We collected data from the various instruments, which permitted us to address a broader range of issues that might have caused the youth to struggle with the lessons.

### **Strengths and Limitations**

This study has several strengths and weaknesses. One of the strengths included the use of multiple data collection methods; the different data sources increased the rigor of the evaluation design. Second, we used various team members to collect the data to decrease bias in analyzing and interpreting the findings. Third, we used a qualitative approach to evaluation, which allowed for an in-depth examination of implementation that solely quantitative approaches generally lack.

As for limitations, the study did not assess facilitators and barriers to recruitment. We recruited a hard-to-reach population for an HIV/AIDS-prevention intervention study in an environment where HIV/AIDS stigma is high. Identifying effective recruitment strategies would have been a significant contribution to the literature in general and in rural sexual and reproductive health research in particular. Another weakness of the study is that it was primarily a qualitative evaluation, with the exception of the youth satisfaction survey. The qualitative approach offered a more subjective perspective and could be difficult to interpret because of varied interpretations from observers and facilitators. The observers were trained to observe as objectively as possible, but we also recognized that we could not control for individual interpretation because of the flexible nature of qualitative methods.

The inclusion of more quantitative measurements would have enhanced the evaluation by providing a consistent metric for evaluating session delivery, participant engagement, and facilitator effectiveness. For example, we could have developed the observation guide to include written qualitative observations and a metric scale for each question to control for observer bias. We could also have developed a brief participant and facilitator survey to be completed after each session to assess satisfaction, content, and facilitation problems to provide a quantitative account of their experiences with the sessions.

To ensure community input, we engaged multiple community partners to conduct the TORO process evaluation. Researchers from previous community-based participatory research projects have focused on engaging only staff members from community organizations to assist with assessing community health concerns (Hyatt et al., 2009) instead of broadening their approach to include community residents likely to be directly affected by these concerns. Unlike previous studies, we examined how engaged the participants were during each lesson and monitored the fidelity and effectiveness of each lesson. Other HIV-prevention intervention studies have incorporated a narrow evaluative perspective, using the data collected only from peer health advocates and ethnographers and excluding the perspective of the participants (Dickson-Gomez, Weeks, Martinez, & Convey, 2006). In another example of a narrowly focused process evaluation, a computer-based HIV intervention with rural ninth graders was evaluated on the technical aspect of the intervention only, such as materials being posted and functioning as intended; number of times students contacted technical support staff; and the number of unique entries to determine student participation (Roberto et al., 2007). The researchers did not gather information on student experiences with the intervention or feedback from school staff or administrators.

Researchers in a study targeting Hispanic youth used an evaluation approach similar to TORO; however, they evaluated two HIV-prevention programs (one new program and a 2-year-old program) within a community-based organization (Harper, Conteras, Bangi, & Pedraza, 2003). The TORO evaluation differed in that it was a newly implemented intervention that was not affiliated with an existing community-based organization and involved community partners representing different sectors of the community. Harper et al. (2003) created evaluation instruments such as facilitator journals, session-observation forms, participant session-evaluation forms, focus groups for current and previous participants, and individual participant interviews.

Harper et al.'s (2003) evaluation process was extensive, and like TORO, they gathered program and implementation data from the staff and participants; however, it is unclear whether they partnered with other agency-based staff and community members to help conduct the evaluation. In short, there are many strategies used to conduct process evaluations. Although no one strategy might be deemed superior to another, we chose to use an extensive qualitative approach that included invested community partners as evaluators.

## Conclusion

We have presented a study with an innovative approach to evaluating a rural HIV/AIDS- and STI-prevention intervention. This approach gave voice to the communities in which the study was implemented. The premise of community-based participatory research is the expectation that community partners share in the responsibility of understanding the health problems in their community and share control over all phases of the research (Israel, Schulz, Parker, & Becker, 1998). The community-based approach to process evaluation was helpful in determining how well study fidelity was upheld. Community partner involvement in the evaluation was critical to improving the success of the study. TORO is a model example of how research and community partnerships together improve the health of a community and make certain that the programs offered in a community reflect the interests and needs of that community.

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## Appendix A

### LHA Coordinator Debriefing Guide

How did you feel about the session? Did it go well? Why or why not?

What types of activities worked well? What didn't work well?

In what way did the session flow logically?

Did the participants seem to easily understand the content of the session? (Probes: What didn't they understand? What were some indicators that they did understand the content?)

Did the participants seem to easily understand the activities in the session? (Probe: What didn't they understand?)

How engaged were the participants? (Probe: What were some indicators that the participants were engaged?)

How did their participation and involvement change as you progressed through the session?

How well do you think the participants related to the lesson?

What interesting points were raised for you?

How good was the match between the amount of time allotted to teach the session and the amount of material that you needed to cover?

How well were the participants' objectives met?

Was there anything unusual or awkward about the session?

What revisions/changes would you recommend for the remaining sessions?

What revisions/changes would you make to this session?

Were there any interruptions during the lesson?

Were there other people (besides participants) present during the data collection event? If so, who, and what was their role? [This question was asked only after Lessons 1 and 13. Data collection occurred prior to Lesson 1 and following Lesson 13.]

Were there problems with the layout of the room? Briefly describe the setting.

Were there any other logistical problems (e.g., food and so forth)?

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**Table 1**

Teach One Reach One Youth Curriculum Process-Evaluation Methods.

Core Process-Evaluation Components		Process-Evaluation Question	Data Sources	Tool/Procedures	Timing of Data Collection	Data Analysis or Synthesis	Reporting
Fidelity		To what extent was the intervention implemented consistently with the underlying theory and philosophy?	Curriculum Intervention mapping matrices	Comparison of lesson content to performance and behavioral objectives from the intervention mapping matrices	End of intervention program	Performance and behavioral objectives not captured in the lessons were identified and listed	Summative—described for each lesson and project overall
		Was the training implemented as intended?	Program staff  LHA coordinator	Observation guides  LHA coordinator debriefings	Program staff reported weekly observations  LHA coordinator debriefings administered at end of each lesson	Observations used to modify curriculum  Coded debriefings using Atlas. ti; codes used to modify curriculum	Formative—biweekly feedback to staff  Summative—described for each lesson  Formative—biweekly feedback to staff  Summative—described for each lesson
Dose Delivered		To what extent were all of the intended units or components of the intervention provided to participants?	Program staff	Observation guides	Program staff reported biweekly observations	Observations used to modify curriculum	Formative—biweekly feedback to staff  Summative—described for each lesson
		To what extent were all materials (written and audiovisual) designed for use in the intervention used?	Program staff	Observation guides	Program staff reported biweekly observations	Observations used to modify curriculum	Formative—biweekly feedback to staff  Summative—described for each lesson
		To what extent was all of the intended content covered?	Program staff	Observation guides	Program staff reported biweekly observations	Observations used to modify curriculum	Formative—biweekly feedback to staff  Summative—described for each lesson

Core Process-Evaluation Components		Process-Evaluation Question	Data Sources	Tool/Procedures	Timing of Data Collection	Data Analysis or Synthesis	Reporting
		To what extent were all of the intended methods and/or strategies used?	Program staff	Observation guides	Program staff reported biweekly observations	Observations used to modify curriculum	for each lesson Formative—biweekly feedback to staff Summative—described for each lesson
		Were methods and materials appropriate?	LHA coordinator	LHA coordinator debriefings	LHA coordinator debriefings administered at end of each lesson	Coded debriefings using Atlas. ti; codes used to modify curriculum	Formative—biweekly feedback to staff Summative—described for each lesson
			Program staff	Observation guides	Program staff reported biweekly observations	Observations used to modify curriculum	Formative—biweekly feedback to staff Summative—described for each lesson
			Ambassadors	Ambassador focus group	Focus group held shortly after completing final lesson	Themes identified from focus group through qualitative analyses using Atlas.ti	Summative—described the project overall
		How satisfied were the LHA coordinators with the actual implementation of the training?	LHA coordinator	LHA coordinator debriefings	LHA coordinator debriefings administered at end of each lesson	Code debriefings using Atlas. ti; codes used to modify curriculum	Formative—biweekly feedback to staff Summative—described for each lesson
Dose Received		To what extent were participants present at intervention activities engaged in the activities?	Program staff	Observation guides	Program staff reported biweekly observations	Observations used to modify curriculum	Formative—biweekly feedback to staff Summative—described for each lesson

Core Process-Evaluation Components		Process-Evaluation Question	Data Sources	Tool/Procedures	Timing of Data Collection	Data Analysis or Synthesis	Reporting
			Ambassadors	Ambassador focus group	Focus group held shortly after completing final lesson	Themes identified from focus group through qualitative analysis using Atlas.ti	Summative—described for the project overall
		How did participants react to specific aspects of the intervention?	Program staff	Observation guides	Program staff reported biweekly observations	Observations used to update curriculum	Formative—biweekly feedback to staff
			Ambassadors	Ambassador focus group	Focus group held shortly after completing final lesson	Themes identified from focus group through qualitative analysis using Atlas.ti	Summative—described for each lesson Summative—described for the project overall
		How satisfied were Ambassadors with the training?	Ambassadors	Satisfaction survey	Survey administered at final lesson	Response frequency summarized	Summative—described for the project overall
			Ambassadors	Ambassador focus group	Focus group held shortly after completing final lesson	Themes identified from focus group through qualitative analysis using Atlas.ti	Summative—described for the project overall
		Were objectives achieved?	Program staff	Comparison of lesson content to matrices	End of intervention program	Performance and behavioral objectives not captured in the lessons will be identified and listed	Summative—described for each lesson and for the project overall
			Program staff	Observation guides	Program staff reported biweekly observations	Observations used to modify curriculum	Formative—biweekly feedback to staff
			LHA coordinators	LHA coordinator debriefings	LHA coordinator debriefings administered at end of each lesson	Code debriefings using Atlas.ti; codes used to modify curriculum	Summative—described for each lesson Formative—biweekly feedback to staff

Core Process-Evaluation Components						
	Process-Evaluation Question	Data Sources	Tool/Procedures	Timing of Data Collection	Data Analysis or Synthesis	Reporting
Reach	What proportion of the priority target audience participated in (attended) each session?	LHA coordinator	Attendance log	LHA coordinators took attendance at each lesson	Percent of youth in each session calculated	Summative—described for each lesson
	How many participated in at least one half of possible sessions?	LHA coordinators	Attendance log	LHA coordinators took attendance at each lesson	Percent of youth who participated in at least six sessions calculated	Summative—described for the project overall

Note. LHA = lay health advisor.

**Table 2**

Conceptual, Instructional, and Vocabulary Challenges Within Lessons.

Lesson	Conceptual/Content Challenges	Instructional Challenges	Vocabulary Challenges	Observer and Facilitator Feedback
Lesson 1		✓		Both agreed on instructional challenges
Lesson 2	✓		✓	Observer identified conceptual challenges, facilitators identified vocabulary challenges
Lesson 3	✓			Challenge identified by observer but not facilitator
Lesson 4	✓			Both agreed on conceptual challenges
Lesson 6	✓		✓	Both agreed on conceptual and vocabulary challenges
Lesson 7			✓	Challenge identified by facilitator but not observer
Lesson 8		✓		Challenge identified by facilitator but not observer
Lesson 9	✓		✓	Observer identified conceptual and vocabulary challenges; facilitators observed vocabulary challenges
Lesson 10		✓	✓	Both agreed on instructional and vocabulary challenges
Lesson 11	✓			Challenge identified by facilitator but not observer
Lesson 12	✓	✓	✓	Both agreed on conceptual, instructional, and vocabulary challenges

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**Table 3**

The Teach One Reach One Problem–Solution Matrix.

Core Process-Evaluation Element	Problem	Solution
Reach	Inadequate number of participants recruited and matriculated through the program	Strengthened recruitment for program by working with additional recruiters and community organizations to increase their referrals into the program; increased the amount of contact with participants who were recruited into the program to improve and gauge interest in the program; and offered a TORO informational/meet-and-greet session before the intervention began to answer questions and increase participant excitement, and to build trust with participants about the program  Increased collaborative recruitment efforts. The recruiters and LHA coordinators worked with various GRACE steering committee members to improve the networks to reach out to participants; recruiters worked in pairs at college fairs, visited schools and other sites (e.g., Boys & Girls Club and a teen pregnancy-prevention program) to recruit participants.
Fidelity	Length of session did not accommodate the allotted start/end time	Delegated cofacilitators as timekeepers to enforce session start/end time
Dose Delivered	Session materials missing during implementation of the lesson  Variations of lesson implementation (i.e., omitting content and activities, modifying lesson to adapt to participants)	Created a materials box and checklist for each lesson Delegated a community-based organization representative to check materials boxes prior to lesson being taught  Refresher facilitator trainings were conducted to share best practices and reinforce appropriate implementation methods. Delegated cofacilitators as timekeepers to enforce session start/end time
Dose Received	Maintaining and engaging youth participants  Youth participants desired a longer program	Created additional skits/role plays to engage youth  Created additional programs to include TORO graduates; programs included <i>Making Healthy Change Happen</i> (a photovoice and advocacy project with youth–caregiver pairs and their allies) and <i>Project Uplift My Sister</i> (a female-youth empowerment and gender-equality project)

*Note.* GRACE (Growing, Reaching, Advocating, for Change and Empowerment) is the name of the academic–community partnership formed to address health disparities. LHA = lay health advisor; TORO = Teach One Reach One.