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## Youth Ambassadors Reaching Out (YARO): Lessons learned from the implementation of a youth-based cancer education program

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## Youth Ambassadors Reaching Out (YARO): Lessons learned from the implementation of a youth-based cancer education program

### Abstract

We know that many factors contribute to the exacerbation of cancer health disparities. These inequities observed in adulthood may have originated from behaviors occurring in early adolescence. We believe that increasing awareness of cancer prevention in youth may help reduce future disparities. Our community partners identified a need for youth-oriented cancer prevention and helped design the pilot Youth Ambassadors Reaching Out (YARO) program. YARO provided cancer prevention and health disparities education and exposure to health careers to 73 middle school students between 2012-2016. YARO included didactic sessions (health disparities, smoking prevention, physical activity, nutrition), a cancer center tour, and Photovoice project. Students were encouraged to serve as ambassadors by sharing lessons learned with others. Participants demonstrated increases in cancer prevention knowledge during the program. Evaluation data revealed that students served as ambassadors by sharing information with others about healthy behaviors, improving their own health habits, and volunteering in their communities.

### Keywords

: cancer disparities, cancer prevention, adolescent health, health education, health promotion

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## Introduction

Many factors, such as race/ethnicity, socioeconomic status, and access to health care, contribute to the exacerbation of cancer health disparities (National Cancer Institute, 2019). These inequities observed in adulthood may have originated from behaviors occurring in early adolescence. Therefore, increasing awareness of cancer prevention in youth may help reduce future disparities. Although youth interventions have addressed a myriad of aspects related to cancer prevention and empowerment, no interventions to our knowledge addressed the need to empower and encourage middle school students to serve as ambassadors by providing education related to cancer prevention behaviors. Youth ambassadors are empowered to engage in and model healthy behaviors while promoting such behaviors among family, peers, and others via education and the sharing of resources. Prior research has demonstrated the potential for interventions to motivate youth to identify problems and solutions as lay health advisors and peer educators in their community while promoting healthy behaviors (Berkley-Patton, et al., 1997; Ferrera et al., 2015; Hingle et al., 2014; Ozer, 2016; Ritchwood et al., 2016; University of California, Berkeley, 2020; Varvel et al., 2010; Wilson et al., 2007; Zimmerman et al., 2018). These have included training youth to serve as lay health advisors for their peers regarding reducing risky sexual behavior (Ritchwood et al., 2016) and peer-to-peer programming that used health education to address major diseases (Ferrera et al., 2015). These findings highlighted the impactful role that youth can play in promoting healthy behaviors in their communities.

Given the impact youth empowerment programs can have on addressing health disparities (Ferrera et al., 2015), a youth-centered program related to cancer risk reduction practices was needed. At the time of the implementation of our program (2012-2016), there were no interventions addressing the need to empower middle school students to serve as ambassadors in this capacity. Recognizing a need for reaching younger populations with cancer prevention messages, the Tampa Bay Community Cancer Network (TBCCN), a community-academic network addressing cancer disparities, spearheaded the development and implementation of the pilot Youth Ambassadors Reaching Out (YARO) program for middle school (6th-8th grade) youth. Youth attended schools or community centers located within medically underserved areas (MUAs) and/or health professional shortage areas as indicated by the Health Resources and Services Administration (HRSA, 2019).

This advocates in the field paper will describe the curriculum development, provide an overview of the sessions, and describe the feasibility of the program. Additionally, information will be shared on best practices and lessons learned to assist others with replicating or developing a similar program.

### **Curriculum Design and Development**

The YARO curriculum was developed through an iterative process that consisted of input and feedback from TBCCN community partners, program team members, and a Youth Advisory Board (YAB). The YAB was composed of high school and undergraduate trainees associated with TBCCN. Final program content was influenced by the input of the YAB, community partners, and the 6th-8th grade standards and performance indicators outlined by the National Health Education Standards (NHES) (Centers for Disease Control and Prevention, 2016). Curriculum content included health disparities and health inequities, smoking prevention, physical activity and nutrition, and careers in science and health.

### **Program Sessions**

It was important to our team to maintain the attention and engagement of our student participants, with brief yet interactive sessions. A total of five program sessions were facilitated by TBCCN team members including a health educator, high school and undergraduate student trainees, post-doctoral research fellows, and senior researchers. Facilitators were selected based on their area of professional expertise related to program content. At each session, facilitators took attendance to document participation, which was used as a metric of program feasibility. On average, sessions lasted 75 minutes except for the 2nd session. The 2nd session lasted approximately 4 hours as it included the tour of the cancer center and presentations by health and science professionals. To gauge outcomes of participation, our team developed pre and post knowledge assessments that were administered for sessions 1-4. A program satisfaction survey was administered during the final session. Satisfaction results were used to highlight program acceptability and capture feedback from participants.

We felt it was important to honor the commitment and participation of our student participants. Therefore, for their participation, students received a variety of incentives such as a \$10 gift card, certificate of completion, exercise equipment (i.e., jump ropes), a YARO shirt, and tobacco and smoking educational materials from the local anti-drug alliance. A description of each session is given below.

**Session 1. Health Disparities.** The inclusion of a health disparities and health inequities session was important because of the role disparities play across the cancer continuum. In alignment with the Social Cognitive Theory (SCT), a focus of the discussion was on the external factors that impact health behaviors for students (Bandura, 1986). A Photovoice project was incorporated into the session to allow students to capture what they deemed to be external factors that contribute to health disparities within their neighborhoods and communities. This project also intended to introduce students to the ambassador role. While designed to highlight perceptions of disparities, it aimed to illustrate to students how they can serve as local ambassadors by identifying disparities within their community through photography and, in turn, foster conversations that lead to the sharing of relevant health information. Program facilitators provided the students with disposable cameras and instructed students to take photos of what they identified as health disparities in their communities. During the 2nd, 3rd, and 4th sessions, students created captions for the photos to help convey localized health disparities and increase awareness by assisting others in conceptualizing health disparities in their neighborhoods. Examples of images taken by students included fast food restaurants and residential areas with a lack of sidewalks and streetlights.

**Session 2. Health Careers and Science Lab Tours.** While most students were familiar with healthcare careers like nursing, our team wanted to expose students to not only the work of the cancer center in which TBCCN was located, but to various researchers and allied health professionals. This session offered students experiential learning opportunities, such as touring and engaging with cancer center biobanking and immunology labs and staff. Additionally, a variety of allied health professionals (pharmacists, occupational therapists, etc.), and cancer center researchers presented on their respective career fields and academic paths during this session. The inclusion of this session was used to illustrate how cancer prevention information can be applied in a real-world setting.

**Session 3. Cancer and Smoking Prevention.** Smoking is the number one risk factor for lung cancer, and this link was emphasized to students during this session. The Health Belief Model's (HBM) concepts of perceived susceptibility, barriers, benefits, and severity were expanded upon in this session (Rimer & Glanz, 2005). For instance, a discussion on perceived susceptibility was facilitated through the viewing of TRUTH campaign videos that showed young adults with cancer who began smoking or utilizing tobacco products at a young age. Perceived severity was discussed with the aid of an educational poster and models illustrating the harmful effects of smoking on the body.

**Session 4. Physical Activity and Nutrition.** Physical inactivity and unhealthy eating may result in an increased risk of many different types of cancer. In terms of SCT and HBM, discussions centered on increased cancer risk due to obesity, barriers to healthy eating (e.g., easy access and low cost of fast food restaurants in underserved communities), and community resources (e.g., local peer support groups) available to assist with maintaining a healthy weight and purchasing healthy food options.

**Session 5. Recognition & Awards Ceremony.** This session was a celebration of students who completed the program. Additionally, photovoice images were displayed and allowed students to serve as ambassadors by providing an opportunity to discuss their perception of health disparities within their communities, thus increasing awareness of disparities and relevant educational resources and information.

### **Best Practices and Lessons Learned to Consider for Replication**

YARO program best practices included being informed by community partners; the incorporation of community and school sites for implementation; the development and inclusion of the YAB; the exposure of youth to cancer-related research; and the incorporation of interactive activities such as Photovoice. The input from community partners and the YAB throughout program development ensured that the curriculum was age appropriate and appealing. The Photovoice activity was a novel tool for students to recognize and understand disparities in their communities (Nykiforuk et al., 2011). Students were able to see and document health disparities and inequities where they lived, played, and attended school. Overall, we noted that participants demonstrated increases in knowledge related to health disparities, smoking prevention, physical activity, and nutrition. Furthermore, 98% of participants said they would recommend YARO to others.

A key lesson learned was that assessment of the ambassador component required more time for students to implement planned ambassador roles. We realized that due to the age of our student participants, future efforts at training students to serve as health ambassadors should incorporate a longer period to perform the ambassador role, additional metrics such as tracking the number of individuals spoken to, topics covered during these conversations, and providing strategies for speaking to others about health behaviors.

For those who desire to implement a similar program, we encourage our fellow advocates to account for time constraints and varied attendance based on the session location. Approximately 37% of participants were administered the

program in school settings, whereas the remaining 63% of participants attended the program in a community setting. School-based sessions were typically shorter than community-based sessions due to class length. However, an important lesson learned is that school-based YARO sessions tended to have a higher student attendance due to having a captive audience. While community-based sessions allowed for more time than classroom instruction, parents and guardians could pick up their child(ren) at multiple points during the sessions, causing some participants to not complete entire sessions.

We would also encourage having more middle school students serve on the YAB as well as psychometric analyses conducted of pre and post assessments prior to dissemination. Additionally, our program did not assess students' own health behavior changes as this was a pilot study to assess the feasibility and acceptability of the ambassador program. Future research and programming is needed to measure and track health behavior change among students and the individuals they educate. It is also important to note that due to our small sample size, the generalizability of our findings is limited. We would encourage other advocates to expand the program to include more students.

In addition to feedback and input from the YAB, TBCCN has created a Youth Engagement in Action workgroup to revise further the YARO curriculum. As we navigate COVID-19, adding sessions on COVID-19 risk reduction would be worthwhile. Additionally, with the use of electronic vapor products, such as e-cigarettes, e-cigars, e-pipes, vape pipes, vaping pens, e-hookahs, and hookah pens, increasing in popularity amongst youth, updating the curriculum to include content related to these topics is critical (Audrain-McGovern et al., 2018).

## **Conclusion**

We were happy with the overall implementation of the YARO program but learned valuable lessons along the way that will help produce an even better and more impactful program in the future. We found that YARO can be implemented in a variety of youth-centered settings. The program showed that students learned important information about cancer prevention from the program and were willing to share that information with others. Future programming is needed to evaluate the long-term effectiveness of YARO on knowledge, attitudes, and behavioral changes with emphasis on the ambassadorship component. Additionally, YARO has the flexibility to be revised and tailored for younger and older populations and can be used as a tool to empower youth while increasing knowledge of healthy lifestyle practices related to cancer risk reduction in MUAs.

The lessons learned from YARO can help shed light on ways to provide health education information to underserved youth to mobilize them to engage in healthy behaviors and contribute to an increased understanding of the lifestyle practices that are associated with cancer and cancer health disparities.

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