

Using Entertainment Education to Promote Self-efficacy and Aspirations among Young Malawians: the *Tisankhenji* Radio Program

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Abstract

Background: Sexual activity begins early in Malawi and the HIV prevalence is high, particularly among young women ages 15-24. Enhancing self-efficacy, encouraging open communication and promoting goal-setting can influence young people to make positive choices that can, in turn, affect their risks for HIV. One approach for empowering young people to make healthier choices is entertainment education.

Methods: *Tisankhenji* was an entertainment education radio program designed to increase self-efficacy, encourage open discussion, promote career goals, and education aspirations among young girls in Malawi. The impact of *Tisankhenji* was assessed using a post-only, treatment-control quasi-experimental design. Self-administered surveys collected from boys and girls in randomly selected treatment schools (n = 709), were compared to similar data collected from control schools (n = 696). Linear regression analyses tested the hypothesis that exposure to the *Tisankhenji* radio program, after controlling for demographic differences, would be associated with increased self-efficacy, open discussions, career aspirations, and educational attainment goals.

Results: Program exposure was significantly associated with increased selfefficacy to attain an education, and to engage in discussions with parents, teachers and elders about career plans and HIV prevention (P < .001). Program exposure was also associated with having had discussions about career plans (P < .001), with career aspiration intentions (P < .01), and with educational attainment goals (P < .01).

Conclusions: This study suggests that cognitive and behavioral skills can be enhanced through an entertainment education approach, and schools may provide an ideal intervention setting. Young people, and specifically young girls because of their increased vulnerability to HIV/AIDS, must continue to be targeted with theoretically-based interventions.

Keywords: HIV, Malawi, Radio, Self-efficacy, Health communication, Mass media, Primary prevention.

Introduction

The Malawi BRIDGE I Project was an HIV/AIDS prevention project that aimed to change the way Malawians thought and spoke about HIV/AIDS and to encourage the adoption of behaviors that prevent HIV transmission. Formative research indicated that young Malawians felt powerless to take action against HIV/AIDS. To address this issue, Malawi BRIDGE I developed the *Tisankhenji* radio program, which aimed to fight HIV/AIDS by enhancing selfefficacy and aspirations among young Malawians through an entertainment education approach. This case study details the development and evaluation of the *Tisankhenji* radio program, including a discussion on possible factors that contributed to its success.

Background

With an estimated HIV prevalence of 11 percent,¹ and approximately seven percent of adults ages 15-49 living with HIV/AIDS,² the AIDS epidemic in Malawi is a pressing health concern. AIDS is the leading cause of death among Malawians aged 15-49.³ HIV is transmitted primarily by heterosexual sex; 90% of infections in Malawi stem from heterosexual transmission.¹ As in many parts of southern Africa, sexual activity begins early in Malawi. By age 18, 60% of girls and 53% of boys will have had sex; 14% of females and 22% of males ages 15-24 initiated sexual activity before age 15.⁴ Due to high rates of sexual transmission, practicing safer sexual behavior is crucial to averting new infections.

Young girls are at high risk for exposure to HIV. Research shows that in the nine countries in southern Africa most affected by the disease, prevalence among young women aged 15-24 years was, on average, about threefold greater than among men of the same age.⁵ In Malawi, prevalence is approximately 10% among women age 15-24, while prevalence among men of the same age is approximately four percent.⁴ The heightened vulnerability to HIV infection among young women is driven by exposure to unprotected sexual relationships, which occur primarily through relationships that are transactional (ie, they involve the exchange of goods or money for sex) or intergenerational in nature.⁶

One approach to reducing girls' vulnerability to HIV infection is encouraging girls to stay in school. As previous research has shown, girls who remain in school are significantly more likely to make healthy decisions about sex and sexuality and are more likely to be older at sexual initiation.⁷

One way to encourage girls to stay in school is to include intervention components that promote educational attainment goals and career aspirations. Schools are increasingly being used as intervention sites to promote healthy behaviors. Because youth attend school for several years before engaging in sexual activity, school-based interventions can help prevent or delay sexual activity and debut.⁸ For students who are already sexually active, schoolbased interventions can also increase protective behaviors, such as condom use.⁹

Increasing protective behaviors is crucial in Malawi, where intergenerational sex drives HIV infection among girls and young women,¹⁰ and more girls than boys drop out of primary school.¹¹ However, schoolbased intervention studies in Malawi have been scarce; most measured knowledge-based outcomes and did not specifically target girls.¹²

The reasons why staying in school can lead to healthier outcomes related to sexual behavior are multifaceted, primarily because sexual behavior change is complex and can be influenced by many factors. Within the context of sexual health, studies have shown that educational and career aspirations are related to contraceptive use, pregnancy, and childbearing among youth.⁷ Yet, school-based interventions aiming to prevent HIV/AIDS and other sexually transmitted diseases at the primary or secondary grade levels do not typically include the promotion of educational and career aspirations as the focus of their intervention messages.

Among Malawian women, education levels were related to sexual initiation. According to the 2010 Malawi Demographic and Health Survey, 27% of women ages 15-24 with no education had sex by age 15.⁴ Among those with at least a primary education, the corresponding figure was 16%, and for those with at least a secondary education, the corresponding figure was only 7%. Despite this evidence, the impact of school-based interventions that emphasize the importance of education, future goals, and career aspirations among African youth, much less female African youth, is largely unknown. In a cultural context in which women are both more vulnerable to HIV and less able to make decisions about their own sexuality, and where men exercise greater power over them,¹⁰ improving women's behavioral and decision-making skills, and enhancing their personal efficacy, is critical.

The Role of Mass Media and Entertainment-Education

One way to increase self-efficacy is to model desirable behavior through mass media.¹³ Studies from developing countries have shown that mass

media can influence health behavior.¹⁴⁻¹⁶ Health communication scholars have found that mass media interventions, by themselves or in combination with other programs, can significantly influence health behaviors as well as intermediate variables in the behavior change pathway.¹⁷⁻²² Radio, in particular, has been found to motivate people to take protective behavioral actions.^{14,23-25}

Entertainment education (EE) is often the larger theoretical umbrella that is used to conceptualize how narratives in the mass media can promote behavior change.²⁶ Entertainment education (EE) is an approach to social and behavior change communication where health and social messages are purposively incorporated into entertaining media.²⁷ EE can be an effective vehicle to change behaviors.²⁶ Blending the best of art and science, EE uses art to create stories and characters that help the audience form an emotional attachment to the characters and their situations. EE uses science, through the application of theory and a compelling story, to motivate audience members to make positive health choices. Audience involvement is an essential element of EE; engagement in EE has been associated with self-efficacy, collective efficacy, and interpersonal communications.28

EE programming is often informed by Bandura's social cognitive theory,²⁹ which suggests that individuals observe and evaluate the consequences of others' behavior to make behavioral decisions of their own. Audience identification, which incorporates a sense of affinity with the characters, informs emotional and intellectual development of ways one might act or respond to particular situations.³⁰ This is consistent with the concept of observational learning in social cognitive theory,²⁹ according to which people adopt behaviors they observe in the media through appraisals of their own abilities (self-efficacy), the perceived benefits, and the costs of engaging in that behavior (outcome expectations).

Exposure to EE programs has been positively associated with increased interpersonal communication between friends and family members, as well as behavior change at the individual and community-level.³¹⁻³⁵ Positive changes in knowledge about program topics, in perceptions of self-efficacy, and in attitudes have also been associated with exposure to EE.³²⁻³⁵ Several school-based interventions have incorporated narrative or dramatic elements in their programs.³⁶ But to our knowledge, only one study in KwaZulu Natal, South Africa used drama as the main strategy to affect changes in HIVrelated knowledge, attitudes, and behaviors among secondary school students.³⁷

The Present Study

In this study, we evaluate the results of a schoolbased intervention in Malawi that used a radio program to primarily target girls between 10 and 14 years old. Although the long-term goal of the program was to reduce behaviors that increase risks of HIV infection, we sought to affect change through a wider, and a more indirect, appeal. We focused on intermediate factors that could influence HIV-related behavior.38 Our intervention aimed to increase selfefficacy for girls' educational and career aspirations by promoting goal-setting and fostering open communication with parents, teachers, and elders. Focusing on these factors was deemed to be a more holistic approach by the project team, which, if successful, would indirectly lower girls' risk for HIV infection as well as promote protective health behaviors more generally. Called Tisankhenji ("the choice is mine"), the radio program was a small part of a larger behavior change intervention conducted as part of the Malawi BRIDGE I Project.

The approach we adopted in promoting the goals of the program was informed by observational learning.²⁹ Our primary strategy was to enhance girls' self-efficacy to engage in meaningful communication with their peers and elders about matters close to them, including educational and career goals. This was done by having the primary character of the radio program, Alinafe, model the desired behaviors.

Social cognitive theory posits that self-efficacy can be enhanced through four sources; performance accomplishment (enacting a behavior increases one's self-efficacy to enact the behavior in the future), vicarious reinforcement (observing positive rewards being given for others' behaviors, also called modeling), verbal persuasion (through encouragement), and affective arousal (focusing on positive feelings).¹³ Each of these mechanisms was used in the intervention. The intervention included weekly discussion sessions, games, and other activities that were designed to engage girls in decision-making. Various role-play activities focused on the challenges they faced on a dayto-day basis, including the means of overcoming them. Activities and discussions were followed by opportunities for cognitive rehearsal, exercises designed to promote thoughtful reflections on one's life, overcoming challenges, and resisting negative peer influences. In this study, we tested the hypothesis that exposure to the *Tisankhenji* radio program intervention would be associated with increased self-efficacy, discussions with parents, teachers and elders about career aspirations and HIV prevention, career aspirations, and educational attainment goals.

Methods

Overview

BRIDGE I (2003-2009) was a United States Agency for International Development (USAID)-funded HIV/AIDS prevention project implemented by the Johns Hopkins Bloomberg School of Public Health Center for Communication Programs with international and local Malawian partners. Based on formative research and social and behavior change theory, the project was designed to address distal and proximate causes of HIV transmission, including but not limited to the following; improving self-efficacy and collective efficacy to prevent the spread of HIV, increasing the practice of abstinence (especially among young people), delaying sexual debut, and increasing consistent and correct use of condoms.

Due to the increased vulnerability girls faced for HIV risk exposure, addressing the needs of young girls within the context in which they lived was a priority for the BRIDGE I project. Various project interventions targeted girls specifically. For example, girls were provided with personal diaries to help them envision goals and reach them, workshops with grandmothers were conducted to augment sex education teachings with accurate information about HIV/AIDS, and a series of Sara Communication Initiative (SCI) comic books dealing with HIV/ AIDS-related issues were distributed.

The SCI was developed in 10 countries of Eastern and Southern Africa, with United Nations Children's Fund (UNICEF) assistance. One of the main aims of the initiative was educating adolescent girls and their parents about the importance of staying in school. Sexual harassment, HIV/AIDS, early marriage, genital mutilation, and girls' domestic workload were other topics that were woven into the entertaining plots about Sara and her friends. UNICEF also provided assistance to a similar program centered on addressing issues that young girls in South Asia faced, called the Meena Communication Initiative. Given the positive reaction to the SCI, and the need for a role model for young girls, BRIDGE I decided to develop the *Tisankhenji* radio program as the centerpiece of its efforts to reach young adolescent girls and the key players in their lives, which included parents, teachers, elders, community leaders, and young boys.

Development of the *Tisankhenji* Radio Program

An extensive literature review, combined with formative research conducted in Malawi prior to the start of the project, indicated that many young girls did not have aspirations for their future and, if they did, they were not encouraged by others to strive to reach them.³⁹ They lacked self-esteem and assertiveness skills, had poor communication with their parents, felt that their parents did not care about their educational attainment, and did not see the correlation between their daily actions and achieving their goals.³⁹ In terms of HIV/AIDS, while most young girls could articulate the ways to prevent HIV, there was little understanding of *how* to do it, especially when pressured by boys and peers to engage in sex.³⁹

With the aim of influencing the attitudes and behaviors of girls while they were still being formulated, *Tisankhenji* was designed for 10-14 year old girls, with parents, teachers, and young boys as secondary audiences. There were two program components: a 15-minute radio drama and a 15-minute discussion segment, called *Tikhoza* ("We Can"). Program objectives included the following: (1) the promotion of abstinence and delayed sexual debut among adolescent girls through provision of accurate information about HIV/AIDS, STIs, and pregnancy; (2) the imparting of relevant life skills to adolescents that would enable them to negotiate risky life situations and enhance their confidence and self-esteem to achieve their goals; (3) the initiation and encouragement of open and healthy dialogue between adults and children generally, and particularly on issues pertaining to sex, sexuality, and HIV/AIDS; and (4) the promotion of gender equitable values and practices while discouraging inter-generational sex.

Development of the *Tisankhenji* program was a collaborative effort. Program partners and their respective roles were as follows: Business Eye Art and Media House were responsible for overall management, production, and monitoring of *Tisankhenji*; Nanzikambe Art and Theatre was responsible for conducting community workshops; Zodiak Media House and Malawi Broadcasting Corporation were responsible for airing the programs; and UNICEF provided expert input for the overall production.

The development of each radio program series followed a distinct set of steps to ensure that the characters and plots remained relevant to listeners and remained on target with program objectives. The design of the first series of episodes included a unique component, the contextualization of the SCI comic book series to Malawi. Each successive series (or season) built upon the last, allowing room for the characters to grow over time and for the program to cover a variety of story lines.

Contextualization process. The contextualization process was undertaken to ensure the SCI comic book series was not only translated into the local language, but was appropriately adapted to place the young girl at the centerpiece of the series, and her adventures in the context of the reality lived by girls in Malawi. The conceptualization process additionally included the creation of the names of the main and secondary characters, and the program's title. The process started with translating the original radio program, and then using those scripts as the foundation to develop new scripts. To get relevant input on the new scripts, a workshop was convened with students to obtain their insights in terms of appeal, believability of the characters, and the programs' potential to impact their behavior. Radio professionals, actresses, and other adults were also invited to help gauge the believability of the scripts, based on their radio experience, as well as to discuss HIV/AIDS-related issues with the young participants. The results of this first seminal workshop formed the basis of the design of *Tisankhenji*.

Development process steps. Each of the three series was created using the following development process steps:

- Community Workshops & Development of Info-packs: Community-based workshops were held with young girls to explore the issues most pertinent to them. Interviews were conducted with the secondary audiences and stakeholders working on improving young girls' welfare. The findings were then compiled into an information packet that was used to develop the key messages, story lines, and scripts. The "infopack" highlighted key aspects of the community discussions. It included information regarding how adolescents understood their family and community structures, how they saw their place within them, their attitudes toward various relationships, and their dreams and aspirations.
- **Program Design:** Workshops were held between the program team and producers to review the findings from the community workshops and to agree on priority issues, communication objectives, and messages to be incorporated into the season's episodes.
- Creative Process: Based on the program design, professional scriptwriters applied their talents to creatively weave the messages into entertaining plots and story lines.
- Script Pretesting: Three draft scripts were

pretested with youth as well as parents, teachers, and other stakeholders to obtain feedback. The objectives of the pretesting were to assess comprehension, realism, believability, and entertainment value. Feedback from pretesting was then incorporated into the script revisions.

- Dummy Program Pretesting: Draft programs were recorded and played for audience members to confirm the findings of the script pretesting and to ensure the programs had the right use of dialogue, language, and character development. In addition, participants were questioned to see if they could pick out and understand the lessons in the program.
- **Production and Broadcast:** In addition to recording the drama portion of the program, producers gathered field recordings of interviews with young girls covering their reactions to the program, highlighting their positive achievements, and obtaining ideas on how Alinafe and her friends could overcome the challenges they faced. These elements were mixed with quizzes, poems, and musical selections that were woven throughout the program.

Story line. The development process informed the story line for the program, which revolved around the life and experiences of a young girl named Alinafe. Determined to overcome life's challenges and achieve her future aspirations, Alinafe's stories, as she interacted with family, friends, and other members in her community, characterized real life situations faced by typical Malawian girls during the transition from childhood into adolescence. The stories included gender-related inequities and HIVrelated risks. Alinafe is described as a vibrant young girl who is smart, ambitious and creative, but who sometimes gets into trouble. Alinafe is 12 years old and has what most young girls her age do not have, a vision for her life. She has decided on her goals, which guide her daily decisions and endeavours. She has many household chores, but finds time to do her homework as well. Well-mannered and polite,

she also asserts her views and opinions. She likes to spend time with her best friends; she cares about her community and her family.

Throughout the series, Alinafe and her friends have many adventures. They face and overcome challenges that highlight the tricky situations young girls often face. Their stories and experiences illustrate how a community, working together, can bring about positive change. Along the way, Alinafe and her friends receive social support, as well as tangible and intangible rewards for their actions, from friends, family, and community members as they strive to reach their goals. Over the course of the series, changes were made to the settings, issues they faced, and characters to respond to audience feedback. However, the central character of Alinafe remained an engaging and positive role model throughout the series.

While different EE methodologies have evolved over time, core components of the approach include storytelling and the use of narrative. Through Alinafe's interactions with other characters in Tisankhenji, listeners were able to witness, and hopefully emulate, her reactions and behaviors. Tisankhenji also included transitional characters who evolved over time. For example, her mother, who was at first shown as accepting of harmful prevailing gender norms, later recognized the error of her ways. To further the reach and depth of the program, the discussion segment, Tikhoza, featured pre-recorded interactive discussions and shared girls' real life stories. Periodically, this segment also incorporated quiz competitions related to issues presented in the radio drama, and t-shirts were given as prizes.

Implementation

BRIDGE I established 48, school-based, *Tisankhenji* Listeners' Clubs (four per school, each with 30-35 members). Facilitated by schoolteachers, the listeners' clubs provided an environment for girls to listen and share their reflections on the issues dealt with in each weekly episode. The

clubs were designed for girls only, in order to ensure that girls would have a safe space to freely discuss their reactions to the topics. The schoolbased discussions were an essential element of the program's success. The clubs proved to be so popular that boys also started attending and actively listening to the programs, even though they were not the primary target audience. Listening clubs were also established for the secondary audiences to listen to the broadcasts every Saturday in small groups. The Saturday listening clubs, which were formally organized through community groups, were established during the first series.

The *Tisankhenji* radio program was broadcast from 2005-2008 in three different series consisting of 13 episodes each. At the time this evaluation was conducted, the three series of 13 episodes each had already been broadcast over two nationally popular radio stations: the state owned Malawi Broadcasting Corporation (MBC) Radio 2 and the privately owned Zodiak Broadcasting Station. Each of the two stations broadcast the program twice per week, once during regular school hours and once on Saturday.

Study Design & Sample

The overall study design was a post-only, treatmentcontrol quasi-experiment. In each of the four districts in which the program was being run (Chikwawa, Mzimba, Ntcheu, and Salima), we randomly chose three schools from a list of 20 to serve as the treatment schools. For each chosen school, another school was matched on key indicators to serve as a control school. Selected from a list of 30 schools, the matched schools had classes 1 to 8, were staffed by gualified teachers employed by the Malawi government, enrolled both boys and girls, were similar in total number of students, and had similar class compositions. This resulted in a total of 24 (12 treatment and 12 control) schools. The larger list of control schools (from which the 12 were sampled) was assembled by deliberately choosing schools that were geographically distal from the treatment schools in order to minimize contamination.

All treatment schools set aside time during school hours for listening to the Tisankhenji program as it was broadcast on the radio. In addition to setting aside listening time, some treatment schools held discussion group meetings among girls and teachers, while others were not able to hold discussion groups. This was primarily due to the popularity of the groups, as the size of the groups became unmanageable. The control schools did neither: time was not set aside for listening to the program and discussion groups were not held. Intervention and control schools were similar in that they were both full primary schools (had classes 1 to 8), were staffed by qualified teachers employed by the Malawi government, and they enrolled both boys and girls. From each selected school, we randomly selected approximately 20 students from the student rosters of 6th, 7th, and 8th grades (60 students from each of the 24 schools). A total of 696 boys and girls comprised students in the control group and a total of 709 boys and girls comprised students in the treatment group.

It is important to note that because each episode was aired twice on the weekend over two different radio stations, exposure to the program was not limited to the treatment school students; those in the control group could have accessed the program during the weekend. Hence, there is a great deal of "contamination" in this study, which reduces the likelihood of detecting differences between the treatment and control groups. Given the study design, the two groups differed in two important ways. First, the treatment group specifically set aside school time to listen to the program, whereas the control group did not. Second, many (though not all) members of the treatment group also engaged in school-run discussion groups, whereas the control group did not. These school-run discussion groups were voluntary and involved listening to the program and then discussing the program, with a teacher loosely facilitating the discussion.

Data Collection

An external research firm, whose investigators were hired and specifically trained on data collection and human subjects issues, collected the data. The questionnaire was first translated from English into Chichewa and pretested among a group of research assistants and students (unrelated to the intervention) in a local community in Zomba, Malawi, Pretesting helped refine the questions for clarity and cultural congruence. Questions were thereafter backtranslated into English and compared with the original English version. Investigators handed out self-administered questionnaires in classrooms during regular school hours. Students filled out the questionnaires at their desks and then returned the completed questionnaires to a box located in a corner of the room. Questionnaires did not include any personally identifiable information. This research was approved by the human subjects boards in both Malawi and in the authors' home institution in the United States. The data presented in this study were collected after the completion of the third season of the Tisankhenji program.

Measures

Socioeconomic status. In order to assess socioeconomic status (used as a control variable), we asked participants whether their families owned various types of cattle (including donkeys, goats, sheep, pigs), poultry, a radio, television set, bicycle, computer, an indoor bathroom, a cell phone, and a business. This combination of items represented the highest level of reliability in relation to socioeconomic status. Responses were standardized and averaged into an index ($\alpha = .56$).

Self-efficacy to attain education. Five questions asked participants the extent to which they agreed or disagreed that they had control over: (1) their ability to achieve the level of education they desired, (2) how often they attended school, (3) how often they completed their school assignments or homework, (4) how well they did on their exams, and (5) how often they studied for their exams. Responses, measured on

five-point scales ranging from "Disagree strongly" (coded as 1) to "Agree strongly" (coded as 5), were averaged ($\alpha = .70$, M = 3.75, SD = .60).

Self-efficacy to engage in career and HIV prevention discussions. We asked six questions pertaining to participants' perceived ability to discuss various issues with their parents, teachers, and elders. All questions were asked on 5-point scales ranging from "It is very difficult" (coded as 1) to "It is very easy" (coded as 5). Three questions pertained to participants' perceived ability to talk with parents, teachers, and elders about "What you want to be when you grow up." Responses were averaged into an index ($\alpha = .62, M = 3.93, SD = .83$) reflecting self-efficacy to discuss career plans. Three other questions pertained to participants' self-efficacy to talk about HIV prevention with parents, teachers, and elders. Responses were averaged into an index $(\alpha = .77, M = 4.09, SD = .87).$

Discussions about career plans. Four questions asked participants whether, in the past year, they had talked about their career plans with their parents, teachers, elders, and others. Each positive response was awarded one point and added together into an index ($\alpha = .56$, M = 2.63, SD = 1.21).

Career aspirations. Participants were asked how much they agreed with three statements pertaining to their education and future careers: intention to (1) "complete my education no matter what happens," (2) "get a good job when I grow up," and (3) "convince my parents that I need to stay in school even if they want me to quit school." Responses, measured on five-point scales ranging from "Disagree strongly" (coded as 1) to "Agree strongly" (coded as 5), were averaged into an index ($\alpha = .64$, M = 4.3, SD = .78).

Educational attainment goals. One question asked about participants' educational attainment goals: the highest level of education that they would like to achieve. Responses were coded on a 4-point scale ranging from finishing primary school (coded as 1) to finishing college or university (coded as 4) (M = 3.87, SD = .49). Because this variable was negatively skewed, it was transformed through a squared transformation and analyses were conducted with both the raw and the transformed variables in our regression models (described later). For simplicity of presentation, we retained the raw variable because the primary findings were similar.

Exposure to the program. Exposure to the *Tisankhenji* program could have occurred in a number of ways: by being a member of the treatment group (attending a treatment school), through membership in a listening club at school, or by listening to the radio program broadcast during the weekends. Four questions were asked to assess exposure within the last year: whether participants had listened to the *Tisankhenji* program on MBC radio, Zodiak Radio, or in school, and whether they had participated in any activities associated with the program (including dramas, quizzes, sporting activities, etc). One point was awarded for each

affirmative answer, and thus the variable ranged from 0 to 4.

Statistical Analysis

Independent sample t-tests compared the treatment and control group respondents on demographic characteristics, exposure to the Tisankhenji program, and the various other outcome measures of interest (self-efficacy, career and HIV prevention discussions, and educational achievement goals) post-intervention. The primary study hypothesis was tested through linear regression equations in which we first controlled for each student's grade level, their socioeconomic status, and their gender. Because grade and age were highly correlated, we did not include age in the regression analysis. The primary relationship of interest was the association between exposure to the program through the various venues and the outcomes of interest, after controlling for the aforementioned demographic variables. Post hoc tests were performed to assess gender by exposure effects for several variables, but this was not the primary test of interest in this study.

Results

Treatment and Control Group Comparisons

Demographic characteristics. Table 1 shows the primary characteristics of the sample in both the treatment and control schools. Treatment and control schools differed on two demographic variables; those in the treatment schools were younger than those in control schools by almost a year and those in treatment schools had higher socioeconomic status than those in control schools. None of the demographic comparisons between girls and boys within the treatment or control schools were significant.

Program exposure. As expected, exposure to the *Tisankhenji* program (which was measured with a variable ranging from 0 to 4) varied significantly between students in the treatment and control schools. In control schools, the average exposure score was .93 (SD = .93), whereas the average score in treatment schools was 2.14 (SD = 1.34). Thus, students in treatment schools were exposed to the program through significantly more venues or channels within the last year than students in control schools (t = 20.0, P < .001). The distribution of exposure for students in the treatment and control schools is also shown in Table 1.

	Treatment Schools		Control Schools		Significance ^a	
Characteristics	Girls (n = 363)	Boys (n = 346)	Girls (n = 351)	Boys (n = 345)	t	P Value
Demographics						
Age in years, M (SD)	13.18 (1.7)	13.10 (2.0)	14.32 (1.8)	14.29 (1.8)	11.90	***
Socioeconomic status, M (SD) b	0.04 (0.4)	0.04 (0.4)	-0.03 (0.4)	-0.06 (0.4)	3.96	***
No. of older siblings, M (SD)	2.69 (2.1)	2.70 (2.2)	2.70 (2.1)	2.73 (2.0)	0.19	
No. of younger siblings, M (SD)	2.10 (1.7)	2.15 (1.7)	2.33 (1.7)	2.26 (1.6)	1.92	
Father alive, % (SD)	76.31 (0.4)	74.57 (0.4)	72.08 (0.5)	74.78 (0.4)	0.88	
Mother alive, % (SD)	86.23 (0.3)	88.15 (0.3)	86.61 (0.3)	88.12 (0.3)	0.11	
Exposure, <i>M</i> (<i>SD</i>) ^b	2.15 (1.3)	2.14 (1.4)	0.96 (0.9)	0.90 (1.0)	19.63	***
Self-efficacy	3.90 (0.5)	3.90 (0.6)	3.78 (0.6)	3.80 (0.6)	3.46	***
To attain education, M (SD)	4.01 (0.8)	4.05 (0.7)	3.82 (0.9)	3.83 (0.9)	4.55	***
To discuss career, M (SD)	2.74 (1.2)	2.73 (1.2)	2.53 (1.2)	2.52 (1.3)	3.31	***
To discuss HIV, M (SD)	4.22 (0.8)	4.17 (0.9)	4.01 (0.9)	3.98 (0.9)	4.33	*
Education goals, M (SD)	4.43 (0.7)	4.40 (0.8)	4.25 (0.8)	4.32 (0.8)	3.17	***

Table 1. Characteristics of Girls and Boys in Treatment and Control Schools.

^a Independent samples t tests compared treatment and control school students overall: statistically significant differences are annotated with asterisks where * = P < .05; ** = P < .01; and *** = P < .001.</p>

^b Sum of standardized scores of household possessions.

Exposure Types: MBC radio; Zodiak Radio; in a treatment school; listening club member at school (range = 0 to 4).

Intervention outcomes of interest. Comparisons between the treatment and control students on post-intervention measures of self-efficacy to attain an education, and to discuss career plans or HIV prevention with parents, teachers and elders were all statistically significant. As expected, average scores for the treatment group exceeded those for the control group students post-intervention. Similarly, the treatment group had higher educational attainment goals, on average, compared to the control group post-intervention. Data analyses (not shown) revealed that males and females within the treatment schools did not differ on any of the study outcomes.

Multiple Regression Analysis

Self-efficacy to attain education. Table 2 shows the results from the regression equations in which students' self-efficacy to attain education was associated with socioeconomic status, but not grade level or gender (all control variables). Those with higher socioeconomic status were more likely to have greater self-efficacy to attain an education. After controlling for the three predictors, exposure to the *Tisankhenji* program was significantly associated with self-efficacy to attain education $(\beta = .11, P < .001)$. We also tested the gender by exposure interaction term with self-efficacy, but this relationship was not statistically significant

Self-efficacy to engage in discussions. As is also shown in Table 2, socioeconomic status, grade level, and gender were not associated with self-efficacy to engage in discussions with parents, teachers, and elders about career plans. Exposure to the *Tisankhenji* program, however, was significantly associated with self-efficacy to engage in discussions about career plans ($\beta = .15$, P < .001).

Students in higher grades had greater self-efficacy to engage in discussions about HIV prevention with parents, teachers and elders, as compared to students in lower grades, but neither of the other two control variables (socioeconomic status or gender) were associated. Exposure to the *Tisankhenji* program was significantly associated with self-efficacy to engage in discussions about HIV prevention (β = .14, *P* < .001).

	Self-Effic Edu	Self-Efficacy to Attain Education		Self-Efficacy to Engage in Discussions				
			About Career Plans		About HIV Prevention			
Predictors	β	P Value	β	P Value	β	P Value		
Socioeconomic status	0.09	**	0.05		0.03			
Grade level	-0.02		0.02		0.06	*		
Female Exposure	-0.01 0.11	***	-0.02 0.15	***	0.02 0.14	***		

Table 2. Post-Intervention Effects of Exposure to the *Tisankhenji* Program on Self-Efficacy to Attain Education and Engage in Discussions.^a

^a Cell entries are standardized betas (β) from multiple regression equations and significance levels (*P* values): statistically significant results are annotated with asterisks where * = *P* < .05; ** = *P* < .01; and *** = *P* < .001.

Discussions about career plans. Table 3 shows the predictors of participants' having had discussions about their career plans with parents, teachers, elders or others within the past year. Together with the control variables used in the prior analyses, we also included self-efficacy to engage in discussions about career plans as one of the predictors. As shown in Table 3, those with higher socioeconomic status were more likely to engage in discussions about career plans (compared to those with lower levels of socioeconomic status). As expected, self-efficacy was associated with having career plan discussions ($\beta = .27$, P < .001), as was exposure to the *Tisankhenji* program ($\beta = .18$, P < .001).

Career aspirations. As is also shown in Table 3, upper-grade students had stronger intentions to achieve their career and educational aspirations,

compared with their lower-grade counterparts. Socioeconomic status and gender were not associated with intentions to achieve career and educational aspirations. Self-efficacy to discuss career plans with parents, teachers, and elders was a significant predictor of intentions to achieve career aspirations ($\beta = .14$, P < .001) as was exposure to the *Tisanhkenji* program ($\beta = .07$, P < .01)

Educational attainment goals. Socioeconomic status and grade level, but not gender, were significantly associated with educational attainment goals, such that those at higher socioeconomic status or grade levels had higher educational attainment goals. Self-efficacy for discussing career plans ($\beta = .06, P < .05$) and exposure to the *Tisankhenji* program ($\beta = .07, P < .01$) were both significantly associated with educational attainment goals.

Table 3. Post-Intervention Effects of Exposure to the *Tisankhenji* Program on Discussions about Career Plans, Career Aspiration Intentions and Educational Attainment Goals.^a

	Discussions About Career Plans		Career Aspiration Intentions		Educational Attainment Goals	
Predictors	β	P Value	β	P Value	β	P Value
Socioeconomic status	0.05	*	-0.01		0.10	***
Grade level	0.00		0.15	***	0.08	**
Female	0.00		-0.01		0.03	
Self-efficacy to discuss career plans ^b	0.27	***	0.14	***	0.06	*
Exposure	0.18	***	0.07	**	0.07	**

^a Cell entries are standardized betas (β) from multiple regression equations and significance levels (*P* values): statistically significant results are annotated with asterisks where * = *P* < .05; ** = *P* < .01; and *** = *P* < .001.

^b Self-efficacy to engage in discussions about career plans was included in models predicting discussions about career plans, career aspiration intentions, and educational attainment goals.

Discussion

The *Tisankhenji* radio program sought to enhance self-efficacy and promote open discussion with peers, teachers, parents, and elders not only about HIV prevention, but also about educational and career goals. The radio program modeled the behavior of Alinafe, a character who encountered problems and daily life issues similar to those faced by young Malawian girls. The discussion sessions promoted active engagement through role-play, games, debates, and competitions.

Our study found that exposure to the *Tisankhenji* program was significantly associated with selfefficacy to attain an education, as well as selfefficacy to engage in discussions with parents, teachers, and elders about career plans and protection from HIV infection. Finding associations between program exposure and self-efficacy was important because several studies have demonstrated the critical role of self-efficacy in HIV preventive behaviors.⁴⁰⁻⁴² Exposure to the program was also associated with students actually engaging in discussions with others about their career plans, having stronger intentions to attain their career aspirations, and having higher educational attainment goals.

We suggest a few ideas as to why exposure to the program was associated with the intended outcomes. The first is careful story and character development. During the pretesting of the second series, respondents said they found the story to be truthful because it presented that life is full of challenges and added, "happy ending, after struggle" stories are ones they would like to hear and learn from. They also said the program provided practical solutions for dealing with the challenges young people face or that are standing in their way of achieving their goals such as HIV/AIDS, STIs, early pregnancies, and child rights abuse. A challenge in entertainment education is finding the right balance between presenting content that is informative, on the one hand, and presenting content that is engaging, on the other. The *Tisankhenji* radio program development process included constant dialogue between the creative and program teams, as well as youth and secondary audiences, to ensure this balance.

Second, we utilized a non-didactic approach. For this reason, we did not include the program as part of the regular school curriculum, but framed it as a fun, after-school activity. This also allowed students to participate voluntarily. The radio program and the accompanying activities, which included role-play, discussion, competitions, debates, etc, were designed to conform to the four sub-processes proposed by social cognitive theory: attention (active engagement with the content), retention (through the promotion of cognitive rehearsal), production (through role-play activities), and motivation (through competitions and prizes).²⁹ In sum, the program did not tell people what to do; rather, it highlighted the fact that young people could make choices to enhance their lives.

Third, the program reminded Malawian girls that they had a voice. One of the most unique aspects of *Tisankhenji* was that, for the first time in Malawi, girls' stories were highlighted. Through the radio program, girls could hear a reflection of their lives, struggles, and triumphs. Family members, friends, and others also heard girls being presented as clever, thoughtful, complex beings, who were working hard to make changes, for the better, in their community. This is in contrast to the more stereotypical presentations of girls as problems to be dealt with and financial burdens. This important shift, in how girls view themselves and how others view them, could have played a significant role in their increased self-efficacy and other positive outcomes. Further exploration of this pathway, between character modeling, perceptions of young people by others, young people's perceptions of themselves, and self-efficacy, is recommended for future studies.

A surprising finding was the popularity of the program among boys. Despite the fact that the program was geared specifically toward female students and the main character was a female, male students were equally engaged with the program. In our sampling design, we deliberately sampled male students so that they could provide contrasts to female students within schools. Our results showed. however, that males and females did not differ on any of the study outcomes. We propose that this could be due to a few factors. One of Alinafe's best friends was Juma, a young boy described as a "model friend." Given there were so few role models for young boys on how to befriend girls, male listeners may have been eager to learn from Juma's experience. The formative research conducted before the first series indicated that young people were rarely encouraged to pursue their dreams. It is likely that boys were also captivated by hearing about a young person who developed and worked toward their dreams and goals.

We also observed associations between grade level and self-efficacy to engage in discussions about HIV prevention, as well as in career aspiration intentions and educational attainment goals. Students in higher grades had more positive outcomes than their lowergrade counterparts. This may reflect the fact that older students are more mature, and at a developmental stage where having discussions about sensitive topics such as sex, sexuality and HIV prevention with parents, teachers and elders is more likely to occur. Younger students may not be as developmentally prepared to have these types of conversations, and they may not have clearly articulated their career aspirations and educational goals. It could also be that the students in higher grades were more achievementor goal-oriented to begin with, given the fact that they were still in school.

Implications for Research and Practice

In terms of implications for future EE programming, recent scholarly discussions of EE methodology and practice point to three emerging themes of interest: equity, affirming the power of narrative and storytelling, and expanding dialogue.⁴³ *Equity* refers to breaking down the barriers between experts and the end-user; thus, enabling more opportunities for the stories to emerge directly from those who are living them. *Affirming the power* seeks to understand why and how the methodology has been so successful in changing behavior and has universal appeal. *Expanding dialogue* refers to how EE can both stimulate dialogue at the micro level in communities, as well as across national borders through the use of new technologies.

Future EE programs should continue to bridge the gap between "beneficiary" and "producer." This engagement can be further enhanced by using interactive technology that allows audience members to interact with EE programming such as Short Message Service (SMS), Facebook, mobile devices, and other technologies that were not widely available when *Tisankhenji* was produced. Expanding dialogue for successful EE also includes promoting an exchange between the creative teams and program implementers, who may have different perceptions and world views.⁴⁴

Limitations

The primary limitation of this study was that, because of logistical constraints, we did not randomly assign schools to treatment or control conditions. Rather, we randomly selected schools for inclusion in this evaluation. As a result, there were important differences between students in the two arms of the study; those in control schools were older and had a lower socioeconomic status. For these reasons, it was important to include these two variables in our multivariate models in order to control for any potential effects. It is also likely that there were other underlying differences associated with these variables that we did not capture in our analysis.

A further limitation of this study was that all measures were self-reported. It is possible that students in treatment schools reported more positive outcomes because they had more interactions with the program and knew more about what the intervention was promoting. We tried to minimize this effect by having an external agency conduct the evaluation and by conducting the assessments anonymously. Nevertheless, it is still possible that social desirability biases were greater in the treatment schools, as compared to the control schools.

Finally, because this study was cross-sectional in nature, we were unable to make any conclusions regarding causality. Future research efforts should employ longitudinal study designs to assess the causal impact of EE interventions. Additionally, further understanding of the directionality of the relationships between the variables under study would enhance future programming.

Conclusions

Our findings from *Tisankhenji* are encouraging. This program is one of the first to evaluate the use of drama as a central approach to affect concepts that

influence behavior change. It is also one of the first programs to use radio, combined with structured classroom discussions and interactive activities, as a main communication vehicle to influence important mediators of behavior change. The findings point to the power of EE as a potentially effective, creative approach to promoting educational aspirations and achievement motivations, which may be helpful in fighting HIV.

Given that young girls remain the age and gender group most vulnerable to HIV,⁵ we recommend continued investment in developing creative and engaging programs focused on their needs, desires, and dreams. Focusing on positive outcomes will enable them to plan for, and make progress toward, a future where HIV rates among young girls are diminished. Schools play a particularly important role in this context. School-based programs can not only reduce HIV risk exposure through HIV prevention interventions, but they can also encourage young people, especially girls, to stay in school. This is particularly important because staying in school deters the formation of sexual relationships for both males and females in Malawi, and is inversely associated with having had sex, particularly for young women.⁴⁵ This suggests that targeting young girls in school may be an ideal intervention setting.

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