

Original article

Youth United Through Health Education: Community-Level, Peer-Led Outreach to Increase Awareness and Improve Noninvasive Sexually Transmitted Infection Screening in Urban African American Youth

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Abstract:

Purpose: To evaluate the effectiveness of the Youth United Through Health Education (YUTHE) program, a community-level, peer-led outreach program to increase awareness and improve non-invasive sexually transmitted infection (STI) screening in youth residing in the targeted community. **Methods:** Sexually experienced youth, aged 12–22 years, anonymously participated in the YUTHE program (a 15-minute encounter, including a risk assessment with feedback and prevention messages). A street- and venue-based intercept approach using a nonequivalent control group design was implemented to evaluate the YUTHE program.

Results: YUTHE community respondents were more likely to know that STIs could be asymptomatic (odds ratios [OR] 1.36, 95% confidence interval [CI] 1.08–1.72), know about urine-based STI screening tests (OR 1.34, 95% CI 1.04–1.72), perceive themselves to be at risk for STIs (OR 1.71, 95% CI 1.11–2.62), and worried about acquiring an STI (OR 1.50, 95% CI 1.04–2.18). No other community differences were identified. However, respondents who reported a single contact (OR = 2.12, 95% CI = 1.11–4.03) or multiple contacts (OR 2.78, 95% CI 1.81–4.26) with the YUTHE program were more likely to have been tested for STIs in the previous six months.

Conclusions: We did not accomplish our overall goal of increasing STI screening in our outreach community relative to the comparison community; our findings suggest that a peer-led, street- and venue-based community outreach approach is a feasible means for reaching large numbers of adolescents for STI prevention. © 2007 Society for Adolescent Medicine. All rights reserved.

Keywords:

Youth; Adolescents; Sexually transmitted infection (STI) prevention; STI screening; Community-level interventions; Peer-led health outreach

The shift in the human immunodeficiency virus (HIV) epidemic in the United States toward African Americans may be, in part, attributable to the long-standing disproportionate burden of sexually transmitted infections (STIs) in this group [1] because bacterial STIs are known to facilitate

HIV transmission [2,3]. Given that the reduction of prevalent bacterial STIs may slow the rate of HIV infection [4–6], prevention efforts should target individuals at highest risk for the acquisition and transmission of STIs. African American adolescents and young adults, aged 15–24 years, have the highest rates of chlamydia and gonorrhea [7]. The Centers for Disease Control and Prevention's Advisory Committee for HIV/STI Prevention recommends the expansion of screening and treatment programs in communities where STIs are prevalent [8]. Currently, many adolescents with asymptomatic STIs or STI-related symptoms [9–11]

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may not seek STI services, and those who do access the health care system may not be screened for STIs [12]. These factors may interfere with efforts to control STIs among adolescents and may increase the likelihood of sexual transmission of infections and the propagation of sexually acquired infections within a community.

Research suggests that programs to prevent STIs/HIV in adolescents should enhance motivation and intentions to reduce sexual risk behaviors and incorporate approaches that take into account the psychosocial and environmental barriers to preventative services for STIs/HIV in young people. Specifically, research has shown that community-level health promotion programs that are designed to change community norms to support individuals' efforts to reduce sexual risk behaviors and adopt health-promoting sexual practices hold promise for preventing STIs/HIV in at-risk adolescents [13,14]. Moreover, community-level approaches using peer education and outreach strategies have been successful at reducing sexual risk behavior and increasing the use of health resources in interventions with homosexual men [15–17], and other at-risk groups, including injection drug users and their partners, commercial sex workers, and adult residents residing in census tracts where STI rates are high [18,19]. However, community-level, peer-led interventions designed to prevent HIV/STIs among African American youth residing in an urban community that has a high incidence of STIs is lacking.

To address public health concerns regarding the high burden of STIs in African American adolescents, we developed the Youth United Through Health Education (YUTHE) program, a community-level, peer-led outreach program to increase awareness of and to improve actual noninvasive screening for common bacterial STIs in youth across the outreach community. Specifically, our goal was to determine whether our community-level approach to increase youth's knowledge of noninvasive STI tests would improve STI screening across the outreach community relative to the comparison community where no outreach activities took place. Therefore, the purpose of this article is to describe the development and evaluation of the YUTHE program.

Methods

Development of the YUTHE program

The YUTHE program grew out of a collaborative effort between the San Francisco Department of Public Health (SFDPH) Division of Sexually Transmitted Disease Prevention and Control and the University of California, San Francisco (UCSF) Department of Pediatrics, Division of Adolescent Medicine. Through this partnership, the YUTHE program received community support and guidance from key community advocates, leaders of youth-serving organizations, and adolescents and young adults from the outreach community. Before implementation of the program, forma-

tive research consisting of a community-wide, random-digital health needs assessment to assess factors that facilitate or hinder adolescents' use of STI-related services was conducted. This research is described elsewhere [20]. Subsequently, six peer, health, outreach educators (aged 19–22 years) from the outreach community were hired and trained by the YUTHE team of investigators to conduct all phases of the program's development and implementation.

A number of additional formative research activities were undertaken to develop the YUTHE program. First, community mapping activities and street-based interviews were conducted to determine locations where youth can be reached and to assess the feasibility of conducting STI/HIV prevention outreach activities in the outreach community. These activities were guided by principles of street- and venue-based intercept outreach [21]. In addition, a standardized 21-item STI/HIV risk assessment was developed to determine the adolescents' level of STI risk and stage of readiness to undergo STI screening and receipt of prevention messages based on their responses to the risk assessment. Both the risk assessment and prevention messages were age- and culturally appropriate, and were based on constructs from the AIDS Risk Reduction Model (ARRM) [22] to assess factors related to STI/HIV-related risk and screening for common STIs. The ARRM is a stage-based prevention model that focuses on social and psychological factors hypothesized to change sexual behaviors related to HIV transmission. On the basis of these formative research activities, a 15-minute standardized protocol was developed consisting of: (1) a recruitment script, (2) a 21-item STI/HIV risk assessment, (3) STI/HIV prevention messages including information on noninvasive STI screening, (4) condom distribution (if participants desired), and (5) specific information on "youth-friendly" STI-related health services. Together, these activities comprised the YUTHE program.

Implementation of the YUTHE program

With approval from the University of California, San Francisco, Committee on Human Research, participation in the YUTHE program was on a voluntary basis and required only verbal consent of the youth participant. Youth were eligible to participate in the program if they were sexually experienced and between ages 12 and 22 years. Eligibility was determined by two questions ("what is your age?" and "have you ever engaged in sexual intercourse?"), that were asked of the adolescent as part of the recruitment script. Adolescents were excluded if they were unable to give consent, were non-English-speaking, appeared to be intoxicated, or were otherwise nonresponsive. Youth who met the eligibility criteria were invited to anonymously participate in the YUTHE program and were given two movie passes or coupons for food at local eateries as compensation for their time. The YUTHE program was conducted throughout the outreach community on Mondays through

Fridays between the hours of 2:00 p.m. and 6:00 p.m., where young people congregate, including schools, recreation centers, public housing facilities, local businesses, community-based youth serving centers, after-school programs, and points of transit such as bus stops. YUTHE peer outreach educators were identified within the outreach community by their clothing (i.e., hats, t-shirts, and jackets) that had the YUTHE logo on them. Given the nature of this community-level intervention, youth within the outreach community had multiple opportunities to interact with the YUTHE peer outreach educators.

Study design and evaluation of the YUTHE program

A nonequivalent control group design was used to determine the effectiveness of the YUTHE program. That is, a second community matched by race/ethnicity and socioeconomic status of the outreach community was selected for comparison. Compared with the overall population of San Francisco, the target and comparison communities have larger proportions of adolescents and young adults ages 10–24 years (15.1% vs. 26.7% and 19.3%, respectively), African American residents (7.1% vs. 53% and 33%, respectively), and households reporting less than \$25,000 in annual income (20% vs. 37% and 38%, respectively) [23]. Both the target and comparison communities historically have high rates of STIs in youth [24].

Community-based organizations (CBOs) serving adolescents in both communities were supportive of evaluation of the YUTHE program, thereby permitting evaluations to be conducted in and near their facilities. Four peer health evaluators (separate from the peer outreach health educators) who reside in either community were hired and trained to conduct evaluation questionnaires. The evaluation protocol (i.e., eligibility criteria, voluntary and anonymous participation, time of day and street- and venue-based intercept approach for questionnaire implementation, and clothing worn by the evaluators with the YUTHE logo, compensation for participation) was consistent with that of the implementation of the YUTHE program and was conducted in both the target outreach and comparison communities on different days of the week. The evaluation of the YUTHE program commenced 6 months after the start of the YUTHE program's implementation and proceeded 6 months after completion of the program ended over the course of a 2-year period of time.

YUTHE evaluation questionnaire

A 42-item structured questionnaire assessed socio-demographic factors, sexual risk behaviors, and constructs, identified in the ARRM, believed to affect STI screening behavior. In addition, to minimize the impact of repeated sampling of the same evaluation participants, the questionnaire included a unique identifier based on the participants'

birthday and mothers' initials to permit the exclusion of duplicate participants.

Measures

History of an STI screening. Participants were asked to report the last time they had been screened for an STI (i.e., within the previous 6 months, more than 6 months, but within the previous 12 months, more than 12 months, or never tested) using a single item.

Intention to seek STI screening services. Intention to seek screening for STIs was assessed by the question, "looking ahead over the next 6 months, how likely is it that you will get tested for an STI, even if you do not have symptoms?"

STI/HIV knowledge. STI/HIV knowledge assessed the respondents' knowledge regarding asymptomatic STI and HIV infections, STI treatment, HIV risk, local prevalence of STIs and HIV, and the health consequences of STI and HIV infections using five separate questions.

Perceived risk for STIs/HIV. A single question assessed the youths' perceptions of their personal risk for HIV and STIs compared with that of peers in their community.

STI testing knowledge. Four separate questions regarding knowledge of STI screening queried about noninvasive STI tests, the cost of testing, confidentiality of tests, and screening sites.

Perceived peer norms for STI testing. Participants respond to the following two statements, "My close friends have been tested for an STD in the last 12 months" and "My close friends think that getting tested for STDs is important" to determine the relationship of perceived peer norms to STI screening in youth. Each statement was assessed separately.

Program exposure. To determine youths' exposure to the YUTHE program, four questions assessed whether respondents had spoken to a YUTHE peer educator, the number of times they had spoken to a YUTHE peer health educator, the content of the encounter(s), and whether they had provided urine to screen for STIs that was sponsored by the YUTHE program (i.e., as part of the SFDPH's community-level STI screening efforts, the YUTHE program offered free confidential STI screening when participating in planned neighborhood and school health fairs within the participating communities).

Community of residence. Participants were identified as being from the outreach or comparison community based upon their report of their neighborhood of residence.

Data analytic plan for evaluating the YUTHE program

Conventional descriptive statistics were used to assess the characteristics of the participants. Duplicate questionnaires were resolved by retaining the participant's initial

Table 1
Demographic characteristics of YUTHE evaluation respondents by community

	Total evaluation respondents ^a n = 1483	Outreach community n = 738 (49.7%)	Comparison community n = 745 (50.3%)
Mean age (SD)	18.2 (SD = 2.2)	18.1 (SD = 2.2)	18.3 (SD = 2.3)
Male gender	858 (59.2)	419 (56.8)	460 (61.8)
Race/ethnicity			
African American	1211 (84.6)	607 (82.3)	604 (81.1)
Latino	104 (7.0)	52 (7.0)	52 (7.0)
Caucasian	22 (1.5)	7 (1.0)	15 (2.0)
Asian	15 (1.0)	7 (1.0)	8 (1.0)
Multi-ethnic/racial	86 (5.8)	38 (5.2)	48 (6.4)
STI risk factors			
≤2 Sexual partners	857 (58.9)	425 (58.5)	432 (59.3)
<100% Condom use	679 (46.3)	325 (47.1)	334 (45.6)
History of STIs	159 (10.9)	87 (12.0)	72 (9.8)
Reside in community	1179 (79.5)	565 (76.6)	614 (82.4)

^a All percentages do not total 100% due to missing data on some variables.

questionnaire to eliminate bias that may result from the participants having familiarity with questions. Bivariate comparisons between participants from the outreach community and the comparison community were made using chi-square tests of differences in proportions. To determine the effectiveness of the YUTHE program, logistic regression analyses were used to compare communities on ARRM constructs. Because age and gender were significantly associated with most of the ARRM constructs, these sociodemographic variables were included as covariates in logistic regression analysis. Criterion for retention in the model was a likelihood ratio test with a p -value $\leq .01$. Logistic regression analyses were also used to examine the effect of the YUTHE program within the outreach community on youth screening behavior. All data analyses were performed using the SAS statistical package (SAS Institute, Cary, NC).

Results

Characteristics of the YUTHE program evaluation participants

To evaluate the effectiveness of the YUTHE program, peer health evaluators recruited 1528 eligible adolescents from both the outreach and comparison communities. Of these individuals, 1497 (97.9%) agreed to participate in the YUTHE evaluation study. There was no information collected on the 31 individuals who declined participation. Based upon the unique identifier, 10 participants had duplicate questionnaires that were dropped from further data analyses. Therefore, the final evaluation sample comprised 1487 adolescents who resided in the two study communities. There were nearly an equal number of respondents from both outreach and comparison communities (49.7% vs. 50.3%, respectively). Overall, they were young (mean = 18.2 years, SD = 2.2), predominantly African American

(81.1%), and male (58.7%). Many of these individuals were at high risk for STIs. That is, in the previous 6 months, 58.9% reported having two or more sexual partners and 46.3% reported inconsistent condom with their sexual encounters, whereas 10.9% reported a history of STIs ever (Table 1).

Most respondents were interviewed in the neighborhood in which they resided. Given the distant geographical proximity of the two communities, there was little overlap between the study samples; only 4.5% of respondents interviewed in the comparison community reported residing in the outreach community. Of the respondents in the outreach community, 46.5% self-reported participating in the YUTHE program. Of these individuals, 24.0% reported multiple contacts with YUTHE peer health educators. There were no significant group differences on any of the demographic or STI-related risk factors, nor were there differences between participants reporting contact with the YUTHE program and those who reported no contact. Moreover, there were no differences by the venue site in which the respondents were interviewed nor by the peer evaluator who conducted the interview.

Effects of the YUTHE program

There was no difference between respondents in the outreach and comparison communities with regards to reporting previous STI screening or intention to be screened for STIs (Table 2). However, compared with the respondents from the comparison community, respondents from the outreach community were significantly more likely to know that STI infections could be asymptomatic (odds ratios [OR] 1.36, 95% confidence intervals [CI] 1.08–1.72), know about urine-based STI screening tests (OR 1.34, 95% CI 1.04–1.72), perceive themselves to be at risk for acquiring an STI (OR 1.71, 95% CI 1.11–2.62), and worried about acquiring an STI (OR 1.50, 95% CI 1.04–2.18).

Table 2
Effects of the YUTHE program: a comparison between the outreach and comparison communities

STI screening, intentions, ARRM constructs	Odds ratio	95% Confidence intervals
Intention to get an STI test in next six months	1.19	.95–1.51
Sought STI testing in prior year	1.06	.84–1.34
African American youth at high risk for STIs	1.14	.90–1.44
STIs increase HIV risk	1.07	.85–1.35
Person with STIs can tell they have one	1.36	1.08–1.72
STIs can affect future fertility	.99	.77–1.27
Urine test for STIs	1.34	1.04–1.72
Clinics conduct free STI testing	.84	.64–1.09
Clinic must notify parents	1.19	.95–1.50
STI tests detect disease even if no symptoms	1.14	.90–1.45
Know where to get an STD test	.98	.77–1.23
Chance of acquiring an STI	1.41	.78–1.27
No chance disease from sex	1.71	1.11–2.62
Worried you might get STI	1.50	1.04–2.18
Would go to clinic by myself	1.19	.77–1.84
Would go to clinic even if it will hurt	1.28	.90–1.83
Would not want to know because having an STD would make me feel dirty	1.18	.93–1.49
Would go to clinic if embarrassed	1.02	.77–1.36
Close friends have been tested for STIs	.93	.74–1.19
Friends think testing is important	.93	.74–1.18
Friends have had an STI	1.02	.77–1.35

Within the outreach community, gender differences were detected, with the greatest differences found among female respondents. Compared with their male counterparts, females were significantly more likely to correctly know about asymptomatic STIs (55.6% vs. 44.3%, respectively, $p < .001$), know that STIs can affect future fertility (75.6% vs. 61.3%, respectively, $p < .001$), and would get tested for an STI even if it was embarrassing (82.0% vs. 74.8%, respectively, $p < .001$).

Moreover, within the outreach community, respondents who reported contact with the YUTHE program were more likely to perceive social norms supportive of STI screening. Specifically, they were more likely to report that close friends thought STI testing was important (OR 2.36, 95% CI 1.67–3.33) and that close friends had been tested for an STI (OR 1.98, 95% CI 1.40–2.79). In addition, respondents who had any contact with the YUTHE program were more likely to report receiving an STI test in the prior year (OR 2.21, 95% CI 1.62–3.01) compared with those who reported no contact with the YUTHE program. Similarly, respondents who reported contact with YUTHE program staff on two or more occasions were significantly more likely to report intentions to seek STI screening in the in the coming 6 months (OR 1.74, 95% CI 1.16–2.63), compared with those who reported no contact with YUTHE program staff. A similar pattern was noted with regards to prior STI screening behavior. That is, compared with respondents who reported no contact with YUTHE outreach staff, respondents who reported a single contact (OR 2.12, 95% CI 1.11–4.03)

as well as those who reported multiple contacts (OR 2.78, 95% CI 1.81–4.26) with the YUTHE program were more likely to have been tested for STIs in the previous 6 months.

Discussion

Evaluation of the YUTHE program reveals that community-level, peer-led health outreach is both a feasible and acceptable approach for implementing STI/HIV prevention strategies for adolescents who reside in a community that has high rates of STIs. The results of this research also suggest that a peer-led, street- and venue-based community outreach programs such as the YUTHE program holds promise as a model for improving STI screening in adolescents, especially those who are at increased risk for STI acquisition and transmission. Although there was no difference in STI testing between respondents from the outreach and comparison communities, a difference was noted among a few constructs of the ARRM. That is, respondents in the outreach community reported perceptions of higher STI risk and worry, suggesting an increased awareness of risks associated with STI-related risk behaviors. This is especially encouraging because many participants in this study engaged in behaviors that increased their risk of exposure to STIs. Our finding that the YUTHE program did not have a more salient effect on STI knowledge among participants in the outreach community could be due to a number of factors. Primarily, it is well understood that adolescents residing in San Francisco have a high level of HIV knowledge. Since the late 1980s, the San Francisco Unified School District has had curricula in place that focus on HIV prevention awareness among its middle and high school students. Therefore, it is not surprising that our very brief intervention did not significantly increase participants' overall level of knowledge. The YUTHE program did not have a significant effect on participants' attitudes and perceptions regarding STI screening. This finding is even less surprising, as changing deep-seated perceptions and attitudes typically require more intensive interventions that can address the antecedents and social and contextual factors that influence STI-related perceptions and attitudes [25]. Despite our general lack of findings on group differences, gender differences within the outreach community respondents were detected. Although we cannot explain these findings based on gender, we are encouraged that our outreach efforts resulted in reaching a large proportion of adolescent males, many of whom who have little or no interactions with health care systems for purposes of reproductive health care or health education.

Overall, what is most encouraging about the findings of this research is the "dose" effect detected among respondents who did and did not have contact with the YUTHE program staff. Particularly, adolescents who had contact with the YUTHE program staff were more likely to report greater intentions to seek STI screening in the coming six months and were more likely to have been tested for STIs

within the previous year. This effect was even stronger for those who had multiple contacts with YUTHE program staff. These findings suggest that brief interventions such as the YUTHE program that are designed to increase adolescents' basic awareness of STI screening can have a positive impact on both enhancing intentions to be screened and the actual behavior for STI screening.

Study limitations

There are a number of limitations that should be considered in this evaluation of the YUTHE program. The quasi-experimental design may have limited our ability to detect real changes in both communities. Primarily, use of a street- and venue-based intercept approach did not permit a pre- and postintervention assessment among individuals who received outreach from the YUTHE program staff. Additionally, the YUTHE program and the evaluation instruments were very brief due to the nature of the community-level, street- and venue-based study design, which did not permit implementation of a more intensive program or a lengthy questionnaire. Furthermore, our sampling strategy, a street- and venue-based interview intercept approach lacked true randomization. YUTHE outreach educators could only sample individuals whom they perceived as eligible, available, and approachable (i.e., within the specified age range, nonintoxicated, or responsive). Finally, STI screening was measured by self-report, which is a potential source of bias.

We did not accomplish our overall intended goal of increasing STI screening in our outreach community relative to the comparison community. This suggests that further research is needed to better understand how this goal can be accomplished before this study is replicated. However, despite the limitations of our study and our lack of significant findings in STI screening by communities, we have demonstrated that a community-level, peer, health outreach approach, such as the YUTHE Program, is a feasible approach for reaching a large number of adolescents who may not readily access the health care system.

Conclusions

Development of the YUTHE program was in response to the disproportionately high rates of STIs among sexually experienced adolescents residing in a predominately African American community with a high prevalence of STIs. Through partnership with adolescents and the target communities, the YUTHE program hoped to capture the attention, impart information, and promote attitudinal and behavior change among adolescents. These results also support the notion that health promotion activities for racial and ethnic minority adolescents should be based upon an understanding of the culture, needs, and characteristics of the targeted group, and such efforts need to be sustained to accomplish lasting effects.

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