Original article

Engaging college students in a substance misuse & sexual health intervention using social marketing principles☆

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ABSTRACT

Background/purpose: The successful recruitment and retention of participants is integral to the translation of research findings. Recruitment begins once you have defined your focus population and identified where and how to reach them (i.e., targeting). Formative evaluation can provide valuable information on recruitment, given the dynamics of different communities and the potential for certain strategies to work better than others with high-risk groups. The preliminary work of engaging the population of interest is essential to successfully attracting and retaining the involvement of populations of interest. The purpose of this paper is to present methods used to engage college students in a multi-level intervention aimed at preventing substance abuse, HIV and STIs.
Theoretical framework: Andreasen's six principles of social marketing were used to develop intervention activities and engage students in these activities.
Methods: A multi-method approach was employed using both survey and focus groups for preliminary feedback, post-event surveys and annual evaluations.
Results: Pamphlets are not enough to attract potential participants because advertisements need to be engaging and employ social networking sites. Students also enjoy playing both on-line and in person games and are quite competitive. Testing for HIV tripled in the first year.
Conclusions & implications: Students became more aware with each subsequent event participation increased over time. Although word of mouth is still very effective in getting students to events, the use of social networking sites greatly improved student participation.

1. Background

Minority-serving institutions (MSIs) of higher education have been identified for their commitment to serving individuals historically underrepresented in higher education (Johnson, Conrad, & Perna, 2006). Our campus is a federally-designated Asian American and Native American Pacific Islander (AANAPI) minority-serving institution, with the most diverse student body in New England. College-age Asian Americans perceive themselves at low risk of contracting HIV (Hahm, Lee, Rough, & Strathdee, 2012). However, they are the only ethnic group in the U. S. that had a continuous increase in HIV infection rates from 4.9 per 100,000 in 2011 to 5.5 per 100,000 in 2016. Additionally, in 2016 chlamydia rates have increased by 3.7% among American Indians/Alaska Natives (AI/AN), 29.6% among Asians, and 19.4% among Native Hawaiians/Other Pacific Islanders (NHOPI) (CDC, 2017).

It is well documented that high-risk sexual behaviors are prevalent in college students (Eisenberg, Lechner, Frerich, & Lust, 2012; Eisenberg, Lust, & Garcia, 2014). These high risk sexual behaviors increase the risk for developing sexually transmitted infections (STIs) including HIV (Center for Disease Control and Prevention [CDC], 2014) and are associated with other risk-taking behaviors such as tobacco and alcohol abuse (Scholly, Katz, Gascoigne, & Holck, 2005). Results from a national survey of college students found that 43.9% of all college students reported having at least one sexual partner and 8.5% had 4 or more partners within the past 12 months (American College Health Association [ACHA], 2015).

Recruiting participants for research studies can be challenging (Treweek et al., 2010) especially with minority adolescents. The successful recruitment and retention of participants is integral to the translation of research findings (Hartlieb et al., 2015). Recruitment

begins once you have defined your focus population and identified where and how to reach them (i.e., targeting). Community assessment or formative evaluation can provide valuable information on recruitment given the dynamics of different communities, and the potential for certain strategies to work better than others with high-risk groups. The preliminary work of engaging the population of interest is essential to successfully attracting and retaining the involvement of populations of interest. This is true whether it is for participating in a longitudinal or short interventions such as a testing event. It is also critical that the investigators know the concerns of the population.

Conventionally, recruitment of participants for an intervention has been done using written materials. Researchers have understood that these documents needed to be understandable to potential participants to assist their decision-making (Behrendt, Golz, Roesler, Bertz, & Wunsch, 2011). However, this format has been too long and technical to read (Caldwell et al., 2012). Considering the target population was college students who are technologically savvy, the research team realized that different strategies would be needed to engage students. Using multiple forms of media has been found to increase participant involvement in interventions.

Pamphlets and flyers are not enough to attract potential participants, adding advertisements that are engaging and using multimedia could increase recruitment efforts. Community service providers are faced with the challenge of identifying the most effective marketing strategies to ensure their program has appeal to the targeted community. Such strategies have included social marketing of campaigns (Grov, Bux, Parsons, & Morgenstern, 2009) such as advertising, displaying posters, and writing feature articles in local newspapers. Additionally, the use of social networking sites (SNSs) has become a popular method for recruitment (Jones & Salazar, 2016), including Facebook, Instagram, and Twitter. The purpose of this paper is to present methods used to engage students in a multi-level intervention aimed at preventing substance abuse, HIV and STIs.

2. Andearsen's six principles of social marketing

Social marketing principles (Andreasen, 2002) were followed to engage students at an MSI of higher education in intervention activities. The first step was to decide what behavioral change theory the activities would be based on. The Information-Motivation-Behavioral Skills Model (IMB) (Fisher & Fisher, 1992) was used to support decreasing underage drinking, misuse of alcohol, and risky sexual behaviors. The remaining principles of social marketing that were employed are outlined in Fig. 1. The 4P's included: creating an attractive *product*, minimizing *price*, providing convenient accessing *place*, and communicating messaging by *promoting*.

3. Methods

Institutional Review Board exempt status was obtained from the principal investigator's (PI) institution since all participation was anonymous. This project was funded through Substance Abuse and Mental Health Services Administration (SAMHSA) to focus on substance misuse and HIV prevention among college students. Graduate and undergraduate nursing students were involved as research assistants. Two community-based organizations (CBOs) partnered with the PI to develop project activities. Other departments from the institution were involved and key to planning sustainability (i.e. university health services, student affairs, and student nursing association).

A multi-methods approach was employed to collect data from the students about how to engage them in intervention activities. Focus groups and surveys were used to collect data for: 1) preliminary feedback to develop activities, 2) post-event surveys to evaluate end of semester campus-wide events, and 3) annual evaluations to assess student awareness of project activities. The surveys included both closed and open-ended questions (see Fig. 2 Timeline).

3.1. Preliminary feedback

Preliminary feedback started during the fall semester 2015 by collecting survey data from a convenience sample of students in the campus center asking specifically about what on-line media they use to get health information and which devise they prefer (i.e., smartphones, laptop). The feedback provided valuable information about how to reach the students to participate in project activities.

During the spring-summer semesters in 2016, preliminary feedback continued by recruiting and holding focus groups. Eight focus groups were convened with three to six students in each group. Questions focused on how they receive health information, what social media formats they use most, and colors and designs that attracted their attention for promotional materials. Both the surveys and focus groups led to decisions about what activities to provide students and how to engage more students. Data from both methods of preliminary feedback led to the launching of the project website with shared links to Facebook, Instagram, and Twitter.

3.2. Post-event surveys

The post-event surveys were administered each semester after the campus-wide event. It was a paper and pencil survey administered during the event while the winning raffle ticket recipients were announced. The focus of the survey was to inquire about their satisfaction with the event and how they heard about the event. The goal was to increase awareness of the events and improve the quality of the activities.

3.3. Annual evaluations

Annually data was collected via survey from students asking whether they had heard of events that were being sponsored. Images of the flyers announcing the events were used in the survey and students were asked if they had seen the images and if so where. Additionally, they were asked if they were aware of the event and whether they attended. This information helped to identify where to post announcements for future events. It also alerted the team that the size of the flyers needed to be larger and in highly trafficked areas.

4. Results

4.1. Preliminary feedback

Students were very engaged in different social networking forums. As one student expressed, "The freshmen Facebook group [is where I will learn about events] and then I will post it to all my social media like Twitter, like different ones". They also learn about campus events on the university website, "I go to the events page on the university website. Because that's the most convenient place like bam bam bam and all the events are there by dates and time and order." They strongly felt that it was essential to engage in these mediums in order to reach them for "…social media aspect that really gets people, it's like the whole age of this generation, Facebook, Snapchat, and Instagram".

In fact, of the students who completed the on-line media survey

Fig. 1. Adaptation of Andreasen's six principles of social marketing.

Behavior Change Theory → Needs Assessment → Target Community's Needs → Create Motivational Exchanges → Uses 4 P's of Traditional Marketing → Implement and Evaluate
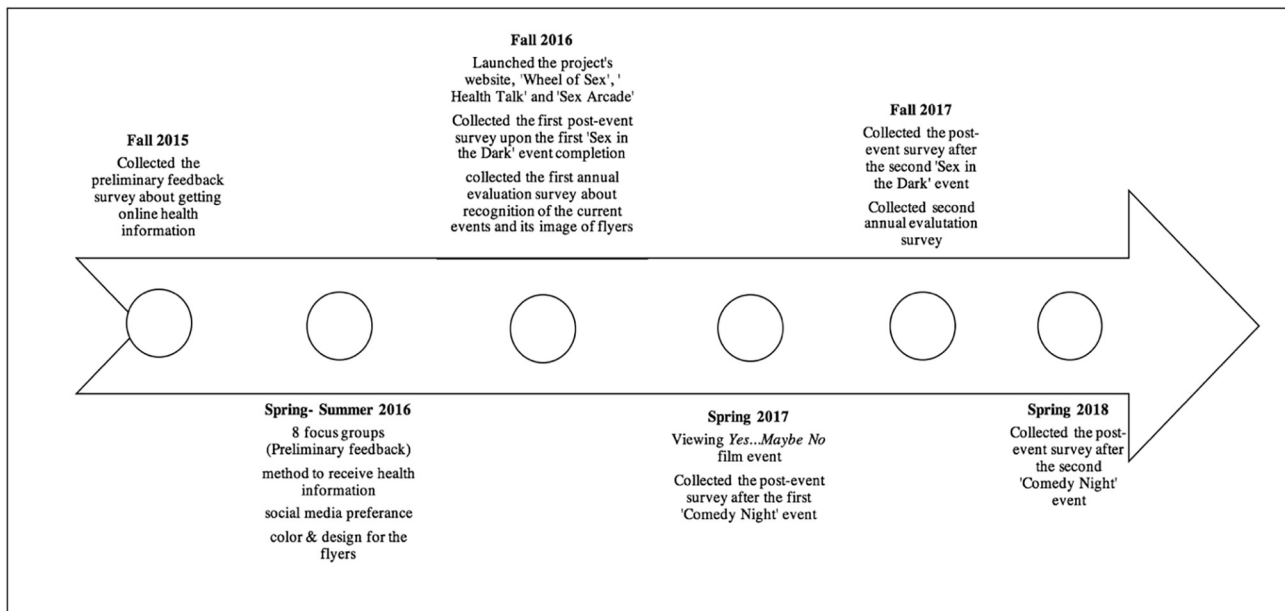
Fig. 2. Data collection timeline.

81.3% reported using their cell phones to connect to the internet multiple times a day. They also reported logging onto Facebook (73.3%), Twitter (31.3%), Instagram (56.3%), YouTube (71.9%), and the campus webpage (53.2%) daily to several times a day. These types of comments were common and the results in the spring semester of 2016 encouraged the team to develop a webpage with links to several SNSs.

However, the students felt that it would be important that the website be interactive, so the team incorporated an arcade game on the website called 'Sex Arcade'. The game allowed the students to earn points for engaging on the webpage and attending events. They could redeem their points anytime during the semester for gifts or exchange them for raffle tickets at the end of semester campus event. To advertise the 'Sex Arcade' game a wallet sized folder card was distributed at all campus events that provided the instructions for registering on the website, how to play the game, and how to redeem points.

The team wanted to provide public health announcements for the campus community and encourage HIV testing. The plan was to post health messages on cards that would be laminated and posted in the campus shuttle buses. Students were asked about images that would attract their attention and colors that would be best for these cards. As one student said, "[You need] bold and colorful letter[ing]…do[ing] same thing [to display the rates of the STIs] on the statistics". They were further asked about how to get students attention in the short period of time they are on the shuttle buses from the parking lots to the campus. Students felt what was needed was "something…[that] grabs you toward bigger pictures or…controversial or something that pop out of them…make them pay attention…" Combining this feedback bright color bus cards were made with rates of HIV and STIs among college aged individuals reported by the CDC. A year after posting the shuttle bus cards, 64% of the students surveyed had seen them.

Free HIV testing events were provided by one of the collaborating CBOs on campus twice a month. This CBO had been providing testing on campus once a month prior to the funding. They had not been successful in engaging many students, in fact they tested between one to three students each month. Students were asked about why they thought not many students were being tested and the overwhelming response was concerns about confidentiality and stigma. "It's not only about the time of the day, or they worry about hearing bad news, they worry about the stigma of it". Prior to our collaboration, on the monthly day of testing the CBO set up a table in the campus center announcing

the opportunity for testing. If a student wanted to be tested they needed to go with the tester to a room on another floor of the campus center to protect confidentiality and avoid the stigma of getting tested. This deterred many students because of the time-consuming inconvenience. During the focus groups, students were asked about this and they felt having to take the time to go to another space was not helpful, but the need for "personal space instead of open space have like…something [dividers]…". Portable room divider screens were used to provide privacy right at the site of the tabling announcing the testing event.

Some students had very specific health concerns they felt should be presented and wanted an interactive approach. "You should develop something…so you spin and it gives different categories like a Trivia game…gives a question and then the answer". This motivated the development of a game named the 'Wheel of Sex' that the team played weekly in the campus center between 11 AM–2 PM when traffic was high because students were getting lunch. A table was set up with health information and a large wheel that students could spin and try answering questions. If they answered the question correctly, they earned points that they could redeem at campus-wide events sponsored through the project. Lunchtime 'Health Talks' were initiated that included both sexual and mental health concerns. With the use of the on-site privacy screens, adding the 'Wheel of Sex' game at the same time as testing, and providing points for testing toward the 'Sex Arcade' game on the website helped increased the number of students that were tested to between 19 and 40 each testing event.

Students were asked about the timing of events, which is critical on the campus since the institution is a commuter school. Students have a tendency to leave right after their classes and historically attendance at events have been very low. One student suggested late afternoon would be a good time to hold an event, "because the usual class schedule [ends at] 4… I think most people will stay here, stay on campus [if they knew in advance]". They were also asked if they could think of any incentives that would help increase participation in events.

Students also gave suggestions about what types of events should be sponsored. "I think recent health fair event was pretty good and interesting. I was passing by and it seemed pretty interesting to stop and look at it. Maybe providing fun game activities might be good, (e.g. give some gifts or raffles), or fun and dancing music?" Students expressed an interest in lively events "…like a party, music, and … I think something like that". These comments reiterated the importance of interactive activities and from this feedback the team decided to sponsor a big

campus event each semester. From the feedback, we initiated our annual 'Sex in the Dark' question and answer event and 'Comedy Night' event.

4.2. Post-event surveys

Post-event survey feedback was very positive, students felt that 'Sex in the Dark' "increased sex positivity". The 'sexpert' panel was four faculty members with expertise in sexual health promotion. Students said that the "Q&A time with sexperts [was]…informative". The timing of the 'Comedy Night' was during finals week, and students felt it was "helpful to reduce stress". Additional comments from the post-event surveys included asking to "…use a lot of media. I think that'll be effective because it keeps the people attentive…people [would be] more comfortable to ask questions" if some form of interactive polling software could be used during the events. This feedback encouraged the team to include Poll Everywhere into the next campus-wide event in the fall 2017.

Another student suggested sponsoring a movie viewing followed by discussion,

"… information or watching some movie together…communication for a group of people." Some students were specific about what content they felt would be important to present. For example, many students reported that they "have gotten emails about a sexual assault incidence, but [the school] doesn't provide [information about] how to prevent." They expressed a desire to "get public education about how to prevent [sexual assault]". During the spring semester 2017, the team presented the film *Yes…Maybe No* that focuses on consent, which led to a good discussion between students.

Of the 208 individuals who completed the post-event surveys, 85% reported being satisfied to extremely satisfied with the events. The students were asked how they found out about the event and were asked to mark all that applied. Many students (42%) reported seeing a posters or flyers on campus, 39% reported hearing by word of mouth, 18% saw them through SNSs, and 16% saw announcement on the project website. The students also suggested announcing events on different SNSs as well as sending blast emails, [during the semester] "students check their emails often". Therefore, with the assistance of the Student Services office an email blast was sent out about the event and 31% received the event announcement. With each event, student attendance increased demonstrating the students were becoming more aware of campus events. The team felt that continuing to survey students would help give ideas on how to reach the population.

4.3. Annual evaluation

4.3.1. Year 1

Ninety-one students were recruited in the campus cafeteria during lunch time and completed the first annual evaluation which was collected two weeks after the first 'Sex in the Dark' event. Although the 'Sex in the Dark' easel posters were up for only three weeks, 76% of the students recognized the 'Sex in the Dark' image with 57% stated that they saw the posters. Thirty-six percent of the students reported that they saw the shuttle bus images. Although 45% of students were aware of the free HIV testing events on campus, only 2% participated. Additionally, although 34% aware of the 'Wheel of Sex' events, only 5% attended.

4.3.2. Year 2

In this second year, 48 students completed the annual evaluation. For this evaluation, instead of paper and pencil survey an email blast was sent requesting that the students respond to the attached survey. Eighty-five percent of students recognized the 'Sex in the Dark' image, and of those 75% reported seeing the easel posters across campus. Because the event easel posters were displayed for two months prior to the event, the promotion of the event was increased. The number of

students that reported having seen the shuttle bus images almost double from the previous year to 64%. At the time of the evaluation, 'Sex Arcade' had been added as an intervention and 72% of students reported they recognized the folder card images. At the end of second year, the number of students that attended 'Wheel of Sex' events (32%) and got HIV testing (21%) drastically increased.

In the second annual evaluation, questions were asked about student's behavioral intent and behavior regarding open sexual communication and HIV testing. Thirty percent of students reported that they thought about and intended on getting tested and 28% of students actually got tested for HIV. Forty-seven percent of students reported knowing where to get resources related to sexual health and substance misuse. Students reported feeling comfortable talking with someone (45%) about sexual health and substance misuse.

5. Discussion

Employing Andreasen's (2002) six principles of social marketing assisted the research team in developing interventions that met the needs of the targeted community. Recruiting minority young adults to participate in research studies is challenging (Treweek et al., 2010); however, translating the findings into effective health promotion interventions must first start with successful recruitment and retention of participants (Hartlieb et al., 2015). In order to be successful in recruiting, the research team needed to complete formative assessments with the population of interest to understand their needs and hear from them the approaches that best suits their needs. This process needed to be ongoing with the team adapting the methods used to reach the population of interest as new ideas were presented.

Incorporating the 4P's of traditional social marketing also increased engagement of students in the intervention activities. Feedback that students gave the research team during focus groups helped to package recruitment products as well as health messaging that was attractive to the community. The design of the shuttle bus cards and the posters and flyers were developed through the student suggestions, including color and design of the advertisement content. Adding gaming strategies incentivized participation, which also increased engagement. Offering the intervention activities in the campus center at convenience times increased participation. In order to promote the project, the research team felt that 'branding' was an important element. The logo was developed for the project and consistently used with all of the promotion events, surveys, and evaluations as well as on the project website.

The college aged population are engaged in SNSs (Jones & Salazar, 2016) so the research team found ways to incorporate these sites as a method of recruitment as well as engagement. These networking sites allow for access to a large number of students. Developing a website with an interactive aspect that included something competitive added to the engagement of the students. Making announcements about events through multiple SNSs was advisable, since not all students use the same sites. Additionally, distributing blast emails was very effective in getting the word out about events.

Involving both undergraduate and graduate students on the research team was essential to formulate a coalition of recruiters. Involving students from different student organizations created an atmosphere of inclusion. Therefore, it is important to collaborate with stakeholders, reach out to student organizations, and train students to be ambassadors for intervention activities. Word-of-mouth was an important method for students to hear about events. The more students that were trained regarding the project goals, the more these students could promote both the primary and secondary prevention activities supported by the grant.

6. Conclusion

Formative methods to assess how the targeting population is hearing about intervention activities is key to continually updating the

methods the research team used to increase participant engagement. Although SNSs played an important role in getting the word out to the targeted population, there is still a need to have one-on-one contact because word-of-mouth is still a key approach of increasing involvement.

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