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Soap Opera Video on Handheld Computers to Reduce Young Urban Women's HIV Sex Risk

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INTRODUCTION

The majority (80%) of women with human immunodeficiency virus (HIV) became infected by unprotected sex with an infected male partner (Centers for Disease Control and Prevention (CDC), 2007). It is a concern that although some women may be naïve about their male partner's HIV risk behaviors, others acknowledge awareness about their partner's risk behaviors and continue to engage in unprotected sex (Dolcini and Catania, 2000; Jones, 2004; Jones, 2006a; Miner, 2002; Sikkema et al., 2000). The literature supports the existence of a contemporary sex script that promotes unprotected sex to fulfill several relationship needs (Emmers-Sommer and Allen, 2005; Jones and Oliver, 2007). These needs include holding onto the relationship, showing trust towards one's partner, and engaging in romance and intimacy (Diekman et al., 2000; Fromme et al., 1997; Jones, 2006b). The need for emotional closeness through these felt relational needs has been found to be the most important obstacle to reducing HIV risk (Bell, Atkinson et al., 2007).

Among women for whom any one or more of these relationship needs is a priority, the effectiveness of rational cognitive based interventions can be limited (Albarracín et al., 2003; Buunk and Dijkstra, 2001). Stacy, Newcomb, and Ames (2000) suggest an approach that involves strongly associating HIV risk reduction behaviors with familiar preexisting risk patterns so that the risk reduction behaviors may more readily be remembered and enacted. Preexisting scripts are readily accessible in memory via associative processing (Smith and Kirby, 2000; Stacy et al., 2000). Sexual health promotion messages can be woven into familiar, emotion-laden contemporary sex scripts as an alternative to normative high risk sex scripts. Testing this approach of associating risk reduction behaviors with familiar preexisting sex scripts in women who engage in sexual risk behaviors is warranted.

The purpose of this study was to evaluate *A Story about Toni, Mike, and Valerie*, a soap opera video intervention that was created to promote HIV sexual risk reduction in young urban women. *A Story about Toni, Mike, and Valerie* is based on content analysis of focus groups held with 43 young adult African American and Latina urban women (Jones and Oliver, 2007). By grounding the dramatic content in urban women's own life experiences via the popular medium of the soap opera, young urban women may identify with the heroine's emotionally charged process of change as she acts to reduce HIV risk under difficult circumstances. The study also evaluated viewing the video and responding to an audio computer assisted self-interview (ACASI) on a small handheld computer with a 4" screen.

BACKGROUND

Entertainment-Education (EE) is an approach to health promotion that involves the use of media entertainment, particularly the soap opera, to purposefully communicate pro-social norms and behaviors (Singhal and Rogers, 2004). Mexican film director and screen writer,

Miguel Sabido, is credited with developing this approach through his telenovelas (Singhal and Rogers, 1999). Key mechanisms thought to enhance the effectiveness of the soap opera are emotion, identification, and involvement. By appealing to emotion, soap operas hold the attention of the audience (Vaughan and Rogers, 2000). Regular viewing of an ongoing soap opera series enhances viewers' identification with the lead characters. The viewer assesses the advantages and disadvantages of various actions, engages with the story, discusses the storyline and feels more involved (Davin, 2000). The feeling of involvement has been found to increase attention and comprehension (Celsi and Olson, 1988).

The soap opera video format has been used to promote mammography screening among Latinas (Borrayo, 2004). In collaboration with the CDC, the soap opera, *The Bold and the Beautiful*, carried a subplot concerning HIV/AIDS. During the show, the National STD and AIDS hotline number was displayed. Caller volume was so high the Hotline was overwhelmed (Kennedy et al., 2004). The EE approach has gained popularity in other countries (Singhal et al., 2004; Vaughan and Rogers, 2000). For example, a study was conducted in Tanzania to evaluate a radio soap opera to promote contraceptive behaviors. The soap opera incorporated a highly dramatic and emotional storyline. Based on survey interviews, a statistically significant increase in family planning adoption was found in the radio broadcast area (Vaughan and Rogers, 2000). The percent of married women who reported contraceptive use increased (26% in 1993 to 33% in 1995 and 37% in 1997). In the comparison area that did not have access to the radio soap opera broadcast, contraceptive use decreased (51% in 1993 and 46% in 1995) but increased to 64% in 1997 after the program began broadcasting there (Singhal and Rogers, 1999).

Young adults are increasingly exposed to multimedia in the form of videos and computer games (Roberts, 2000). Findings have indicated a role for video-based interventions in HIV risk reduction (Kalichman et al., 1999; O'Donnell et al., 1998; Roye, et al., 2007). However, the effects can attenuate over time suggesting the need for booster sessions (Kalichman et al., 1999; Roye et al., 2007)

Conceptual Framework of the Video

A Story about Toni, Mike and Valerie is based on sex script theory (Gagnon and Simon, 2005; Simon and Gagnon, 1986) and the theory of power as knowing participation in change (Barrett, 1998; Caroselli and Barrett, 1998). Colloquial sex scripts are a source of implicit knowledge about how to behave in situations that could involve sexual intimacy (Simon and Gagnon, 1986). Power consists of four dimensions: women's awareness of their own value as women; awareness of their choices and whether they make their choices intentionally; whether they feel free to pursue their choices; and how they are participating in making their choices happen. The conceptual basis to the video intervention is to communicate "power as knowing participation in change" through women's identification and emotional involvement with the characters, realistic plots, and portrayals.

To create realistic characters and plots, focus groups were held (Jones and Oliver, 2007). The purpose of the focus groups was to elicit discussion about sexual pressure, trust, sensation seeking and power due to the importance of these concepts in relation to HIV sexual risk behavior. It was thought that discussion of these variables would be central to understanding a sex script that promotes unprotected sex. Understanding these concepts in greater depth would contribute to the storyline development. Sexual pressure is a limited awareness of sexual choices that are bound by a socially available, yet narrow, stereotypical vision of women and sexual expression (Jones, 2006a). For example, a woman who believes that her male partner decides when to have sex has been related to more frequent unprotected sex (Crosby et al., 2000). Women trust their partners less when they become aware of his risk behaviors. Their lower trust is incongruous with their continuing to engage in unprotected sex (Jones, 2004),

and difficult to appreciate without the understanding that they are also feeling more pressure to *show trust* by engaging in unprotected sex (Jones, 2006a). The pressure to show trust by engaging in unprotected sex is an important element of the sex script. Although, sensation seeking is not inherently related to risk (Horvath and Zuckerman, 1993; Zuckerman, 1994), it has been associated with HIV risk behavior (Gaither, 2003; Jones, 2004; Kalichman and Rompa, 1995). Previous research supports the importance of relationship power in regards to lower HIV risk behavior in Latinas (Pulerwitz et al., 2002; Pulerwitz et al., 2000).

Open and axial coding of the focus group data resulted in themes and relationships. Themes were categorized into lower and higher power sex scripts (Jones, 2006b; Jones and Oliver, 2007). The description of a lower power sex script is as follows. Women envision themselves as *having to satisfy their man*. Their choices narrow down to *doing what it takes to hold onto a man*; to accept cheating “as long as he comes home” (Bowleg et al., 2004; Jones and Oliver, 2007), and even to *prefer that he lie* to cover-up his cheating in order to maintain *what he’s doing for me*. By repeating the same patterns, women often feel *stuck in their ways*, and cling to the *hope that things will get better*. After recurrent regret, stress, and losing trust, they *get tired of it* which represents the turning point when women’s feelings and behavior change

Higher power sex scripts involve a more expansive awareness of one’s own value as a woman, the recognition that there are choices in partners, sexual behaviors and beyond. The act of asking or stating that condoms be used involves women’s awareness of themselves as worthy of self care, with diverse choices, and feeling free to state their position against pressure to have sex because *expecting sex is not all right, and you don’t own me*. Women act with determination to pursue their choices. This may involve leaving a partner who is cheating or deciding to stay on their own terms by *taking the power*, carrying their own condoms, and insisting that their partner use a condom or abstain from sex. Higher power scripts involve *girl power*, which is a sense of connection to friends or family (Jones and Oliver, 2007).

Development of a Story about Toni, Mike, and Valerie

The author and a research assistant (RA), who was a Masters prepared nurse practitioner of similar cultural background to the target audience, wrote the story based on the content analysis of the focus group interview data. The story was organized into eight high risk scenes consistent with lower power and corresponding higher power scenes that depicted the character’s alternative responses. The health promoting messages were delivered towards the end of the story as the two lead characters revisited the high risk scenes and this time they acted with power. After the story was written it was scripted by a team of three actors, students, the filmmaker, and the author.

A casting call yielded a series of auditions for the leading and supporting roles by performing arts majors and graduates at the University as well as young professional actors. Representative of the target population, the actors were African American and Latina. A professional musician created the musical score. A documentary filmmaker directed all aspects of film production. A digital applications developer coded the video using FLASH™ application for use in an Internet Explorer environment in order to play the video on the handheld computer.

The video was first shown internally at several scheduled events to elicit feedback by representatives of the target audience. First, a “wrap party” was held to show the newly completed video to the actors and their friends and family with a discussion that followed. Undergraduate nursing students who were African American women, aged 18 to 22, enrolled in the Educational Opportunity Fund (EOF) at the College of Nursing also viewed and critiqued the video. Finally, a large gathering of nursing and performing arts faculty, the actors, and students was held. A paper and pencil version of the Relevance of Video Survey (RVS) was completed by the attendees to evaluate the video and elicit any recommendations for change.

Per the recommendations, the video was shortened to its current length of 43-minutes, and adjustments were made to the music. The video was reviewed by an HIV prevention content expert and Dr. Barrett for theoretical consistency.

The video was programmed to play within the ACASI that was developed by the technology team for this study. The application was loaded onto a small handheld computer (Sony Vaio™ UX series) with a 4-inch touch screen. Using ACASI, all the items were both heard over a headset and read simultaneously on the screen. The flow of the ACASI began with a short “directions” video, which was followed by the consent, pretest questions, the intervention or control video, posttest, and a short “how to use a condom” video. The “directions” was a one-minute video that illustrated how to scroll down, enter a number on the virtual keyboard on the touch screen of the handheld, and how to click “Next” to progress through the interview. A practice session followed so that the requisite skills could be performed in front of the RA. During the initial testing, these directions underwent several iterations in order to facilitate a participant’s ability to complete the interview without requiring technical assistance. When the interview was completed, the anonymous data were automatically uploaded via a secured wireless local area network (LAN) to the study dedicated remote server. This approach was feasible because there was a land-line Internet connection in the vicinity of the study activities at each site. By creating a wireless hub, multiple interviews could be uploaded and participants could be seated with privacy.

It was anticipated that by viewing *A Story about Toni, Mike, and Valerie*, power as knowing participation in change, would be communicated through women’s identification and emotional involvement with the characters, realistic plots, and portrayals. Viewing the video would lead to short-term attitudinal change in stereotypical sex scripted expectations to engage in unprotected sex. These attitudes have previously been shown to relate to higher HIV sex risk behavior (Emmers-Sommer and Allen, 2005; Jones, 2006a). If the results supported this approach, a follow-up longitudinal study to evaluate the effect of a *series* of soap opera videos on reducing HIV sexual risk *behavior* would be warranted.

Hypothesis—The hypothesis tested in this study was that the difference in pretest-posttest scores of stereotypical expectations to engage in unprotected sex will be greater in the experimental group than the control group, indicating a greater reduction in these expectations.

METHODS

Study Design

This study followed a pretest-posttest control group study design with participants randomized into an experimental or control group. A control video was created to describe careers in health care and computer technology. Both experimental and control videos were 43 minutes in length and both were viewed on the handheld computers. Participants completed a pretest and posttest that assessed evidence of the belief in a lower power sex script involving unprotected sex. In addition, three questionnaires were used to assess the acceptability of the intervention video and the handheld computer. A criteria of 80% approval on each item was sought. If not, post hoc analyses would be conducted to explore reasons that may contribute to lower approval and this feedback would inform the future intervention.

Sample

The sample was 76 urban women, aged 18 to 29, in sexual relationships with men during the previous 6 months. Given this study featured a relatively new intervention and procedure, testing one outcome variable to determine the pretest-posttest difference between the two treatment groups by independent samples *t*-test, the one-tail significance level was set at $p = .$

1 to detect a trend towards statistical significance. Power was set at 80% with an anticipated medium effect size (Cohen, 1987). With $d = 0.5$ as a medium effect size, an $\alpha = 0.1$, power = 0.8, the total number of subjects required was 74. Two additional interviews were conducted.

Measures

Kayla and Steve Sex Script Video (Jones, 2008) is a 6-minute video produced by the author, and is based on the aforementioned focus group content. The video concerns a realistic event that may have been personally experienced by the participant. In the video, Kayla, a young African American woman, has not heard from nor seen her partner, Steve, in two weeks. She is anxiously awaiting a call from him. While outside she happens to see Steve talking to a woman whom she believes Steve is seeing. That afternoon Kayla comes home to hear a message from Steve on her answering machine. Steve is asking if he can come over. The video ends.

The *Sex Script Video Response* (SSVR) (Jones, 2008) was developed by the author as a 12-item instrument to evaluate support for a sex script involving unprotected sex. The participant is asked to conclude what happened in the Kayla and Steve video. Examples of the first 6 items are: *Did Kayla let Steve come over? Did they have sex? Did they use a condom?* (Cronbach's $\alpha = .90$). These data were collected in order to describe the overall sex script. For this study, in order to assess for change in personal viewpoints after watching the intervention video, the SSRV items were revised to ask *What would YOU do in Kayla's situation?* (6 items) (pretest Cronbach's $\alpha = .74$; posttest $.80$). Only these 6 items were calculated in the pre and posttest scores. Response options are on a 5-point metric, the higher the score, the higher the belief in a lower power sex script involving unprotected sex.

Women's Sex Role (WSR) is a 5-item subscale taken from the *Sexual Pressure Scale* (SPS), (Jones, 2006a). The WSR assesses a woman's expectation that it is her responsibility to satisfy her male partner. An example of an item is *If my partner wants sex, it's my responsibility as his woman to have sex with him*. Response options are on a 5-point metric whereby higher scores suggest higher expectation to engage in unprotected sex. Cronbach's α was $.66$.

To maximize power, the pretest score was the combined total of the 6-SSVR items and the 5-item WSR (total 11 items). The SSRV and WSR are conceptually related constructs. Cronbach's α for the combined scales for the pretest was $.72$ and $.84$ for the posttest.

The *Relevance of the Video Survey* (RVS) was adapted from Roye and Hudson (Roye and Hudson, 2003), concerning the acceptability and relevance of the video content to young adult urban women. The RVS consisting of 20 items, has a dichotomous response choice and was completed by the experimental group only. *The Video on Computer Survey* (VCS) consists of eight dichotomous choice items to assess the experience of watching a video on a handheld computer. *The Computer Acceptability Survey* (CAS), consists of six dichotomous choice items to assess the experience of using a handheld computer. The VCS and CAS were administered to both the experimental and control groups. Two reviewers with expertise in technology reached unanimous agreement on the relevance of these items.

A *demographic sheet* included age, ethnicity, employment, number of children, substance use before or during sex, frequency of sex and condom use, and perception of male partner risk behaviors. These data were collected to describe the sample and to determine whether there were baseline differences between the control and experimental groups.

Data Collection

Institutional Review Board approval was obtained from Rutgers University Office of Research and Sponsored Programs before initiating data collection. Participants were recruited from a storefront office in downtown urban district, a public housing development and a public

sexually transmitted disease (STD) clinic located in two urban communities in the northeastern United States. Participants were recruited by the principal investigator (PI) and RAs who were culture, age, and gender representative of the target sample. Recruitment flyers describing the “Women’s Project” were posted or distributed at the study sites. At the housing site, a recruiter who was a resident at the public housing development assisted in notifying age eligible women about the study and assisted with circulating flyers. A private room was reserved for study-related activities at each site. During the interviews, the PI or RA provided child-care, as needed. At each site participants were randomized into either the experimental or control group by assigning every other participant to each group. Both the experimental and control videos were available on each handheld computer. Before the next participant entered the room, the RA tapped on an icon on the screen to enable the interview with either experimental or control video.

Interviews were conducted using ACASI on the handheld computer whereby data were entered by tapping on the touch screen with a pen-like stylus. The touch screen was chosen as an intuitive user interface (Cooley et al., 2001). By tapping on the response choice, the data were directly entered into the database. Participants reviewed the short directions video and practiced each skill with the RA, requiring only an additional minute. A “Statement to the Participant” that included all the elements of informed consent, was played over the headset connected to the handheld and viewed on the monitor. Additionally the RA encouraged questions. To preserve anonymity, participants pressed the #1 key to indicate consent. The RAs remained available during the interview, sitting across the room with their backs to the participant in order to maintain the participant’s privacy. The ACASI is interactive, so that participant sees only questions relevant to their previous responses. After the completion of the intervention video and posttest, there was a short six-minute video created by the team to demonstrate the technique of how to use a condom. By clicking “End” when the interview was completed, the anonymous data were automatically uploaded via the secured wireless LAN to the study dedicated remote server. On completion, each participant was compensated \$20.

Data analysis

Descriptive statistics were conducted to examine means and standard deviations, skew and kurtosis. To test the hypothesis that the difference in pretest-posttest scores of the combined SSRV and WSR items will be greater in the experimental group compared to a control group, an independent sample *t*-test on the difference scores was performed. To corroborate results, a multivariate ANOVA mixed model approach was also utilized.

RESULTS

Sample Characteristics

The mean age was 21. Most of the sample was African American ($n = 65$, 85.5%). The rest were Latina ($n = 8$, 10.5%). Nearly half the sample worked outside the home ($n = 37$, 48.7%). Most of the sample, ($n = 52$, 68.4%) completed 12th grade or less. One-third of the sample never used a condom during sex, 24% always used a condom, the rest used condoms occasionally. More than half did not use a condom the last time they had intercourse ($n = 43$, 56.6%) and 40.8% did not use any birth control. Of those who used birth control, condom use (36.8%) was the most common method. Less than half had children ($n = 30$, 39.5%), of these, most had one or two children. The majority (68.4%) did not use drugs before or during sex. Most used alcohol before or during sex (68%). Most of the sample saw a main partner only ($n = 53$, 69.7%), 12 (15.8 %) saw men occasionally, and 11 (14.5%) had both a main and occasional partner. Most of the sample ($n = 65$, 85.5%) was unsure or believed that their partner was having sex with other women during the past 6 months. Just over one-fourth (20, 26.4%)

believed it was possible he had sex with men and 8% thought that their partner had injected drugs in the past 6 months.

No difference was found between the experimental and control groups on educational level, perception of partner risk behaviors, use of drugs, or alcohol before or during sex. There was no difference between the experimental and control groups on the number of sex partners in the past 6 months, type of partner, nor the frequency of sex or condom use. The means and standard deviations for pretest and posttest scores for the two groups are shown in Table 1. The pretest-posttest difference scores for the intervention and control groups were normally distributed and did not differ by site.

Sex Script Video Findings

Nearly the entire sample ($n = 72$) said Kayla let Steve come over. Of these, 58 (76.3%) indicated that Kayla would have sex with him, and of these, most (49, 64.4%) said Kayla and Steve had unprotected sex. There were 57 (75%) who indicated Kayla would continue to have sex with Steve even though he continued to see the other woman, and that sex would be unprotected. The majority of the sample ($n = 62$, 82%) thought Kayla needed to have sex with Steve to stay as his main partner.

In comparison to what Kayla would do, when asked what YOU would do in Kayla's situation, the numbers declined sharply. There were 37 (48.7%) who would let Steve come over, and of these, 14 (19%) would have had sex with him, 7 without a condom. There were 18 (24%) who indicated they would continue to have sex with Steve even though he continued to see the other woman, and 13 believed they needed to have sex to hold onto a partner.

In regards to most of their friends, the numbers increased. Most responded their friends would have let Steve come over $n = 68$ (89.4%) and of those nearly all ($n = 64$) would have had sex with him, just over one-fourth ($n = 21$, 28%) without using condoms, 57 (75%) thought their friends would continue to have sex with him even though he kept seeing the other woman, 28 (37%) thought sex would continue to be unprotected, and 47 (62%) thought their friends would believe that they would need to have sex with Steve to stay as his main woman.

Of interest, the "What would you do score" was related to the "What Kayla would do" score ($r = .41$, $p < .001$) but not to the "What would your friends do" score. "Would you have had sex with Steve that night?" was related to perceiving your partner had sex with other women. ($r = .25$, $p = .028$).

There was a high level of agreement with most of the Women's Sex Role (WSR) items. For example, 61 (80.3%) felt occasionally, most, or all the time that "It's a woman's responsibility to satisfy her man sexually." Consistent with sex script findings, 30 (39.5%), felt they should have sex because there are plenty of women who were willing to have sex with their partner, and 30 felt "a woman needs to please her man sexually to hold onto him." Only 17 agreed with "Having sex with my partner will show him that I am the BEST woman for him."

Hypothesis Testing

The hypothesis tested in this study was that the difference in pretest-posttest scores will be greater in the experimental group than the control group indicating a greater reduction in stereotypical expectations to engage in unprotected sex. The results of the independent samples t -test, adjusted for violation of the homogeneity of variance assumption, supported the hypothesis. The change between pretest and posttest mean scores differed significantly by group, $t(57.77) = 3.29$, $p = .001$ (one-tailed). These results are depicted in Figure 1. For the control group ($n = 38$), on average, participants scored .42 points lower on the posttest ($SD = 4.33$). For the experimental group ($n = 38$), on average, participants scored 5.18 points lower

on the posttest ($SD = 7.81$) (see Table 2). Analysis by Multivariate Mixed Method ANOVA corroborated this finding (interaction effect, $p < .001$).

According to the value of Cohen's d , the experimental group scored .72 standard deviations lower, on the average, on the posttest than on the pretest, a moderate to large effect (Cohen, 1987). The calculation is based on the means and standard deviations depicted in Table 1. The square root of the average of the two variances was conducted for a measure of the overall standard deviation:

$$\text{Square root } (6.451 * 6.451 + 7.9 * 7.9) / 2 = 7.212.$$

Then, the mean difference was divided by this standard deviation $(24.053 - 18.868) / 7.212 = .72$. The findings indicated a greater short-term reduction in stereotypical views to engage in unprotected sex in the experimental group after viewing *A Story about Toni, Mike, and Valerie*.

Acceptability of Watching the Video and Completing ACASI on a Handheld

Results supported the acceptability and relevance of the experimental video (see Table 3). For example, all 38 women in the experimental group felt the video could help a woman handle herself in a tough situation with a partner. All 38 liked the videos, liked the characters, thought the video could help a woman make decisions about being with a man who won't use condoms, thought the video addressed problems that are important to women, and that the video could change a woman's attitudes. All 38 liked the power scenes. Of the 38, 13 thought the video was too long. However, only 4 thought something should be cut. Twelve thought different messages should be stressed and 14 of 38 could not relate to the characters and the problems in their relationships. In respect to this finding, a correlation was performed to assess whether personal experience affected identification with the characters and their problems, a key element of the soap opera format. Results indicated that women who experienced similar situations as those depicted in the video, identified with the characters. For the experimental group ($n = 38$), those who could relate to the characters and their problems in relationships were more likely to have a partner who had sex with other women ($r = .53, p = .001$) and a trend toward statistical significance with perceived partner sex with men ($r = .28, p = .09$).

Responses to the VCS and CAS indicated overall support for viewing the video on the handheld computer (see Tables 4 and 5). Of the sample of 76, 73 felt the screen was large enough to see the video clearly. Of the 76, only 2 felt the print was too small to read. All 76 felt their privacy was safeguarded while using the handheld computer.

DISCUSSION

The results indicated support for the hypothesis. In the experimental group, there was a statistically significant short-term reduction in stereotypical gender views after viewing *A Story about Toni, Mike and Valerie*. This change was not observed in the control group who viewed an equal length video on careers in health care and computer technology. These expectations have been related to sex risk behavior (Jones, 2006a). Unprotected sex is the most available meaningful response because it is intrinsic to the sex script of winning and holding onto a man (Bowleg et al., 2004; Jones, 2006b; Jones and Oliver, 2007).

The conceptual basis to *A Story about Toni, Mike and Valerie*, was to communicate power as knowing participation in change through a soap opera video format. The HIV risk reduction message was communicated as the lead actors revisit each high-risk scene and this time they

act with power, meaning they act with choices that reflect a new awareness of their value as women. Mays (2004) has also called for reframing the familiar sex script. By acting with power, relationship-promoting objectives that may be otherwise satisfied via high-risk sex were shown to be satisfied in ways that promote health.

The RVS indicated support for the relevance of the video story. For example, the entire sample believed watching *A Story about Toni, Mike, and Valerie* could help a woman learn how to handle herself with a male partner who wants to have unprotected sex when she doesn't want to, and that the video addressed important problems. The majority could relate to the characters and their problems, but 14 of the 38 could not. Those who perceived their male partner to have had sex with other women were more likely to relate to the characters and their problems, suggesting that personal experience influences the relevance of characters and plots. According to Stacy et al. (2000), by associating the message in a relevant context the message will be associated with normative scripts and therefore, more readily be enacted. The findings support the need for further study. A prospective, longitudinal study is planned to assess the effect of a series of soap opera videos on HIV sex risk behavior in a sample of women engaging in high HIV sex risk behavior.

The *Kayla and Steve Sex Script Video* required that the viewer provide an ending to the story. A similar approach, of requiring the viewer to end the story in order to elicit evidence of a sex script, was used by Hynie, Lydon, Cote, and Weiner (1998). This approach yielded several insights into the urban sex script. The "What would you do" SSVR score was correlated with the "What Kayla would do" score but not with "What your friends would do" score, an unanticipated finding in regards to the influence of group norms. It may be that respondents were distancing themselves from their social network. Nearly half the sample felt pressure to have sex with their partner because "there are plenty of women who would have sex with him," suggesting the perception of a competitive environment. Perhaps "plenty of women" include women in one's own social network. These findings require further study into the ways sex scripts manifest in urban women.

There are several limitations to this study. This study was conducted in a sample of predominately African American young adult women from two adjacent cities in the urban Northeast. Assignment was randomized however the results cannot be generalized to different populations. The results may be applicable to young urban women in cities with a high incidence of HIV. Testing in other populations and non-urban areas is indicated.

To date, no study has reported on the use of video and ACASI on a small handheld device as an intervention. The findings indicated that video on a handheld device can be a central feature of an interactive multimedia computer-based intervention to reduce HIV risk behavior in urban women. This is particularly important since multimedia provides a stimulating environment appealing to sight and sound (Huang, 2003; Soto Mas, 2003). Because the nature of HIV risk reduction research requires a perceived sense of privacy, the findings of this study support the subjective sense of privacy offered by the handheld device. This is an important strength of using a small handheld device. Further, reading the small font size on the screen of the handheld was not a problem for this age group. All but two of the sample of 76, were able to read and respond to ACASI items with ease. This may also have been a function of hearing the items over a headset while reading.

There were disadvantages to the use of a handheld computer. The most formidable was the expense of a computer. Another concerned Internet connectivity. Although setting-up a wireless LAN on-site was quite feasible, connection to the Internet was dependent on a nearby land-line. Some field conditions may not have access to a nearby land-line. The video-capable cell phone offers the advantage of greater connectivity in high populated urban areas.

The significance of testing this video intervention on a small handheld device is the potential to stream HIV risk reduction videos to at-risk young urban women on their own personal devices, such as cell phones. For this study, the video and the ACASI were run on the hard drive of the handheld computer and the data were securely uploaded. Another approach is to stream the video and run the ACASI from a secured server to the handheld device. Streaming video from a server to a mobile device is becoming increasingly feasible (Nelson, 2007). The video-capable cell phone is one example of the next generation of lower cost mobile devices.

CONCLUSION

There was a statistically significant reduction from pretest to posttest scores in stereotypical gender views in the experimental group indicating the potential of the video intervention, *A Story about Toni, Mike, and Valerie*, in this population. The results of this study lend support for a prospective study to test for behavior change. The small handheld computer was found to be acceptable as a platform to view a near feature length video and to complete an ACASI. The potential of this intervention is that that health promotion videos and interactive ACASI can be completed on handheld devices that are both portable and promote a subjective sense of privacy. The video can be viewed at the study website www.stophiv.newark.rutgers.edu.

Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

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Table I

Mean and Standard Deviation Pretest-Posttest Scores on the Combined Sex Script Video Subscale and Women's Sex Role Subscale in the Experimental and Control Groups

Treatment		Mean	Standard Deviation	N
Pretest	Control	21.95	8.56	38
	Experimental	24.05	6.45	38
	Total	23.00	7.61	76
Posttest	Control	21.53	9.63	38
	Experimental	18.87	7.90	38
	Total	20.20	8.85	76

Table II

Mean Difference Scores on the Combined Sex Script Video Subscale and Women's Sex Role Subscale for Experimental and Control Groups

Treatment Group	Posttest Score	Pretest Score	Mean Difference	Significance
Control	2	1	-.421	.68
Experimental	2	1	-5.18	.000