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A Human Immunodeficiency Virus Posttest Video to Increase Condom Use Among Adolescent Emergency Department Patients

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A B S T R A C T

Purpose: To compare the effectiveness of a theory-based HIV educational video tool with in-person HIV counseling in promoting safer sex behaviors among adolescent patients of an urban Emergency Department (ED).

Methods: This was a randomized controlled trial taking place in the Emergency Department of Jacobi Medical Center in the Bronx, New York. A total of 203 stable, sexually active patients aged 15–21 years completed pre-intervention and postintervention measures. Participants were randomized to the intervention video series (102 participants), a theory-based, youth-friendly human immunodeficiency virus (HIV) educational video, or an in-person HIV counseling session with a trained HIV counselor (101 participants). Participants completed pre-intervention and postintervention measures on the primary outcomes: condom intention, outcome expectancy, and self-efficacy.

Results: Participants in the video group improved condom use intention (adjusted differential mean improvement [ADMI] = .98 units; confidence interval [CI], .20–1.77; Holm adjusted $p = .028$), condom self-efficacy outcome (ADMI = .26 units; CI, .04–.48; Holm adjusted $p = .019$), and condom outcome expectancy scores (ADMI = .15 units; CI, .07–.23; Holm adjusted $p < .001$) significantly more than those in the counselor group, adjusting for stage of change. The intervention helped participants progress to the next level of readiness or maintain their positive behavior, and did not differ by age, gender, or race.

Conclusions: A theory-based, youth-friendly video can be a valid means to provide posttest HIV education and prevention messages within an urban emergency department. The theory-based prevention messages can improve teenagers' condom intentions, condom self-efficacy, and condom outcome expectancies immediately after the intervention.

IMPLICATIONS AND CONTRIBUTION

This study showed that an educational human immunodeficiency virus posttest counseling video can be used to improve sexual risk behavior in adolescents in an emergency department. Participants in the video-based counseling group had significantly greater improvements in condom intention, self-efficacy, and outcome expectancy scores compared with those in the human immunodeficiency virus counselor group.

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The 2010 National Human Immunodeficiency Virus (HIV)/Acquired Immune Deficiency Syndrome Strategy for the United States has called for intensified prevention efforts in

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communities where HIV is most heavily concentrated [1]. The Centers for Disease Control and Prevention (CDC) continue to advocate that clinical settings such as emergency departments (EDs) offer venues to reach at-risk populations within these communities for rapid HIV testing [2]. Evidence suggests that testing alone will not reduce risk behavior and can even increase risk behaviors among HIV-negative patients by distorting individuals' perceptions of risk [3,4]. Brief behavioral interventions have been shown to help increase rates of condom use [5,6] as well as reduce risky sexual behaviors among adolescents [7–11]. Yet, routine prevention counseling is often viewed as time-consuming and burdensome in busy clinical settings [12]. The use of video-based HIV prevention models minimizes strain on hospital resources and is particularly appealing to adolescents, a population disproportionately affected by HIV [13,14]. We have demonstrated previously that a concise and informative HIV *pretest* counseling video shown to adolescent patients in an urban ED significantly improved HIV knowledge and participation rates in voluntary HIV testing compared with standard care (in-person counseling) [15]. This study reports the results of a randomized trial of an HIV *posttest* counseling video series, shown while ED patients wait for the results of their rapid HIV tests, designed to reduce adolescents' sexual risk behavior.

We based all content developed and used in this intervention on two theories: the Stages of Change [16] (SOC) and the Theory of Reasoned Action [17]. The SOC model is based on the belief that individuals are at different stages of a continuum when making decisions to change behaviors: precontemplation, contemplation, preparation for action, action, and maintenance [16]. We used SOC to tailor the intervention to the participant's initial stage so that the participant would be more open to the risk-reduction messages. Stages of Change has previously been tailored and used for HIV education and behavioral interventions [18,19]. According to the Theory of Reasoned Action, the most important determinant of a person's behavior is intention [17]. The Theory of Reasoned Action created the basis of using condom intention, condom outcome expectancy, and condom self-efficacy as the primary outcome measures for this intervention. We used these behavioral theories to design a teen-friendly behavioral intervention that efficiently addresses the multiple factors that contribute to the spread of HIV among adolescents.

Methods

Study design

We conducted a two-armed, randomized, controlled trial among eligible patient volunteers seen in the adult and pediatric EDs of Jacobi Medical Center. All participants viewed an HIV pretest video. We then randomized participants into a control group that received standard in-person HIV prevention counseling or an intervention group that viewed a series of posttest videos determined by participants' SOC. All participants completed pre-intervention and postintervention measures on condom intention, condom outcome expectancy, and condom self-efficacy. Human immunodeficiency virus testing was optional for both arms. The research protocol received approval from the Albert Einstein College of Medicine Institutional Review Board.

We determined sample size *a priori* based on a .42 standardized effect, which was believed to be the minimal clinically meaningful effect size. Group sample sizes of 92 achieved 80% power to detect such effect with an α value of .05 using a two-sample Student t-test. Assuming a dropout rate of 10%, a total of 202 participants were needed. We calculated sample size requirements using PASS 2004 (NCSS, Kaysville, UT).

Selection of participants

We selected participants from the adult (aged 18–21 years) and pediatric (aged 15–17 years) EDs and the urgent care centers of Jacobi Medical Center, a level 1 trauma and tertiary care center located in Bronx, New York. Recruitment took place between 9 A.M. and 9 P.M., Monday through Friday, from November 2009 to June 2010. Inclusion criteria required that patients be sexually active, aged 15–21 years, and proficient in English. Patients were excluded if they were medically unstable, in obvious pain, unable to understand the consent process, did not speak English, were known to be HIV-positive, or had been tested within the past 6 months. Patients who refused to participate completed a short, anonymous refusal form that obtained their demographic information and reason for refusal.

Study procedures

Trained research assistants approached all patients who were between the ages of 15 and 21 years, in the waiting areas and treatment rooms of both the adult and pediatric EDs. Research assistants followed a script that described the study and obtained patients' informed consent. The institutional review board granted a waiver of parental consent to protect teens from having information about their risk behaviors disclosed to parents. If parents and/or guardians were present, the youth was brought to a private room for enrollment. Adolescents who agreed to participate completed a confidential, computer-based questionnaire to determine eligibility. Eligible patients provided either a young adult's assent form (15–17 years) or written informed consent (18–21 years). Patients were provided with a copy of the consent form, which included an explanation of the intervention and contact information for the primary investigator.

At baseline, all enrolled participants completed a demographics questionnaire; a risk assessment survey; measures on condom intention, condom outcome expectancy, and condom self-efficacy; as well as a series of questions to determine participants' SOC for condom use (Figure 1). All participants then viewed a validated HIV pretest educational video and were offered an optional HIV test [15]. Regardless of participants' decision whether to be tested, all participants were then randomized to one of two groups. Because we offered HIV testing to all participants before randomization, testing should not have affected differences between control and video groups. The control group received in-person counseling from HIV counselors trained to provide age-appropriate, culturally sensitive education and counseling. All control participants were given information on how to interpret HIV test results, partner notification, and condom use. The experimental video group watched the post-HIV test video series. We conducted randomization using a computer-generated block randomization scheme obtained from http://www.randomization.com. The randomization scheme was kept in an opaque envelope that was not opened until patients signed informed consent, to minimize bias.

For participants who accepted HIV testing, in-person counseling or the video series was presented, depending on whether