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Qualitative Evaluation of the Relevance and Acceptability of a Web-Based HIV Prevention Game for Rural Adolescents

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African Americans in the rural Southern United States continue to experience disproportionate increases in new HIV/AIDS infections. Electronic gaming interventions hold promise but the use of HIV prevention games is limited. The purpose of this study was to assess the acceptability and relevance of a web-based HIV prevention game for African American rural adolescents. Findings from focus groups conducted with 42 participants suggested that the game was educational and somewhat entertaining but lacking in real-life scenarios and player-control. Findings are congruent with self-efficacy literature and constructivist approaches to learning. Findings have implications for gaming intervention development and further research.

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AFRICAN AMERICAN YOUTH in the United States continue to experience a disproportionate increase in new HIV/AIDS infections despite the availability of HIV prevention interventions with demonstrated effectiveness. Although African American adolescents (ages 13–19) represent 17% of the U.S. adolescent population, they accounted for 68% of new AIDS diagnoses in this population in 2009 (CDC, 2011). The number of new cases of HIV/AIDS among adolescents is rapidly increasing in the Deep South and in the state of Alabama. The number of new cases of HIV among adolescents (15–24) accounted for the highest rate (24.8 per 100,000) of new infections compared to any other age group in Alabama in 2010 (Alabama Department of Public Health, 2011a). In addition, among 15–19 year olds, Alabama ranked among the top five states in the nation on rates of gonorrhea (193 per 100,000 compared to national rates of 106.3 per 100,000 nationally) and chlamydia (637.6 per 100,000 compared to the

national rate of 262.2 per 100,000) (CDC, 2014). These high rates of sexually transmitted infections (STIs) and unintended pregnancies (73 per 1000 compared to the national rate of 29.4 per 1000) in the state (Alabama Department of Public Health, 2011b) point to the need for risk reduction interventions. Recent trends in national adolescent risk behavior suggest that gains made in the past decades in reducing adolescent sexual risk behavior may have slowed in the last decade (Kann, Lowry, Eaton, & Wechsler, 2012). For example among sexually active African American adolescents, condom use increased from 48.0% to 70.0% during 1991–1999 and then decreased to 65.3% during 1999–2011 (Kann et al., 2012). This has prompted calls for renewed prevention efforts that seek to delay onset of sexual activity and increase condom use among adolescents who are sexually active (Kann et al., 2012).

The role of social and contextual influences on HIV related disparities among adolescents is also increasingly being recognized (Akers, Gold, Coyne-Beasley, & Corbie-Smith, 2012; Williams, Wyatt, & Wingood, 2010). Research in disproportionately affected rural communities in the South suggests that HIV prevention interventions targeting these communities need to address contextual factors (situational,

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personal, interpersonal and environmental) that perpetuate health disparities (Akers et al., 2012; Céné et al., 2011; Coker-Appiah et al., 2009). Among other contextual factors, environmental conditions and perceived norms are strongly associated with sexual risk behavior among African American youth (Romero, Galbraith, Wilson-Williams, & Gloppen, 2011; Williams et al., 2010). Tailoring interventions that target relevant environmental and social factors should therefore be important considerations in designing or adapting interventions for use in populations that have not yet benefitted from existing HIV prevention programs.

Developments in neuroscience provide promising insights into how gaming approaches may be particularly useful with young adolescents under 16 (Dahl, 2004; Steinberg, 2007). With the increasingly earlier onset of puberty documented in recent decades, young adolescents face the potential of spending many years with a sexually mature body and 'sexually activated brain circuits with relatively immature neurobehavioral systems' necessary for anticipating the potential long-term consequences of early sex (Enah, Moneyham, Vance, & Childs, 2013; Rew & Bowman, 2008; Steinberg, 2007). Young adolescents, therefore, need venues to observe and reflect on the long-term consequences of current sexual risk behaviors. However, research involving the use of such strategies in HIV prevention efforts targeting adolescents is quite limited. In addition, the usefulness of games in educating adolescents on nutrition, exercise, diabetes management, and asthma management has been demonstrated in other studies (Baranowski, Buday, Thompson, & Baranowski, 2008; DeShazo, Harris, & Pratt, 2010; Peng & Liu, 2009). The systematic evaluation of health related gaming is however still in its infancy and only a few of the games that are available have been systematically evaluated. The potential impact of gaming interventions is enhanced by the inherent attractiveness to adolescents and the potential to increase access to geographically dispersed rural populations.

The purpose of this study was to gather formative data using focus groups on the acceptability (within the realm of appropriate) and relevance (applicability to the target population) of an existing freely downloadable United Nations Educational and Cultural Organization (UNESCO) web-based HIV prevention game: "Fast Car: Travelling Safely around the World" for rural adolescents. This evaluation was conducted as part of the process of determining if adapting the game for use with rural African American adolescent was an alternative to the lengthy and costly process of developing a new HIV prevention game. *Prior to selecting the UNESCO game for evaluation in this study, the research team could not locate any HIV prevention games for adolescents developed within the United States. The game was previewed and determined adequate for use with the target population by a team of three local adolescent HIV prevention education specialists.* Although HIV prevention games are available internationally (Enah et al., 2013), these games have not been formally evaluated with African American rural adolescents in the

United States. In the UNESCO game, simulated car races take place in highways in different continents around the world. Players drive and avoid crashing the car while navigating obstacles that reflect the local traffic conditions (e.g. Camels on the road in North Africa or Kangaroos crossing the road in Australia). This simulated driving is punctuated by stopping points where HIV related questions are presented and must be answered within a specific timeframe. Correct responses are rewarded with points while wrong responses are followed with feedback providing the right response and the rationale for the right response. The virtual scenery of each racing segment displays UNESCO designated historical sites. In this study, participants took turns playing the game and participated in focus group discussions about their perceptions of the game in terms of relevance, acceptability, and potential changes that would make the game suitable for African American rural adolescents.

Methodology

Design

A focus group approach was used to gather formative data on rural adolescents' perceptions of the acceptability and relevance of the UNESCO web-based game. This evaluation was part of a series of studies in a user-centric approach to game development/adaptation, in which, potential users are engaged in a series of evaluations until all game components are judged to be adequate (Meneses & McNeese, 2007). A focus group is a unique form of face-to-face interview that allows interactions among group participants and provides greater insight into why certain opinions or beliefs are held in a community or population (Sandelowski, 2000). In addition, the advantage of the focus group approach is the synergy created among group members that can: 1) foster the production of information that is difficult to elicit during individual interviews, 2) clarify issues and reveal diversity in perspectives, and 3) allow members to build on perspectives of others thus enriching the quality of data (Sandelowski, 2000).

Participants

The investigators' university institutional review board approved the study. A purposive sample of 42 adolescents participated in the study. Access to participants was obtained through an existing collaboration with a community based HIV/AIDS Service organization that serves eight rural counties in the heart of the Black Belt region of Alabama. The Black belt region is characterized by poverty, a high proportion of African Americans, and a poor health infrastructure. Adolescents aged 12–16 years of age were recruited to participate in one focus group sessions. The inclusion of two stages of adolescence; early and middle adolescent (Rew, 2005), was intentional and is guided by research findings that indicate that sexual debut in African American adolescents begins around age 14 (Cavazos-Rehg

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