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Are Sexually Transmitted Infection/HIV Behavioral Interventions for Women of Color Culturally Grounded? A Review of the Literature

Natasha Crooks, PhD, RN* • Rebecca J. Muehrer, PhD, RN

Abstract

Although behavioral interventions for women of color have been shown to be effective in reducing sexually transmitted infections (STIs), STI/HIV rates continue to increase. To alleviate sexual health disparities, it is necessary to understand the cultural behaviors of the target population to design culturally grounded interventions. The purposes of our review were to examine the current state of STI/HIV behavioral interventions for women of color, determine how culture has been incorporated into interventions, and identify gaps in the literature. We reviewed 17 articles targeting women of color between the ages of 13 and 65 years. Findings suggest the need for interventions that are culturally grounded, group based, and delivered face-to-face and in multiple sessions to reduce STI/HIV risk behaviors. Although many of the studies were effective, we found three major gaps: (a) the need to examine intervention sustainability, (b) limitations in the adaption of theoretical frameworks, and (c) clarity in how to infuse culture into interventions.

Key words: behavioral interventions, culture, HIV, sexually transmitted infections, women of color

Sexual health disparities exist for women of color as the burden of sexually transmitted infections (STIs), including HIV, falls on ethnic racial minorities (Centers for Disease Control and Prevention, 2016). Sexually transmitted infections can result in serious health issues for women as they increase the risk for HIV, infertility, complications during pregnancy, and death (Centers for Disease Control and Prevention, 2016). The STI epidemic continues to disproportionately affect women of color. For example, compared with White women, chlamydia is contracted twice as frequently in Hispanic women, four times more often in Native women, and five times more frequently in African American women (Centers for Disease Control and Prevention, 2016). Comparatively, Asian American women have lower STI rates but are an understudied population regarding sexual health outcomes (Centers for Disease Control and Prevention, 2016). Numerous behavioral interventions have been designed to reduce STIs in women of color, yet, in spite of these interventions, STIs such as chlamydia, are increasing at alarming rates (Centers for Disease Control and Prevention, 2015).

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In addition to women having anatomical differences making them more susceptible to STIs, women of color experience sociocultural conditions that increase their vulnerability to STIs (National Women's Health Information Center, 2016). For the purposes of this review, "women of color" was defined as women who self-identify or belong to a population made up of persons "of mixed racial descent or of other nonwhite descent" (https://www.thefreedictionary.com/Women+of+color, p. 3). Women of color share experiences as a result of membership in marginalized groups and, as a result, endure social, economic, and cultural barriers (i.e., environment, discrimination, poverty, and access to care) to preventive health information that would reduce their STI/HIV risks (Short & Williams, 2014). The majority of STI/HIV behavioral interventions developed for women of color have (a) specifically targeted African American and Latina women, (b) incorporated culturally specific elements, and (c) focused on modifying risky sexual behaviors, such as increasing condom use and reducing number of sexual partners (Crepaz et al., 2009). Additionally, these interventions focused on increasing STI/HIV knowledge, skill building for negotiating safer sex, and counseling about behavior change as the primary goal of reducing the spread of STIs (Crepaz et al., 2009; Wetmore, Manhart, & Wasserheit, 2010). Many researchers have suggested that grounding STI/HIV prevention in a target group's culture would make it more effective, but few have explicitly described how they have integrated culture into their interventions (Crepaz et al., 2009; Logan et al., 2002; Wilson & Miller, 2003). Our

intent was to fill this gap by reviewing all STI/HIV preventive interventions published between 2008 and 2018 that stated they had incorporated culture into their interventions.

What Is Culture?

Culture is a complex, multidimensional construct (Barrera, Castro, Strycker, & Toobert, 2013; Wilson & Miller, 2003). Fiske (2002) captured the constructs of culture:

> A culture is a socially transmitted or socially constructed constellation consisting of such things as practices, competencies, ideas, schemas, symbols, values, norms, institutions, goals, constitutive rules, artifacts, and modifications of the physical environment. (p. 85)

Culture is a way of life and can be passed down through generations (Wilson & Miller, 2003). Health is influenced by culture and behavior, which can be used to explain disease processes (Barrera et al., 2013). For women of color, cultural aspects such as beliefs, values, traditions, and norms may influence the risk for STIs (Wilson & Miller, 2003). For example, some Hispanic/Latino cultures discourage discussion about topics such as STIs and sex because of machismo (cultural expectation to respect and be submissive to males) and Catholic beliefs (Gipson & Frasier, 2003). Additionally, the historical context of African American women's sexual experiences (i.e., slavery) can cause internalized oppression and discrimination, which may be a barrier to accessing sexual and reproductive health care (Short & Williams, 2014). Sexualized and stereotyped messaging is also known to influence African American female sexuality, sexual attitudes, perceptions of self, and self-esteem, which can increase risky sexual behaviors (Rosenthal & Lobel, 2016; Townsend, 2008). Discomfort in discussing sexuality and sexual behavior due to cultural norms makes it difficult for women of color to negotiate safer sex practices and set limitations with sexual partners, which may increase the risk for STIs.

Infusing Culture Into Intervention Research

There is variation in what is considered to be the gold standard for incorporating culture into intervention research. Further, multiple terms have been used interchangeably to describe the idea of incorporating culture into research and intervention (e.g., culturally tailored, culturally sensitive, culturally adapted). Barrera et al. (2013) noted many distinctions between these terms, but consistency has been lacking in qualification for a culturally grounded intervention. Resnicow, Soler, Braithwaite, Ahluwalia, and Butler (2000) defined culturally sensitive interventions as, "ethnic cultural characteristics, experiences, norms, values, behavioral patterns, and beliefs of a priority population as well as relevant historical, environmental and social forces…in the design, delivery and evaluation" (p. 272). Barrera et al. (2013) found the term "culturally tailoring" as often being synonymous with "cultural adaption." The CDC defined adaption as, "the process of modifying key characteristics of an intervention, recommended activities and delivery methods, without competing with or contradicting the core elements, theory, and internal logic of the intervention thought most likely to produce the intervention's main effects" (McKleroy et al., 2006). Kreuter and Skinner (2000) proposed that "tailored" be defined as, "any combination of information or change strategies intent to reach one specific person based on characteristics that are unique to that person, related to the outcome of interest, and have been derived from an individual assessment" (p. 1).

Culturally grounded interventions have the potential to improve client engagement, increase retention, develop a trusting relationship between participants and researchers, and address culturally relevant social norms in the population of interest (Marsiglia & Booth, 2015). Therefore, we focused our review on STI/HIV behavioral interventions for women of color that included some element of culture in their interventions. There are discrepancies in how to incorporate culture into interventions as well as in the consideration of culturally adapted theories. Race and gender disparities in US STI/HIV rates have persisted despite efforts of "culturally grounded" behavioral interventions aimed at women of color (CDC, 2016). We aimed to examine the state of STI/HIV behavioral interventions for women of color, evaluate how culture was incorporated into interventions, and identify gaps in the literature.

Methods

Eligibility Criteria

We included published, peer-reviewed empirical studies addressing behavioral interventions to prevent STIs/HIV in women of color. We used the Preferred Reporting Items for Systematic reviews and Meta-Analyses (PRISMA) guidelines to guide the review (Liberati et al., 2009). The PRISMA guidelines helped the authors create criteria in order to determine which articles should be included in the analysis. Articles were reviewed for inclusion based on the following criteria: (a) included women of color, (b) focused on STI/HIV prevention, (c) infused culture into the

intervention, (d) used empirical methods such as randomized control trials and evidence-based interventions (EBIs), and (e) were written in English. Articles were excluded based on the following criteria: (a) studies included men in the sample; (b) interventions did not incorporate elements of culture into the intervention; (c) interventions targeted at sex workers, churches, parents, women living with HIV, incarcerated females, or health care providers; (d) interventions using vaccinations as the sole prevention; or (e) published abstracts.

Literature Search Strategy

An electronic search of articles published from January 2008 to January 2018 was performed using PubMed and Cumulative Index to Nursing and Allied Health Literature (CINAHL) with the following terms: [*women of color* OR *women of colour* OR *african american* OR *minority** OR *black* OR *native american* OR *Asian* OR *Latin** OR *Hispanic* OR *Indian* AND *sexually transmitted disease* OR *sexually transmitted infection* OR *STI* OR *STD* AND *prevention* AND *evidence based* NOT *male* NOT *men* NOT *drug* NOT *parents* NOT *pregnancy* NOT *cancer (full text[sb]* AND "*last 10 years"[PDat]* AND *Humans [Mesh]* AND *English[lang]* AND *Female[MeSH Terms])*. The search terms were used in the hope of identifying all studies related to women of color, which was inclusive of all non-White and was not specific to the United States.

Data Collection Process

Abstracts were screened for eligibility by the authors using the aforementioned criteria. Full text articles fitting the criteria and/or that were questionable were read by each author. If there was disagreement about eligibility, a third reviewer read the article and we discussed until consensus was reached.

When the final set of 17 articles was selected, the two authors independently extracted data from the articles. Information related to STI/HIV behavioral interventions among women of color were extracted and included (a) author(s)/year, (b) sample characteristics, (c) design/intervention, (d) theoretical framework guiding the intervention, (e) how they were culturally grounded, (f) outcomes and measures, and (g) results of the study. The authors met and compared data extractions, combining them into a single evidence table. Disagreements were discussed until consensus was reached.

Synthesis of Results

We first identified study characteristics such as design, sample size, and demographics. We then examined how the intervention was developed including the use of theoretical frameworks. We also focused on how the intervention was delivered (e.g., individual vs. group, electronic vs. face-to-face, single session vs. multiple sessions) as well as outcomes measured in the study. Finally, we investigated how authors described incorporating culture into their interventions.

Results

Search Outcome

The search resulted in 128 potential articles. Forty-four abstracts appeared to meet criteria or required further review. After review of the 44 full text articles, 17 met criteria and were included in the review. Figure 1 depicts both the PRISMA process and results of the search. The results section focuses on the characteristics of studies reviewed and approaches to integrating culture.

Characteristics of Included Studies

We found 17 studies that incorporated culture into their interventions. All studies used a quantitative design. Most (n = 11) of the studies were experimental randomized control trials and assessed the efficacy of their interventions (Champion & Collins, 2012; DiClemente et al., 2009; Dolcini, Harper, Boyer, & Pollack, 2010; Helion, Reddy, Kies, Morris, & Wilson, 2008; Ito, Kalyanaraman, Ford, Brown, & Miller, 2008; Klein & Card, 2011; Klein, Kuhn, Altamirano, & Lomonaco, 2017; Marion, Finnegan, Campbell, & Szalacha, 2009; Thurman, Holden, Shain, Perdue, & Piper, 2008; Wingood, Card, Er, et al., 2011; Wingood, DiClemente, Villamizar, et al., 2011). Four studies used a quasi-experimental design (Bertens, Eiling, van den Borne, & Schaalma, 2009; Danielson et al., 2013; Harper, Bangi, Sanchez, Doll, & Pedraza, 2009; Hawk, 2013), and two used a descriptive design (Broaddus, Marsch, & Fisher, 2015; Davidson et al., 2014).

Sample sizes ranged from 7 to 715. Many studies had 100–200 or more females in their samples (Bertens et al., 2009; Broaddus et al., 2015; Champion & Collins, 2012; DiClemente et al., 2009; Dolcini et al., 2010; Harper et al., 2009; Hawk, 2013; Helion et al., 2008; Klein & Card, 2011; Klein et al., 2017; Marion et al., 2009; Thurman et al., 2008; Wingood, Card, Er, et al., 2011; Wingood, DiClemente, Villamizar, et al., 2011). Study participants ranged from 13 to 65 years of age. A summary of study characteristics is presented in Table 1. Although the purpose of our review was to focus on populations of women of color, two studies included

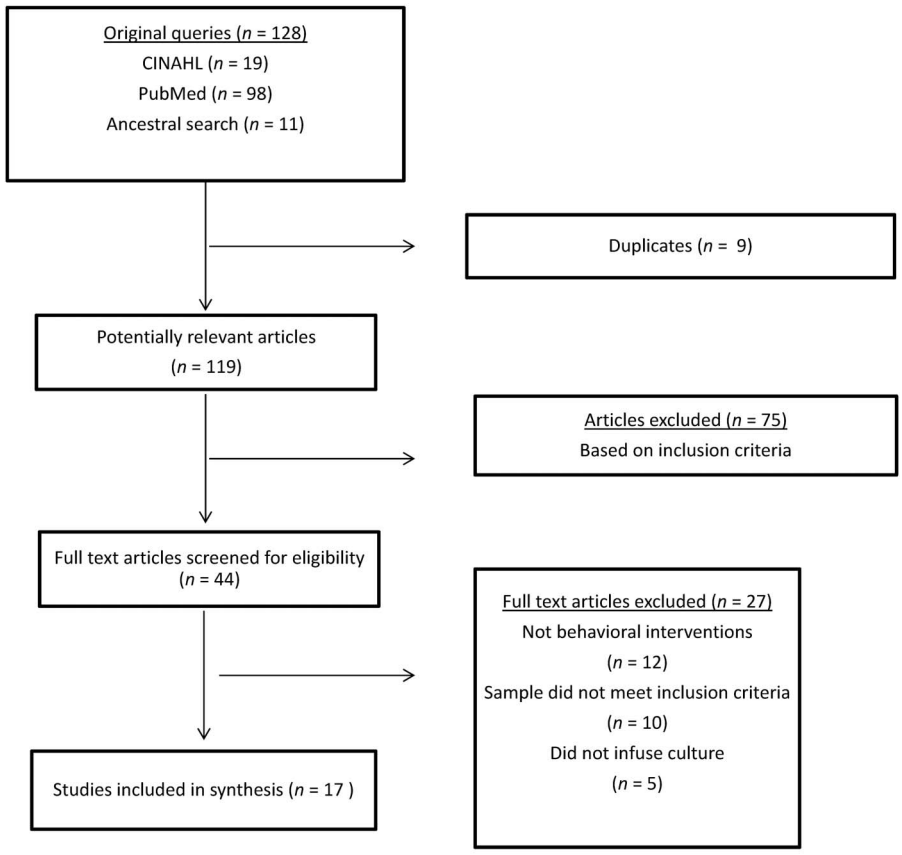

Figure 1. PRISMA Diagram (Liberati et al., 2009).

White women in their samples (Helion et al., 2008; Ito et al., 2008). Only four studies had samples of Latina women (Davidson et al., 2014; Harper et al., 2009; Klein et al., 2017; Wingood, DiClemente, Villamizar, et al., 2011), and eight studies focused solely on African American women (Broaddus et al., 2015; Danielson et al., 2013; DiClemente et al., 2009; Dolcini et al., 2010; Hawk, 2013; Klein & Card, 2011; Marion et al., 2009; Wingood, Card, Er, et al., 2011). Two studies included both African American and Latina women (Champion & Collins, 2012; Thurman et al., 2008), one study focused on Latina, White, and African American women (Ito et al., 2008), and the Bertens et al. (2009) sample consisted of Afro-Caribbean women, which included Afro-Surinamese and Dutch Antillean women.

Interactive Delivery

Seven studies used interactive media formats including computer web-based, compact disc read-only memory, digital optical disc storage format, and text message (Broaddus et al., 2015; Danielson et al., 2013; Helion et al., 2008; Ito et al., 2008; Klein & Card, 2011; Klein et al., 2017; Wingood, Card, Er, et al., 2011); only two of those interventions showed significant changes (Danielson et al., 2013; Wingood, Card, Er, et al., 2011). Broaddus et al. (2015) conducted an acceptability study of text message versus small group intervention delivery modalities and found that both interventions were acceptable to African American females.

Twelve studies included elements of a face-to-face intervention including individual or group-based counseling (Bertens et al., 2009; Broaddus et al., 2015; Champion & Collins, 2012; Davidson et al., 2014; DiClemente et al., 2009; Dolcini et al., 2010; Harper et al., 2009; Hawk, 2013; Marion et al., 2009; Thurman et al., 2008; Wingood, Card, Er, et al., 2011; Wingood, DiClemente, Villamizar, et al., 2011). Seven of those studies were effective in reducing STI risk behaviors (Bertens et al., 2009; Champion & Collins, 2012; DiClemente et al., 2009; Harper et al., 2009; Marion et al., 2009; Thurman et al., 2008; Wingood, Card, Er, et al., 2011), and three studies looked at and reduced STI/HIV incidence (Champion & Collins, 2012;

Table 1. Study Characteristics (*N* = 17)

Author(s) (Year)	Sample Characteristics	Design	Intervention	Culturally Grounded	Theoretical Framework	Length of follow-up	Outcomes	Results
Bertens et al. (2009)	*N* = 273 Afro-Caribbean (Afro-Surinamese and Dutch Antillean) 100% 15 years or older Recruited from community	Quantitative, Quasi-experimental	Uma Tori—developed to enhance women's control of their sexual health. Goals: to increase awareness of sexual risk and power in relationships by improving sexual decision-making skills. Consisted of 5 interactive group-based sessions with 6–14 participants guided by Afro-Surinamese and Dutch Antillean peer health educators	Described as culturally appropriate based on the Intervention Mapping framework, which outlines six steps to develop a cultural and gender appropriate program (Bertens, 2008)	Problem-based Learning, Transtheoretical Model and Observational Learning Theory	No follow-up after the completion of intervention Pre/post test	Self-reported questionnaire assessed: knowledge about STI transmission, risk and prevention, perceived severity and susceptibility, attitudes toward condom use and negotiated safety, response efficacy, social norms, perceived social support, sexual assertiveness, intention to practice safe sex, and focus groups about the program	Significant differences in Uma Tori: • Better knowledge r/t STI transmission, risks, and prevention; perceived severity and lifestyle susceptibility to STIs; response efficacy and levels of sexual assertiveness • Stronger subjective norms and intentions to practice safe sex • Improved ability to communicate and more positive attitudes r/t condom use, monogamy, and negotiated safety
Broaddus et al. (2015)	*N* = 102 AA 100% 18–25 years old Recruited from inner city clinic	Quantitative, Descriptive	Not applicable Testing delivery of a text message-delivered sexual health intervention Study 1: Qualitatively identified themes reflecting young AA women's attitudes r/t small group versus text message delivered sexual health interventions, which informed the content for study 2 Study 2: Quantitatively assess similarities and differences in perceived risks and benefits between delivery modalities	Described as culturally based, as it was designed using SISTA as a template, but did not explicitly describe how the intervention was culturally based (DiClemente & Wingood, 1995)	Social Cognitive Theory and Theory of Gender and Power	Not applicable	Acceptability of text message versus smallgroup intervention delivery modalities Themes: convenience, learning from others, discomfort discussing socially sensitive topics, group social stigma (exposure), community social stigma, and privacy Risk-benefit questionnaire measuring lack of social privacy, stigma, comfort discussing sexual topics, convenience, and benefits	No significant differences between the two—text message versus small group intervention delivery modalities
Champion, & Collins (2012)	*N* = 409 Mexican 84% AA 16% 14–18 years old Recruited from community-based clinic	Quantitative, Experimental	Project IMAGE, adapted from Project SAFE, was specifically designed for Mexican and AA women with a history of abuse and STI. Consisted of two workshop sessions, two or more individual counseling sessions, and 3–5 support group sessions. Groups consisted of 4–8 persons. Facilitator didn't match race of participants	Described as culturally relevant as it is grounded in knowledge of the target population behavior and culture and was based on Project SAFE, which is culturally relevant to Mexican and AA women (Shain et al., 1999).	AIDS Risk Reduction Model	12 months	Evaluated efficacy of Project IMAGE versus enhanced counseling (control group) Outcomes measured: experience of abuse, STIs, substance abuse	Significant differences in Project IMAGE: the intervention group experienced fewer infections 0–12 months after intervention than control group

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Table 1. (*continued*)

Author(s) (Year)	Sample Characteristics	Design	Intervention	Culturally Grounded	Theoretical Framework	Length of follow-up	Outcomes	Results
Danielson et al. (2013)	*N* = 41 AA 100% 13–18 years old Recruited from community	Quantitative, Quasi-Experimental	SiHLEWeb was adapted from the SiHLE. Goals: to increase consistent condom use and decrease the incidence of unprotected vaginal sex, number of new sexual partners, and number of new chlamydia infections. Consisted of four 1-hour sessions.	Described as culturally tailored as it was adapted from SiHLE which is a culturally tailored HIV/STI prevention program targeting AA girls (DiClemente et al., 2004)	Social Cognitive Theory and Theory of Gender and Power	3 months	Feasibility and acceptability of the SiHLEweb-based adapted intervention Outcomes measured: knowledge change, sexual behaviors, condom use, condom self-efficacy, partner communication history, self-esteem, and ethnic pride	SiHLEWeb completion rates provided support for feasibility of the web-based delivery of STI prevention intervention Pre to post changes: • Increased knowledge r/t STI education, condom demonstration, and risk reduction • Condom use self-efficacy at 3 months increased significantly
Davidson et al. (2014)	*N* = 7 Latinas 100% 15–18 years old Recruited from urban high school	Quantitative, Descriptive	CHILE, HIV prevention program exclusively for teenage girls of Latino descent that was adapted from SiHLE. Consisted of 11 weekly, 1.5-hour sessions (10–12 participants); 2–3 females from the same ethnic background facilitated the sessions	Described as a culturally tailored using ADAPT ITT framework to adapt SiHLE to assess cultural modifications, which included speaking to key stakeholders, gathering information from desired population in focus groups (DiClemente et al., 2004).	Social Cognitive Theory and Theory of Gender and Power	Not applicable	Themes from focus groups: discussion of acculturation, more knowledge about reproductive health, interpersonal relationships and integration of Latino culture	Gained valuable insight into the perceptions of young women regarding the relevance and usefulness of CHILE
DiClemente et al. (2009)	*N* = 715 AA 100% 15–21 years old Recruited from inner city clinics	Quantitative, Experimental	HORIZONS: a gender- and culturally tailored STI/HIV intervention for AA adolescent females Consisted of two 4-hour group sessions (8 participants) facilitated by trained AA women health educators and 4 telephone contacts over a 12-month period, targeting personal, relational, sociocultural, and structural factors associated with adolescent STI/HIV risk; were given vouchers facilitating male partners' STI testing/ treatment	Described as culturally tailored and was field-tested to assess the gender and cultural appropriateness of the intervention	Social Cognitive Theory and Theory of Gender and Power (Culturally adapted)	12 months	Main outcome: incident chlamydial infections in 6 and 12 months Behavioral outcomes: proportion of condom-protected sex acts in the 60 days before the 6- and 12-month assessments, number of lifetime sexual partners, condom use at last sex, consistent condom use, and frequency of douching. Psychosocial outcomes: knowledge of STI/HIV prevention, condom use self-efficacy and safer sex communication	Significant differences in HORIZONS intervention group at 12-month follow-up: • 35% lower risk of chlamydia • Reported significantly higher proportion of condom-protected sex acts for the 14 and 16 days preceding follow-up • More likely to report consistent condom use for the 14 and 60 days preceding follow-up and were significantly more likely to report consistent condom use at last intercourse

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Table 1. (*continued*)

Author(s) (Year)	Sample Characteristics	Design	Intervention	Culturally Grounded	Theoretical Framework	Length of follow-up	Outcomes	Results
Dolcini et al. (2010)	*N* = 264 AA 100% 14–21 years old Recruited from community	Quantitative, Experimental	Project ÒRÉ a friendship-based HIV/STI prevention intervention designed to influence social norms and behavior related to HIV/STIs. Consisted of one 5-hour-long single group discussion of 3–6 participants/session delivered to friendship groups by a trained AA female educator.	Used a friendship intervention that was designed to incorporate social and cultural factors into the structure and content of programs as described by Wilson & Miller (2003).	AIDS Risk Reduction Model	3–4 months	Self-reported questionnaire assessed: friendship quality; substance use; HIV/STI testing and results; history of vaginal, anal, and oral sexual behavior (number of sexual partners and condom use); and perceived social norms	No significant differences found between experimental and control groups. Three outcomes varied significantly by age at 3-month follow-up: decreases in risky sex in the oldest group, decreases in multiple partners in the middle age group, and increases in HIV testing in the youngest group.
Harper et al. (2009)	*N* = 378 Mexican American 100% 12–21 years old Recruited from community	Quantitative, Quasi-Experimental	SHERO program, which is a community based, culturally, and ecologically tailored nine-session interactive group-based intervention. Sessions focused on issues that impact sexual health of Mexican American adolescents (i.e., machismo). Groups consisted of 15–20 participants co-facilitated by a Mexican American female.	Described as culturally and ecologically tailored using community-based participatory research and narrative ethnographic methods to reveal community and cultural narratives.	AIDS Risk Reduction Model	Pretest, posttest and 2-month follow-up	Psychosocial outcomes: self-esteem, HIV knowledge, STI knowledge, condom attitudes, peer norms, sexual beliefs, sexual communication, sexual assertiveness, and sexual decision making Behavioral outcomes: self-reports of vaginal sex-related behaviors and condom use	Significant improvements for SHERO participants in self-esteem, condom attitudes, perceived peer norms, beliefs about sexual assault and control of sexuality, and STI/HIV knowledge. At posttest, SHERO's participants were more likely to carry condoms and report abstaining from vaginal sex in the previous 2 months; and at 2-month follow-up they reported using condoms more often in the preceding 2 months and planned on using them more frequently in the coming 2 months
Hawk (2013)	*N* = 149 AA women 18–65 years old Recruited from community friendship networks	Quantitative, Quasi-experimental	TGP, HIV risk reduction and testing intervention. Women hosted single-session group intervention parties with trained facilitators from AIDS organizations. HIV testing and counseling were provided	Described as a community-developed intervention by AA women for AA women using a bottom-up approach to increase cultural relevance. Has a more detailed description in Hawk (2015)	Health Belief model, Social Norms Theory, and Theory of Gender and Power	Pretest and 3 months	Feasibility and potential efficacy of TGP Assessed: changes in HIV risk knowledge, risk perception, intention for risk reduction behaviors, HIV risk behaviors, and changes in perceived norms	No statistically significant difference found on any of the variables between the control and TGP groups. Participants responded positively toward the intervention.
Helion et al. (2008)	*N* = 167 AA 47% White 53% 19–22 years old	Quantitative, Experimental	DVD intervention with either a White female communicator relative to a Black female or a DVD featuring two Black females would influence efficacy of STI/HIV intervention	Described whether the race of the communicator made a difference in efficacy of STI/HIV prevention intervention	Not stated	Immediate pretest posttest with a 2- and 4-week follow-up	Perceptions of the DVD HIV/STI risk and intentions to use condoms. Number of condoms taken or purchased following DVD	No significant effects of communicator race on perceptions of the DVD among AA and Caucasians were found

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Table 1. (*continued*)

Author(s) (Year)	Sample Characteristics	Design	Intervention	Culturally Grounded	Theoretical Framework	Length of follow-up	Outcomes	Results
Ito et al. (2008)	*N* = 47 AA 55%, White 19%, and Hispanic 17% 15–19 years old Recruited from clinic	Quantitative, Experimental	Interactive CD ROM intervention where subjects choose their "host:" sexually active or not and Caucasian, AA, or Hispanic. CD-ROM programs took about 20 minutes and were designed to increase HIV/STI knowledge; raise awareness of importance of being tested; provide HIV/STI risk reduction information; encourage critical appraisal of media images of sexual activity and consequences; challenge peer norms regarding abstinence, monogamy, and condom use; and increase self-efficacy and skills for abstinence and consistent condom use if sexually active	Described choosing a culturally appropriate host to guide them through CD-ROM. Sought to develop a culturally appropriate, interactive CD- ROM aimed at preventing STI/HIV in female adolescents. Theorized that allowing teens to "self–tailor" the intervention by choosing from a group of ethnically diverse teens would increase cultural appropriateness and receptivity and acceptance of the message.	Integrative Model of Behavioral Prediction	Immediate pretest posttest	Feasibility and acceptability of the CD-ROM intervention Secondary outcomes: change in intended sexual behavior, HIV/STI knowledge, normative beliefs, attitudes, barriers, and self-efficacy regarding abstinence and condom use.	No significant differences measured between CD–ROM and comparison groups. • All Hispanic participants chose Hispanic host • 71% Black women chose Black host • 25% White women chose a White host • Those remaining choose Hispanic host • Abstinent hosts were chosen less commonly No participants had trouble using the CD-ROM and all completed successfully
Klein & Card (2011)	*N* = 178 AA 100% 14–18 years old Recruited from community	Quantitative, Experimental	Multimedia SiHLE adapted from SiHLE into a two-session, 2-hour computer-delivered individual intervention enhancing gender and ethnic pride, HIV/STI transmission, risk reduction strategies, communication skill, consistent condom use, and health relationships	Described as culturally appropriate as it was adapted from SiHLE, which worked with a team of AA teenage females in storyboard development, reviewed design decisions and performed as "Sistas" in the final multimedia product (DiClemente et al., 2004)	Social Cognitive Theory and Theory of Gender and Power	Baseline and 3 months	User satisfaction of Multimedia SiHLE Psychosocial questionnaire, HIV knowledge scale, condom use self-efficacy scale, communication Behavioral outcome: percentage of condom-protected vaginal intercourse acts in the 3 months post intervention	No statistically significant difference found in the control versus intervention group • Average percentage of condom use for participants in Multimedia SiHLE rose from baseline to 71% at 3-month follow-up • Nonsexually active intervention group participants reported a significant increase in condom self-efficacy Overall satisfaction with Multimedia SiHLE

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Table 1. (*continued*)

Author(s) (Year)	Sample Characteristics	Design	Intervention	Culturally Grounded	Theoretical Framework	Length of follow-up	Outcomes	Results
Klein et al. (2017)	*N* = 321 Latinas 100% 19–34 years old Recruited from clinic	Quantitative, Experimental	C-SAFE adapted from Project SAFE, which is a computer delivered evidence-based intervention to create two individually administered 2-hour-long computer-delivered program sessions.	Described as culturally tailored by revising storyboards to incorporate telenovela-style video content and contracted a Latino-owned production company to ensure that all C-SAFE videos captured cultural specificities of Latina communities. Conducted focus group of Latinas to obtain impressions on content, images, overall style, narrators, video actors, and activity formats.	AIDS Risk Reduction Model and Social Cognitive Theory	6 months	User satisfaction of C-SAFE Primary behavioral outcomes: number of sex partners in the past 30 days, number of sex partners in the past 6 months, condom use at the last sexual encounter, never used condoms (by vaginal sex, anal sex, and all sex), currently have an STI, and currently in a monogamous relationship Secondary outcomes: STI knowledge, attitudes, and condom use self-efficacy	No statistically significant differences between the two conditions at a 6-month follow-up in terms of sexual behaviors or attitudes toward STI and condoms. C-SAFE participants reported fewer days in the past month when their mental health was not good, more satisfaction than control condition women in assessment of information presentation and having learned something new
Marion et al. (2009)	*N* = 342 AA 100% 18 years or older Recruited from community	Quantitative, Experimental	WWP—culturally specific, high-intensity program designed to lower STI rates among AA women considered high risk. Consisted of four individualized and group sessions and comprehensive care management delivered by nurse practitioners.	Described as culturally specific but did not explicitly state how it was culturally specific	Interaction Model of Client Health Behavior (Culturally adapted)	12–15 months	Primary outcome: biologically confirmed STI (chlamydia, gonorrhea, or trichomoniasis) Psychological outcomes: STI knowledge, self-risk appraisal, self-esteem, feelings r/t condom use, motivation, and STI risk behavior	WWP reported significantly fewer STI risk behaviors than control participants at visits 2, 3, and 4. • STI proportions in the WWP group remained significantly lower than the proportions in the control group. • At month 15, the estimated probability of a WWP participant having an STI was 20% less than a control participant.
Thurman et al. (2008)	*N* = 477 Mexican American 67% AA 33% 14–45 years old Recruited from clinic	Quantitative, Experimental	Secondary analysis of Project SAFE intervention – small group, multicomponent behavioral cognitive intervention. Consisted of 3 weekly, 3-hour, small group interventions that used role playing, interactive video, handouts, and group discussion to emphasize abstinence strategies, facilitated by a female of the same ethnicity.	Project SAFE is described as a culturally specific intervention. This article does not explicitly state it is culturally specific, but refers to original article describing the SAFE study (Shain et al., 1999).	AIDS Risk Reduction Model (Culturally adapted)	Baseline and 6 and 12 months	Primary outcome reinfection of gonorrhea or trichomoniasis; collected specimens for microbiologic testing. Secondary outcomes were changes in risky sexual behaviors.	Teens in SAFE had statistically lower incidence of gonorrhea and trichomoniasis at 0 to 6 months compared to control group. Adolescent reinfection was explained by unprotected sex with untreated partners, nonmonogamy, and rapid partner turnover.

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Table 1. (*continued*)

Author(s) (Year)	Sample Characteristics	Design	Intervention	Culturally Grounded	Theoretical Framework	Length of follow-up	Outcomes	Results
Wingood, DiClemente, Villamizar, et al. (2011)	*N* = 252 Latinas 100% 18–35 years old Recruited from community and social networks	Quantitative, Experimental	AMIGAS, adapted SISTA for Latinas. AMIGAS is a culturally congruent HIV prevention intervention for Latinas. Consists of four interactive group sessions, lasting 2.5 hr each delivered by Latina health educators.	Described as culturally congruent using community-based participatory research (focus groups) to explore factors that increased HIV risk and using Latina outreach workers who had deep roots in the Latino community and extensive experience recruiting Latina women. Helped to identify and select recruitment sites, recruitment strategies, develop culturally appropriate and appealing recruitment materials in Spanish.	Adapted from SISTA, which uses Social Cognitive Theory and Theory of Gender and Power	6 months	Efficacy of AMIGAS intervention Primary outcomes: consistent condom use, reporting use of condom-protected sex acts in the 30–90 days before the 3- and 6-month follow-up Self-reported behavioral outcomes: condom use at last intercourse, proportion of condom-protected sex Psychosocial outcomes: cultural norms, i.e., machismo gender roles	Significant differences found in AMIGAS participants: • 4.8 times more likely to report using condoms consistently during the past 90 days and 3.1 times more likely during past 30 days. More than 6 months of follow-up • 53% less likely to report never having used condoms. They also reported fewer traditional gender roles, greater self-efficacy for negotiating safer sex and using condoms, and greater feelings r/t power in relationships
Wingood, Card, Er, et al. (2011)	*N* = 135 AA 100% 21–29 years old Recruitment from Planned Parenthood clinic	Quantitative Experimental	SAHARA is a computer-based HIV prevention adapted from SISTA. Consisted of two 60-minute computer-based sessions enhancing gender and ethnic pride, communication skills, sexual decision making and consistent condom use. They also participated in a 15-minute small group (4–6 participants) session facilitated by an AA female health educator.	Described as culturally congruent and stated that the adaptation process remained faithful to the underlying theory and core elements of the group to which it was administered. Did not explicitly state how it was culturally congruent but referred to the original SISTA study (DiClemente & Wingood 1995).	SAHARA was adapted from SISTA, which uses Social Cognitive Theory and Theory of Gender and Power	Baseline and 3 months	Efficacy of SAHARA Primary outcome was consistent condom use during vaginal sex in the prior 90 days Psychosocial outcomes: HIV/STI knowledge, condom use self-efficacy, communication, and condom barriers	Participants in SAHARA were more knowledgeable about HIV/STI prevention, had higher scores on condom use self-efficacy and higher percentages of condom-reported sex at 3 months post intervention Demonstrated that an evidence group-based HIV intervention could be adapted to a computer-based HIV intervention

Note. AA = African American; AMIGAS = AMIGAS, mujeres, Latinas, infromados, guiandonos y apoyandonos; CD-ROM = compact disc read-only memory; C-SAFE = Computer-delivered Sexual Awareness For Everyone; DVD = digital optical disc storage format; r/t = related to; SAFE = Sexual Awareness For Everyone; SAHARA = Sistas Accessing HIV/AIDS Resources At a click; SHERO = SiHLE = Sistas Informing, Healing, Living, and Empowering; SISTA = Sistas Informing Sistas about Topics on AIDS; STI = sexually transmitted infection; TGP = The Girlfriends Project; WWP = the Well Woman Program.

DiClemente et al., 2009; Thurman et al., 2008). Two studies found improvements in attitudes, beliefs, and STI/HIV knowledge (Bertens et al., 2009; Harper et al., 2009).

Ten studies had group-based interventions (Bertens et al., 2009; Champion & Collins, 2012; Davidson et al., 2014; DiClemente et al., 2009; Dolcini et al., 2010; Harper et al., 2009; Hawk, 2013; Marion et al., 2009; Thurman et al., 2008; Wingood, DiClemente, Villamizar, et al., 2011). Seven were effective in reducing STI/HIV risk behavior (Bertens et al., 2009; Champion & Collins, 2012; DiClemente et al., 2009; Harper et al., 2009; Marion et al., 2009; Thurman et al., 2008; Wingood, DiClemente, Villamizar, et al., 2011). In contrast, six studies had interventions targeted only to the individual; no statistically significant differences were found between the control and intervention groups in those studies (Broaddus et al., 2015; Danielson et al., 2013; Helion et al., 2008; Ito et al., 2008; Klein & Card, 2011; Klein et al., 2017). Wingood, DiClemente, Villamizar, et al. (2011) created an individualized computer-based intervention in conjunction with a 15-min small group session and found that their intervention increased STI/HIV protective behaviors.

Twelve studies used multiple session interventions, and nine of them reported a reduction in STI/HIV risk behaviors (Bertens et al., 2009; Champion & Collins, 2012; Danielson et al., 2013; Davidson et al., 2014; DiClemente et al., 2009; Harper et al., 2009; Klein & Card, 2011; Klein et al., 2017; Marion et al., 2009; Thurman et al., 2008; Wingood, Card, Er, et al., 2011; Wingood, DiClemente, Villamizar, et al., 2011). Four studies used single session interventions and none of those studies were effective in reducing STI/HIV risk behaviors (Dolcini et al., 2010; Hawk, 2013; Helion et al., 2008; Ito et al., 2008).

Theories Used

All but one study (Helion et al., 2008) used theory in the development of the intervention. Because most interventions were adapted from Sisters Informing Sisters about Topics on AIDS (SISTA) and Sisters Informing Healing Living and Empowering (SIHLE), the most commonly used theories were Social Cognitive Theory and the Theory of Gender and Power (Broaddus et al., 2015; Danielson et al., 2013; Davidson et al., 2014; DiClemente et al., 2009; Klein & Card, 2011; Wingood, Card, Er, et al., 2011; Wingood, DiClemente, Villamizar, et al., 2011). Five studies used the AIDS Risk Reduction Model (Champion & Collins, 2012; Dolcini et al., 2010; Harper et al., 2009; Klein et al., 2017; Thurman et al., 2008). Although a majority of studies used theory to develop their interventions, only three studies explicitly stated that the theories they used were culturally adapted (DiClemente et al., 2009; Marion et al., 2009; Thurman et al., 2008). DiClemente et al. (2009) adapted the Theory of Gender and Power for young African American women. Thurman et al. (2008) used AIDS Risk Reduction Model and stated it was culturally adapted for minority women. Marion et al. (2009) adapted the Interaction Model of Client Health Behavior (IMCHB). All three interventions using culturally adapted theories were effective in reducing STI/HIV risk behaviors (DiClemente et al., 2009; Marion et al., 2009; Thurman et al., 2008).

Outcomes

Outcomes varied greatly across studies from psychosocial, behavioral, and biologic markers. A majority of studies used self-reported measures, which included both psychosocial and behavioral outcomes. Psychosocial outcomes included STI/HIV knowledge; perceptions; attitudes toward condom use; intentions to use condoms; social support/friendships, communication, and self-efficacy; gender; and cultural norms (Bertens et al., 2009; Danielson et al., 2013; DiClemente et al., 2009; Dolcini et al., 2010; Harper et al., 2009; Klein & Card, 2011; Klein et al., 2017; Thurman et al., 2008; Wingood, Card, Er, et al., 2011; Wingood, DiClemente, Villamizar, et al., 2011). Behavioral outcomes included condom protected sex, number of sexual partners, consistent condom use, and self-reported STI history or diagnosis (Bertens et al., 2009; Danielson et al., 2013; DiClemente et al., 2009; Dolcini et al., 2010; Harper et al., 2009; Klein & Card, 2011; Klein et al., 2017; Thurman et al., 2008; Wingood, Card, Er, et al., 2011; Wingood, DiClemente, Villamizar, et al., 2011). In four studies, the primary outcome was biologically confirmed STI incidence (Champion & Collins, 2012; DiClemente et al., 2009; Marion et al., 2009; Thurman et al., 2008).

Integrating Culture Into Interventions

There are currently no standards for evaluating the incorporation of culture into an intervention. Although all studies included in our review infused elements of culture into the intervention, their methods varied. We described the variation in these methods, as many authors did not specifically state how they evaluated the cultural components of their interventions, only that they adapted an EBI. Some researchers took a more comprehensive approach such as using qualitative methods (i.e., focus

groups, ethnography) to capture the cultural experiences of women and integrated them into the interventions (Bertens et al., 2009; Davidson et al., 2014; DiClemente et al., 2009; Dolcini et al., 2010; Harper et al., 2009; Hawk, 2013; Klein et al., 2017; Wingood, DiClemente, Villamizar, et al., 2011).

Three studies conducted focus groups to make their interventions culturally grounded in the knowledge, beliefs, values, and languages of the population of interest (Davidson et al., 2014; Klein et al., 2017; Wingood, DiClemente, Villamizar, et al., 2011). Harper et al. (2009) and Wingood, DiClemente, Villamizar, et al. (2011) used community-based participatory research and narrative ethnographic methods to reveal community and cultural narratives. DiClemente et al. (2009) used qualitative methods for their intervention, which was field-tested in the community to assess gender and cultural appropriateness. Hawk (2013) described using community input to increase cultural relevance. Klein et al. (2017) provided extensive descriptions on how their intervention incorporated cultural specificities of Latinas such as the use of telenovela-style videos. Dolcini et al. (2010) used a friendship intervention for African American women that incorporated social and cultural factors (i.e., cultural exercises) into the structure and content of programs as described by Wilson and Miller (2003). Overall the studies that provided more comprehensive approaches using both community-based and qualitative research to integrate culture into their interventions were shown to be more successful in reducing STI/HIV risk behaviors (Bertens et al., 2009; DiClemente et al., 2009; Harper et al., 2009; Wingood, DiClemente, Villamizar, et al., 2011).

Other studies used minimal efforts to integrate culture through the use of only intervention facilitators. Some studies stated that the facilitators of the interventions matched the race of participants (Dolcini et al., 2010) or gave participants the opportunity to choose a culturally appropriate host to facilitate the intervention (Helion et al., 2008; Ito et al., 2008). None of those studies showed any differences between the control and intervention groups.

Only one study by Davidson et al. (2014), which adapted an EBI, explicitly stated that they used the Assessment Decision Administration Production Topical Experts-Integration Training Testing framework to assess cultural modifications, which included speaking with key stakeholders and gathering information from the desired population by conducting focus groups (Wingood & DiClemente, 2008). Nine studies were adapted from culturally tailored EBIs, but did not specifically describe how they retained cultural elements of these interventions (Broaddus et al., 2015; Champion & Collins, 2012; Danielson et al., 2013; Davidson et al., 2014; Klein & Card, 2011; Klein et al., 2017; Thurman et al., 2008; Wingood, Card, Er, et al., 2011; Wingood, DiClemente, Villamizar, et al., 2011). Therefore, we conducted an ancestral search to determine how the authors incorporated cultural elements from EBIs into their interventions. Three studies (Broaddus et al., 2015; Wingood, Card, Er, et al., 2011; Wingood, DiClemente, Villamizar, et al., 2011) adapted SISTA created by DiClemente and Wingood (1995), which emphasizes ethnic and gender pride. Of these studies Wingood, DiClemente, Villamizar, et al. (2011) was the only one to show differences between the control and intervention group. Three studies (Danielson et al., 2013; Davidson et al., 2014; Klein & Card, 2011) were adapted from SIHLE developed by DiClemente et al. (2004). Researchers from SIHLE collaborated with African American adolescent girls in the community to create a culturally tailored intervention (DiClemente et al., 2004). All studies found participant satisfaction with the interventions, but no statistically significant differences were found in the control group. Three studies (Champion & Collins, 2012; Klein et al., 2017; Thurman et al., 2008) adapted Project Sexual Awareness For Everyone created by Shain et al. (1999). Project Sexual Awareness For Everyone incorporated ethnographic data about women's lifestyles, values, beliefs, and other measures, and also had a multiethnic team to help design the intervention (Shain et al., 1999). Champion and Collins (2012) and Thurman et al. (2008) both reported lowered incidence of STIs. Overall only three adapted EBIs significantly reduced STI/HIV risk behaviors or incidence (Champion & Collins, 2012; Thurman et al., 2008; Wingood, DiClemente, Villamizar, et al., 2011).

Additionally, an in-depth search of Hawk et al. (2013) revealed that the researchers used a bottom up approach to increase cultural relevance to develop an intervention created by African American women for African American women (Hawk, 2015). Bertens et al. (2009) developed Uma Tori and conducted an in-depth cultural exploration to create their culturally appropriate intervention, which incorporated core cultural, social, historical, environmental, and psychological factors that grounded the content of their intervention into the context, experiences, values, beliefs, and norms of the priority group (Bertens, 2008). Marion et al. (2009) designed the Well Woman Program, which adapted the interaction model of client health behavior, to create a culturally specific STI prevention framework for African American women but provided no information about how it was culturally grounded.

Discussion

The purposes of this review were to (a) examine the current state of STI/HIV behavioral interventions for women of color, (b) evaluate how culture was incorporated into these interventions, and (c) identify gaps in the literature. Our findings revealed face-to-face, group-based, multiple session, and theory-based interventions were more effective than single session, interactive, media interventions for reducing STI/HIV risk behaviors. We also found that studies that provided more comprehensive approaches using both community-based and qualitative research to integrate culture into their interventions were shown to be more successful at reducing STI/HIV risk behaviors (Bertens, 2008; DiClemente et al., 2009; Harper et al., 2009; Wingood, DiClemente, Villamizar, et al., 2011). Additionally, we found inconsistencies in how to infuse cultural components into behavioral interventions, how to adapt EBIs to retain cultural components, and how to culturally adapt theory-guided interventions.

Although interactive media interventions may be more cost effective and increasing in use, only one study (Wingood, Card, Er, et al., 2011), using a computer-based intervention, was found to be effective, but they also included a small group face-to-face component. Danielson et al. (2013) found pre to post changes in STI/HIV behaviors in their web-based delivery. Additionally, the effects of these interventions were not tested past 6 months. No significant differences in intervention effects were attributed to amount of time (hours included in the session) used to deliver the interventions. Although the majority of interactive media interventions were adapted from culturally tailored EBIs, the authors were not explicit about how cultural tailoring was retained in the interactive media format. Only the studies by Klein & Card (2011) and Klein et al. (2017) described how cultural components from the EBIs were translated into multimedia formats for their interventions.

Our review found that single session interventions were not as effective as multiple session interventions. A systematic review by Lin, Whitlock, O'Connor, and Bauer (2008) supported this finding. Multiple session formats may reinforce prevention strategies and create community among participants (Broaddus et al., 2015; DiClemente et al., 2009). In contrast, a meta-analysis by Crepaz et al. (2009) found that interventions with fewer sessions (e.g., 1 session) were as effective at reducing STI/HIV risk behaviors as interventions with more sessions. Another study by Jemmott, Jemmott, and O'Leary (2007) found that the effects of their single session, culturally sensitive intervention could be sustained up to 12 months after intervention implementation.

Overall group-based, multi-session, theory-based interventions that were delivered face-to-face were most effective at reducing STI/HIV risk behaviors (Bertens, 2008; Champion & Collins, 2012; DiClemente et al., 2009; Harper et al., 2009; Marion et al., 2009; Thurman et al., 2008; Wingood, DiClemente, Villamizar, et al., 2011). Researchers have found group-based interventions to be effective in women of color because of the benefit of shared experiences, social support, and reducing social stigma (Bertens et al., 2009; Broaddus et al., 2015). Other researchers have found group-based interventions that included elements of skill building, role playing, and interactive exercises to be effective for women of color (DiClemente et al., 2004; Jemmott et al., 2007; Shain et al., 1999). Findings from the meta-analysis by Crepaz et al. (2009) revealed that interventions for African American women should be culturally specific and focus on empowerment, which DiClemente and Wingood (1995) addressed in the cultural adaption of the Gender and Power Theory. Although many studies were effective at reducing STI/HIV risk behavior, we found three major gaps: (a) sustainability of interventions needs to be considered, (b) theoretical frameworks are not adapted for women of color, and (c) there is a lack of clarity about how to infuse culture into an intervention.

Sustainability

Given the fact that STI/HIV rates are high and consequences of these diseases are devastating for women of color, sustainability of interventions needs to be considered. Only four studies (Champion & Collins, 2012; DiClemente et al., 2009; Marion et al., 2009; Thurman et al., 2008) tested post-intervention follow-up to 12 months; the majority of the studies included in our review had not assessed follow-up beyond 2–3 months, so there were minimal data to assess whether the interventions were effective in the long term. A recent systematic analysis by Wetmore et al. (2010) shared similar findings that behavioral interventions were effective in the short term, but they could not demonstrate long-term effectiveness of their interventions because of data limitations. Given that young Black women are vulnerable to STI reinfection, researchers should focus on longer-term outcomes (Craft-Blacksheare, Jackson & Graham, 2014). Despite efforts to make the information about STI/HIV transmission and prevention available to women of color, STI rates, including repeat infections among African American and Hispanic women, remain the highest of any other racial groups (Centers for Disease Control and Prevention, 2016). Sustainability in behavioral interventions needs to examine how long-

term behavior change can be sustained and to identify barriers to sustaining safe sexual behaviors (Wetmore et al., 2010). Additionally, researchers need to explore why women return to former behavior patterns. One way researchers can understand women's barriers to long-term sexual risk-related behavior change is through qualitative research. For example, Sales, DiClemente, Davis, and Sullivan (2012) explored why condom use did not increase post intervention in a subset of young African American women. Using grounded theory, the authors found barriers (e.g., nonstable relationships, substance abuse) to changing sexual behaviors for this population. Qualitative work such as that of Sales et al. (2012) can serve to inform future interventions by documenting what is relevant to women and the barriers to behavior change.

Limitations of Theoretical Frameworks

Although a majority of researchers used theory in the development and implementation of their interventions, only three studies used culturally adapted theories (DiClemente et al., 2009; Marion et al., 2009; Thurman et al., 2008). The majority of the studies we reviewed used theories that had not been adapted for women of color. For example, Social Cognitive theory, which was used by three researchers (Broaddus et al., 2015; Danielson et al., 2013; DiClemente et al., 2009), was developed and tested in White populations (Bandura, 1986). Many of the theories used in the development of interventions did not explicitly consider culture and cultural values, which have rarely been explored or explained in theoretical terms (Bertens, 2008). Culture and cultural values are important to explore in theory development because they can influence perceptions of sexuality and sexual behavior, communication, and negotiation of safer sex practices with partners (Gipson & Frasier, 2003). A meta-analysis by Logan et al. (2002) shared similar findings in critiquing the use of theory in interventions that did not consider the dyadic nature of sexual behavior or the range of important sociocultural factors (i.e., environment, culture) that have influenced women's sexual behavior. The intersection of race and gender/sex makes women of color especially vulnerable to historical trauma and discrimination as a result of being a part of marginalized groups (Crenshaw, 1991; Short & Williams, 2014). Women of color have been affected by various additional sociocultural conditions that may increase STI risk (Gipson & Frasier, 2003; Logan et al., 2002). Theorists should explore how these sociocultural conditions could be integrated into theory and then into interventions (Logan et al., 2002), and new theories should be developed specifically for women of color or extant theories should be culturally adapted to support the needs of under-represented populations (Bertens, 2008; Mize, Robinson, Bockting, & Scheltema, 2002).

How to Infuse Culture Into Interventions

The terms used by studies to describe the incorporation of culture into interventions were "culturally appropriate," "culturally based," "culturally relevant," "culturally tailored," "culturally specific," and "culturally congruent." We demonstrated that there was no consistency on how researchers infused culture into their interventions and there were no standard guidelines to do so. Although many of the interventions were adapted from EBIs, these EBIs were developed from 10 to nearly 20 years ago (DiClemente & Wingood, 1995; DiClemente et al., 2004; Shain et al., 1999). Such methods are likely outdated, as sexual behaviors and cultural norms change over time. Researchers and other practitioners should be more specific and explicit in how they adapt culturally tailored EBIs to address the sociocultural conditions of their populations (Logan et al., 2002). Research should, therefore, explore a clear, consistent definition of culturally adapting EBIs and then examine the effect of the revised or new culturally tailored interventions in the context of current social norms.

There are also discrepancies in how to adapt an EBI and what adaption means. Adaptation has been defined as "the degree to which an innovation is changed or modified by a user in the process of its adoption and implementation" (Rogers, 2003, p. 180) or "deliberate or accidental modification of a program" (Center for Substance Abuse Prevention, 2001, p. 7). Adaptation can include deletions or additions, modifications of existing components, changes in the manner or intensity of components, or cultural modifications required by local circumstances (Center for Substance Abuse Prevention, 2001).

There are very few recommended processes or best practices for adapting EBIs to conditions different from those presented in the original research (McKleroy et al., 2006; Wingood & DiClemente, 2008). The CDC has developed a map of the adaption process to adapt EBIs, which includes five action steps: assess, select, prepare, pilot, and implement (McKleroy et al., 2006). The adapt-ITT (assessment decision administration production topical experts–integration training testing) model created by Wingood and DiClemente (2008) described how to adapt evidence-based HIV interventions in eight phases: assessment, decision, administration, production,

topical experts, integration, training, and testing. Although this is a valuable contribution to the literature, the process is quite extensive, which may limit its use in research. There is no concrete definition of how to culturally adapt interventions (McKleroy et al., 2006; Wingood & DiClemente, 2008). This is important to distinguish, as researchers who adapt EBIs aren't distorting the core cultural components/elements of an intervention. As interactive media increases in popularity, new research should focus on how the adaption of cultural components of EBIs translate into interactive media formats. It is also important for researchers to consider populations in which EBIs work before dissemination into communities.

Limitations

A first limitation was that although this review was inclusive of women of color, many of the studies included in our review focused primarily on African American women and some on Hispanic women. This limitation may be due to our inclusion criterion for English-language-only studies. This highlighted a gap in STI/HIV prevention research conducted with Asian, Native, and Indian populations. A second limitation was that the majority of the research focused on heterosexual relationships. Our ancestral searches revealed that a culturally adapted theory does not necessarily make an intervention culturally tailored. As discussed previously, infusing elements of culture and doing a more in-depth exploration of culture from the perspective of the population of interest would be necessary to create a culturally tailored intervention.

Recommendations

Although we found multiple session interventions to be more effective at reducing STI/HIV risk for women of color, additional studies are needed to further assess the efficacy of single-session to multiple-session interventions. This is necessary to determine which intervention format is better suited for populations of women of color. In addition to the session format, it is important to consider sustainability of the interventions. Given that studies in our review did not consider sustainability past 2–3 months and that most re-infections occurred 3–6 months following initial diagnosis/treatment, sustainability should be documented to determine long-term effectiveness of interventions. Researchers should consider the sustainability of their interventions given that STI/HIV prevention requires long-term behavioral change. Additionally, researchers should determine which interventions work for each age group as certain prevention strategies may be more effective in older versus younger populations of women of color.

Culturally adapting frameworks, theories, and interventions are necessary to support the needs of women of color. There is a lack of interventions that explicitly address sociocultural conditions related to culture, despite evidence that has demonstrated their effectiveness. In order to develop culturally sensitive interventions, health promoters should first aim to understand the cultural structures that influence their populations (Bertens, 2008; Resnicow et al., 2000; Wilson & Miller, 2003). The objectives of the intervention should address the needs of the population, and theoretical methods and practical strategies should match structures of the population (Bertens, 2008; Resnicow et al., 2000; Wilson & Miller, 2003). The lack of culturally adapted interventions may create barriers between health care providers, researchers, and participants and patients (Marsiglia & Booth, 2015). Using a culturally grounded approach in a clinical setting could lead to more equitable and productive relationships between patients and providers by grounding interventions in patient-lived experiences (Marsiglia & Booth, 2015). Culturally grounding interventions can be achieved in research by using or developing theories or frameworks that speak to the lived experiences of women of color, such as intersectionality. Intersectionality is a theoretical framework that considers how different identities, such as race and gender, are not separate, but interact to affect the lives of women of color, including their health (Crenshaw, 1991). Grounded theory could be used to create a framework that is developed and grounded in the perspectives and experiences of women of color. Studies that consider these recommendations could greatly inform prevention efforts in high-risk groups such as women of color.

Health care providers play a crucial role in STI/HIV prevention and treatment because they regularly encounter patients and can support the linkage to care in STI/HIV programs. Although women of color are at higher risk for STIs, it is important that providers do not overscreen minority women for STIs or target minority women without understanding the social and cultural context of higher STI rates, as the effects can result in labeling, shaming, and anxiety, having a negative effect on the patient–provider relationship (Zakher, Cantor, Pappas, Daeges, & Nelson, 2014). A recent review on overscreening for STIs in urban women suggested that although personal history of STI and younger age were important clinical variables, they did not necessarily result in a positive test (Jackson, McNair, & Coleman, 2015).

Key Considerations

- There is a need to consider how to infuse culture into interventions designed for women of color who are at risk for STI/HIV.
- The combination of group-based, multiple-session, theory-based interventions with infused culture was more effective than single-session interactive media interventions at reducing STI/HIV risk behaviors.
- There is a lack of research on standards for integrating culture into interventions and adapting evidence-based interventions to retain the cultural components necessary to address the sociocultural conditions that impact STI/HIV risk in women of color.
- Clinicians should discuss and explore possible risks for STI/HIV exposures that are cultural and context specific to the individual despite age, race, and environment.

Based on our findings, it is important for clinicians to discuss and explore possible risks for STI/HIV exposures that are culturally and contextually specific to the individual despite age, race, and environment.

Conclusion

Our review can facilitate discussion and research about integrating culture into STI/HIV interventions. This is important, as women of color are at particular risk for STI/HIV and culturally tailored behavioral interventions have been found to reduce risk. We found that group-based, multiple-session, theory-based interventions with infused culture were more effective than single-session, interactive, media interventions for reducing STI/HIV risk behaviors. The best approaches to integrate culture into interventions are the use of community-based research and qualitative research methods. Researchers should compare single- to multiple-session interventions and examine sustainability of the interventions to reduce STI recurrence. There is a lack of research on standards for integrating culture into extant interventions, the creation of new theories, or adapting theories specifically for women of color. Researchers should consider the sustainability of their interventions given that STI/HIV prevention requires long-term behavioral change.

Disclosures

The authors report no real or perceived vested interests related to this article that could be construed as a conflict of interest.

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