

College- or University-Based Sexual Assault Prevention Programs: A Review of Program Outcomes, Characteristics, and Recommendations

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Abstract

This article examines literature reviews of research articles and dissertations focused on the effectiveness of college- or university-based sexual violence prevention programs. Literature reviews were eligible for inclusion in this article if they examined empirical published peer-reviewed research articles or dissertation research that reported original data; focused on examining the effectiveness of programs that were developed to reduce sexual violence that occurred in college or university settings; offered recommendations for developing and implementing effective college- or university-based sexual assault prevention programs; and reviewed studies that occurred in the United States. Eight review articles met the inclusion criteria. The results suggest that the effectiveness of college- or university-based sexual violence prevention programs varies depending on the type of audience, facilitator, format, and program content. Recommendations from existing reviews of empirical research concerning these program characteristics should be considered by college or university administrators when designing and implementing their own programs on campus.

Keywords

sexual assault, sexual violence, college, university, prevention

Introduction

Sexual violence victimization is very common among college and university students in the United States. Research estimates that 20–25% of female undergraduates experience attempted or completed rape during their college careers (Fisher, Cullen, & Turner, 2000; Krebs, Lindquist, Warner, Fisher, & Martin, 2009a, 2009b; Martin, Fisher, Warner, Krebs, & Lindquist, 2009). Undergraduate males also report that they experience sexual violence during college, although it occurs at a lower rate than females (Krebs et al., 2009a).

Not only is sexual violence against undergraduate students common, but it may also have devastating short-term and longer-term sequelae in a variety of domains. Those who have been sexually assaulted have been found to experience a variety of physical health problems, including chronic illnesses (e.g., asthma and arthritis), chronic headaches, fatigue, injuries (e.g., bruises, cuts, and scratches), sleep disturbance, sexually transmitted infections, sexual dysfunction, and, for women, unwanted pregnancy (Campbell, Sefl, & Ahrens, 2003; Eby, Campbell, Sullivan, & Davidson, 1995; Fisher et al., 2000; Koss, Koss, & Woodruff, 1991). In addition, psychological health may be adversely affected by sexual violence, resulting in anxiety, humiliation, depression, stress, suicidal ideation, and trouble concentrating (Carr, 2005; Gidycz, Orchowski,

King, & Rich, 2008; Silverman, Raj, Mucci, & Hathaway, 2001; Ullman & Brecklin, 2003; Yeater, 2000). In light of these sexual violence consequences, it is not surprising that sexually violated students may also evidence a multiplicity of behavioral problems, including drug use, eating disorders, heavy drinking, physical fights, lowered academic achievement, and dropping out of school (American College Health Association [ACHA], 2007; Gidycz et al., 2008; Resnick, Acierno, & Kilpatrick, 1997).

In an attempt to increase awareness about crime statistics and security procedures on college campuses, the Clery Act (20 U.S.C.A. § 1092) was passed in 1990. This law, formerly known as the Crime Awareness and Campus Security Act of

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1990, mandates that colleges and universities that receive federal aid should inform students and employees about crime statistics as well as policies and procedures that are in place to prevent crimes, including sexual offenses. These prevention policies must include a statement regarding sexual assault prevention programs on campuses and the procedures that follow after the occurrence of a sexual assault. Although this legislation encourages the development of sexual violence policies and prevention programs, it does not require any particular practices and does not describe the exact form that a program should take.

In light of this situation, college or university administrators (who may not be well trained in the area of sexual violence) are faced with having to choose from an existing array of sexual assault prevention programs or to develop their own program. In making this decision, they should consider the effectiveness of the program, in particular, whether the program has been shown to be beneficial, and, more specifically, the domains in which beneficial changes have been documented (e.g., improvement in rape attitudes and sexual assault incidence). In addition, they need to make decisions concerning the specific characteristics and attributes of the program that they wish to offer, including the program audience they plan to serve (e.g., the number of persons and the gender of the individuals), the program facilitators that they will use (e.g., professional vs. peer facilitators), the format of the program (e.g., the duration of the program and the mode of delivery such as video), and the program content (e.g., the types of topics and strategies to be used, such as risk-reduction strategies and gender-role socialization).

Therefore, to help inform those interested in the effectiveness of college- or university-based sexual violence prevention programs, this article reviews the scientific literature focused on the impact of these programs. In particular, this article examines comprehensive literature reviews concerned with university and college sexual assault prevention programs that have been published in recent years. Each of these systematic and rigorous reviews helps to summarize, synthesize, and build the growing evidence about how sexual assault prevention programs should best be delivered. Nonetheless, each review also used distinct review approaches; these research efforts focus on different articles in their reviews; and each review offers distinct findings. Thus, we decided it was timely and useful to the field of sexual assault prevention to conduct a systematic and rigorous literature review of all the extant reviews to help provide an overarching synthesis for the sexual violence prevention field. In particular, this article examines comprehensive literature reviews on university and college sexual assault prevention programs to address the following questions:

- What types of program outcomes are examined in these reviews and how did the reviews define these outcomes?
- Did the reviews find that improvement in particular types of outcomes varied by specific program characteristics, including the type of audience, facilitator, format, and program content?

What types of recommendations did the authors of the literature reviews provide for those who design and implement college- or university-based sexual violence prevention programs, with these recommendations focusing on the characteristics of the audience, facilitator, format, program content, and other aspects of the programs?

Method

A systematic approach was used to identify literature reviews of empirical research that evaluated the effectiveness of sexual assault prevention programs in college settings. Using several electronic article databases (i.e., CINAHL, PsycINFO, PubMed, and Social Work Abstracts), we conducted a literature search using multiple combinations of keywords, including sexual abuse, sexual assault, sexual violence, college, university, evaluation, and intervention.

Literature reviews were then deemed eligible for inclusion in this research if they met the following criteria. First, the literature review had to examine empirical published peer-reviewed research articles or dissertation research that reported original data. Second, the review had to focus on examining the effectiveness of programs that were developed to reduce sexual violence that occurred in college or university settings. Third, the review had to offer recommendations for developing and implementing effective college- or university-based sexual assault prevention programs. Finally, only literature reviews of studies that occurred in the United States were included. Once the literature review articles were selected, the first step in the data abstraction process was to record information concerning all of the research articles that were included in each of the literature reviews, including each article's title, authors, and year of publication. Next, the content of the literature review articles was summarized and synthesized to address the questions posed in this article. Each article was systematically reviewed to document: (a) the types of program outcomes the researchers examined and their definitions of these outcomes; (b) whether the researchers found that particular types of outcomes were differentially associated with specific program characteristics (including the type of audience, the type of facilitator, the type of format, and the program content); and (c) the recommendations provided by the researchers concerning specific program characteristics (including the type of audience, the type of facilitator, the type of format, program content, and other aspects of the interventions). Data collected from this systematic review process were then synthesized into literature review results.

Results

Identification of the Literature Reviews

Approximately 15,000 publications on sexual abuse or violence were identified of which 780 pertained specifically to college or university settings. However, only eight literature review articles (Anderson & Whiston, 2005; Bachar & Koss,

2001; Brecklin & Forde, 2001; Breitenbecher, 2000; Flores & Hartlaub, 1998; Lonsway, 1996; Schewe & O'Donohue, 1993a; Yeater & O'Donohue, 1999) published in peer-reviewed journals between 1993 and 2005 met the inclusion criteria for this article.

Table 1 shows that, altogether, the 8 literature reviews examined 102 research articles/dissertations (from 1977 to 2002) that focused on the effectiveness of college- or university-based sexual violence prevention programs. The number of research articles/dissertations included in each literature review ranged from 11 to 69, with several literature reviews examining the same research articles/dissertations.

These reviews varied in regard to their approaches for reviewing and analyzing the research articles and dissertations. Four literature reviews (Bachar & Koss, 2001; Lonsway, 1996; Schewe & O'Donohue, 1993a; Yeater & O'Donohue, 1999) provided a narrative review of studies that evaluated rape prevention efforts; two of these reviews focused on studies that evaluated educational programs while the other two focused more broadly on studies that evaluated primary prevention programs. Three literature reviews (Anderson & Whiston, 2005; Brecklin & Forde, 2001; Flores & Hartlaub, 1998) used a more rigorous approach by conducting meta-analyses to quantify the effect size for sexual assault program effectiveness. Although they used similar approaches, two of these reviews limited their study inclusion to those that only focused on rape attitudes and rape myth acceptance; one of these focused strictly on male-targeted interventions. The remaining literature review (Breitenbecher, 2000) used a construct-by-construct analysis to review studies that described quantitative evaluations of sexual assault prevention programs.

Program Outcomes Examined in the Literature Reviews

Table 2 shows that several types of program outcomes were examined in the 8 literature reviews. The most commonly examined of these outcomes was rape attitudes (reported on in 8 [100%] of the literature reviews of which one [Anderson & Whiston, 2005] specified rape-related attitudes and two [Bachar & Koss, 2001; Brecklin & Forde, 2001] specified rape-supportive attitudes), followed by rape myth acceptance (reported on in 7 [88%] of the literature reviews [Anderson & Whiston, 2005; Bachar & Koss, 2001; Brecklin & Forde, 2001; Breitenbecher, 2000; Flores & Hartlaub, 1998; Lonsway, 1996; Yeater & O'Donohue, 1999]), the incidence of sexual assault perpetration and/or victimization (reported on in 5 [63%] of the literature reviews [Anderson & Whiston, 2005; Bachar & Koss, 2001; Breitenbecher, 2000; Lonsway, 1996; Yeater & O'Donohue, 1999]), dating behaviors and rape awareness behavior (reported on in 5 [63%] of the literature reviews [Anderson & Whiston, 2005; Bachar & Koss, 2001; Breitenbecher, 2000; Lonsway, 1996; Yeater & O'Donohue, 1999]), behavioral intent (reported on in 4 [50%] of the literature reviews [Anderson & Whiston, 2005; Breitenbecher, 2000; Lonsway, 1996; Yeater & O'Donohue, 1999]), rape empathy (reported on in 4 [50%] of the literature reviews [Anderson &

Whiston, 2005; Bachar & Koss, 2001; Breitenbecher, 2000; Yeater & O'Donohue, 1999]), and rape/sexual assault knowledge (reported on in 4 [50%] of the literature reviews [Anderson & Whiston, 2005; Bachar & Koss, 2001; Breitenbecher, 2000; Yeater & O'Donohue, 1999]). Table 2 also shows that even though several of the literature reviews documented the same types of outcomes, they often used slightly differing definitions of these outcomes, and some of the literature reviews did not provide definitions for the outcomes that they examined.

Variation in Effectiveness by Program Characteristics

Program audiences. All of the literature reviews examined the effectiveness of sexual violence prevention programs in relation to some characteristics of the target audience (Table 2). Seven literature reviews examined the effectiveness of programs that targeted same-gender vs. mixed-gender populations, while the remaining literature review (Flores & Hartlaub, 1998) assessed the effectiveness of programs targeting all-male audiences (Table 2). Three literature reviews examined program effectiveness among Greek members (i.e., fraternities and sororities; Anderson & Whiston, 2005; Bachar & Koss, 2001; Yeater & O'Donohue, 1999) two examined program effectiveness for populations at higher risk for sexual violence victimization or perpetration (e.g., students who exhibit depression, prior sexual experiences, alcohol use in dating, and prior sexual victimization; Anderson & Whiston, 2005; Breitenbecher, 2000), and one examined whether the number of audience participants influenced program effectiveness (Brecklin & Forde, 2001).

In general, the reviews report that programs are most effective if they target single-gender audiences, although this finding varies depending on the program outcomes assessed (Anderson & Whiston, 2005; Bachar & Koss, 2001; Brecklin & Forde, 2001; Breitenbecher, 2000; Lonsway, 1996; Schewe & O'Donohue, 1993a; Yeater & O'Donohue, 1999). All-female programs are effective at improving rape attitudes, behavioral intent, rape awareness, and knowledge about sexual assault (Anderson & Whiston, 2005; Bachar & Koss, 2001; Lonsway, 1996; Yeater & O'Donohue, 1999); all-male programs are effective at improving rape-related attitudes and rape empathy and reducing rape-supportive behaviors and rape myth acceptance (Anderson & Whiston, 2005; Bachar & Koss, 2001; Brecklin & Forde, 2001; Lonsway, 1996; Yeater & O'Donohue, 1999). Although mixed-gender programs can be effective at improving rape attitudes and reducing behavioral intent and rape myth acceptance (Anderson & Whiston, 2005; Bachar & Koss, 2001; Lonsway, 1996), they are generally found to be less effective than single-gender programs (Brecklin & Forde, 2001; Breitenbecher, 2000; Schewe & O'Donohue, 1993a; Yeater & O'Donohue, 1999). In addition, programs focused on Greek members and those with fewer participants may improve rape attitudes (Anderson & Whiston, 2005; Brecklin & Forde, 2001; Yeater & O'Donohue, 1999).

Program facilitators. Only three (38%) of the literature reviews examined the influence of the program facilitator on

Table 1. Research Articles/Dissertations Included in the Eight Literature Reviews of the Effectiveness of College- or University-Based Sexual Violence Prevention Programs

Research Article/Dissertation Authors (Publication Year)	Literature Review Authors (Publication Year)							
	Anderson and Whiston (2005)	Bachar and Koss (2001)	Brecklin and Forde (2001)	Breitenbecher (2000)	Flores and Hartlaub (1998)	Lonsway (1996)	Schewe and O'Donohue (1993a)	Yeater and O'Donohue (1999)
Abrams (1992)			X					
Anderson et al. (1998)	X	X	X	X				
Beadner (2000)	X							
Berg (1993)						X		X
Berg, Lonsway, and Fitzgerald (1999)	X	X		X				
Berger (1993)	X		X					
Black, Weisz, Coats, and Patterson (2000)	X							
Borden, Karr, and Caldwell-Colbert (1988)	X		X	X	X	X	X	X
Boulter (1997)	X		X					
Brakensiek (1983)			X					
Breitenbecher and Gidycz (1998)	X	X		X				
Breitenbecher and Scarce (1999)	X	X		X				
Breitenbecher and Scarce (2001)	X							
Briskin and Gary (1986)				X		X		X
Calhoun et al. (2001)	X							
Check and Malamuth (1984)				X				
Cummings (1992)				X				
Dallager and Rosen (1993)	X		X	X	X	X		X
Davis (1999)	X							
Davis (1997)	X		X					
DeBates (2002)	X							
Duggan (1998)	X		X					
Earle (1996)	X			X				
Echols (1998)	X							
Egidio and Robertson (1981)				X		X		X
Ellis, O'Sullivan, and Sowards (1992)				X		X		X
Ensign (1996)			X					
Feltey, Ainslie, and Geib (1991)						X		
Fischer (1986)	X		X	X		X		X
Fonow, Richardson, and Wemmerus (1992)	X		X	X	X	X		X
Forst, Lightfoot, and Burrichter (1996)	X							
Forst (1993)			X					
Foubert (2000)	X							
Foubert and Marriot (1996)				X				
Foubert and Marriot (1997)	X		X	X				
Foubert and McEwen (1998)	X	X	X	X				
Frazier, Valtinson, and Candell (1994)	X	X		X				X
Gibson (1991)	X		X					
Gidycz, Layman, et al (2001)	X							
Gidycz, Lynn, et al (2001b)	X							
Gilbert, Heesacker, and Gannon (1991)	X			X		X	X	X

(continued)

Table 1 (continued)

Research Article/Dissertation Authors (Publication Year)	Literature Review Authors (Publication Year)							
	Anderson and Whiston (2005)	Bachar and Koss (2001)	Brecklin and Forde (2001)	Breitenbecher (2000)	Flores and Hartlaub (1998)	Lonsway (1996)	Schewe and O'Donohue (1993a)	Yeater and O'Donohue (1999)
Gillies (1997)	X		X					
Gottesman (1977)						X		
Gray, Lesser, Quinn, and Bounds (1990)				X		X		X
Hanson and Gidycz (1993)	X			X		X		X
Harrison, Downes, and Williams (1991)	X		X	X	X	X	X	X
Heppner, Good, et al. (1995)			X	X				
Heppner, Humphrey, et al. (1995)	X	X	X	X				
Heppner, Neville, Smith, Kivlighan, and Gershuny (1999)		X		X				
Himelein (1999)		X		X				
Hoehn (1992)	X							
Holcomb, Sarvela, Sontag, and Hatton-Holcomb (1993)			X	X		X		X
Holcomb, Sondag, and Holcomb (1993)				X		X		X
Intons-Peterson, Roskos-Ewoldsen, Thomas, Shirley, and Blut (1989)	X			X		X		X
Jensen (1993)	X		X					
Johnson (1978)	X		X					
Johnson and Russ (1989)	X			X		X		
Jones and Muehlenhard (1990)			X				X	
Kleck (1990)								X
Kline (1993)	X							
Lanier (1995)	X							
Lanier, Elliot, Martin, and Kapadia (1998)		X	X					
Layman-Guadalupe (1996)	X		X					
Lee (1987)			X	X	X	X	X	X
Lenihan, Rawlins, Eberly, Buckley, and Masters (1992)	X		X	X	X	X		X
Lenihan and Rawlins (1994)	X	X	X					
Linz, Fuson, and Donnerstein (1990)				X	X			
Lonsway et al. (1998)	X	X	X	X				
Lonsway and Kothari (2000)	X							
Malamuth and Check (1984)	X			X		X		
Mann, Hecht, and Valentine (1988)	X			X		X		X
Marx, Calhoun, Wilson, and Meyerson (2001)	X							
McLeod (1997)	X							
Michener (1996)	X							
Moore and Waterman (1999)				X				
Murphy (1997)	X							
Nagler (1993)	X		X					
Nelson and Torgler (1990)	X		X	X	X	X		
Nichols (1991)	X		X					

(continued)

Table 1 (continued)

Research Article/Dissertation Authors (Publication Year)	Literature Review Authors (Publication Year)							
	Anderson and Whiston (2005)	Bachar and Koss (2001)	Brecklin and Forde (2001)	Breitenbecher (2000)	Flores and Hartlaub (1998)	Lonsway (1996)	Schewe and O'Donohue (1993a)	Yeater and O'Donohue (1999)
Northam (1997)	X		X					
O'Donohue and Fanetti (1997)								X
Ostrowski (1991)	X							
Patton and Mannison (1993)			X	X	X			
Pinzone-Glover, Gidycz, and Jacobs (1998)	X	X	X	X				
Prince (1994)			X					
Ring and Kilmartin (1992)				X		X		X
Rosenthal, Heesacker, and Neimeyer (1995)	X	X	X	X	X			
Saberi (1999)	X							
Schaeffer and Nelson (1993)				X				
Schewe and O'Donohue (1993b)	X			X				X
Schewe and O'Donohue (1996)	X	X	X	X				
Schewe and Shizas (2002)	X		X					
Schultz, Sherman, and Marshall (2000)	X							
Schwartz and Wilson (1993)	X		X					
Sweetser (1995)	X							
Tarrant (1997)	X		X					
Turner (1996)			X					
Williams (1996)			X					
Women Against Rape (1980)						X		X
Wolford (1993)	X		X					
Yeater (2000)	X							

Note. X indicates that the research article/dissertation was included in the literature review.

the program's effectiveness (Table 2). Among these articles, one reviewed both peer- and professional-facilitated programs (Anderson & Whiston, 2005) while another one only reviewed peer-facilitated programs (Flores & Hartlaub, 1998). The third literature review examined the influence of the number of communicators, their personality traits, and physical characteristics on program effectiveness (Lonsway, 1996).

The first review reports that while both peer- and professional-facilitated programs are successful at improving rape attitudes, professional-led programs are more successful than peer-led programs at improving rape-related attitudes and behavioral intentions (Anderson & Whiston, 2005). The second review reports that an educational workshop led by peers is effective at reducing rape myth acceptance (Flores & Hartlaub, 1998). Although the third review does not distinguish between professional and peer-facilitated programs, it reports that educational programs with multiple instructors and those with instructors that possess characteristics, such as "expertise, trustworthiness, status, likeability, and attractiveness" positively influence participants (Lonsway, 1996).

Program format. Six of the literature reviews examined the impact of the program format on the program's effectiveness (Table 2; Anderson & Whiston, 2005; Bachar & Koss, 2001; Brecklin & Forde, 2001; Flores & Hartlaub, 1998; Lonsway, 1996; Yeater & O'Donohue, 1999). All six reviews examined the impact of the duration of the program (i.e., the amount of time per session and the number of sessions) and two of these also examined the impact of the form of program delivery (i.e., video and lecture presentation).

Although these reviews have mixed findings, several reviews report that programs with a longer duration (i.e., increased session length and number of sessions) are effective at improving rape attitudes (Anderson & Whiston, 2005; Bachar & Koss, 2001; Lonsway, 1996; Yeater & O'Donohue, 1999), while another review reports that long sessions with few participants and increased participation is effective at reducing rape myth acceptance (Flores & Hartlaub, 1998). This review also reports that short programs (i.e., those less than half an hour) may also be effective. In regard to the form of program delivery, lectures may be effective at reducing rape myth acceptance but ineffective at changing rape attitudes.

Table 2. Findings of the Literature Reviews of the Effectiveness of College- or University-Based Sexual Violence Prevention Programs

Authors, Publication Year, Title, and Number Of Research Articles Or Dissertations Reviewed	What Program Outcomes Were Examined And How Were They Defined?	How Is The Type Of Audience Related To Program Effectiveness?	How Are Facilitator Characteristics Related To Program Effectiveness?	How Is The Program Format Related To Program Effectiveness?	How Is The Program Content Related To Program Effectiveness?
<ul style="list-style-type: none"> Authors: Anderson and Whiston Publication Year: 2005 Title: Sexual assault education programs: A meta-analytic examination of their effectiveness Number of research articles/ dissertations reviewed: 69 	<ul style="list-style-type: none"> Rape attitudes: rape myth acceptance, attitudes toward rape and rape victim blame. Rape empathy: degree to which participants identified with rape victims or perpetrators. Rape-related attitudes: attitudes promoting the occurrence of sexual assault, including: sex-role stereotyping, attitudes toward women, and adversarial sexual beliefs. Rape knowledge: knowledge about sexual assault. Behavioral intent: intent to rape or engage in certain dating behaviors. Rape awareness behavior: differences in dating behaviors and willingness to volunteer for rape prevention programs. Incidence: incidence of sexual assault perpetration and victimization. 	<ul style="list-style-type: none"> Three audience characteristics were examined: gender, Greek membership, at-risk populations (participants considered high risk for sexual violence victimization or perpetration). Gender: Females: All-female audiences had the greatest improvement in rape attitudes and behavioral intent; there was also improvement in rape attitudes for females in mixed-gender audiences. Males: All-male groups had the greatest improvement in rape-related attitudes; there was also improvement in behavioral intent for men in mixed-gender audiences. Greek membership: Greek members had the largest improvement in rape attitudes and rape-related attitude as a result of educational programs. At risk: These populations had the largest improvement in behavioral intent. 	<ul style="list-style-type: none"> Peer-facilitated programs and professional-facilitated programs produced similar improvements in rape attitudes. Professional presenters were more successful than peers in promoting positive changes and improving rape-related attitudes and behavioral intent. 	<ul style="list-style-type: none"> Intervention length: Longer interventions resulted in more positive change in rape attitudes and rape-related attitudes (with the average program lasting 142 minutes). Semester-long courses and multisession workshops were the most effective program formats. 	<ul style="list-style-type: none"> "Risk reducing" sexual assault education programs produced the most improvement in rape attitudes. Empathy-focused programs produced no significant change in rape attitudes. Programs that focused on gender-role socialization had a significant effect on rape-related attitudes and behavioral intent. Sexual assault education programs that focused on gender-role socialization, provided general rape information, addressed risk-reduction strategies, and discussed rape myths and facts had a more positive impact on attitudes than empathy programs. Programs that focused on one topic were more effective than programs that included multiple topics. Specific combinations of topic areas were not specified; however, the content areas considered were information, empathy, socialization, and risk reduction.
<ul style="list-style-type: none"> Authors: Bachar and Koss Publication year: 2001 Title: From prevalence to prevention: Closing the gap between what we know about rape and what we do Number of research articles/ dissertations reviewed: 15 	<p>The following constructs were included:</p> <p>Rape-supportive attitudes, rape myth acceptance, empathy toward rape victims, knowledge about sexual assault, dating behaviors, and incidence of rape victimization.</p> <p>There were no formal definitions of these constructs provided in the paper.</p>	<p>Two audience characteristics were examined: gender and Greek membership.</p> <p>Gender:</p> <p>Mixed-gender: interventions were both effective and ineffective in reducing rape myth acceptance, reducing rape-supportive attitudes, and increasing knowledge.</p> <p>Males: There was mixed success in improving rape-supportive attitudes, rape myth acceptance, rape empathy, and rape-supportive behaviors.</p> <p>Females: interventions had mixed success in increasing knowledge about sexual assault.</p> <p>Greek membership: A rape education program was more successful in reducing rape-supportive attitudes among non-Greek members than among Greek members.</p>	<ul style="list-style-type: none"> No information available. 	<p>Intervention length: A semester-long mixed-gender rape-prevention program was more effective in changing attitudes than a short human sexuality course.</p> <p>A 60-minute education program was successful in increasing knowledge of sexual assault but did not affect the incidence of sexual victimization.</p>	<ul style="list-style-type: none"> A successful intervention for women that improved their knowledge of sexual assault and their use of precautionary dating behaviors included a five-session rape-risk-reduction program. An additional intervention that was successful in increasing sexual assault knowledge among women included a 1-hour sexual assault education program. Interventions for men that have resulted in mixed success in addressing rape-supportive attitudes, rape myth acceptance, empathy, and rape-supportive behaviors included listening to a victim describe an acquaintance rape. Men who listened to women describing an acquaintance rape had a greater likelihood of participating in rape-supportive behaviors and committing rape. Mixed-gender interventions that were successful in changing rape-supportive attitudes, rape myth acceptance, gender stereotypes, adversarial sexual beliefs, and empathy included an interactive talk show, 2-hour interactive theater drama, intervention play, group lecture, practicum course, information on rape prevalence statistics, and a 60-minute didactic and role-play intervention. Intervention format: An intervention with a video and lecture format was successful in decreasing rape myth acceptance among fraternity males. Interventions that were unsuccessful at changing rape-supportive attitudes and decreasing sexual assault incidence included a risk reduction program and a 1-hour sexual assault education program.

(continued)

Table 2 (continued)

Authors, Publication Year, Title, And Number Of Research Articles Or Dissertations Reviewed	What Program Outcomes Were Examined And How Were They Defined?	How Is The Type Of Audience Related To Program Effectiveness?	How Are Facilitator Characteristics Related To Program Effectiveness?	How Is The Program Format Related To Program Effectiveness?	How Is The Program Content Related To Program Effectiveness?
<ul style="list-style-type: none"> • Authors: Brecklin and Forde • Publication year: 2001 • Title: A meta-analysis of rape education programs • Number of research articles/ dissertations reviewed: 45 	<ul style="list-style-type: none"> • <i>Rape myth acceptance</i>: accepting false, stereotyped, or prejudicial beliefs about rape. • <i>Rape-supportive attitudes</i>: attitudes and beliefs that are often false but justify the occurrence of sexual assault. 	<ul style="list-style-type: none"> • Two audience characteristics were examined: gender and number of participants. • <i>Gender</i>: • <i>Males</i>: Males in all-male groups had reductions in rape-supportive behaviors and attitudes. There was less reduction in rape-supportive attitudes among males in mixed-gender groups. • <i>Females</i>: There were no attitude changes among females in mixed-gender groups. Changes among females in single-gender groups could not be assessed because only one intervention targeted rape-supportive attitudes of women in a single-gender group. • <i>Number of participants</i>: Interventions with more participants were less effective at reducing rape-supportive attitudes and myth acceptance than interventions with fewer participants. 	<ul style="list-style-type: none"> • No information available. 	<p>Intervention length: There was no effect of intervention length on rape attitudes among participants.</p>	<ul style="list-style-type: none"> • The type of intervention did not significantly affect <i>rape-supportive attitude change</i>. Short video-based programs had the same affect on participants' attitudes as long workshops. • The content of mixed- and single-gender groups varied greatly and may account for the differences in attitude changes that were seen among males in all-male groups but not in mixed-gender groups.
<ul style="list-style-type: none"> • Author: Breitenbecher • Publication date: 2000 • Title: Sexual assault on college campuses: Is an ounce of prevention enough? • Number of research articles/ dissertations reviewed: 38 	<ul style="list-style-type: none"> • <i>Attitudes</i>: included rape myth acceptance, attitudes toward rape, adversarial sexual beliefs, responses to rape vignettes, acceptance of IPV, knowledge about sexual assault, attitudes toward women, rape empathy, sex role stereotyping, responses to a rape trial, and sexual conservatism. • <i>Behavioral intentions</i>: Included the likelihood to engage in sexually aggressive behavior; dating behaviors, and responses to videotaped sexual conflict. • <i>Self-reported behaviors</i>: Included dating behaviors and sexual communication. • <i>Directly observed behaviors</i>: • Assessed participants' willingness to volunteer for rape prevention programs and acceptance of fee increases for rape prevention programs. • <i>Self-reported sexual victimization</i>: Incidence of sexual victimization. • <i>Self-reported sexual aggression</i>: Incidence of sexually aggressive behaviors. 	<ul style="list-style-type: none"> • Two audience characteristics were examined: gender and at-risk populations (women were considered high risk for sexual victimization based on depression, alcohol use in dating, sexual liberalism, sexual experience, prior sexual victimization; men were considered high risk for engaging in sexually aggressive behavior based on screening tools, including the Likelihood of Raping Scale and the Attraction to Sexual Aggression scale). • <i>Gender</i>: • <i>Males and females</i>: Single-gender programs resulted in more positive outcomes than mixed-gender programs, particularly among males. • <i>At risk</i>: Programs that focused on these populations (e.g., those who exhibit depression, prior sexual experiences, alcohol use in dating, and prior sexual victimization) resulted in favorable outcomes. 	<ul style="list-style-type: none"> • No information available. 	<p>No information available.</p>	<ul style="list-style-type: none"> • Interventions that have been successful in reducing <i>rape myth acceptance</i> included a rape scenario video, human sexuality course, live and video versions of a rape myth program emphasizing rape as an act of violence, program featuring an account of a man being raped, video of rape survivors, rape/sexual education briefings before exposure to a sexually violent film, acquaintance rape scenario, and a peer facilitator course. • Interventions that have been successful in improving attitudes toward women included a human sexuality course and an acquaintance rape prevention program. • Interventions that have improved <i>behavioral intentions</i> included using local statistics and examples, displaying videotaped scenes that portray couples involved with varying levels of sexual coercion, interactive drama, and didactic/video. • Interventions that have been successful in reducing sexual victimization included videos that portrayed events prior to an acquaintance rape and modeled protective dating behaviors and rape avoidance techniques. • Interventions that have been successful in reducing sexual victimization among women and reducing sexually aggressive behavior among men in high-risk populations included: • <i>High-risk women</i>: five weekly 90-minute sessions that included a pretest regarding dating behaviors and knowledge, education on role of alcohol in sexual assault, role-plays, sexual revictimization, and self-defense training. • <i>High-risk men</i>: victim empathy focused-programs. • Interventions that have been unsuccessful in reducing <i>rape myth acceptance</i> included a talk show, interactive acquaintance rape scenario, discussion group focused on sexual attitudes, and a rape documentary. • Interventions that have been unsuccessful in reducing sexual victimization among women and reducing sexually aggressive behavior among men in high-risk populations included: • <i>High-risk women</i>: 90-minute program that included statistics on revictimization, discussion of the role of past victimization, a video depicting acquaintance rape, and a video modeling protective behaviors. • <i>High-risk men</i>: rape myths and facts group (increased acceptance of IPV). • Negative effects occurred from interventions that included an audiotape of a female survivor and a lecture/presentation by a professional facilitator.

(continued)

Table 2 (continued)

Authors, Publication Year, Title, and Number Of Research Articles Or Dissertations Reviewed	What Program Outcomes Were Examined And How Were They Defined?	How Is The Type Of Audience Related To Program Effectiveness?	How Are Facilitator Characteristics Related To Program Effectiveness?	How Is The Program Format Related To Program Effectiveness?	How Is The Program Content Related To Program Effectiveness?
<ul style="list-style-type: none"> • Author: Flores and Hartlaub • Publication date: 1998 • Title: Reducing rape myth acceptance in male college students: A meta-analysis of intervention studies • Number of research articles/ dissertations reviewed: 11 	<ul style="list-style-type: none"> • Rape myth acceptance: examples of myths include the beliefs that a woman can defend herself against rape, women who say "No" to sex really mean "Yes" and women who are raped "get what they deserve." • Attitudes toward rape: there was no definition provided for this construct. 	<ul style="list-style-type: none"> • No information available. 	<ul style="list-style-type: none"> • A peer-led workshop resulted in favorable outcomes. Peers were able to speak to participants in a "very familiar perspective" and allowed participants to "relate more easily." 	<p>Intervention length: There was no relationship between length and effectiveness of an intervention. However, both short (<30 minutes) and long interventions were found to be effective.</p> <p>Short interventions engage participants and "maintain their interest" because of the brevity.</p> <p>Long interventions with a small number of participants and considerable audience participation were effective in reducing rape myth acceptance.</p>	<ul style="list-style-type: none"> • Overall, the findings indicated that no particular type of intervention was superior to another. • Interventions that were successful at changing student beliefs included a human sexuality course that had an intensive format, long duration, and self-selection of interested students; and short videotapes or brochures. • Successful and cost-effective interventions that created long-term effects in rape myth acceptance included workshops and videos.
<ul style="list-style-type: none"> • Authors: Lonsway • Publication date: 1996 • Title: Preventing acquaintance rape through education: What do we know? • Number of research articles/ dissertations reviewed: 25 	<ul style="list-style-type: none"> • Programs that were reviewed in this article measured rape awareness, rape myth acceptance, attitude change, behavioral intentions, and rates of sexual victimization. There were no definitions provided in the paper about these constructs. 	<ul style="list-style-type: none"> • One audience characteristic was examined: gender. • Females: Programs targeting female audiences have been effective at increasing females' awareness of rape and reducing their vulnerability. • Males: All-male programs were successful in changing attitudes immediately after the intervention (one study found that attitudes changed in an "undesirable direction"). • Single-gender interventions are more appropriate and can be tailored to different needs of each gender since men are often rape perpetrators and women are often rape survivors. • Mixed-gender programs have been effective in changing rape-supportive attitudes. 	<ul style="list-style-type: none"> • Successful educational interventions included multiple instructors that had expertise, status, likeability, attractiveness, and trustworthiness. 	<p>Intervention length: Interventions are most effective when they are repeated and of longer duration to allow more time to "meaningfully process the material . . . to establish trusting relationships among program participants."</p> <p>Intervention format: Lecture presentations have been unsuccessful at changing attitudes about rape, while participant interaction has been most successful.</p> <p>Personalized programs for women increased intentions to avoid risk-taking behaviors.</p> <p>"Confrontational" formats were unsuccessful in changing rape attitudes.</p>	<ul style="list-style-type: none"> • Educational interventions that have been successful in reducing rape-supportive attitudes have focused on misinformation of rape. In particular, successful programs for women included workshops; successful mixed-gender programs included a videotaped workshop in a classroom; additional successful programs have included sex education courses. • Educational interventions that have been successful in changing rape attitudes have focused on rape mythology and increasing women's empathy for rape victimization. In addition, 35-minute workshops focused on consent scenarios were effective in improving rape attitudes, particularly among men. • Interventions that have been successful in improving rape awareness have focused on acquaintance rape prevention through myth/fact worksheets, video presentations, and post-video discussion (for women) and workshops (for mixed-gender audiences). • Programs that were successful in decreasing rape myth acceptance among mixed-gender participants included a human sexuality course and exposure with an acquaintance who was a rape survivor. • Successful rape education programs included participant interaction through group discussion, role-playing, and interactive dramatic performance. • Programs that focused on rape deterrence strategies were effective at protecting individual women but ineffective at reducing the "vulnerability of woman as a group." • Unsuccessful rape education programs were focused on teaching women confrontational approaches. • Unsuccessful programs among mixed gender audiences included 45-minute lectures on rape awareness prevention and date rape prevention.
<ul style="list-style-type: none"> • Authors: Schewe and O'Donohue • Publication date: 1993 • Title: Rape prevention: Methodological problems and new directions • Number of research articles/ dissertations reviewed: It is unclear how many studies were critically reviewed. However, there are five that are specifically mentioned in this article 	<ul style="list-style-type: none"> • Attitudes: There were no formal definitions provided in the article. 	<ul style="list-style-type: none"> • One audience characteristic was examined: gender. • Programs targeted toward mixed-gender audiences may not be the most effective (and can be dangerous). 	<ul style="list-style-type: none"> • No information available. 	<p>No information available.</p>	<ul style="list-style-type: none"> • An intervention that was successful in changing rape attitudes included a 2-hour workshop with a 20-minute lecture on rape myths and facts, 40 minutes of empathy exercises, 40 minutes of a "guided fantasy concerning acquaintance rape," and 20 minutes of discussion. • Interventions that were unsuccessful in changing rape attitudes of participants included a lecture on legal definitions of rape, descriptions of rapists, rape trauma syndrome, prevention strategies, and assistance following rape; a lecture given to an introductory psychology class; a facilitated group discussion following a videotape of sexually themed television advertising and clips depicting dating behaviors.

(continued)

Table 2 (continued)

Authors, Publication Year, Title, and Number Of Research Articles Or Dissertations Reviewed	What Program Outcomes Were Examined And How Were They Defined?	How Is The Type Of Audience Related To Program Effectiveness?	How Are Facilitator Characteristics Related To Program Effectiveness?	How Is The Program Format Related To Program Effectiveness?	How Is The Program Content Related To Program Effectiveness?
<ul style="list-style-type: none"> • Authors: Yeater and O'Donohue • Publication date: 1999 • Title: Sexual assault prevention programs: current issues, future directions, and the potential efficacy of interventions with women • Number of research articles/dissertations reviewed: It is unclear how many studies were critically reviewed in this paper. However, 23 studies were specifically mentioned in the article. 	<ul style="list-style-type: none"> • Programs that were reviewed in this article measured intent to engage in risky behaviors, rates of sexual assault, rape myth acceptance, rape attitudes, rape empathy, knowledge, and dating behaviors. There were no definitions provided in the article about these constructs. 	<ul style="list-style-type: none"> • Three audience characteristics were examined: gender, Greek membership, and high-risk populations (men who reported a greater likelihood of participating in sexually abusive behavior). • Gender: • Females: All-female programs have been successful in reducing fear, increasing confidence with self-defense strategies, decreasing adherence to rape myths, decreasing intent to engage in risky behaviors, decreasing rates of sexual assault, increasing knowledge, and altering dating behaviors. • Males: All-male programs have been successful in changing attitudes among program participants, reducing rape myth acceptance, adversarial sexual beliefs, gender-role stereotyping, and acceptance of IPV. Unsuccessful programs have led to increased likelihood of sexual aggression and higher scores of rape myth acceptance. • Single-gender programs may be more effective than mixed-gender programs. • Greek membership: Greeks who participated in a mixed-gender program adhered to less rape-supportive attitudes than Greek members who did not participate in the program. • High risk: Two interventions targeted toward high-risk males emphasizing victim empathy and rape beliefs resulted in improved empathy ratings but did not change inaccurate beliefs about rape. 	<ul style="list-style-type: none"> • No information available. 	<ul style="list-style-type: none"> • Intervention length: Mixed-gender programs should be longer to have an adequate amount of time to influence both male and female behaviors. 	<ul style="list-style-type: none"> • Interventions that have been successful for all-female participants have included workshops to discuss rape prevention, confrontation training, and self-defense. Programs that have been successful in reducing intent to engage in risky behaviors have included personalized programs (information, discussion, and role-playing). Videotaped acquaintance rape scenarios and possible response strategies were effective in decreasing the rates of sexual assault among women without prior sexual victimization, increasing sexual assault knowledge, and changing dating behaviors. • Self-defense strategies may be effective for reducing the incidence of sexual assault but may also produce iatrogenic effects. For example, women may experience fear after completing a workshop that may affect their daily lives. Also, women may become overly confident that may cause them to situate themselves in more dangerous environments. • Interventions that have been successful in changing rape attitudes for all-male participants have included 2-hour workshops (with rape myths and facts, exercises to increase empathy, and discussion); program with segments including victim empathy, rape myths, and outcome expectancies. Exposure to films that discussed myths and parts of movies that were sexually violent improved rape myth acceptance. • An intervention that was unsuccessful for all-male participants and increased their likelihood of sexual aggression included a 1.5-hour workshop on victim empathy and rape myths that included an audiotape of a female victim and a male victim describing their rape experiences. • Interventions that have been successful in decreasing rape myth acceptance and rape tolerance among mixed-gender audiences have included: a human sexuality education course; student discussion about their personal experience with sexual assault survivors; videotaped workshop, 35-minute workshop with a "consent scenario" and discussion on how to prevent sexual assault in dating situations; 50-minute classroom presentation with lecture, video presentations, and victim account of a date rape situation; 15-min performance of "Big Girl Don't Cry." • Interventions that were unsuccessful in changing rape attitudes among mixed-gender audiences included a 45-minute lecture on the prevention and prevalence of sexual assault; interactive theater; and a film of media clips with a dating scene and post-film discussion.

Program content. Several characteristics of the program content (i.e., topics and strategies) were examined in relation to specific outcomes in the literature reviews (Table 2). Examples of the program topics included risk-reduction strategies, gender-role socialization, sexual assault education, human sexuality, rape myths, rape deterrence, rape awareness, and self-defense.

Overall, the literature reviews found that all of these program topics are successful at improving at least one of the following outcomes: rape attitudes, behavioral intentions, sexual assault knowledge, rape myth acceptance, rape tolerance, sexual victimization, and intent to engage in risky behaviors. However, one literature review (Bachar & Koss, 2001) found that programs that focus on risk reduction and/or sexual assault education are unsuccessful at changing rape-supportive attitudes and reducing the incidence of sexual assault among college students. In addition, the success of these program topics at improving the aforementioned outcomes varied depending on the strategies used to present the topics. For example, videos, films, presentations by rape survivors, interactive dramas, role-playing, workshops, and worksheets/brochures are successful at improving at least one of the following outcomes: rape attitudes, rape awareness, behavioral intentions, sexual assault knowledge, rape myth acceptance, empathy, sexual beliefs, and sexual victimization (Bachar & Koss, 2001; Breitenbecher, 2000; Lonsway, 1996; Schewe & O'Donohue, 1993a; Yeater & O'Donohue, 1999). However, a few literature reviews reported that films and lectures are not successful at changing rape attitudes (Lonsway, 1996; Schewe & O'Donohue, 1993a; Yeater & O'Donohue, 1999); and presentations by rape survivors do not change rape-supportive behaviors among men (Bachar & Koss, 2001).

Recommendations Concerning Future Program Development/Implementation

Table 3 shows that the literature reviews did not always provide similar recommendations concerning the characteristics of program audiences, facilitators, formats, program content, and other program aspects to help guide those who will be designing and/or implementing future college- or university-based sexual violence prevention programs.

Six of the literature reviews offered audience-related recommendations based on their summaries of intervention effectiveness, with six advising that schools provide programs for single-gender audiences and only one advising that schools provide programs for mixed-gender audiences (Anderson & Whiston, 2005; Bachar & Koss, 2001; Brecklin & Forde, 2001; Lonsway, 1996; Schewe & O'Donohue, 1993a; Yeater & O'Donohue, 1999). Two literature reviews further suggest that more sexual violence prevention programs should be directed at males (Bachar & Koss, 2001; Schewe & O'Donohue, 1993a).

Only one literature review provided a facilitator-related recommendation, advocating for the use of professional facilitators rather than peer facilitators in light of their conclusion

that professional-led programs were more likely to be effective (Anderson & Whiston, 2005).

Four literature reviews offered program format-related recommendations (Anderson & Whiston, 2005; Brecklin & Forde, 2001; Flores & Hartlaub, 1998; Yeater & O'Donohue, 1999). Two literature reviews made recommendations concerning the program duration, with one advocating for longer programs (Anderson & Whiston, 2005) and another advocating for shorter programs (i.e., number of sessions and number of minutes per session; Brecklin & Forde, 2001). One of these literature reviews and two other reviews made format-related recommendations concerning the mode of program delivery (Brecklin & Forde, 2001; Flores & Hartlaub, 1998; Yeater & O'Donohue, 1999). Specifically, one review suggested the use of mass media and public service announcements for changing rape-supportive attitudes (Brecklin & Forde, 2001) while another advocated for the use of videos, classroom courses, and workshops for improving rape myth knowledge and acceptance over a longer period of time (Flores & Hartlaub, 1998). It was also noted that workshops and videos may be more cost effective and less difficult to implement than classroom courses. The third review suggested that computer-based programs are cost effective and may be more appealing to participants than other programs (Yeater & O'Donohue, 1999).

Seven of the literature reviews provided content-related recommendations, with each offering a different suggestion (Anderson & Whiston, 2005; Bachar & Koss, 2001; Brecklin & Forde, 2001; Breitenbecher, 2000; Lonsway, 1996; Schewe & O'Donohue, 1993a; Yeater & O'Donohue, 1999). Examples of suggested content for effective programs include gender-role socialization, risk education, sexual assault myths, rape-supportive attitudes, rape avoidance, men's motivation to rape, victim empathy, dating communication, controlled drinking, and relapse prevention. Specifically, four reviews suggested that programs targeting men should address men's motivation to rape and victim empathy in order to help change their rape-supportive attitudes (Bachar & Koss, 2001; Brecklin & Forde, 2001; Lonsway, 1996; Schewe & O'Donohue, 1993a). Two reviews advocated for programs targeting women that address risk education/reduction (i.e., controlled drinking and relapse prevention, particularly among previously victimized women), rape avoidance, and effective communication with dating partners to decrease the risk of sexual victimization and/or revictimization (Brecklin & Forde, 2001; Yeater & O'Donohue, 1999).

Three of the literature reviews provided other recommendations concerning how to structure sexual violence prevention programs to maximize effectiveness (Bachar & Koss, 2001; Lonsway, 1996; Yeater & O'Donohue, 1999). Two reviews offered specific recommendations for restructuring prevention programs. Specifically, one review suggested that rape prevention programs should be combined with drug and alcohol programs (Bachar & Koss, 2001). The other review recommended that prevention programs should intervene at various times within the students' tenure at college in order to modify behaviors (Yeater & O'Donohue, 1999). The third review suggested

Table 3. Recommendations of the Literature Reviews of the Effectiveness of College- or University-Based Sexual Violence Prevention Programs

Authors	Audience-Related Recommendations	Facilitator-Related Recommendations	Program Format-Related Recommendations	Content-Related Recommendations	Other Program Structure-Related Recommendations
Authors: Anderson and Whiston	<ul style="list-style-type: none"> Although both mixed- and single-gender programs are effective, colleges should choose an audience based on the goals and topics of the presentation. 	<ul style="list-style-type: none"> Rape education interventions for college students that are presented by professionals are more effective than interventions conducted by peers. 	<ul style="list-style-type: none"> The format of the program should be varied, although no particular strategy is effective for all individuals. Interventions that are longer (i.e., number of sessions and minutes per session) with varied formats that address multiple content areas are most effective for rape education. 	<ul style="list-style-type: none"> Effective sexual assault education interventions include content that addresses risk-reduction, gender-role socialization, provision of information and discussion of myths and facts about sexual assault. 	<ul style="list-style-type: none"> No additional recommendations were provided.
Authors: Bachar and Koss	<ul style="list-style-type: none"> Mixed-gender programs have the tendency to promote victim blaming and minimize the focus on particular genders as perpetrators. As a result, these programs often do not result in the desired effect. Therefore, interventions should eliminate mixed-sex audiences. More sexual violence interventions should be directed at men. Programs for women should utilize different curricula and should reflect "current theory." Efforts should incorporate rape-resistance training. 	No recommendations.	No recommendations.	<ul style="list-style-type: none"> Interventions for men should incorporate content informed by theories that predict rape behavior. Programs should focus on potential perpetrators of violence and address the primary cause of rape, "men's motivation to rape." 	<ul style="list-style-type: none"> Drug and alcohol programs should be linked with rape-prevention education. Since studies indicate that current preventive interventions are largely ineffective, approaches for rape-prevention education should be changed and should not include intervention content that has not worked in the past.
Authors: Brecklin and Forde	<ul style="list-style-type: none"> More programs directed at female audiences are needed. Interventions may be more effective at changing women's attitudes in single-gender settings. Rape prevention programs are more effective in reducing rape-supportive attitudes among men when there are single-gender audiences. 	No recommendations.	<ul style="list-style-type: none"> Programs that have more frequent presentations (compared to one long presentation) may be more effective at reducing rape-supportive attitudes. Programs divided into short segments may be more effective than programs that are long and have only one segment. Mass media and public service announcements may be effective in changing rape-supportive attitudes. 	<ul style="list-style-type: none"> Programs for men should target changing rape supportive attitudes. Programs targeting women should emphasize situational risk education and rape avoidance techniques. 	No recommendations.
Author: Breitenbecher	No recommendations.	No recommendations.	No recommendations.	<ul style="list-style-type: none"> Given the lack of programs that included sexual victimization as an outcome, it is unclear if programs are effective for reducing the incidence of sexual assault victimization. Therefore, interventions aimed at reducing the incidence of self-reported sexual victimization may not be effective. Program content should not focus on changes in rape-supportive attitudes with the assumption that there will be reductions in sexually aggressive behavior. This link between attitudes and behaviors has not been empirically established. 	No recommendations.
Author: Flores and Hartlaub	No recommendations.	No recommendations.	<ul style="list-style-type: none"> Human sexuality courses, workshops, and videos may be effective types of interventions that should have long-term effects. Videos are effective tools that can change rape myth acceptance and should be more readily available on college campuses. 	No recommendations.	No recommendations.

(continued)

Table 3 (continued)

Authors	Audience-Related Recommendations	Facilitator-Related Recommendations	Program Format-Related Recommendations	Content-Related Recommendations	Other Program Structure-Related Recommendations
Authors: Lonsway	<ul style="list-style-type: none"> • Successful interventions for the general population may not work for individuals with a history of victimization or perpetration. • Future efforts should focus on younger age groups to intervene prior to "patterns of sexual behavior." • Single-gender programs may be more appropriate than mixed-gender programs for rape education. 	No recommendations.	No recommendations.	<ul style="list-style-type: none"> • Rape prevention should target potential perpetrators and should address men's motivation to rape. • More research is needed to determine if interventions that address rape mythology, sex education, empathy induction, confrontational approaches, and previous sexual victimization/perpetration are effective. 	<ul style="list-style-type: none"> • Effectiveness of materials, intervention strategies, techniques, facilitators, time length, context, and communication style may differ by gender within rape education programs. • Proper experimentation must be conducted with rape prevention programs and various outcomes should be compared.
Authors: Schewe and O'Donohue	<ul style="list-style-type: none"> • Mixed-gender programs may not be the most effective since there are differences in the information that men and women need for rape prevention. Therefore, more programs should be developed for men. Mixed-gender programs that are implemented should focus on presenting information that will not have iatrogenic effects. • An effective primary prevention intervention would include identifying men with deviant patterns of arousal and modifying these patterns. 	No recommendations.	No recommendations.	<ul style="list-style-type: none"> • Primary prevention should be directed toward "a) refusing the belief that to be powerful a man one must be sexually dominant and controlling; b) teaching men to find prosocial sources of satisfaction of power motives; c) reducing men's anger at women; d) reducing men's desire to inflict pain on others." • Effective rape prevention programs should focus on the development of a curriculum to enhance social skills. • Programs targeting men should focus on understanding the victim's experiences and improving victim empathy by increasing their awareness of the pain that rape inflicts upon women and children. • A useful rape prevention strategy is to help participants identify and avoid high risk situations. 	No recommendations.
Authors: Yeater and O'Donohue	<ul style="list-style-type: none"> • Sexual assault prevention programs that use educational approaches for women may be effective for reducing the prevalence of sexual assault on college campuses. • Female-targeted interventions should be refined to be more efficacious in reducing rates of sexual assault for women who report a prior history of sexual victimization. • Male and female programs can be tailored in order to complement one another ("two-pronged approach" -separate male and female programs). • Single-gender programs may be able to focus more effectively on the particular constructs that promote behavioral change among the target audience. These constructs are likely to differ between men and women. • Programs targeted toward women with a prior history of sexual victimization may be more effective as one-on-one interventions instead of group interventions. 	No recommendations.	<ul style="list-style-type: none"> • Computer-based interventions may be effective. In particular, they are cost-effective, engaging, and educational. 	<ul style="list-style-type: none"> • Women should be taught to engage in hypothesis generating and testing approaches with potential dating partners. • Women should be instructed in the use of clear and assertive communication in dating situations in order to decrease their risk of sexual assault. • Possible intervention strategies may focus on controlled drinking, relapse prevention, or providing accurate information about sexual assault. 	<p>Prevention programs should develop and implement strategies that intervene at various points in the causal pathway that produce proactive and risk-reducing behaviors.</p> <p>Sexual assault prevention programs among women with a prior history of sexual assault should target high-risk behaviors (e.g., substance use and sexual behavior) in order to decrease the risk of future sexual revictimization. These risk factors increase a woman's risk of becoming sexually assaulted.</p>

that the effectiveness of educational rape prevention programs and their characteristics and attributes will vary depending on the gender of the participants and should be considered when structuring these programs on college or university campuses (Lonsway, 1996).

Discussion

Eight literature review articles published between 1993 and 2005 in peer-reviewed journals examined research articles and dissertations that evaluated the effectiveness of college- or university-based sexual violence prevention programs in the United States. The findings from our systematic review of these eight articles shows that college and university administrators should consider the evidence about program audience, facilitator(s), format, and content when choosing which sexual assault prevention programs to develop and/or implement on their campuses. It is evident from the literature reviews that there are several program components and strategies that should be considered. First, administrators should consider interventions targeted toward single-gender audiences. These programs are effective at improving rape attitudes, behavioral intent, rape awareness, rape knowledge, rape empathy, and rape myth acceptance depending on if there is an all-female or all-male audience. Similarly, programs focused on sorority or fraternity members can be effective for improving rape attitudes. Second, professional-facilitated programs should be considered for improving rape-related attitudes and behavioral intentions among students and peer-facilitated programs should be considered for reducing rape myth acceptance. Third, administrators should develop programs that have multiple sessions with long session lengths; these longer programs, particularly those with a lecture-based format, are effective at improving rape attitudes and rape myth acceptance. Fourth, depending on the desired outcomes, effective programs should focus on risk reduction strategies, gender-role socialization, sexual assault education, human sexuality, rape myths, rape deterrence, rape awareness, and/or self-defense. Effective strategies used to present these topics include lectures, rape scenario videos, films, presentations by rape survivors, interactive dramas, role-playing, workshops, and worksheets/brochures.

In addition to the program components and strategies that are considered important for effective sexual assault prevention programs, there are some that may not be as effective depending on the desired outcome. For example, while mixed-gender programs can be effective at improving rape attitudes and behavioral intent and reducing rape myth acceptance, they are often less effective than single-gender programs. In addition, although films and lectures may be effective at reducing rape myth acceptance, they may be ineffective at changing rape attitudes. Similarly, presentations by rape survivors may be effective at reducing rape myth acceptance, but they may not be as effective at changing rape-supportive behaviors, particularly among men. Finally, although programs that focus on risk reduction and/or sexual assault education may be successful at improving sexual assault knowledge, they may be

unsuccessful at changing rape-supportive attitudes and reducing the incidence of sexual assault among college students. Thus, it is evident that different types of interventions may be needed to address different types of outcomes. More research is needed to determine why specific program formats and modes of delivery work better in certain contexts than others.

Overall, the findings from these review articles are consistent in their conclusions regarding the impact of program characteristics on the effectiveness of sexual assault prevention programs, particularly for program audiences and facilitators. However, there were mixed findings in the conclusions regarding program format and program content. For example, among the six review articles that examined program duration, only one suggested that shorter sessions may be effective. In addition, conclusions regarding program content (i.e., topics and strategies) varied between the review articles depending on the outcomes assessed. These differences may be due to the fact that the review articles examined different research articles and dissertations and the authors chose to focus on different aspects of these articles. These reviews also varied in regard to their approaches for reviewing and analyzing the research articles and dissertations that may have implications for differences in their findings.

In our efforts to find all relevant reviews of research on college- and university-based sexual violence prevention programs, we attempted to discover all pertinent studies, regardless of discipline, including psychology, social work, sociology, and health. Although an extensive search was conducted to locate published articles that met the inclusion criteria for our review, it is possible that we have overlooked some relevant publications. In addition, the most recent literature review was published in 2005, while the other seven reviews were published between 1993 and 2001. Therefore, several of the research articles/dissertations included in the literature reviews are more than a decade old, which may have implications for the applicability of the sexual assault prevention programs today. For example, the popularity of social media presents new avenues and opportunities for prevention programming that would not have been conceivable when the reviewed research was conducted.

We have also focused solely on literature reviews for this research effort. As a consequence of this focus, our research does not include some new and promising sexual assault prevention practices, which were not included in the review articles for this research. For example, one such promising approach is the community-level, bystander prevention intervention approach, which was developed by Banyard and her colleagues (e.g., Banyard, Plante, & Moynihan, 2004), which seeks to engage university students as bystanders in prosocial behaviors to act to prevent sexual violence on their campus.

Thus, a recommended next step for violence prevention researchers is to determine the efficacy of other promising sexual assault prevention approaches (i.e., bystander prevention intervention) when delivered in conjunction with the recommended prevention practices determined here. Further, we also

recommend that violence prevention researchers work to refine some of the broad prevention approaches and strategies recommended here. For example, the findings from this research strongly support the recommendation that prevention programs have multiple sessions. Researchers should determine specifically how many sessions are needed to effect attitude and behavioral change among college and university students. Given that the resources necessary to carry out multisession prevention programs could be considerable for colleges and universities, researchers should work to determine what minimum amounts of programs can lead to meaningful change. That is, if a three-session prevention program can show statistical and meaningful change, then a six-session program may not be necessary.

Moreover, we encourage violence researchers to begin to investigate these successful prevention programming strategies with subgroups of students. Specifically, women with histories of prior victimization do not seem to benefit from universal prevention and intervention approaches (Macy, 2007). Thus, future research efforts should target this vulnerable group. We also encourage violence prevention researchers to focus more on behavioral outcomes in future efforts. Although behavioral outcomes, including sexual victimization and perpetration, were investigated in these reviews, prevention research in this area tends to focus mainly on changes in attitude and behavioral intention. Changes in attitude and intention are certainly important outcomes. Nonetheless, we will never have full confidence in our prevention programs until they are firmly linked to reductions in violence perpetration and victimization.

Finally, in regard to the interpretation and organization of our study results, we found it difficult to distinguish between program format and mode of delivery from program content. Many of the recommendations for content are specific to the program delivery. Future research should seek to better understand the effectiveness of these elements of prevention programs both independently and in conjunction with each other.

Despite these potential limitations and needs for future research efforts, our review suggests that there are robust empirical findings about what program components and characteristics work most effectively to prevent sexual violence at colleges and universities. Thus, our research can help inform the development and implementation of evidence-based sexual assault prevention programming at U.S. colleges and universities. Specifically and in summary, we encourage college/university leaders to consider implementing professional-facilitated programs targeted at single-gender audiences at various times throughout students' tenure at their colleges and universities. These programs should be workshop-based or offered as classroom courses with frequent and long sessions. Program content should include gender-role socialization, risk education, rape myths, rape attitudes, rape avoidance, men's motivation to rape, victim empathy, dating communication, controlled drinking, and/or relapse prevention. Moreover, programs should be supplemented with campus-wide mass media and public service announcements. College and university leaders should also

consider combining these programs with drug and alcohol prevention programs.

Guided by such evidence-based prevention practices and strategies, U.S. colleges and universities could enhance their effectiveness in preventing sexual violence among the students on their campuses. Further, the findings from this research could help inform policies regarding sexual assault prevention programming. Policy makers may wish to consider rewarding or recognizing campuses that adopt these evidence-based practices to encourage colleges and universities to enact the most effective sexual assault prevention programs.

Implications for Practice, Policy, and Research

Practice

- The effectiveness of college- or university-based sexual violence prevention programs varies depending on the type of audience, facilitator, format, and program content. Further, this research shows that there are robust empirical findings about what sexual assault prevention program components and characteristics work most effectively for college and university students.
- Effective sexual assault prevention programs are professional-facilitated, targeted at single-gender audiences, and offered at various times throughout students' tenure at college.
- Effective sexual assault prevention programs are workshop-based or offered as classroom courses with frequent and long sessions.
- Sexual assault prevention program content should include gender-role socialization, risk education, rape myths, rape attitudes, rape avoidance, men's motivation to rape, victim empathy, dating communication, controlled drinking, and/or relapse prevention.
- Workshop and classroom-based sexual assault prevention programs should be supplemented with campus-wide mass media and public service announcements.

Policy

- Leaders and administrators at U.S. colleges and universities could enhance their effectiveness in preventing sexual violence among the students on their campuses by implementing the evidence-based sexual assault prevention strategies described above.
- Policy makers may wish to consider rewarding or recognizing campuses that adopt evidence-based prevention practices to encourage colleges and universities to enact the most effective sexual assault prevention programs.

Research

- We encourage violence prevention researchers to determine the efficacy of other promising sexual assault prevention approaches (e.g., bystander prevention intervention) when delivered in conjunction with the recommended prevention practices determined here.

- We also encourage violence prevention researchers to begin to investigate these successful prevention programming strategies with subgroups of vulnerable students, specifically women with histories of prior victimization.
- Finally, we encourage violence prevention researchers to focus more on behavioral outcomes in future efforts.

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Bios

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Sandra L. Martin, PhD, is an epidemiologist who currently serves as the Associate Dean for Research in the Gillings School of Global Public Health and as a Professor and Associate Chair for Research within the Department of Maternal and Child Health at the University of North Carolina at Chapel Hill. Her research, teaching, and public health service focus on the health of women and children, with particular attention paid to the role that physical and sexual violence plays in their lives. Much of her research has examined violence during pregnancy and the postpartum period, with investigations concerning the extent of such violence, risky health behaviors (such as substance use) associated with this violence, and screening for violence within health care settings. In addition, she has been involved in a variety of other studies concerning violence in the lives of women, such as adolescent dating violence, violence in military families, and the development of assessment and evaluation instruments that may be used in domestic violence and sexual assault agencies. Her research projects have been set both within the United States and abroad.