



# SEXUAL ASSAULT PREVENTION PROGRAMS: CURRENT ISSUES, FUTURE DIRECTIONS, AND THE POTENTIAL EFFICACY OF INTERVENTIONS WITH WOMEN

*Elizabeth A. Yeater and William O'Donohue*

*University of Nevada, Reno*

**ABSTRACT.** *Current problems facing the primary prevention of sexual assault are reviewed. Effective sexual assault prevention programs for both males and females have been slow to develop due to the fact that the etiologies of sexual assault have not been identified. Although dissemination of prevention programs has become increasingly popular in recent years, few programs have evaluated the extent to which the constructs identified in the interventions are effective at decreasing rates of sexual assault. This article discusses previous studies in sexual assault prevention programs, methodological and conceptual problems that currently exist in the field, pragmatic difficulties regarding program implementation and evaluation, and recommendations for future research with an emphasis on interventions with female participants. © 1999 Elsevier Science Ltd*

STUDIES HAVE DEMONSTRATED THAT sexual assault is a ubiquitous and serious problem in our society (Kilpatrick & Amick, 1985; Russell, 1984). Epidemiological studies conducted in community settings have provided estimates of the prevalence of sexual assault that vary from 5% to 22% (Kilpatrick & Amick, 1985; Russell, 1984; Sorenson, Stein, Siegel, Golding, & Burnam, 1987). Research further indicates that prevalence of sexual assault among college women is approximately three times greater than prevalence rates of sexual victimization among women who are members of the general population (Koss, Gidycz, & Wisniewski, 1987; Muehlenhard & Linton, 1987). Finally, there is evidence that approximately 15–25% or 1 out of 4 college women will have been a victim of sexual assault by the time she begins her college career (Koss et al., 1987).

In addition to an increased risk for sexual assault, college females are more likely to be assaulted by someone they know and less likely to successfully avoid these assaults when they are acquainted with the perpetrator (Rozee, Bateman, & Gilmore, 1991; Russell, 1984). Date or acquaintance rape accounts for 80–90% of sexual assaults, and stranger rape occurs 10–20% of the time (Koss, Dinero, Siebel, & Cox, 1988; Russell,

---

Correspondence should be addressed to Elizabeth A. Yeater, Department of Psychology, Mail-stop 298, Reno, NV 89557. E-mail: eyeater@scs.unr.edu

1984). In contrast to the myth that sexual assault typically occurs only on first dates, data suggest that 31% of rapes are perpetrated by steady dating partners (Koss et al., 1988). Furthermore, research suggests that 1 out of 13 men report having sexually assaulted a woman at some point in their lives, and that approximately 35% of college men would sexually assault a woman if they knew that they would not get caught for the offense (Malamuth, Sockloskie, Koss, & Tananka, 1991). Thus, although we might like to believe that sexual assault is rare, and that only a small percentage of men would be likely to commit such an abusive act, the data suggest otherwise.

Although it is difficult to assess what the long-term effects of a sexual assault experience may be, victims often report experiencing, among other symptoms, shock, humiliation, anxiety, depression, substance abuse problems, suicidal ideation, loss of self-esteem, social isolation, difficulties with anger, distrust of others, fear of AIDS, guilt, and sexual dysfunction (Kilpatrick, Veronen, & Resick, 1982; Koss et al., 1988). In addition, there is some evidence to suggest that women who are sexually assaulted by acquaintances experience greater levels of general psychological distress than women who are assaulted by strangers (McCahill, Meyer, & Fischman, 1979).

One of the strategies employed to decrease prevalence of sexual assault in college populations has been development and implementation of sexual assault prevention programs (Parrot & Bechhofer, 1991). The plethora of existing programs suggests that it is believed by researchers and educators alike that sexual victimization is a preventable phenomenon, or, at the very least, that rates of sexual assault can be reduced. However, despite proliferation of such programs, few sexual assault prevention programs have been empirically evaluated. Those programs evaluated have often been done so in a manner which does not eliminate problematic assumptions about mechanisms involved in change (Schewe & O'Donohue, 1993a).

This article will explore those issues specific to prevention of sexual assault that may improve current and future programs implemented on college campuses. More specifically, this article will cover (a) a critical review of previous studies in sexual assault prevention, (b) methodological and conceptual problems with current research in sexual assault prevention, (c) pragmatic difficulties with program implementation and evaluation, and (d) suggestions for future research with an emphasis on interventions with female participants.

## REVIEW OF PREVIOUS STUDIES IN SEXUAL ASSAULT PREVENTION

The majority of sexual assault prevention programs focus primarily on changing attitudes about sexual assault and rarely assess effectiveness of these programs in reducing actual prevalence of sexual assault (Lonsway & Fitzgerald, 1995). In addition, programs have traditionally been composed of mixed-gender audiences and have typically focused on information regarding rape myths and sex role stereotyping, videos depicting sexual assault scenarios, and group discussions about rape (Parrot & Bechhofer, 1991). A review of studies that have attempted to evaluate primary prevention programs will be included in the following paragraphs.

### *Educational Approaches to Primary Prevention With Females*

To date, three studies have been conducted in which the intervention was aimed exclusively at women. The first was a study by Women Against Rape (1980). This inter-

vention involved having urban women participate in workshops that discussed “the politics of rape and feminist prevention strategies, confrontation training, and self-defense” (p. S238). The objectives of the program were (a) to empower women both individually and societally, (b) to change women’s beliefs regarding their vulnerability for experiencing sexual assault, and (c) to increase community responsibility for decreasing risk. At both the 3- and 6-month follow-up periods, the participants reported less adherence to rape myths, greater belief in “societal change prevention tactics,” and an increased understanding of the consequences of living in a misogynistic society. In addition, participants reported reduced fear, increased willingness to identify their assailants, and greater confidence in using self-defense tactics. The control group did not evidence these changes at follow-up.

Interpretation of the results of this study is problematic for the following reasons: (a) outcomes could be due strictly to demand characteristics, (b) no data exist which suggest that the intervention was effective in decreasing rates of sexual assault, (c) the sample may have included women who at pretest were at low risk for experiencing a sexual assault; therefore, it is difficult to assess whether the intervention would be effective for women who are at higher risk (i.e., high-risk sexual behavior, alcohol/drug abuse, etc.), and (d) changes in attitude are not always indicative of changes in behavior.

Gray, Lesser, Quinn, and Bounds (1990) attempted to reduce risk taking behavior in women by “personalizing” their program. The authors hypothesized that their sexual assault prevention program would be more efficacious if it was idiographically, rather than nomothetically, based. The program was based upon a Health Belief Model, which suggests that people take precautions and attempt to reduce their risk if they believe the threat to be serious (Becker & Maiman, 1975). This program included information, discussion, and role-playing, and was minimally “personalized” for the participants by including local examples and statistics on sexual assault. The authors discovered that subjects in the personalized condition demonstrated significantly lower scores on dependent measures which assessed intent to engage in risky behavior.

Interpretation of the results of this study is problematic for the following reasons: (a) significant results could have been due to the demand characteristics of the study, (b) the steps involved in “personalizing” the prevention program for the participants were not adequately specified or theoretically driven. In addition, it is questionable whether the program was actually “personalized” for all participants (i.e., identified and changed the environmental contingencies specific to all individuals’ lives that may have increased their risk for sexual victimization), (c) risk taking behavior was not adequately defined, (d) the statistically significant reduction in “risk taking” behavior may not have been clinically significant (e.g., actually reduced risk and decreased rates of sexual assault; Jacobson, Follette, & Resendorf, 1984), (e) it is questionable whether the dependent measures used had adequate psychometric properties, and (f) the study did not evaluate whether or not the program was effective at decreasing actual rates of sexual assault.

Hanson and Gidycz (1993) have conducted the most methodologically sophisticated study in the field of sexual assault prevention. The goals of the study were (a) to heighten participants’ awareness of sexual assault, (b) to reduce adherence to rape myths, (c) to increase awareness of how various societal forces condone sexual assault, (d) to increase participants’ ability to respond to risky situations, (e) to change risky behaviors often associated with acquaintance rape, (f) to promote clear and effective sexual communication in dating situations, and (g) to decrease the incidence of sexual assault over a 9-week period.

The authors randomly assigned 360 college women to either the treatment or the control group. The treatment group received the sexual assault prevention program from the first author of the study, whereas subjects in the control group completed dependent measures at Time 1 and Time 2 without experiencing any type of intervention. Subjects in the experimental group were first required to fill out the Rape Myths and Facts Worksheet, which attempts to assess the subjects' knowledge of several statements regarding rape. Subjects then viewed a videotape which depicted various events culminating in an acquaintance rape at a college party. The videotape highlighted several contextual variables known to be highly correlated with sexual victimization (e.g., alcohol use, nonassertive behavior, and difficulties with sexual communication). After presentation of the videotape, Hanson and Gidycz (1993) asked the participants several questions regarding possible behaviors that might have helped the character in the video avoid the acquaintance rape. Subsequent to this discussion, subjects viewed an additional videotape that demonstrated possible response strategies for dealing with the risky dating situation. After a discussion of these strategies, subjects were required to fill out the Preventive Strategies Information Sheet, which the authors adapted from Warshaw (1988). This instrument reviews strategies for dealing effectively with risky dating situations. Before the end of the session, subjects were asked whether they had questions regarding sexual assault or information included within the program. All subjects were then required to return at the end of the academic quarter and complete a series of outcome measures.

Hanson and Gidycz (1993) were able to demonstrate a statistically significant decrease in the rates of sexual assault over a 9-week period among college women who did not report a prior history of sexual victimization. They also found that the intervention was effective in increasing knowledge regarding sexual assault and altering dating behaviors that have been shown to be highly correlated with rape. This study is the first to demonstrate the effectiveness of a rape prevention program in reducing the incidence of sexual assault during a specified time period. Problems with the Hanson and Gidycz (1993) study include: (a) the program was ineffective with women who were considered "high risk" for sexual revictimization, (b) several of the dependent measures lacked adequate psychometric properties, and (c) participants who volunteered for the study may have been at lowest risk for sexual assault; thus, changes in rates of sexual victimization could have been due to a biased sample.

Although the program was ineffective in reducing rates of sexual assault among women with a prior history of sexual victimization, these results nevertheless support the premise that sexual assault prevention programs for females may be an effective means of reducing the prevalence of sexual assault on college campuses. A future direction of such programs should be to incorporate those elements that have been shown to be effective and further develop and refine interventions that may be efficacious in reducing the rates of sexual assault for women who report a prior history of sexual victimization.

### ***Self-Defense Approaches to Primary Prevention With Females***

To date, there are few outcome data to substantiate efficacy of self-defense strategies in reducing the prevalence of sexual victimization. Short-term effects of such training suggest that women who complete these courses report feeling some sense of self-improvement, control over their life, and increased confidence, assertiveness, and in-

dependence (Cohn, Kidder, & Harvey, 1978; Kidder, Boell, & Moyer, 1987; Searles & Berger, 1987).

In addition, studies that have evaluated the efficacy of self-defense strategies have typically addressed stranger rather than acquaintance assaults. A study conducted by Kleck and Sayles (1990), using National Crime Survey data, found that victims who resisted a stranger assailant were much less likely to experience sexual assault than victims who did not resist. These authors also found that resistance efforts did not appear to increase the probability that the victim was physically injured. This information may only be relevant for women who are confronted with a stranger assault. It seems reasonable to assume that women who are assaulted by an acquaintance or dating partner may, at times, be in a physically compromised position that make the use and effectiveness of these techniques questionable. However, given that the majority of sexual assaults are acquaintance rapes (i.e., 80–90%), training women primarily in self-defense strategies may only allow them to respond effectively to a small minority of assaults. It is risky to assume that we can extrapolate from data on stranger assault cases and conclude that these techniques would be equally effective in combating acquaintance assailants. Although this may be a valid assumption, it is ultimately an empirical question, and one most effectively answered by conducting prospective studies in which the long-term effectiveness of an intervention can be adequately evaluated.

Despite what appear to be positive results, researchers who implement these and similar programs should monitor and predict possible iatrogenic effects that may occur as a result of the intervention. Although it may be beneficial for women to experience a “healthy” amount of fear as a result of a self-defense workshop, one would want to assess whether this fear limits the person’s life in an unhealthy manner. Similarly, a heightened sense of confidence or control over one’s life may be positive, or it may result in the individual placing themselves in situations that actually increase their risk. Without long-term studies to assess possible iatrogenic effects, there is no way of knowing for certain whether participants find these interventions to be useful. At present, there is no evidence to suggest that instruction of such techniques is the most effective intervention to accomplish the goals of primary prevention.

In sum, it is presently impossible, given the paucity of controlled studies in these areas, to identify a single sexual assault prevention program that is efficacious in reducing rates of sexual victimization for women who have and do not have a prior history of sexual assault. The program developed by Hanson and Gidycz (1993) has been the most successful to date. Despite the “clinical lore” which often suggests that self-defense tactics are the most effective strategies for women to learn, no prospective studies, without self-selected samples, have been conducted to evaluate the efficacy of such interventions. Given the serious nature and consequences of sexual assault, additional studies are needed to begin to identify the factors that may decrease the prevalence of sexual victimization and revictimization.

### ***Male-Only Programs***

Given that men are most often responsible for the crime of sexual assault, several programs have been developed that have focused specifically on decreasing males’ potential to engage in sexually assaultive and aggressive behavior. To date, nine studies have evaluated the outcome of programs focused on males.

A program conducted by Lee (1987) consisted of a 2-hour workshop that included rape myths and facts, exercises to increase empathy for sexual assault victims, and a

general discussion. Pre- and posttest dependent measures demonstrated statistically significant changes in attitudes for the males who participated in the prevention program. Interpretation of these results is problematic for the following reasons: (a) attitude change does not guarantee behavior change (i.e., refusal to engage in sexually abusive behavior), (b) demand characteristics could have produced positive results (i.e., social desirability), (c) no outcome measure was used to assess whether the program was effective at decreasing rates of sexual assault, (d) statistically significant change on dependent measures does not mean clinically significant change, and (e) the outcome could have been due to a low-risk sample of men.

In a similar study for males, Gilbert, Heesacker, and Gannon (1991) found statistically significant differences between pre- and posttest measures of rape myth acceptance, adversarial sexual beliefs, gender-role stereotyping, and acceptance of interpersonal violence. These subjects were then contacted by the experimenters 1 month after the study and asked whether they would be interested in listening to a message regarding a women's safety project. The males in the experimental condition were more willing to listen to the message than the men in the control condition. However, those men who had participated in the program were not more willing than those who had not to volunteer to work on the project. Results of this study are problematic for the following reasons: (a) volunteering or not volunteering for a women's safety project is not equivalent to the potential to engage in sexually abusive behavior, (b) positive results could have been due to a low-risk sample of men, (c) statistically significant change on dependent measures does not guarantee clinically significant changes in behavior, and (d) no outcome measure was used to assess whether the program was effective in decreasing rates of sexual assault.

Another program conducted by Berg (1993) had college males participate in a 1.5-hour workshop which emphasized victim empathy and rape myths. All of the subjects were then required to listen to an audiotape. Half of them listened to a female victim describing her rape experience, while the other half heard a young man describing his rape by another adolescent male. The author found that the empathy condition did not affect levels of general empathy, rape empathy, or rape-related attitudes, and that men who were told to empathize with the female victim demonstrated an increased likelihood of sexual aggression. The most obvious problem with this study is that the intervention caused not only treatment failures, but *iatrogenic* effects. It is difficult to know whether these results were caused by the fact that the sample was composed of high-risk males or whether the intervention was not implemented adequately by the experimenters (i.e., poor treatment fidelity). Without additional information, it is difficult to evaluate the origin of such results.

A program by Egidio and Robertson (1981) was developed for fraternity men to "increase self-awareness, to stimulate values clarification, to dispel the many myths and misconceptions concerning rape, and to overcome the ignorance that perpetrates the crime of rape" (p. 445). This program was developed by the intrafraternity council and was approximately 2 hours in length. The program began with a questionnaire to evaluate rape awareness, and then continued with a lecture and discussion regarding various aspects of sexual assault. It also included two films on rape and a small group discussion that addressed issues related to prevention. Interpretation of the results of this study is problematic for the following reasons: (a) the only variable evaluated at outcome was consumer satisfaction, (b) positive results could have been due to demand characteristics (i.e., social desirability), (c) no outcome measure was used to as-

sess whether the program was effective at decreasing rates of sexual assault, and (d) the sample used could have been biased (i.e., composed of low-risk participants).

A study conducted by Intons-Peterson, Roskos-Ewoldson, Thomas, Shirley, and Blut (1989) had college males watch a film on either sexual assault which discussed myths, facts, statistics, and the consequences of rape (sexual assault education), or on the value of consideration and respect in sexual encounters (sex education). Following exposure to films, subjects viewed parts of movies which showed sexual violence, consenting sex, or nature scenes. Subjects were then required to make judgments regarding an actual rape trial. The study concluded by debriefing subjects through use of a postexperimental film and a discussion regarding rape myths and the potential outcomes of viewing pornographic materials. The authors found that those subjects exposed to the sexually violent movie condition scored higher in rape myths acceptance than those subjects who did not view the film. They also found that subjects who were exposed to the pre-experimental conditions (rape or sex education) had significantly lower scores on rape myths acceptance at the end of the experiment and at the 2-week follow-up. Interpretation of the results of this study is problematic for the following reasons: (a) a longer follow-up period that evaluated whether the intervention was effective at decreasing rates of sexual assault was not used, (b) the link between rape myth acceptance, judgments regarding a rape trial, and sexually abusive behavior may not be construct valid, and (c) positive results could have been due to demand characteristics (i.e., social desirability).

A program conducted by Ring and Kilmartin (1992) required male undergraduates to watch a film that addressed sex role socialization and intimacy. After exposure to this treatment component, subjects were required to participate in an experiential, small group discussion which focused on how men's bodies are objectified and their emotions "repressed." Subjects were then required to examine how women's bodies are objectified in our society. The authors theorized that men become aggressive and rape because they repress their emotions, and that if they were able to express these emotions more readily, they would be less inclined to engage in sexually abusive behavior.

The only outcome variable assessed in this study was consumer satisfaction. The authors found that subjects were pleased with the program and reported a greater understanding of the societal processes that led to sexually aggressive behavior. Results of this study are problematic for the following reasons: (a) positive consumer satisfaction ratings could have been due to demand characteristics alone, (b) given the fact that participation was voluntary, the sample used was undoubtedly biased. Few valid conclusions regarding behavior of high-risk males could be drawn from results of this study, and (c) there does not exist a one-to-one correspondence between consumer satisfaction and a change in sexually aggressive behavior. In addition, it is difficult to comprehend how an understanding of societal processes that lead to sexual aggression influences behavior specific to the individual in a dating situation.

Schewe and O'Donohue (1993b) assessed outcome of two prevention programs for men. One program emphasized victim empathy, while the other addressed the modification of inaccurate beliefs about rape. Both programs were evaluated with men who reported a greater likelihood of engaging in sexually abusive behavior (i.e., high-risk males). All participants were randomly assigned to the empathy treatment, the rape myths treatment, or a no-treatment control group. Outcome was determined by changes in scores on the Likelihood of Sexually Abusing scale (a revised version of the

Sexual Experiences Survey, SES; Koss & Gidycz, 1985), the Rape Empathy Scale (Deitz, Blackwell, Daley, & Bentley, 1982), the Acceptance of Interpersonal Violence scale (Burt, 1980), and the Adversarial Sexual Beliefs Scale (Burt, 1980). In addition, all participants were assessed using an Asch-type conformity measure. Validity checks suggested that high-risk males differed from low-risk participants in reporting a more intense history of sexual aggression, in fantasizing more often about rape and child sexual abuse, and in feeling more sexually aroused to a vignette depicting a sexual assault. Finally, although the victim empathy condition significantly increased participants' empathy ratings, the rape myths condition did not significantly change inaccurate beliefs about sexual assault among high-risk males.

This study had several strengths, including use of random assignment, high-risk participants, and psychometrically sound dependent measures. However, without a follow-up period, it is difficult to know whether the intervention was effective at changing sexually abusive behavior.

Finally, O'Donohue and Fanetti (1997) investigated effectiveness of a video-based prevention program in reducing men's potential to engage in sexually abusive behavior. The program contained three segments (victim empathy, rape myths, and outcome expectancies) and was developed through the use of expert consultation and focus groups. A theoretical model was also used to guide the development of the content included within the program. For the first part of the study, construct validity of each segment was evaluated by 101 undergraduate males. For the final study, 102 undergraduate males were randomly assigned to the prevention program or a placebo control. Results indicated that the prevention program was more effective than the placebo control on changes of rape myths acceptance, attitudes toward interpersonal violence, adversarial sexual beliefs, attraction to sexual aggression, rape empathy, and self-efficacy ratings.

This study also has several strengths, including use of a theoretical model to guide content, random assignment, a placebo control, and a manipulation check on the independent variables. However, this study lacks a follow-up period that assesses maintenance of treatment effects.

### ***Mixed-Gender Programs***

In addition to the preceding studies that focused on either male or female participants, several programs have been conducted with coed or mixed-gender audiences. To date, 12 such programs have been conducted.

Borden, Karr, and Caldwell-Colbert (1988) evaluated a program which involved a 45-minute lecture on the definition, prevalence, effects, and prevention of sexual assault. Although participants reported that they enjoyed the program, dependent measures used in the study demonstrated no significant differences between experimental and control groups in attitudes toward sexual assault and victim empathy at the 1-month follow-up period. It is difficult to interpret results of this study for the following reasons: (a) null results could have been due to lack of sensitive dependent measures, (b) inadequate statistical power, and/or (c) a weak intervention.

Frazier, Valtinson, and Candell (1994) found that members of sororities and fraternities who participated in their program adhered to significantly less rape-supportive attitudes than did members that did not participate. Despite the fact that these authors utilized an interactive improvisational theater type of intervention, which is often anecdotally reported to be more efficacious than other types of interventions, they



found that attitudinal changes between the experimental and control groups were not significantly different at the 1-month follow-up. Interpretation of these results is problematic for the reasons cited in the preceding study.

Briskin and Gary (1986) had college students participate in a workshop that addressed 24 rape myths and facts. These items were presented in "quiz format" to stimulate discussion and to challenge the participants' personal beliefs about sexual assault. Presentation of the program was not standardized. Presenters sometimes read answers and led group discussions, while at other times, participants broke into small groups and discussed the items until they arrived at an agreement. The only outcome measure used in the study was consumer satisfaction. Interpretation of the results of this study is problematic for the following reasons: (a) lack of program standardization may have unduly influenced the outcome (i.e., poor treatment fidelity), (b) psychometrically poor dependent measures were utilized, (c) no outcome measure was used to evaluate whether the program was effective at decreasing rates of sexual assault, and (d) the sample may have been biased (i.e., composed of low-risk participants).

Dallager and Rosen (1993) compared students in a human sexuality course with those in an education course. They hypothesized that students' attitudes about rape would change after exposure to a course in human sexuality. The authors gave students in both classes the Rape Myth Acceptance Scale and Acceptance of Interpersonal Violence Scale (Burt, 1980) during the 2nd and 14th week of class. The authors found that the human sexuality students showed significant decreases in rape myth acceptance but did not change on the measure of interpersonal violence. The authors concluded that their results were problematic given the fact that their effect size was small and the majority of the students in both groups failed to adhere to myths about rape. It is difficult to interpret results of this study given that the primary intervention was a course in human sexuality rather than a sexual assault prevention program. It is also problematic that the authors provided participants with measures of rape myth acceptance and interpersonal violence during the second, rather than the first week of the course. The participants were most likely "primed" at this point to respond in a socially desirable manner.

Ellis, O'Sullivan, and Sowards (1992) assessed the effect of an actual or imagined exposure to a survivor of sexual assault in changing attitudes about rape. A mixed-gender audience was asked "to consider a situation in which a close friend or relative came to them and told them that she had been sexually assaulted" (p. 891). They were also asked "to describe their initial reaction and what action they would suggest that the sexual assault victim take" (p. 891). Students were also asked about their personal experiences with sexual assault survivors.

Students were asked to complete a 30-item questionnaire, the Adversarial Sexual Beliefs Scale, and the Acceptance of Interpersonal Violence Scale (Burt, 1980) either before or after the imaginal exposure exercise. The authors found that women became more rejecting of rape myths than men as a result of the intervention. Interpretation of the results of this study is problematic for the following reasons: (a) small number of males who participated ( $n = 51$ ) makes the external validity of the intervention questionable, (b) null results for the male participants could have been caused by insufficient statistical power due to the small sample size, (c) change in rape myth acceptance for the women may not be causally related to a decrease in risk for sexual assault, and (d) results could have been due to demand characteristics alone.

Fischer (1986) assessed the impact of a human sexuality course on attitudes toward rape. A total of 1 day a week was spent on the topic of sexual aggression. This topic was

either presented in a "standard" format or was presented in a "confrontational" style. Participants were compared to students in an introductory psychology course and were given pre- and posttest materials from a variety of surveys about rape-related beliefs. Students in the human sexuality course reported a decrease in tolerance for rape if they were in the "standard" format lecture on sexual aggression. Males in the "confrontational" format demonstrated an increased tolerance of rape.

Interpretation of the results of this study is problematic for the following reasons: (a) statistically significant changes on dependent measures do not mean that clinically significant changes occurred, (b) results could have been due to demand characteristics of the study (i.e., a human sexuality course elicits responses consistent with nonaggression), and (c) the study did not assess whether the intervention was effective at decreasing rates of sexual assault.

A study conducted by Fonow, Richardson, and Wemmerus (1992) exposed college students to a live or videotaped workshop. This workshop stressed rape myths, accurate information regarding rape, and a feminist conceptualization of sexual aggression. The authors used a Solomon 4-group design to control for a number of confounds in the study. The authors found that participation in either program resulted in attitude change about rape. They also discovered that pretesting groups resulted in greater attitude change.

Although the authors utilized a sophisticated experimental design, interpretation of the results of this study is problematic for the following reasons: (a) changes in attitudes may not be related to behavioral change, (b) the study did not assess whether the intervention was effective in decreasing rates of sexual assault, (c) statistically significant changes may not indicate clinically significant results, and (d) there is no way of knowing whether the sample utilized was biased. It is interesting, however, to note that pretesting groups resulted in greater attitude change. This result suggests that pretesting may increase the impact of sexual assault prevention efforts.

Harrison, Downes, and Williams (1991) presented male and female undergraduates with one of two program formats. All subjects were presented with a film of media clips "that are representative of print and TV advertising and use sexual themes to advertise clothing, perfume, and liquor" (p. 13). Following the film, all subjects were shown a dating scene in which the male attempted to engage in sexual activity with the female. Half of the subjects then participated in both a structured and open discussion section. The authors found no significant differences between the types of format presented to the subjects. Additionally, females did not demonstrate attitude change as a result of participation in the program. The authors concluded that the null findings could have been due to ceiling effects on women's pretest responses.

Interpretation of the results of this study is difficult for the following reasons: (a) the null findings could have been caused by a weak or inappropriate intervention, (b) there is no way of knowing whether the sample utilized was biased, and (c) attitude change demonstrated by male participants may not indicate behavioral change.

A study conducted by Holcomb, Sarvela, Sondag, and Holcomb (1993) exposed male and female undergraduates to a 35-minute workshop that began with a "consent scenario" and then required subjects to "try to determine when and how consent to have sex takes place" (p. 160). After this section of the program, the cofacilitators discussed how men and women could prevent sexual assault in dating situations. All subjects in the experimental and control groups were then required to fill out the Date Rape Attitudes Survey. The authors found that those subjects in the experimental

group reported being less tolerant of rape than those in the control group. They also discovered that the intervention was more effective with men than with women.

Interpretation of the results of this study is problematic given that (a) the null results for female participants may have been caused by an inappropriate intervention, (b) there is no way of knowing whether the sample was biased, (c) changes in attitude may not guarantee behavioral change, (d) results could have been caused by demand characteristics, and (e) the study did not assess whether the intervention was effective at decreasing rates of sexual assault.

Holcomb, Sondag, and Holcomb (1993) presented a workshop to a large sample of male and female undergraduates that required subjects to engage in an open discussion about date rape. This 50-minute presentation focused on getting males and females to share the responsibility of preventing sexual assault. Subjects were also exposed to a date rape scenario and given recommendations for preventing acquaintance rape.

Interpretation of the results of this study is difficult given that (a) the only dependent measure used was one of consumer satisfaction; therefore, the positive results could have been due to demand characteristics alone, and (b) the open format of the intervention suggests a lack of treatment fidelity. Without some type of standardization, it would be difficult for another researcher to replicate this intervention.

Lenihan, Rawlins, Eberly, Buckley, and Masters (1992) presented a large group of male and female undergraduates with a 50-minute classroom presentation in which the "instructional method included a combination of lecture, video presentations of date rape situations, plus sharing of a date rape experience by one of the presenters" (p. 333). The authors used a Solomon 4-group design and the Rape Supportive Attitudes Survey (Burt, 1980) to evaluate the prevention program. Results suggested that women reported significant attitude change simply by completing the pretesting assessment. The men did not demonstrate any significant attitude change.

Interpretation of the results of this study is difficult given that no dependent measure was given that assessed risk to engage in sexually abusive behavior. Without such an assessment, it is difficult to know whether the null findings for the male participants were due to a high-risk sample or to a weak or inappropriate intervention. It is interesting to know, however, that female participants appeared to benefit simply by filling out a dependent measure.

Finally, a study conducted by Mann, Hecht, and Valentine (1988) exposed male and female undergraduates to a 15-minute performance of "Big Girls Don't Cry." This performance presented issues related to assertive behavior and dating. One group watched only the performance, whereas another group engaged in a 15-minute discussion after presentation on sexual attitudes, "gender scripts," and assertiveness. In addition, a third group participated only in the discussion, whereas the final group completed dependent measures without experiencing any type of intervention. The authors reported significant attitude change as a result of the 15-minute performance. They also found that discussion alone was ineffective in producing change, and that levels of assertiveness did not increase as a result of any of the interventions. The authors did discover, however, that assertiveness increased at the 5-week follow-up. Finally, they concluded that the performance plus discussion condition facilitated the most significant attitude change.

Interpretation of the results of this study is difficult given that (a) attitude change may not guarantee behavioral change, (b) the follow-up period was somewhat short and did not evaluate effectiveness at decreasing rates of sexual assault, (c) attitude

change could have been the result of demand characteristics alone, and (d) there is no way of knowing whether the sample used was biased.

## METHODOLOGICAL AND CONCEPTUAL PROBLEMS

Currently, several methodological and conceptual problems exist in the field of sexual assault prevention. In the paragraphs that follow, we will attempt to identify those areas that appear to be the most problematic. In addition, we will provide potential solutions to these difficulties.

### ***Lack of Outcome Data That Substantiates Efficacy***

The goal of sexual assault prevention programs should be to reduce the number of sexual assaults that occur among program participants. This goal can be accomplished through use of prospective or longitudinal studies or by assessing changes in dependent measures that are thought to be either theoretically or empirically related to a decreased risk for sexual victimization. To date, only one prospective study has been conducted in the field of sexual assault prevention (Hanson & Gidycz, 1993), and few, if any, dependent measures exist that have adequate psychometric properties.

One of the primary problems with current prevention efforts is the lack of outcome studies that evaluate the event to which interventions have been effective at decreasing the actual rates of sexual assault. This appears particularly important given that the goal of primary prevention is to reduce the number of new cases of sexual assault. Without such data, it is difficult to know whether our interventions are effective. It often appears as if the face validity rather than the measured effectiveness of a program is the sole criterion of success. This type of intervention might be described as a "deliver and hope" strategy. Ultimately, this is the type of intervention that we need to abandon to further empirical science in the area of sexual assault prevention.

Without outcome data, it is also difficult to know whether the psychological constructs identified within a sexual assault prevention program are theoretically or pragmatically relevant to producing change. Although modifications in cognitions or attitudes may indicate changes in how participants will respond to high-risk situations in the future, this relationship is not axiomatic. One of the ways in which we can begin to assess whether these constructs are valid is to conduct prospective studies in which participants are followed for a specified time period in order to assess whether the program is effective at decreasing rates of sexual assault. This methodological strategy appears particularly well-suited for research in female sexual assault prevention, where base rates of sexual victimization are high enough to allow one to evaluate whether the program has been effective at decreasing rates over a specified period of time.

### ***Lack of Information on Types of Programming, Relevant Psychological Constructs, and Length of Time Changes Can Be Expected to Last***

Researchers currently have little information as to what forms of programming are preferable to participants, what attitudes, cognitions, and behaviors can be expected to change as a result of the intervention, and how long changes that have occurred as a result of exposure to a program will last (Heppner, Humphrey, Hillenbrand-Gunn, & DeBord, 1995). Several different programs are currently used, such as didactic pre-

sentations, plays, marches, folk singing, and public testimonials to video-based interventions. Few studies have assessed whether one type of intervention is more preferable than other types. Additionally, no studies to date have evaluated whether a combination of formats (e.g., video-based plus role-playing, etc.) or the use of ancillary interventions to supplement a program (e.g., group discussion) are more effective than one type of intervention alone.

Studies that assess how long cognitive or attitudinal changes last often only for a short period of time (e.g., 1 month). It would be useful for researchers in the field to track how long those changes last in order to identify how long treatment effects are maintained, and when ancillary interventions or booster sessions are needed to promote additional behavioral change. It often appears as if program developers assume that a “one-shot” intervention will be sufficient. This seems an unreasonable assumption given that it often takes several trials to learn new skills in a manner that generalizes to daily life.

Finally, although several relevant psychological constructs have been developed for male sexual assault prevention programs, few important variables have been identified in the area of prevention for females. Various studies have demonstrated that altering rape myths, victim empathy, and outcome expectancies for males may decrease males’ potential to engage in sexual assaultive behavior (O’Donohue & Fanetti, 1997; Schewe & O’Donohue, 1993b). It has been hypothesized that females may need training in accurate risk perception and identification of response strategies that may then help them to decrease their risk of sexual assault (Hanson & Gidycz, 1993). Thus, it is imperative that we begin to identify those constructs that are relevant to decreasing females’ risk of sexual victimization. We must begin to identify whether or not these constructs are relevant for women who have a prior history of sexual victimization. At present, it is not known whether these constructs would be the same or different. It could be that women with a prior history of sexual assault need the same type of information, but that they also require additional booster sessions to promote adequate behavioral change. Whatever the relevant constructs, the question of how to successfully intervene with this population is a question that remains unanswered in the literature.

### ***Lack of Theoretical Models***

Few programs use a theoretical model to guide the content and type of intervention to be included within their prevention program (Heppner et al., 1995). It often appears as if information is included in sexual assault prevention programs because it seems to “make sense.” Without some type of theory or model to inform and guide our decisions about the content to be included within the prevention program, we are reducing our potential effectiveness and ability to evaluate the results of our intervention.

### ***Problem of Evaluating Verbal Competence***

In the studies conducted thus far, researchers often assume that participants have comprehended the material adequately enough to be able to respond differently in the future. Although participants may appear to understand the material presented, this does not mean that adequate understanding has occurred. It often appears as if we are making the assumption that all participants are equally motivated to comprehend and utilize the material presented in a sexual assault prevention program. We

must cease assuming and begin assessing whether or not participants have adequately understood the material that has been presented.

One of the ways in which sexual assault prevention programs can begin to be evaluated is to assess whether or not participants are successful in demonstrating verbal competence of the material included within the prevention program. Although assessing whether participants can demonstrate verbal competence of the material is not equivalent to demonstrating behavioral competence, results such as these would set the foundation upon which researchers could begin to accurately evaluate generalization of skills taught in the intervention.

No empirical studies to date have assessed whether or not participants have a useful working knowledge of the material presented to them within a program. Without such an analysis, it is difficult for researchers to understand why their program may be ineffective in changing either attitudes or behavior. Although it may be true that the material is not construct valid, or that the intervention lacks strength, it may also be true that the participants did not learn the material in a manner that would increase the probability that the behavior learned would generalize to other situations. In addition, assessing whether participants adequately learn the material included within the program would serve as a manipulation check of the independent variables and make interpretations regarding the results of the outcome studies less ambiguous (Follette, 1995).

One of the ways in which we have decided to evaluate participants' verbal competence of prevention material is through the use of computer-based interventions. Several potential advantages exist to providing a sexual assault prevention program within a computer-based format. First, the information can be provided to the participants in a manner which is engaging, educational, and cost-effective. A computer program can allow the participants to actively manipulate the program and can also include various images and vignettes that may increase motivation to attend to the content of the program.

Second, a computer-based format allows for greater treatment fidelity than a program which is delivered by one or several research assistants. Presently, studies have failed to evaluate whether or not those individuals who deliver the programs reliably adhere to the specified treatment protocol. Although we expect and require this type of methodological constraint in psychotherapy outcome studies, we have failed to incorporate this procedure within sexual assault prevention research. Thus, although research assistants may vary in their adherence to a verbally didactic treatment protocol, a computer-based program would be successful at delivering the protocol in the same manner for every trial. This procedure has a distinct advantage over more traditional approaches in that it is more likely to reduce problematic variability.

Finally, a computer-based format will ensure that participants adequately master the material included within the prevention program. By providing feedback loops that require participants to complete the necessary trials to reach a specific behavioral criterion, all participants will adequately master the material provided. This type of intervention could then be utilized in a prospective design, in which we could assess whether or not the program was effective at decreasing rates of sexual assault. If the program is ineffective at accomplishing this goal, we would then be able to eliminate the possibility that the participants did not adequately comprehend the information included within the program. We could then begin to investigate whether the material was content or construct valid, or whether the intervention was too short in duration.

### ***Lack of Component Analysis and Systematic Replication***

Existing programs in sexual assault prevention are often composed of several different constructs hypothesized to produce behavioral change. For example, a mixed-gender program may include segments on rape myths, societal influences on the victimization of women, and strategies for reducing risk. This is a problematic strategy in that it makes it impossible to evaluate which variables are related to the observed effects. Although it may logically appear that a combination of elements is required to promote change, we have no systematic way of evaluating whether this is a valid assumption without research that attempts to identify which components may be both necessary and sufficient in promoting change.

One of the ways in which to accomplish this goal would be to conduct a component analysis or dismantling study of the program. For example, if a male-only program consisted of rape myths and facts, victim empathy, and outcome expectancies, one could evaluate whether or not providing information regarding a victim's experience is sufficient in producing change. These types of studies would assist us in identifying the relevant constructs and developing programs that would be both cost and time efficient. It seems unreasonable to require participants to sit through an hour-long program, for example, if 15 minutes of information would be sufficient in producing the desired outcome. It also seems unreasonable for colleges to provide funding for interventions that may be completely unrelated to decreasing rates of sexual assault.

According to Schewe and O'Donohue (1993a), an additional problem in prevention research is that evaluation of our efforts is occurring in isolation from one another. At present, there exists no standardized manner by which to evaluate existing programs. Because studies often utilize disparate dependent measures, it is difficult or impossible to evaluate the comparative utility of various prevention programs. Additionally, descriptions of current interventions make it virtually impossible for the researcher to replicate a study. This strategy of systematic replication is often considered standard practice in behavioral research (Sidman, 1960), yet it has failed to occur in the area of sexual assault prevention. Without such replication, we will remain uncertain as to whether the observed effects are robust or due to sources of uncontrolled variability.

### ***Problem of Biased Samples and the Issue of Social Desirability***

Few programs have attempted to evaluate whether or not their intervention is effective with high-risk participants (i.e., prior history of sexual revictimization; prior history of sexually assaulting; increased levels of high-risk sexual behavior; increased levels of drug/alcohol use). It may be that participants who need most to be exposed to a prevention program are less motivated and least likely to participate. Because most research in sexual assault prevention is conducted with participants who self-select, these samples are undeniably biased in a manner that makes it difficult to predict that the results generalize to higher risk populations. Given that it is unethical to force college students to participate in research, we are left with the unanswered question of whether or not our results possess external validity.

In addition, most research in sexual assault prevention has not adequately controlled for the possibility that socially desirable responses are responsible for the differences between the treatment and control groups (Schewe & O'Donohue, 1993a).

In all likelihood, participants do understand the purpose of the intervention in this type of research. Demand characteristics should be carefully monitored and controlled for when conducting these studies. Some ways in which to reduce the effects of demand characteristics include the use of (a) Solomon 4 group designs, (b) behavioral rather than cognitive/attitudinal measures, (c) double-blind studies, and (d) placebos that are equally credible to the intervention.

### ***Problem of Maintenance of Treatment Effects***

Most studies have failed to evaluate how long various attitudinal and behavioral effects can be expected to last. Although some studies have conducted follow-up assessments, most of these assessments have been short term rather than long term. To date, little information is available as to how long behavioral change can be expected to be maintained. Without such data, it is difficult, if not impossible, to implement ancillary interventions that may hone and supplement skills previously taught. Indeed, without evaluating maintenance of treatment effects, researchers continue to assume that "one-shot" interventions are effective in promoting lasting behavioral change.

### ***Problem of Clinical Versus Statistical Significance***

Researchers in the primary prevention of sexual assault are often required to utilize a large number of subjects to obtain sufficient statistical power. Although this strategy is required to prevent Type II errors from occurring, use of large numbers of subjects may provide statistically significant results between the experimental and control groups when, in fact, no clinically significant results exist. For example, if female participants in a treatment group increased their mean scores on measures of risk perception and ability to respond to risky situations by approximately 7 points, it would not necessarily follow that they would then be less likely to experience sexual assault. One strategy suggested by Schewe and O'Donohue (1993a) for determining clinical significance is to determine cutoff points for high and low-risk participants. Criterion groups (e.g., poor vs. exceptional risk perception skills) could be utilized to arrive at these cutoff points.

### ***Lack of Psychometrically Adequate Dependent Measures***

Another current difficulty with primary prevention efforts is the lack of psychometrically adequate dependent measures to evaluate the effects of sexual assault prevention programs. Although there are several reliable and potentially valid instruments for assessing men's potential to engage in sexually abusive behavior, the same does not apply for evaluating changes in female participants' behavior (Burt, 1980; Deitz et al., 1982; Malamuth, 1986; Malamuth & Check, 1981). Whether some of the psychological constructs identified as being important in changing males' behavior are also relevant for females (e.g., adherence to rape myths) is a question that currently remains unanswered.

To date, Hanson and Gidycz (1993) have done the most work in developing dependent measures that may be theoretically relevant to assessing changes in female participants' behavior. These authors hypothesized that sexual assault and revictimization may be the result of a lack of proper information regarding sexual assault, an inability to communicate sexual intentions clearly, and participation in various dating behav-



iors that may increase risk of sexual victimization. As a result of these hypotheses, Hanson and Gidycz (1993) developed the following outcome measures: (a) the Dating Behavior Survey, which was designed to assess situational variables found in the literature to be highly correlated with sexual assault, such as substance use and being in an isolated place (test-retest reliability = .77, alpha internal consistency coefficient = .63); (b) the Sexual Communication Survey, which was constructed to assess participants' evaluations of the clarity and effectiveness of their communication regarding sexual intentions in dating situations (test-retest reliability = .70, alpha internal consistency = .56); and (c) the Sexual Assault Awareness Survey, which was designed to assess participants' accuracy of knowledge related to sexual assault (no psychometric data provided). Although the authors provided information regarding the reliability of these instruments, whether they are valid measures of these constructs and possess predictive validity is a question that has yet to be addressed.

Hanson and Gidycz (1993) also used the Sexual Experiences Survey (SES) as an outcome measure to assess whether their program had been effective at decreasing rates of sexual victimization during a 9-week period. The SES is a behaviorally specific instrument for assessing sexual victimization that has been demonstrated to be both reliable and valid (test-retest reliability = .93, alpha internal consistency coefficient = .74; Koss & Gidycz, 1985). This scale appears quite useful as an outcome measure with female participants because it assesses the extent to which a particular program has been effective in decreasing rates of sexual assault. In addition, the SES may be a useful way of reducing the threat of social desirability, because it uses behaviorally specific definitions of sexual victimization rather than using words such as rape. The SES should continue to be used as a dependent measure in prospective studies due to its psychometric properties and utility as an outcome measure. Finally, we should continue to develop other behavioral measures that may assess the probability of risk of sexual assault without creating demand characteristics that would confound the results of the study (see Schewe & O'Donohue, 1993a).

One of the reasons for the lack of dependent measures may be due to deficient information about processes involved in sexual victimization and revictimization. Although some researchers have hypothesized that lack of accurate information regarding sexual assault, inability to perceive risk, and various assertiveness deficits may place a woman at high risk for sexual assault and sexual revictimization, the development and evaluation of instruments to assess these constructs have been slow to develop (Gray et al., 1990; Hanson & Gidycz, 1993; Naugle, Follette, & Follette, 1996). The scales that have been constructed have been based on either clinical speculation or on variables found to be associated with sexual assault in the literature (Hanson & Gidycz, 1993).

Several factors must be addressed when attempting to determine what measures should be developed and utilized in primary prevention programs for female participants. First, we must identify the constructs that are important to measure. These constructs should be directly related to a female's risk of being sexually victimized. This is not an easy task given the inherent difficulty in measuring incidence of sexual assault. Second, the content included within the scale should be a valid measure of the construct. One way in which to accomplish this goal would be to consult with experts in the field who could evaluate the content validity of the scale. Third, these scales should be able to identify those persons who will experience sexual assault (no false negatives) and should not falsely identify persons who will not be sexually victimized (no false positives). Fourth, scales should be sufficiently reliable so that changes between groups

can be accurately assessed. Finally, scales should be constructed so that floor or ceiling effects do not confound the results of the study. For example, a scale that assesses information regarding sexual assault would be essentially meaningless if the information contained in the measure was common knowledge to most of the participants.

## PRAGMATIC PROBLEMS WITH CURRENT PROGRAMS

In addition to methodological and conceptual problems in the field, there is a variety of pragmatic problems that have failed to be adequately addressed. In this section, we will attempt to clarify the nature of these problems, and why they need to be resolved in order to advance our understanding of the mechanisms involved in the prevention of sexual victimization.

### ***What Gender to Target?***

Traditionally, sexual assault prevention efforts have focused on the types of behaviors that women can engage in that will either decrease their risk of being sexually assaulted or increase their chances of escaping from a sexual assault. A veritable cornucopia of advice has been given to women over the years (Bart & O'Brien, 1985; Dowdeswell, 1986; Searles & Berger, 1987; Smith, 1986). Experts in the field have suggested everything from self-defense training to vomiting or defecating on oneself to appear unattractive to a would-be assailant. Some individuals who are active in the field of sexual assault prevention have stated that these strategies are far too restrictive and ultimately impinge upon a women's basic human rights (Schewe & O'Donohue, 1993a). It is the contention of many in the field that no woman should, or can be, perfectly vigilant to her environment at all times, and that all women will continue to be at risk for being sexually victimized as long as "there are men who will commit acts of sexual assault" (Schewe & O'Donohue, 1993a, p. 668).

Others have declared that sexual assault prevention efforts that focus on the female population are either "victim-blaming" (i.e., women are responsible for rape) or inevitably result in problematic self-attributions when women are unsuccessful at applying the skills that they learn. Thus, it is suggested by some that efforts in the field of sexual assault prevention should focus and intervene primarily upon those individuals who commit the crime of rape: males (Schewe & O'Donohue, 1993a).

Although we agree that the ultimate goal of sexual assault prevention programming should be to eliminate males' potential to engage in sexually abusive behavior, this goal is, at present, difficult to achieve. The policies of most universities and colleges do not make sexual assault education mandatory. The males who participate in these programs voluntarily will most likely be those who demonstrate the lowest potential to engage in sexually assaultive behavior. Thus, dissemination of information to the male population is problematic at present. Even if all men were to participate, no intervention is 100% effective. Additionally, females will come into contact with males who are not college students and who have not participated in a sexual assault prevention program. Therefore, there is currently no way to guarantee that focusing strictly on male sexual assault prevention programming will promote the dissemination of information to a large enough population to influence substantial behavioral change.

We also realize that no prevention program for females will be 100% effective. In addition, it is conceivable that men who are deterred from assaulting may move on to

another victim who is incapable of stopping the assault. However, lack of access to the male population makes dissemination of information difficult, and potentially decreases the number of sexual assaults that could be prevented each year on college campuses. Efforts to decrease rates of sexual assault with only a single focus (i.e., males only) may prove both weak and ineffectual. One way in which to maximize our prevention efforts may be to tailor male and female programs so that they complement one another. For example, if women are instructed in their program to discriminate and respond to situational variables associated with sexual assault (e.g., avoid isolated places with new dating partners, refuse or limit the use of alcohol/drugs, etc.), males could be instructed to assist women in such response strategies (e.g., meet in a public place, double date, etc.). This approach may avoid placing all of the responsibility on women for changing their behavior, while creating a synergistic effect between the programs that may ultimately be more effective at decreasing rates of sexual assault.

Given that the mechanisms responsible for adequate (i.e., nonabusive) behavioral change in the male population are equivocally understood at present, it appears prudent to continue to investigate the ways in which sexual assault prevention programs may be effective at changing women's behavior. There are data to suggest that this is a valid approach to reducing the incidence of sexual assaults for some women (Hanson & Gidycz, 1993).

In sum, although decreasing males' potential to rape is a relevant concern worthy of empirical investigation, no single rape program for males can be completely effective at reducing the prevalence of sexual assault on college campuses. Berkowitz (1992) has suggested that the process of sexual assault and acquaintance rape is best conceptualized by an integrated model. In this model, perpetrator and victim socialization experiences, beliefs, and attitudes toward sexuality are combined with situational characteristics of the dating situation and the perpetrator's misperceptions of the victim's intent. This combination of variables leads to an increased likelihood of sexual assault occurring. Given these and other assumptions, sexual assault prevention efforts should entail a two-pronged approach (i.e., separate male and female sexual assault prevention programs) to attempt to reduce the high incidence of sexual assault that occurs within this population.

### ***A Focus on Simplistic Rather Than Complex Information***

One of the questions that remains unanswered is whether or not the information provided within programs is simplistic. It seems reasonable to assume that there are multiple kinds and classes of causes that result in both sexual assault and sexual revictimization. Because research has been unsuccessful in identifying the exact nature of these multiple causes, we cannot, at present, provide the type of comprehensive coverage or allocate the time needed in our prevention programs that would be most likely to promote behavioral change.

This problem is especially evident when considering the type of information that should be incorporated with prevention programs. Ultimately, one of the primary goals of sexual assault prevention research for females should be to identify those behaviors that are effective at stopping rape behavior once it has been initiated by a perpetrator. Although a plethora of anecdotal information exists concerning potentially efficacious behaviors (i.e., pleading with the perpetrator, being physically combative with the perpetrator, etc.), other data suggest that there is significant variability in vic-

tim, perpetrator, and situational characteristics that deem general statements regarding response strategy effectiveness difficult at present (Abarbanel, 1986). This makes decisions regarding what information to provide in the program to promote maximum effectiveness extremely difficult.

In addition, taxonomic research has identified four types of rapists who are motivated to rape for different reasons (Knight & Prentky, 1990). Theorists have suggested that different response strategies are effective in stopping rape with these four types of sexual offenders (Prentky, Knight, & Rosenberg, 1988). One of the goals of primary prevention efforts for females should be to teach women how to respond effectively with each type of rapist. Although this appears a noteworthy goal, it is difficult to achieve. It seems unreasonable to assume that potential victims will be able to accurately assess, using a decision tree or algorithmic model, type of rapist and effective response strategy within a short period of time given a high level of affective arousal. Furthermore, it may be difficult and cost-ineffective to include a self-defense strategy component within most programs given the fact that they are most often "one-shot" interventions. It would be difficult to convey that information in a sufficiently powerful manner to effectively change behavior and prevent a future sexual assault. Even if those skills were conveyed in a useful manner, there is no way of evaluating whether or not these strategies could be retained long enough, without practice, to effectively avoid an assault. This problem could be ameliorated by providing women with booster sessions in self-defense skills. However, it seems reasonable to assume that some women would not continue to seek this type of training.

The burden of current prevention efforts for women is to provide both the distal and proximal behaviors that will prevent a sexual assault experience. For example, distal behaviors might include decreasing alcohol use in dating situations, finding out about a potential partner before agreeing to date, and avoiding isolated places with a new dating partner. Although it is imperative that women be familiar with the distal factors that may increase their risk of sexual assault, it is equally important for women to be skilled in more proximal behaviors. For example, women would need to know how to assertively refuse sexual advances and/or physically defend themselves if they find they are being verbally or physically coerced to engage in sexual activity. In sum, then, prevention programs must provide women participants with a plethora of potential strategies that will assist them to either proactively or immediately prevent sexual victimization. This requires complex information rather than simplistic platitudes. We must not require women to wait and hope that they will not become victims of sexual assault until our society changes those contingencies that are evocative of sexual victimization.

### ***Technical Problems***

In addition, there are technical problems with current programs. Currently, if a program is unsuccessful in accomplishing its goal, we have no way of knowing whether participants did not either access or were unable to utilize the information provided. For example, it may be true that participants did not comprehend the material provided because it was too boring or too complex, or that they did not adequately apply the information in a manner that would have decreased their risk of either sexually assaulting or being sexually victimized. Furthermore, we have no way of knowing whether the participants were faced with a sexual assault situation in which the information provided was both inappropriate and inapplicable. For example, if a preven-

tion program focuses primarily upon how societal practices promote the reinforcement of rape myths, but a participant is later faced with a situation in which a male verbally coerces her to engage in sexual activity, it seems reasonable to assume that it might be difficult to apply this information in a manner which would then decrease her risk. Instead, a program that focused on effective strategies for dealing with verbal coercion would have been potentially more helpful. Finally, we have no way of evaluating the extent to which participants were successful at comprehending the material provided but that, due to lack of behavioral rehearsal, information and skills learned decayed from lack of practice.

### ***Homogeneous Or Mixed-Gender Audiences?***

Given the time and cost restraints often allocated for primary prevention, it is often difficult to decide whether or not to intervene with mixed-gender, female, or male-only audiences. Although it may be both cost effective and expedient to address mixed-gender audiences when implementing sexual assault prevention programs, there may be some potential disadvantages to these types of interventions. Men may learn in mixed-gender programs that sexual assault is a common occurrence and that there exist few negative consequences for those men who do rape. Furthermore, females who possess a prior history of sexual victimization may be unwilling to participate in a mixed-gender program due to the sensitive nature of the topic and the emotional responses that may occur during the program. Finally, it may be advantageous to keep potential rapists, who may be members of mixed-gender workshops, ignorant of those strategies that may decrease a female's risk of victimization. However, an important aspect of mixed-gender programs may be to instruct males to assist females in implementing those strategies that may decrease their risk of being sexually assaulted.

It also seems reasonable to assume that men and women may require separate programs that address issues related to sex role socialization and that effect both the perceptions and behavior associated with sexual assault. In fact, empirical studies suggest that men and women respond differently to rape-related scenarios (Bridges, 1991; Jenkins & Dambrot, 1987). Because the majority of mixed-gender programs are given in a 60-minute period, it may be reasonable to assume that the intervention may not be strong enough to adequately alter either male or female behavior. Given that behavior is most often under the control of multiple contingencies of reinforcement, it is a conceptual leap to assume that one, 60-minute intervention will be effective in altering behavior specific to both genders. Programs that intervene with one group during a 60-minute session would be able to focus more time and attention on those psychological constructs (e.g., victim empathy for males, risk perception for females) that may promote significant behavioral change.

### ***The Issue of Consumer Acceptability***

The issue of whether or not prevention programs are palatable to consumers is another problematic area that has received little empirical attention. Although we can evaluate whether or not participants find the programs enjoyable, this type of verbal report is problematic due to demand characteristics. Thus, participants may report that they enjoyed a program simply because they wish to appear "nice" and "cooperative" to the experimenter. Discovering types of interventions that are appealing to the participants, least intrusive, and effective is a difficult task. Although we know that in-

forming women to stay away from all members of the male population would reduce the prevalence of sexual assault by men to 0%, this type of intervention would be unappealing, absurd, and far too intrusive. One of the primary goals of female sexual assault programs should be to identify those types of interventions that are the least intrusive but most efficacious in reducing rates of sexual victimization.

### ***Parameters to Be Addressed***

In sum, then, the parameters that need to be addressed in this area include: (a) Does the curriculum contain valid information? (i.e., Are the constructs included relevant and predictive of behavioral change?), (b) Does the curriculum provide comprehensive coverage of the important areas? (i.e., Does the program provide skills for dealing with a variety of risky situations?), (c) Does the program have a lasting impact on the participants?, (d) Can the participants retain the information until they need to utilize it?, (e) Can the participants successfully generalize the skills taught to relevant situations?, (f) Can the participants competently instantiate the skills taught?, (g) Is the information provided sufficient to stop sexual assault from occurring?, and (h) Can the participants accurately discriminate which type of response is relevant for a particular situation?

## **FACTORS ASSOCIATED WITH SEXUAL ASSAULT: POTENTIAL DIRECTIONS FOR FUTURE RESEARCH**

### ***Information Regarding Causal Variables***

One of the main questions that has yet to be answered in the field of sexual assault prevention is what causes sexual assault. Without this knowledge, it is difficult to identify interventions that may be potentially efficacious. Because the goal of any sexual assault prevention program should be to eliminate causes of sexual victimization, such lack of information about etiology makes this goal difficult, if not impossible, to achieve. To date, no single factor has been demonstrated to be a necessary or sufficient cause of sexual assault (Schewe & O'Donohue, 1993a). Thus, the ultimate goal of sexual assault prevention will remain elusive until we have identified precursors that result in sexual victimization.

Although it is obvious that males are most often the perpetrators of such crimes, the mechanisms by which this type of behavior occurs remain unclear. Current theories on the causes of sexually abusive behavior include deviant arousal (for a review, see Barbaree & Marshall, 1991), interpersonal affective motivations (e.g., anger at women) (Finkelhor, 1984; Groth, Burgess, & Holmstrom, 1977; Hobson, Boland, & Jamieson, 1985; Malamuth, 1986), a history of childhood sexual abuse (Freund, Watson, & Dickey, 1990; Lang & Langevin, 1991), poor heterosocial skills (Abel, Blanchard, & Becker, 1978; Lipton, McDonel, & McFall, 1987), adherence to rape supportive myths and beliefs (Burt, 1980; Malamuth & Check, 1981), lack of victim empathy (Hildebran & Pithers, 1989; Hobson et al., 1985), Situation  $\times$  Person interactions (Jones & Muehlenhard, 1990), and psychopathic deviance (Armentrout & Haver, 1978).

Additionally, it is not known why 50% of women who possess a prior history of being sexually assaulted report additional sexual victimization experiences (Russell, 1984). It does appear evident, however, that, on the average, the processes which result in either sexual assault or sexual revictimization are not random ones. For exam-

ple, if we took a random sample of women who had experienced sexual victimization and/or revictimization, we would find that certain characteristics differentiate these women from those women who have not experienced such events (e.g., high-risk sexual behavior, alcohol/drug abuse, etc.). This statement is not meant to suggest that women are to blame for experiencing a sexual assault. Undoubtedly, most behavioral phenomena are the result of person-specific variables interacting within an environmental context. We realize that women live in an environment that often condones and promotes sexually abusive behavior. We question, however, whether focusing strictly upon changing societal practices or the behavior of men should be our only attempts at intervention.

The Situation  $\times$  Person interaction model (Berkowitz, 1992) may be a particularly important one to emphasize in attempting to identify the etiology of sexual assault. Because no single, causal factor has been identified that is strongly predictive of sexual assault, it seems reasonable to assume that there may be several personological and situational variables that interact to produce such an event. For example, not all males who score high in adherence to rape myths or hostility towards women engage in sexually abusive behavior. These males may not sexually assault unless they come into contact with environmental contingencies that then elicit this type of behavior (e.g., participation in rape-supportive environments or environments that have few consequences for sexually abusive behavior). This same model may apply equally well for females who experience sexual assault or sexual revictimization. For example, women who are nonassertive and adhere to more "traditional" beliefs about a woman's place in society may be more likely to date a male who is hostile and controlling towards women. Dating this type of male would then potentially place this woman at high risk for experiencing a sexual assault.

### **Potential Causal Models**

The Situation  $\times$  Person interaction mode (Berkowitz, 1992) suggests that there may be numerous causal pathways that culminate in a sexual assault experience. These pathways may be either unique or a combination of several variables. Although we believe that these variables undoubtedly interact with those specific to males, we have attempted to identify those variables that may be important to primary prevention efforts with females. The burden of current interventions for women is to comprehensively and effectively address these factors in a manner that prevents new cases of sexual assault. We realize that some of these factors (e.g., history of CSA, socioeconomic status) cannot be effectively ameliorated by primary prevention efforts. Our goals should be to identify those variables that can be manipulated and result in behavioral change that will then effect other factors in the causal pathway. For example, women may be able to avoid high-risk environments by training them to accurately discriminate risky situations. This strategy may then decrease the probability that they will experience sexual assault.

Potential causal pathways may include the following: (a) SES factors (i.e., single, dating, poor, etc.) lead to increased exposure to high-risk environments which results in increased sexual assault rates; (b) lack of knowledge of risk factors leads to high-risk behaviors which result in increased sexual assault rates; (c) drug/alcohol use leads to increased exposure to high-risk environments and increased perceptions by others of vulnerability, which results in increased sexual assault rates; (d) a history of CSA leads to drug/alcohol use to ameliorate various psychological symptoms (e.g., PTSD symp-

toms) which results in increased exposure to high-risk environments and increased sexual assault rates; (e) various skills deficits (e.g., assertiveness) lead to an inability to respond effectively to high-risk situations which results in increased sexual assault rates; (f) a history of CSA leads to discrimination and response deficits which result in exposure to high-risk environments and increased sexual assault rates; and (g) adherence to stereotypical feminine roles may result in dating males who are at high risk to engage in sexually abusive behavior which leads to increased sexual assault rates. It is important to keep in mind, however, that these causal pathways may be either unique or occur in combination with one another to produce a sexual assault experience. These numerous possibilities imply that prevention programs must develop and implement strategies that intervene at those points in the causal pathways that will produce proactive and risk-reducing behaviors.

### ***Correlates of Sexual Assault***

Studies suggest that prior childhood sexual abuse (CSA) and/or sexual assault is a risk factor for subsequent sexual revictimization experiences (Browne & Finkelhor, 1986; Gidycz, Nelson-Coble, Latham, & Layman, 1993; Hanson & Gidycz, 1993; Polusny & Follette, 1995). Russell (1984) found that, for women who had experienced either rape or attempted rape, 50% of them reported a prior history of sexual victimization. In addition, Wyatt, Guthrie, and Notgrass (1992) reported that women who report a history of childhood sexual abuse (CSA) are 2.4 times more likely to be revictimized as adults. These data suggest that women with a prior CSA and/or sexual assault history are at an increased risk of being sexually revictimized. It seems reasonable to assume that this group of women is a particularly important one to target in a sexual assault prevention program. Although a prevention program cannot directly change or manipulate a historical variable such as past sexual victimization, it can attempt to identify and target those maintaining variables that may place these women at an increased risk for sexual revictimization. For example, potential maintaining variables may include behavioral excesses or behavioral deficits on the part of the individual, or competing and interfering environmental contingencies (e.g., reinforcing effects of drugs/alcohol, lack of assertion/refusal skills, low levels of reinforcement density, etc.). These maintaining variables may, in turn, influence and shape subsequent sexual revictimization experiences.

One of the ways in which we may begin to identify the exact nature of these maintaining variables is to conduct in-depth interviews with women who have experienced multiple sexual victimization experiences. These interviews would need to include behaviorally specific questions as to environmental antecedents, victim responses, and short- and long-term consequences of the sexual assault experiences. Replication of these interviews would allow for some experimental control and would provide the field with a large amount of information regarding typical antecedents and potentially useful responses to high-risk situations. Although some research has been conducted in this area (e.g., Fischhoff, Furby, & Morgan, 1987; Muehlenhard & Linton, 1987), the information provided by these studies is far too general and lacks the situational specificity necessary for curriculum development in sexual assault prevention. In fact, the study conducted by Furby, Fischhoff, and Morgan (1992) identified over 1,140 possible strategies for responding to a sexual assault.

It may also be true, however, that there exist far too many disparate antecedents, responses, and consequences to sexual assault experiences to be able to identify general



principles that may then be applied on an individual level. For example, most of us, if asked, could identify numerous pathways in a hypothetical causal model that would result in the consequences often associated with a sexual assault experience. Given the disparity in peoples' histories, and the multitude of conditions that may give rise to problematic behavior, it stands to reason that group interventions may be ineffective in decreasing rates of sexual assault among women who possess a prior history of sexual revictimization. This population of women may require a one-on-one intervention in the form of individual psychotherapy which attempts to alter those maintaining variables that are specific to that individual. Whether or not this assumption is valid remains an empirical question that has not been tested. Even if valid, this approach remains problematic because it assumes nomothetic perpetrators and situations. It may also be logical that an individual approach would be much less effective at adequately disseminating information in general, and specifically to those females who are at the highest risk for sexual revictimization. Those women who presented for therapy would be a select group of women who would probably be more motivated and willing to work on issues related to their sexual abuse. Therefore, it may be more reasonable at present to continue to identify relevant constructs and to alter policies on college campuses that make sexual assault prevention mandatory. This would ensure adequate dissemination of information to both high-risk and low-risk groups of students.

As mentioned, little is known as to processes by which sexual revictimization occurs. Given the methodological constraints often inherent in conducting this type of research, studies that evaluate the consequences of sexual revictimization are often retrospective, and hence, descriptive and correlational in nature. It is often difficult to assess, given these methodological constraints, the exact cause or causes of the phenomenon of sexual revictimization. Although literature exists which attempts to describe these processes theoretically (e.g., Polusny & Follette, 1995), experimental data which substantiate the processes by which revictimization occurs are virtually absent from the literature.

One way in which we could begin to identify the causal processes involved in sexual revictimization is to conduct prospective studies. In a prospective study, one could track college students over a specified time period, identify those students at the end of the study who experience additional sexual victimization, and interview these individuals to obtain the antecedents and responses to these experiences. Past prospective studies have demonstrated that college females are revictimized at shockingly high rates during the course of a college semester, but have presently been unsuccessful at identifying the exact nature of these experiences (Gidycz et al., 1993; Hanson & Gidycz, 1993).

Data from a recent study conducted by Naugle et al. (1996) provide some useful information regarding the potential processes involved in sexual revictimization. This study demonstrated that college females with a prior history of CSA and/or sexual assault experienced difficulty discriminating the types of responses that would be most effective in negotiating risky social situations. Using various videotaped vignettes, the authors discovered that women with a prior sexual abuse history were able to discriminate the types of responses that would be useful in more obvious high-risk situations (e.g., picking up a hitchhiker), but experienced difficulty choosing effective responses when given ambiguous social cues (e.g., engaging in unprotected sexual intercourse when a dating partner refuses to wear a condom, etc.).

These data suggest that women with a prior history of CSA and/or sexual assault may benefit from a sexual assault prevention program that identifies information, risk

factors, and response strategies that make the context in which sexual assault typically occurs less ambiguous and easier to identify and avoid. In addition, it seems reasonable to assume that women without such a history, and who are at lower risk of being sexually victimized, would also benefit from such a program. Results of a study conducted by Hanson and Gidycz (1993) suggest that prevalence of sexual assault does, in fact, decrease in this population of women over the course of a college semester when information is provided to them in the form of a sexual assault program. These results also suggest that women without such a history may simply need information to decrease their risk, while women with a prior history of sexual victimization may need, for example, additional interventions in the forms of assertiveness training, discrimination training, behavioral rehearsal of various skills, and response feedback from others regarding the effectiveness of their responses to high-risk situations. If this is in fact a valid assumption, then interventions with this population would need to be more extensive and less like the "one-shot" interventions that are currently popular on college campuses. Finally, results of the Naugle et al. (1996) study further suggest that refinement of females' ability to perceive and respond to risks characteristic of ambiguous social situations may promote more effective behavioral repertoires for discriminating and responding. This may ultimately decrease risk for those females who are highly vulnerable to being sexually revictimized.

Studies that have assessed the long-term correlates of CSA suggest that increased vulnerability for sexual victimization places this population at an increased risk for exposure to STDs (Allers & Benjack, 1991; Browne & Finkelhor, 1986; Polusny & Follette, 1995; Zierler et al., 1991). Furthermore, this population of women often engages in high-risk sexual activity with numerous sexual partners (Briere & Runtz, 1993), which may then place them at risk for sexual assault and consequent exposure to STDs.

Because increased substance use is highly correlated with a history of CSA, this level of sexual activity and consequent victimization could be due to the consumption of psychoactive substances in dating situations. In fact, there is evidence to suggest that previously victimized women are at an increased risk for substance abuse disorders (e.g., Polusny & Follette, 1995). The lifetime prevalence of substance use disorders among women who report a history of CSA and/or sexual assault far exceeds the lifetime prevalence rates of these disorders for women who do not report a prior history of CSA and/or sexual assault (15–22% compared to 4–7%; Zierler et al., 1991). Being intoxicated in an ambiguous situation would make it nearly impossible to effectively interpret and respond to risky situations, which would ultimately increase a female's risk of sexual assault. Given the additional risk factors of high-risk sexual behavior and substance use often associated with this population of women, it is imperative that sexual assault prevention programs target those high-risk behaviors (e.g., alcohol/drug use, high-risk sexual behavior) in a manner that would decrease risk of future sexual revictimization.

One of the ways in which we might be able to accomplish this goal is to instruct these women in either controlled drinking or relapse prevention techniques (e.g., Fromme, Marlatt, Baer, & Kivlahan, 1994; Kivlahan, Marlatt, Fromme, & Coppel, 1990; Mackey & Marlatt, 1990; Marlatt, Larimer, Baer, & Quigley, 1993). This would be difficult to successfully accomplish, however, because these interventions would require time and motivation on the part of the participants, and financial resources to pay the therapists who would implement treatment. In addition, this strategy would result in a potentially biased sample of women who were highly motivated to change

their own behavior. Finally, this type of approach would ultimately be pragmatically impossible for most sexual assault prevention educators or researchers to carry out effectively. However, despite these difficulties, we are left with the reality that it will be virtually impossible to effectively intervene with this population of women with a single, "shot-gun" approach.

Another issue that needs to be considered when working with this population is the possible iatrogenic effects that could occur if they are identified as being at risk for sexual assault because of a past sexual victimization history. We presently have no empirical evidence to suggest that informing women that they may be at future risk because of a past history is a useful intervention. Possible iatrogenic effects to disseminating such information could include, for example, a loss of self-efficacy or a sense of hopelessness that may then be evocative of future victimization experiences. It may be more reasonable to target those specific behaviors that are associated with an increased risk of sexual assault rather than a historical variable (e.g., sexual abuse history) when intervening with this population of women.

### ***Additional Factors Associated With an Increased Risk for Sexual Assault***

High rates of sexual victimization on college campuses have resulted in more refined analyses of the risk factors and behaviors that may lead to an increased risk of sexual assault in the college population. Muehlenhard and Linton (1987) have identified several variables which appear to be correlated with both acquaintance rape and sexual aggression in dating situations. These factors include heavy alcohol and drug use, the man initiating the date and paying for all expenses, miscommunication about sex, and acceptance of both rape myths and traditional sex roles. Although knowledge of these risk factors and behaviors is useful, they do not assist researchers in knowing how to get college women to both perceive or respond to these risk factors when they occur in dating situations. However, any sexual assault prevention program targeting females should clearly identify these factors as ones that increase a female's risk of being sexually victimized.

Women may additionally be at an increased risk for sexual victimization if they are unable to identify the inappropriateness of male behavior that may be verbally coercive. Despite the myth that most sexual assault involves some type of physical coercion, research suggests that approximately 1 out of 4 college males uses some type of verbal coercion to attempt to get females to engage in sexual intercourse (Fischer, 1996). A study conducted by Fischer (1996) demonstrated that 25% of college males lied regarding their commitment to the relationship in order to verbally coerce a female into engaging in sexual activity. In comparison, she discovered that few males used physical coercion or threats to get females to respond to demands for sexual intercourse. Those males who used such strategies reported a greater number of sexual experiences, excessive use of alcohol, increased belief in a woman's "token resistance" to sexual activity, and greater hostility towards women. It seems reasonable to assume that women may need accurate information about verbally coercive behavior. This type of information may assist women in discriminating potentially risky situations or dating partners. For example, a female who experiences a male attempting to verbally coerce her to engage in sexual intercourse will be able, with proper information, to identify this behavior as verbally coercive. Such identification may enable her to remove herself from the situation before she experiences sexual assault.

Research also demonstrates that women may be at an increased risk for sexual assault if they engage in what has been labeled in the literature as "token resistance" to sexual activity. Token resistance has been described as mild resistance to engaging in sexual intercourse despite a desire to engage in this type of behavior. It was originally thought that approximately 39.3% of women engaged in token resistance to sex (Muehlenhard & Hollabaugh, 1988). However, Muehlenhard and Rogers (1993) questioned the validity of past assessment strategies and conducted an additional study. They discovered that only 5% of women engaged in token resistance to sexual intercourse. When this type of behavior occurred, it generally did so in the context of an ongoing relationship. In short, although these results suggest that women's efforts to resist sexual advances are rarely disingenuous, males may still perceive such resistance as equivocal and continue to coerce, either verbally or physically, a woman to engage in sexual activity (Marx & Gross, 1995).

In an analogue study on date rape, Marx and Gross (1995) assessed the effect of perceived token resistance and prior sexual contact on men's ability to discriminate a female's desire to have her partner cease sexual advances. Subjects were informed that a couple had been on five previous dates, and that on one of the dates, the male had been permitted to engage in sexual activity with the woman. The subjects were then informed that either the woman had consented to this contact, or alternatively, resisted sexual activity but later ceased resisting contact. Those subjects in the token resistance condition demonstrated significantly longer latency times when deciding whether or not they would attempt to engage in further sexual contact.

These results suggest that women may be at an increased risk for sexual assault if, at the beginning of the relationship, they engage in token resistance to sexual activity. Marx and Gross (1995) suggest that when resistance is followed by sexual activity, males are intermittently reinforced for sexually aggressive behavior. They note that high rates of aggressive behavior could result if a male is intermittently reinforced for such aggressive behavior. The authors further suggest that if a female then fails to reinforce such behavior, extinction bursts of aggressive behavior could occur, which may then be reinforced by the female in order to terminate these aversive stimuli. A woman's verbal "no" could then become a discriminative stimulus for sexual aggression and persistence. The results of the Marx and Gross (1995) study suggest that women should be informed in sexual assault prevention programs of the potential negative effects of engaging in token resistance to sexual activity.

Although there exists some controversy over whether or not women adhere to rape myths that may place them at risk for sexual assault (Thorton, Robbins, & Johnson, 1981), it seems risky for any sexual assault program to fail to deliver accurate information regarding the nature of sexual victimization. There does exist some evidence to suggest that females do not always have adequate information regarding this behavioral phenomenon, and that lack of such information is correlated with an increased risk for sexual assault (Muehlenhard & McNaughton, 1988). Muehlenhard and McNaughton (1988) found that women who strongly accepted inaccurate beliefs regarding sexual assault were more likely to have experienced unwanted sexual intercourse. In addition, Lonsway and Fitzgerald (1995) suggest that women adhere to different rape myths than men, and that the function of these beliefs may be to deny personal vulnerability of being sexually assaulted. In sum, this literature suggests that lack of accurate information regarding sexual assault may increase a female's risk of sexual victimization.

Women may also be at an increased risk for sexual assault if they date men that have been characterized in the literature as possessing a high potential to engage in sexu-

ally abusive behavior. In a review of the literature on the characteristics of such perpetrators, Berkowitz (1992) identified the following behaviors and factors to be indicative of male rape potential: (a) traditional gender role expectations, (b) acceptance of rape-supportive attitudes, (c) hostility towards women, (d) lack of a social conscience, (e) control and dominance issues in dating relationships, and (f) participation in peer group environments that reinforce rape-supportive beliefs. Additionally, Mosher and Sirkin (1984) have demonstrated that males who are interested in dominating others, who are forceful and aggressive with women, who inhibit demonstrating "weak" emotions such as caring and empathy, who find danger and violence as exciting and manly, and who are unafraid to take risks are more likely to engage in aggressive behavior.

It seems reasonable to incorporate this information within a sexual assault prevention program for females to assist them in discriminating potential perpetrator characteristics that may place them at an increased risk for sexual assault. However, providing female participants with a rule to unerringly avoid these types of men may be both ineffective and unjust. After all, these variables are not pathognomonic signs that unequivocally identify perpetrators of sexual assault. A more reasonable approach may be to teach women to engage in a hypothesis generating and testing approach with potential dating partners. For example, females could be instructed to form potential hypotheses that should be either confirmed or disconfirmed by additional evidence. In short, a program could identify these behaviors as potential "red flags" that may suggest risk of sexual victimization.

Finally, research has suggested that difficulties in being assertive and stating sexual intentions early in a sequence of events may place females at an increased risk for sexual assault. (Muehlenhard, Julsonnet, Carlson, & White-Flarity, 1989). It has been demonstrated that men often misinterpret behavior as sexual and report feeling more justified in ignoring women's verbal refusals and physically coercing them to engage in sexual intercourse if women's sexual intentions are communicated in a nonassertive manner (Muehlenhard et al., 1989). Additionally, men who engage in sexual assault often report having misinterpreted their partner's sexual intentions (Muehlenhard, 1988). Given these data, instruction in the use of clear and assertive communication in dating situations may be useful in decreasing risk.

## CONCLUSIONS

The long-term negative consequences often associated with sexual victimization require that effective prevention programs are developed to decrease the high rates of sexual assault that occur on college campuses. To date, most programs have targeted either males or mixed-gender audiences in their efforts to produce behavioral change. Additionally, the primary prevention of sexual assault currently possesses several unique difficulties. First, we are presently unable to identify the exact causal mechanisms responsible for sexual assault and sexual revictimization. Without this knowledge, it is difficult to prevent the occurrence of sexual assault. In addition, the lack of psychometrically adequate dependent measures for female-based interventions makes the measurement of theoretically relevant constructs difficult, if not impossible. Furthermore, various pragmatic problems related to the implementation of these programs remain unresolved. The need for further prospective studies and component analyses in this area is imperative. We must continue to identify the causal

variables that are indicative of both sexual assault and sexual revictimization. These mechanisms must then be incorporated into the content of prevention programs for both women and men. Finally, psychometric research is needed for female-based programs in order to develop valid measures of risk for experiencing sexual assault and ability to respond effectively to such risk.

## REFERENCES

- Abarbanel, G. (1986). Rape and resistance. *Journal of Interpersonal Violence, 1*, 100–105.
- Abel, G. G., Blanchard, E. B., & Becker, J. V. (1978). An integrated treatment program for rapists. In R. T. Rada (Ed.), *Clinical aspects of the rapist*. New York: Grune & Stratton.
- Allers, C. T., & Benjack, K. J. (1991). Connections between childhood abuse and HIV infection. *Journal of Counseling and Development, 71*, 14–17.
- Armentrout, J. A., & Haver, A. L. (1978). MMPIs of rapists of adults, rapists of children, and nonrapist sex offenders. *Journal of Clinical Psychology, 34*, 330–332.
- Barbaree, H. E., & Marshall, W. L. (1991). The role of male sexual arousal in rape: Six models. *Journal of Consulting and Clinical Psychology, 59*, 621–630.
- Bart, P., & O'Brien, P. H. (1985). *Stopping rape: Successful survival strategies*. New York: Pergamon.
- Becker, M. H., & Maiman, L. A. (1975). Social behavioral determinants of compliance with health and medical recommendations. *Medical Care, 13*, 10–24.
- Berg, D. R. (1993). *The use of rape-specific empathy induction in rape education for college men: A theoretical and practical examination*. Unpublished master's thesis, University of Illinois, Urbana-Champaign.
- Berkowitz, A. (1992). College men as perpetrators of acquaintance rape and sexual assault: A review of recent research. *Journal of American College Health, 40*, 175–181.
- Borden, L. A., Karr, S. K., & Caldwell-Colbert, A. T. (1988). Effects of a university rape prevention program on attitudes and empathy toward rape. *Journal of College Student Development, 29*, 132–136.
- Bridges, J. S. (1991). Perceptions of date rape and stranger rape: A difference in sex role expectations and rape-supportive beliefs. *Sex Roles, 24*, 291–307.
- Briere, J., & Runtz, M. (1993). Childhood sexual abuse: Long-term sequelae and implications for psychological assessment. *Journal of Interpersonal Violence, 8*, 312–330.
- Briskin, K. C., & Gary, J. M. (1986). Sexual assault programming for college students. *Journal of Counseling and Development, 65*, 207–208.
- Browne, A., & Finkelhor, D. (1986). Impact of child sexual abuse: A review of the research. *Psychological Bulletin, 99*, 66–77.
- Burt, M. (1980). Cultural myths and support for rape. *Journal of Personality and Social Psychology, 38*, 217–230.
- Cohn, E., Kidder, L., & Harvey, J. (1978). Crime prevention vs. victimization prevention: The psychology of two different reactions. *Victimology: An International Journal, 3*, 285–296.
- Dallager, C., & Rosen, L. A. (1993). Effects of a human sexuality course on attitudes toward rape and violence. *Journal of Sex Education and Therapy, 19*, 193–199.
- Deitz, S., Blackwell, K., Daley, P., & Bentley, B. (1982). Measurement of empathy toward rape victims and rapists. *Journal of Personality and Social Psychology, 43*, 372–383.
- Dowdeswell, J. (1986). *Women on rape*. New York: Thorsons.
- Egidio, R. K., & Robertson, D. E. (1981). Rape awareness for men. *Journal of College Student Development, 22*, 455–456.
- Ellis, A. L., O'Sullivan, C. S., & Sowards, B. A. (1992). The impact of contemplated exposure to a survivor of rape on attitudes toward rape. *Journal of Applied Social Psychology, 22*, 889–895.
- Finkelhor, D. (1984). *Child sexual abuse: New theory and research*. New York: Free Press.
- Fischer, G. J. (1986). College student attitudes toward forcible date rape: Cognitive predictors. *Archives of Sexual Behavior, 15*, 457–466.
- Fischer, G. J. (1996). Deceptive, verbally coercive college males: Attitudinal predictors and lies told. *Archives of Sexual Behavior, 5*, 527–533.
- Fischhoff, B., Furby, L., & Morgan, M. (1987). Rape prevention: A typology of strategies. *Journal of Interpersonal Violence, 2*, 292–308.
- Follette, W. C. (1995). Correcting methodological weaknesses in the knowledge base used to derive practice standards. In S. C. Hayes, V. M. Follette, R. M. Dawes, & K. E. Grady (Eds.), *Scientific standards of psychological practice* (pp. 229–247). Reno, NV: Context Press.

- Fonow, M. M., Richardson, L., & Wemmerus, V. A. (1992). Feminist rape education: Does it work? *Gender and Society, 6*, 108–121.
- Frazier, P., Valtinson, G., & Candell, S. (1994). Evaluation of a coeducational interactive rape prevention program. *Journal of Counseling and Development, 73*, 153–158.
- Freund, K., Watson, R., & Dickey, R. (1990). Does sexual abuse in childhood cause pedophilia: An explorative study. *Archives of Sexual Behavior, 19*, 557–568.
- Fromme, K., Marlatt, G. A., Baer, J. S., & Kivlahan, D. R. (1994). The alcohol skills training program: A group intervention for young adult drinkers. *Journal of Substance Abuse Treatment, 11*, 143–154.
- Furby, L., Fischhoff, B., & Morgan, M. (1992). Preventing rape: How people perceive the options of defending oneself during an assault. In E. C. Viano (Ed.), *Critical issues in victimology: Interactional perspectives* (pp. 174–189). New York: Springer.
- Gidycz, C. A., Nelson-Coble, C. N., Latham, L., & Layman, M. J. (1993). Relation of a sexual assault experience in adulthood to prior victimization experiences: A prospective analysis. *Psychology of Women Quarterly, 17*, 151–168.
- Gilbert, B., Heesacker, M., & Gannon, L. (1991). Changing the sexual aggression supportive attitudes of men: A psychoeducation approach. *Journal of Counseling Psychology, 38*, 197–203.
- Gray, M. D., Lesser, D., Quinn, E., & Bounds, C. (1990). The effectiveness of personalizing acquaintance rape prevention: Programs on perception of vulnerability and on reducing risk-taking behavior. *Journal of College Student Development, 31*, 217–220.
- Groth, A. N., Burgess, A. W., & Holmstrom, L. L. (1977). Rape: Power, anger, and sexuality. *American Journal of Psychiatry, 134*, 1239–1243.
- Hanson, K. A., & Gidycz, C. A. (1993). Evaluation of a sexual assault prevention program. *Journal of Consulting and Clinical Psychology, 61*, 1046–1052.
- Harrison, P. J., Downes, J., & Williams, M. D. (1991). Date and acquaintance rape: Perceptions and attitude change strategies. *Journal of College Student Development, 32*, 131–139.
- Heppner, M. J., Humphrey, C. F., Hillenbrand-Gunn, T. L., & DeBord, K. A. (1995). The differential effects of rape prevention programming on attitudes, behavior, and knowledge. *Journal of Counseling Psychology, 42*, 508–518.
- Hildebran, D., & Pithers, W. (1989). Enhancing offender empathy for sexual abuse victims. In D. Laws (Ed.), *Relapse prevention with sex offenders* (pp. 236–243). New York: Guilford.
- Hobson, W. F., Boland, C., & Jamieson, D. (1985). Dangerous sexual offenders. *Medical Aspects of Human Sexuality, 19*, 104–119.
- Holcomb, D. R., Sarvela, P. D., Sondag, K. A., & Holcomb, L. C. (1993). An evaluation of a mixed-gender date rape prevention workshop. *Journal of American College Health, 41*, 159–164.
- Holcomb, D. R., Sondag, K. A., & Holcomb, L. C. (1993). Healthy dating: A mixed-gender date rape workshop. *Journal of American College Health, 41*, 155–157.
- Intons-Peterson, M. J., Roskos-Ewoldson, B., Thomas, L., Shirley, M., & Blut, D. (1989). Will educational materials reduce negative effects of exposure to sexual violence? *Journal of Social and Clinical Psychology, 8*, 256–275.
- Jacobson, N. S., Follette, W. C., & Resendorf, D. (1984). Psychotherapy outcome research: Methods for reporting variability and evaluating clinical significance. *Behavior Therapy, 15*, 336–352.
- Jenkins, M. J., & Dambrot, F. H. (1987). The attribution of rape: Observer's attitude and sexual experiences and the dating situation. *Journal of Applied Social Psychology, 17*, 875–895.
- Jones, J., & Muehlenhard, C. (1990, November). *Using education to prevent rape on college campuses*. Presented at the annual meeting of the Society for Scientific Study for Sex, Minneapolis, MN.
- Kidder, L., Boell, J., & Moyer, M. (1987). Rights consciousness and victimization prevention: Personal defense and assertiveness training. *Journal of Social Issues, 39*, 155–170.
- Kilpatrick, D. G., & Amick, A. E. (1985). Rape trauma. In M. Hersen & C. G. Last (Eds.), *Behavior therapy casebook* (pp. 86–103). New York: Springer.
- Kilpatrick, D. G., Veronen, L. J., & Resick, P. A. (1982). Psychological sequelae to rape: Assessment and treatment strategies. In D. M. Doleys, R. L. Meredith, & A. R. Ciminero (Eds.), *Behavioral medicine: Assessment and treatment strategies* (pp. 473–497). New York: Plenum.
- Kivlahan, D. R., Marlatt, G. A., Fromme, K., & Coppel, D. B. (1990). Secondary prevention with college drinkers: Evaluation of an alcohol skills training program. *Journal of Consulting and Clinical Psychology, 58*, 805–810.
- Kleck, G., & Sayles, S. (1990). Rape and resistance. *Social Problems, 37*, 149–162.
- Knight, R. A., & Prentky, R. A. (1990). Classifying sexual offenders: The development and corroboration of taxonomic models. In W. Marshall, D. Laws, & H. Barbaree (Eds.), *The handbook of sexual assault: Issues, theories, and treatment of the offender* (pp. 23–52). New York: Plenum.

- Koss, M. P., Dinero, T. E., Siebel, C. A., & Cox, S. L. (1988). Stranger and acquaintance rape: Are there differences in the victim's experience? *Psychology of Women Quarterly*, *12*, 1–24.
- Koss, M. P., & Gidycz, C. A. (1985). Sexual Experiences Survey: Reliability and validity. *Journal of Consulting and Clinical Psychology*, *53*, 162–170.
- Koss, M. P., Gidycz, C. A., & Wisniewski, N. (1987). The scope of rape: Incidence and prevalence of sexual aggression and victimization in a national sample of higher education students. *Journal of Consulting and Clinical Psychology*, *55*, 162–170.
- Lang, R. A., & Langevin, R. (1991). Parent-child relations in offenders who commit violent sexual crimes against children. *Behavioral Sciences and the Law*, *9*, 61–71.
- Lee, L. (1987). Rape prevention: Experiential training for men. *Journal of Counseling and Development*, *66*, 100–101.
- Lenihan, G. O., Rawlins, M. E., Eberly, C. G., Buckley, B., & Masters, B. (1992). Gender differences in rape supportive attitudes before and after a date rape education intervention. *Journal of College Student Development*, *33*, 331–338.
- Lipton, D. N., McDonel, E. C., & McFall, R. M. (1987). Heterosocial perception in rapists. *Journal of Consulting and Clinical Psychology*, *55*, 17–21.
- Lonsway, K. A., & Fitzgerald, L. F. (1995). Attitudinal antecedents of rape myth acceptance: A theoretical and empirical reexamination. *Journal of Personality and Social Psychology*, *68*, 704–711.
- Mackey, P. W., & Marlatt, G. A. (1990). Maintaining sobriety: Stopping is starting. *International Journal of the Addictions*, *25*, 1257–1276.
- Malamuth, N. M. (1986). Predictors of naturalistic sexual aggression. *Journal of Personality and Social Psychology*, *50*, 953–962.
- Malamuth, N. M., & Check, J. V. P. (1981). The effects of mass media exposure on acceptance of violence against women: A field experiment. *Journal of Research in Personality*, *15*, 436–446.
- Malamuth, N. M., Sockloskie, R. J., Koss, M. P., & Tananka, J. S. (1991). Characteristics of aggressors against women: Testing a model using a national sample of college students. *Journal of Consulting and Clinical Psychology*, *59*, 670–681.
- Mann, C. A., Hecht, M. L., & Valentine, K. B. (1988). Performance in a social context: Date rape versus date right. *Central States Speech Journal*, *3*(4), 269–280.
- Marlatt, G. A., Larimer, M. E., Baer, J. S., & Quigley, L. A. (1993). Harm reduction for alcohol problems: Moving beyond the controlled drinking controversy. *Behavior Therapy*, *24*, 461–503.
- Marx, B. P., & Gross, A. M. (1995). Date rape: An analysis of two contextual variables. *Behavior Modification*, *19*, 451–463.
- McCahill, T. W., Meyer, L. C., & Fischman, R. M. (1979). *The aftermath of rape*. Lexington, MA: Lexington.
- Mosher, D., & Sirkin, M. (1984). Measuring a macho personality constellation. *Journal of Research in Personality*, *18*, 150–163.
- Muehlenhard, C. L. (1988). Misinterpreted dating behavior and the risk of date rape. *Journal of Social and Clinical Psychology*, *6*, 20–37.
- Muehlenhard, C. L., & Hollabaugh, L. C. (1988). Do women sometimes say no when they mean yes? The prevalence of correlates of women's token resistance to sex. *Journal of Personality and Social Psychology*, *54*, 872–879.
- Muehlenhard, C. L., Julsonnet, S., Carlson, M. I., & White-Flarity, L. A. (1989). A cognitive-behavioral program for preventing sexual coercion. *Behavior Therapist*, *12*, 211–214.
- Muehlenhard, C. L., & Linton, M. A. (1987). Date rape and sexual aggression in dating situation: Incidence and risk factors. *Journal of Counseling Psychology*, *34*, 186–196.
- Muehlenhard, C. L., & McNaughton, M. (1988). Women's attitudes toward women who "lead men on." *Journal of Social and Clinical Psychology*, *7*, 65–79.
- Muehlenhard, C. L., & Rogers, C. S. (1993, August). Narrative descriptions of "token resistance to sex." In C. L. Muehlenhard (Chair), *Token resistance to sex: Challenging a sexist stereotype*. Presented at the annual meeting of the American Psychological Association, Toronto.
- Naugle, A. E., Follette, W. C., & Follette, V. M. (1996). *Toward a behavior-analytic conceptualization of the process of sexual revictimization*. Manuscript submitted for publication.
- O'Donohue, W. T., & Fanetti, M. N. (1997). *Reducing rape-related cognitions of college aged males*. Manuscript submitted for publication.
- Parrot, A., & Bechhofer, L. (Eds.). (1991). *Acquaintance rape: The hidden crime*. New York: Wiley.
- Polusny, M. A., & Follette, V. M. (1995). Long-term correlates of child sexual abuse: Theory and review of the empirical literature. *Applied & Preventive Psychology*, *4*, 143–166.
- Prentky, R. A., Knight, R. A., & Rosenberg, R. (1988). Validation analyses on a taxonomic system for rapists: Disconfirmation and reconceptualization. *Annals of the New York Academy of Sciences*, *528*, 21–40.



- Ring, T. E., & Kilmartin, C. (1992). Man to man about rape: A rape prevention program for men. *Journal of College Student Development, 33*, 82–84.
- Rozee, P., Bateman, P., & Gilmore, T. (1991). The personal perspective of acquaintance rape prevention: A three tier approach. In A. Parrott & L. Bechhofer (Eds.), *Acquaintance rape: The hidden crime*. New York: Wiley.
- Russell, D. E. H. (1984). *Sexual exploitation: Rape, child sexual abuse, and workplace harassment*. Beverly Hills, CA: Sage.
- Schewe, P., & O'Donohue, W. T. (1993a). Rape prevention: Methodological problems and new directions. *Clinical Psychology Review, 13*, 667–682.
- Schewe, P., & O'Donohue, W. T. (1993b). Sexual abuse prevention with high risk males: The roles of victim empathy and rape myths. *Violence and Victims, 8*, 339–351.
- Searles, P., & Berger, R. (1987, March). The feminist self-defense movement: A case study. *Gender and Society, 1*, 61–84.
- Sidman, M. (1960). *Tactics of scientific research*. New York: Basic Books.
- Smith, S. (1986). *Fear of freedom: A woman's options in social survival & physical defense*. Racine, WI: Mother Courage Press.
- Sorenson, S. B., Stein, J. A., Siegel, J. M., Golding, J. M., & Burnam, M. A. (1987). The prevalence of sexual assault: The Los Angeles epidemiologic catchment area. *American Journal of Epidemiology, 126*, 1154–1164.
- Thorton, B., Robbins, M. A., & Johnson, J. A. (1981). Social perception of the rape victim's culpability: The influence of respondent's personal-environmental causal attribution tendencies. *Human Relations, 34*, 225–237.
- Warshaw, R. (1988). *I never called it rape: The Ms. report on recognizing, fighting, and surviving date and acquaintance rape*. New York: Harper & Row.
- Women Against Rape. (1980). A rape prevention program in an urban area: Community action strategies to stop rape. *Signs, 5*, 238–241.
- Wyatt, G. E., Guthrie, D., & Notgrass, C. M. (1992). Differential effects of women's child sexual abuse and subsequent sexual revictimization. *Journal of Consulting and Clinical Psychology, 60*, 167–173.
- Zierler, S., Feingold, L., Laufer, D., Velentgas, P., Kantrowitz-Gordon, I., & Mayer, K. (1991). Adult survivors of childhood sexual abuse and subsequent risk for HIV infection. *American Journal of Public Health, 81*, 572–575.