

Self-Defense or Assertiveness Training and Women's Responses to Sexual Attacks

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Self-defense classes aim to prevent violence against women by strengthening women's capacity to defend themselves; however, little research has examined the effects of self-defense training on women's attempts to fight back during actual attacks. This study investigated the relationship of self-defense or assertiveness training and women's physical and psychological responses to subsequent rape attacks (N = 1,623). Multivariate analyses showed that victims with preassault training were more likely to say that their resistance stopped the offender or made him less aggressive than victims without training. Women with training before their assaults were angrier and less scared during the incident than women without training, consistent with the teachings of self-defense training. Preassault training participants rated their degree of nonconsent or resistance as lower than did nonparticipants, perhaps because they held themselves to a higher standard. Suggestions for future research on women's self-defense training and rape prevention are offered.

Keywords: *self-defense; assertiveness training; rape avoidance; college women*

Self-defense training gives women access to a new set of assertive and combative responses to various forms of intimidation and threat along the continuum of sexual violence (Kelly, 1988; McCaughey, 1997). However, little research has examined the effects of self-defense training on women's attempts to fight back during actual attacks. Preassault self-defense or asser-

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tiveness training may be associated with unique subsequent assault experiences, such as more resistance and rape avoidance. Women need to be educated about how to effectively resist if faced with a potential assault.

Self-defense training prepares women both mentally and physically for potential assaults (Follansbee, 1982) by providing them with opportunities to learn, observe, and practice physical, social, and cognitive skills through the use of role-plays, discussion, and simulation exercises (Cummings, 1992; Peretz, 1991; Thompson, 1991). Women's self-defense tactics are meant to be practical, simple, and effective in common situations, so that all women can learn them regardless of age, size, previous experiences, and physical strength (Burton, 1999; McDaniel, 1993; Quinsey, Marion, Upfold, & Popple, 1986; Rentschler, 1999; Schuiteman, 1990). Women's self-defense lessons often include learning how to create impromptu weapons (e.g., comb, keys) and how to use body parts (e.g., fists, elbows, knees) against the offender's particularly vulnerable body targets (e.g., eyes, jaw, nose, groin) in various situations (Cummings, 1992; Schuiteman, 1990).

After completing self-defense classes, evaluations have shown increases in the following domains for women: assertiveness, self-esteem, perceived control, participatory behaviors, self-efficacy, masculinity attributes (e.g., active, independent), anger, dominance, self-defense skills, physical competence, and decreases in anxiety, depression, hostility, fear, and avoidance behaviors (Cohn, Kidder, & Harvey, 1978; Cox, 1999; Donaldson, 1978; Finkenberg, 1990; Follansbee, 1982; Fraser & Russell, 2000; Frost, 1991; Gaddis, 1990; Guthrie, 1995; Henderson, 1997; Kidder, Boell, & Moyer, 1983; Lidsker, 1991; Mastria, 1975; McCaughey, 1997; McDaniel, 1993; S. O. Michener, 1996; T. D. Michener, 1997; Ozer & Bandura, 1990; Pava, Bateman, Appleton, & Glascock, 1991; Rowe, 1993; Sedlacek, 2000; Shim, 1998; Smith, 1983; Vaselakos, 1999; Weitlauf, Cervone, Smith, & Wright, 2001; Weitlauf, Smith, & Cervone, 2000; Wheeler, 1995). Studies have found that successful rape resisters were more assertive, confident, dominant, perceived more control over their lives, and showed more initiative, persistence, and leadership compared with women who were raped (Amick & Calhoun, 1987; Burnett, Templer, & Barker, 1985; Selkin, 1978), demonstrating that psychological changes because of participation in self-defense training may have substantial implications for subsequent rape avoidance. Increasing women's assertiveness skills is especially important in light of a recent prospective study showing that low assertiveness specific to situations with men was predictive of future victimization in a sample of 274 college women (Greene & Navarro, 1998). Empowering women with the tools to respond to threats may serve to both protect and liberate them (Ozer & Bandura, 1990).

Although self-defense training may have positive psychological and behavioral effects on female participants, very little empirical research has examined whether self-defense training is related to actual rape avoidance among women who later face a rape attack. In Bart and O'Brien's (1985) landmark interview study of 51 rape avoiders and 43 rape victims, rape avoiders were nearly twice as likely to have learned self-defense as women who were raped. In a descriptive study, Peri (1991) found that of 8,000 female graduates of Model Mugging, a self-defense course, 120 have reported using nonphysical strategies (e.g., screaming) to avoid an assault. In addition, 46 out of 48 graduates of Model Mugging who were physically assaulted after the course chose to fight back physically and reported being able to disable the offender enough to avoid further harm (Peri, 1991). This prior research suggests that self-defense training may be related to rape avoidance for participants; however, more rigorous studies are needed to verify this relationship.

Numerous empirical research studies have examined the role of victim resistance in rape incidents, using police reports and retrospective self-report surveys. Victims' use of forceful physical resistance (e.g., hitting, kicking, biting) is typically related to avoiding completed rape (Atkeson, Calhoun, & Morris, 1989; Bart & O'Brien, 1985; Clay-Warner, 2002; Fisher, Cullen, & Turner, 2000; Kleck & Sayles, 1990; Lizotte, 1986; Murnen, Perot, & Byrne, 1989; Queen's Bench Foundation, 1976; Ruback & Ivie, 1988; Siegel, Sorenson, Golding, Burnam, & Stein, 1989; Ullman, 1998; Ullman & Knight, 1992, 1993; Zoucha-Jensen & Coyne, 1993). In prior studies examining the temporal order of assault events (e.g., offender attack, victim resistance, rape or injury outcomes), forceful physical resistance (FPR) was not related to greater injury (Quinsey & Upfold, 1985; Ullman, 1998; Ullman & Knight, 1992) but was still related to avoiding completed rape. Nonforceful physical resistance (NFPR) (e.g., fleeing, blocking blows) has also been found to be related to less rape completion (Bart & O'Brien, 1985; Block & Skogan, 1986; Kleck & Sayles, 1990; Ullman & Knight, 1991; Zoucha-Jensen & Coyne, 1993) and unrelated to physical injury (Block & Skogan, 1986; Kleck & Sayles, 1990; Ullman & Knight, 1993). Several studies have shown that forceful verbal resistance (FVR) (e.g., screaming, yelling at, or threatening offender) is related to rape avoidance (Bart & O'Brien, 1985; Kleck & Sayles, 1990; Queen's Bench Foundation, 1976; Quinsey & Upfold, 1985; Siegel et al., 1989; Ullman & Knight, 1992, 1993; Zoucha-Jensen & Coyne, 1993), but its relationship with physical injury has been inconsistent. Forceful verbal resistance was linked to greater physical injury (a positive bivariate correlation) in studies without sequence information (Kleck & Sayles, 1990; Ruback & Ivie, 1988); but in one study, analyzing sequence of

events, this strategy was unrelated to injury (Ullman & Knight, 1992). Finally, nonforceful verbal resistance (NFVR) (e.g., pleading, begging, reasoning) has been found to be related to greater severity of sexual abuse and unrelated to physical injury (Bart & O'Brien, 1985; Clay-Warner, 2002; Ullman & Knight, 1993; Zoucha-Jensen & Coyne, 1993). Based on this research, it appears that the techniques taught most often in self-defense training (e.g., hitting, kicking, yelling) are related to rape avoidance, implying that self-defense may reduce women's severity of sexual victimization.

Present Study

The present study will examine the effects of self-defense or assertiveness training on sexual assault victims using data from 3,187 female college students through the National Survey of Intergender Relationships conducted by Mary Koss. Several published studies have been conducted using this national data set (e.g., Koss & Dinero, 1989; Koss, Gidycz, & Wisniewski, 1987; Ullman, Karabatsos, & Koss, 1999); however, no study has examined the relationship between self-defense or assertiveness training and women's responses to sexual attacks. Because there is limited research available on this important topic, this study will be the first using a national sample to examine whether self-defense or assertiveness training is associated with a decrease in women's sexual victimization. Until primary prevention of rape occurs, women should have access to tools for responding to this threat.

Hypotheses

Based on prior research showing that self-defense training is related to rape avoidance (Bart & O'Brien, 1985; Peri, 1991), women who took self-defense or assertiveness training before their assaults are expected to have experienced less severe sexual victimization than women without such training. It is also expected that victims with preassault training will be more likely to report that the offender either stopped the attack or became less aggressive as a result of their resistance.

Evaluations have shown that self-defense training increases assertiveness, self-efficacy, self-defense skills, and physical competence (Cohn et al., 1978; Cox, 1999; Frost, 1991; Henderson, 1997; Kidder et al., 1983; Lidsker, 1991; McDaniel, 1993; S. O. Michener, 1996; T. D. Michener, 1997; Ozer & Bandura, 1990; Pava et al., 1991; Shim, 1998; Smith, 1983; Weitlauf et al., 2000, 2001), attributes which may increase women's resistance efforts during an attack. It is hypothesized that victims who took self-defense or assertiveness training before their assault experiences will be more likely to have

screamed for help, run away, or physically struggled than victims who did not take training (Peri, 1991), all techniques related to rape avoidance (Ullman, 1997). Because passive resistance strategies are related to both rape completion (Ullman, 1997) and more female gender role-specific culturally conditioned responses (Gaddis, 1990), it is expected that women with preassault training will be less likely to have reasoned or pleaded with the offender, or cried during the assault experience than women without training.

Moreover, self-defense training typically teaches women that sexual assault is not their fault. Lidsker's (1991) evaluation found that sexual assault survivors who took self-defense came to understand that they were not to blame for their assaults. Therefore, it is expected that victims with training before their assaults will believe that offender responsibility for the assault was greater, and their own responsibility was lower compared with victims without training. It is also expected that training participants will be more likely to say that they made it clearer to the offender that they were not consenting to sex than nonparticipants.

Self-defense instructors often teach women to channel their fear into anger and constructive energy (Gaddis, 1990; Kidder et al., 1983; McCaughey, 1997, 1998; Rentschler, 1999; Searles & Follansbee, 1984); however, self-defense program evaluations have been mixed on this issue, with only one study finding an increase in participants' anger as a result of training (S. O. Michener, 1996). Because another study demonstrated that training participants learned that feelings of anger are inconsistent with feelings of fear and helplessness (Kidder et al., 1983), it is expected that women with preassault self-defense or assertiveness training will report having felt angrier, less scared, and less sad during the incident compared with women without training. Because self-defense courses often teach women about the characteristics that define rape (Kidder et al., 1983) and past research has found that acknowledged victims (e.g., women who self-label as rape victims) are more likely to have resisted during an attack than unacknowledged victims (Layman, Gidycz, & Lynn, 1996), it is expected that training participants will be more likely to have defined their experiences as rape than nonparticipants.

METHOD

Sample

A national sample of 3,187 female college students from 32 institutions of higher education across the United States was administered an anonymous self-report questionnaire titled National Survey of Intergender Relationships

in regularly scheduled classes (see Koss et al., 1987, for more details). For the sample, there was a 98.5% response rate. The sample was representative of U.S. higher education enrollment in institution location, participant ethnicity, and family income. However, compared to U.S. higher education enrollment, the proportion of students at Northeast and Southwest institutions were somewhat overrepresented, whereas institutions in the West were underrepresented. Because of the regional disproportion, Koss et al. (1987) used weighting factors in their calculations of the prevalence of sexual victimization. Unweighted data were used in the present study, as it was not focused on examining the prevalence of sexual victimization in the United States.

Demographics

Demographic data on the respondents' race was coded 0 for minority (e.g., African American, Hispanic, Asian or Pacific Islander, American Indian, and Alaskan Native) and 1 for White. Respondent age was assessed in years at the time of the survey, and marital status was coded 0 for unmarried (single, divorced or separated, widowed) and 1 for married (including cohabiting). Family income in the last year was estimated by respondents using the following categories: \$7,500 or less, \$7,501 to \$15,000, \$15,001 to \$25,000, \$25,001 to \$35,000, \$35,001 to \$50,000, and more than \$50,000. Married women were asked to estimate the income in the family in which they grew up. Respondents were asked the following question: "Where are you living now?" This was coded as 0 for on campus (dorm or sorority) and 1 for off campus (off-campus apartment, house, trailer, co-op, or home of parent or relative).

Sexual Victimization Severity

The 10-item Sexual Experiences Survey (SES; Koss & Oros, 1982) was used to assess sexual assault experiences since age 14 in this sample of female college students. The SES is a widely used screening instrument using multiple behaviorally specific questions to reflect various degrees of sexual victimization (Koss et al., 1987; Koss & Gidycz, 1985). An internal consistency reliability of 0.74 has been reported for the female version of the SES, and, with administrations 1 week apart, the test-retest agreement rate was 93% (Koss & Gidycz, 1985). Two studies investigating the truthfulness of self-reports on the SES found significant correlations between a woman's level of sexual victimization based on self-report and interview responses several months later (Koss, 1988; Koss & Gidycz, 1985).

Unwanted sexual contact was defined as women who experienced unwanted fondling or kissing without attempts at sexual intercourse because of a man's continual arguments or pressure, his misuse of authority, threats of physical harm, or actual physical force. The group labeled *sexual coercion* included women who experienced sexual intercourse following the man's use of continual arguments or his misuse of authority but without threats of force or direct physical force. Attempted rape was assessed with two questions (e.g., "Have you had a man attempt sexual intercourse [get on top of you, attempt to insert his penis] when you didn't want to by threatening or using some degree of force [twisting your arm, holding you down, etc.], but intercourse did not occur?"). The second question assessing attempted rape using similar phrasing asked about attempted intercourse where the offender gave the victim alcohol or drugs. Completed rape was assessed with several questions meeting the legal definition of rape (e.g., "Have you had sexual intercourse when you didn't want to because a man threatened or used some degree of physical force [twisting your arm, holding you down, etc.] to make you?"). Two other questions using the same phrasing asked about sexual intercourse obtained when the victim was given alcohol or drugs by a man and completed acts of anal or oral intercourse and penetration with objects. All questions had a no or yes response format. Because women may experience several different victimizations, respondents were classified according to the most severe sexual victimization they reported (e.g., a woman experiencing both sexual contact and attempted rape would be classified as experiencing attempted rape). Sexual victimization severity was coded from the SES as 1 = *unwanted sexual contact*, 2 = *sexual coercion*, 3 = *attempted rape*, and 4 = *completed rape*, following Koss et al.'s (1987) guidelines. Because 44 women responded that their index assault experience occurred prior to age 14, these cases were excluded from the analyses. The final sample of victims for this study included 1,623 women who experienced unwanted sexual contact, sexual coercion, attempted rape, or completed rape in adulthood (age 14 and older).

Index Sexual Assault Experience

Women who had reported any form of sexual victimization were asked additional questions about their experience. Those respondents who had multiple experiences were asked to report on the experience they remembered best. All assault characteristics and victim assault-related perceptions were asked with reference to this index assault experience.

Self-defense or assertiveness training. Victims were asked if they had studied self-defense or taken assertiveness training either before (no or yes) or after (no or yes) their index sexual assault experience. For the purposes of this article, only the question about preassault training was used (see Brecklin & Ullman (2004) for an analysis of the correlates of postassault training among sexual assault survivors).

Assault characteristics. Offender aggression was assessed using questions regarding whether the man used certain behaviors to make the respondent cooperate, such as twisting her arm or holding her down, hitting or slapping, choking or beating, and a weapon. For each aggressive behavior, respondents answered no or yes. Offender aggression was coded as *absent* if the woman replied no to all of the above categories and as *present* if the respondent replied yes to one or more of them. Offenders' verbal threats of physical force were also coded as absent or present.

To assess victim-offender relationship, respondents were asked, "How well did you know him?" with response options of 0 = *didn't know at all*, 1 = *slightly acquainted*, 2 = *moderately acquainted*, 3 = *very well acquainted*, and 4 = *extremely well acquainted*. This variable was recoded as 0 = *didn't know at all (stranger)*, 1 = *slightly to moderately acquainted (acquaintance)*, and 2 = *very well to extremely well acquainted (intimate)*. Respondents were asked, "How would you describe the social situation surrounding this experience?" All assaults occurring in the context of more intimate, planned social situations (individual or group date) were placed into one category (0), and assaults arising from no social situation or unplanned social events (spontaneous dates or parties) were grouped in a second category (1).

Respondents were asked, "Was the man using any intoxicants on this occasion?" and "Were you using any intoxicants on this occasion?" Response options for both questions were "alcohol," "drugs," "both," "none," and "don't know." Respondents indicating that the offenders were only using alcohol were coded yes for offender alcohol use, and those assaults where the offenders were not perceived to be under the influence of any substance were coded no. Similarly, the variable *victim alcohol use* was created (0 = *victim not using drugs or alcohol*, 1 = *victim drinking at time of incident*). Because victims were rarely ever drinking when the offender was not drinking ($n = 20$), dummy-coded contrasts were created for use in the multivariate analyses to compare incidents with no drinking, only offender drinking, and both offender and victim drinking.

To assess victim resistance, respondents were asked, "Did you do any of the following to resist his advances?" including the following categories: (a)

turn cold; (b) reason, plead, quarrel, or tell him to stop; (c) cry or sob; (d) scream for help; (e) run away; and (f) physically struggle, push him away, hit, or scratch. Respondents were asked to check either no or yes for each type of resistance. Those victims who physically struggled, pushed, hit, or scratched their offenders were coded as using FPR, and victims who ran away were coded as using NFPR. FVR included those victims who screamed for help, whereas NFVR was coded as present for victims who cried, sobbed, reasoned, pleaded, quarreled, or told the offender to stop. Each of these four types of resistance was coded 1 if the victim used that particular type of resistance and 0 if she did not use the strategy.

Victim perception of index assault. Victims were asked what they believed was the effect of their resistance and were instructed to choose only one of the following response options: 1 = *he stopped*, 2 = *he became less aggressive*, 3 = *no effect on him*, and 4 = *he became more aggressive*. Effect of victim resistance was recoded as either *no effect or he became more aggressive* or *he became less aggressive or stopped* to distinguish between negative and positive effects of resistance, respectively. Respondents were also asked questions about the offenders' behavior, such as "how aggressive was the man?" (perception of aggression) and "how responsible is he for what happened?" (offender responsibility). In addition, victims were asked to describe their perceptions of their own behavior, including "how much do you feel responsible for what happened?" (victim responsibility), "how clear did you make it to the man that you did not want sex?" (clarity of nonconsent), and "how much did you resist?" (perceived level of resistance). The responses for the above questions used 5-point Likert-type scales of 1 = *not at all* to 5 = *very much*. Because clarity of nonconsent and perceived level of resistance were highly correlated ($r = .72$), a new measure was created by averaging the responses to these two questions. Reliability assessed using Cronbach's alpha for this new measure (perceived level of nonconsent or resistance) was .84.

Three types of victims' emotions at the time of the incident (fear, anger, and sadness) were each assessed with a single question (e.g., "How scared were you?"), using 5-point Likert-type response scales ranging from 1 = *not at all* to 5 = *very much*. Victims were also asked how they defined their own experience using the following response options: 1 = *I don't feel I was victimized*, 2 = *I believe I was a victim of serious miscommunication*, 3 = *I believe I was a victim of a crime other than rape*, and 4 = *I believe I was a victim of rape*. Victims' label of their experience as *rape* was coded no or yes (e.g., acknowledgment of status as rape victim).

Postassault experiences. Disclosure of the experience was assessed with the following question: "Did you discuss this experience with anyone?" (no or yes). Suicidal ideation was measured with the question, "Have you ever seriously contemplated suicide to the point of considering a method?" with respect to timing after the sexual assault experience (no or yes).

RESULTS

Sample Characteristics

Sample characteristics are presented in Table 1. The majority of the 1,623 victims in this sample were White (89.1%), unmarried (88.2%), lived off campus (60.4%), and were an average of 21.7 years old at the time of the survey. Approximately one third of respondents' families of origin earned \$25,000 or less in the last year. Sexual victimization severity for the sample was as follows: unwanted sexual contact (27.3%), sexual coercion (21.1%), attempted rape (22.6%), and completed rape (29.0%). Thirteen percent of the women took self-defense or assertiveness training before their index assaults. Less than half of the offenders used physical aggression (37.8%), and fewer used verbal threats (15.7%) against their victims. Assaults were primarily committed by offenders who were very to extremely well acquainted with the victim (49.1%) in unplanned or spontaneous situations (55.6%). Close to one half of victims reported they used alcohol (41.6%), and their attacker used alcohol (50.9%) prior to the incident. Eighty-two percent of the victims used at least one type of resistance strategy. FPR (47.4%) and NFVR (78.9%) were the most common types of resistance strategies. More than one half of respondents (52.9%) said that the offender stopped or became less aggressive because of their resistance.

Women perceived that the offenders used a moderate level of aggression and that the offenders were highly responsible for their assaults. The victims also felt that they were moderately responsible for their own assaults and that they used a relatively high level of nonconsent or resistance. Women reported moderate levels of fear, anger, and sadness during the incident. Most women defined their experience as something other than rape (90.3%). Of those who experienced completed rape, approximately one quarter (26.1%) defined the event as rape. Approximately one half of respondents reported that they discussed their experience with someone (51.4%). Approximately one fifth of women said they seriously contemplated suicide after their index assaults (19.1%).

TABLE 1: Sample Characteristics

	%	M	SD	Range
Demographics				
Caucasian	89.1			
Age		21.7	5.34	16 to 77
Unmarried	88.2			
Family income				
\$7,500 or less	5.2			
\$7,501 to \$15,000	8.9			
\$15,001 to \$25,000	18.1			
\$25,001 to \$35,000	22.3			
\$35,001 to \$50,000	23.6			
More than \$50,000	21.8			
Lived off campus	60.4			
Assault characteristics				
Sexual victimization severity				
Unwanted sexual contact	27.3			
Sexual coercion	21.1			
Attempted rape	22.6			
Completed rape	29.0			
Preassault training	12.6			
Offender aggression	37.8			
Verbal threat	15.7			
Victim offender relationship				
Stranger	6.4			
Acquaintance	44.5			
Intimate	49.1			
Unplanned situation	55.6			
Offender alcohol use	50.9			
Victim alcohol use	41.6			
FPR	47.4			
NFPR	9.5			
FVR	6.4			
NFVR	78.9			
Positive effect of resistance	52.9			
Assault-related perceptions				
Perception of aggression		3.40	1.11	1 to 5
Offender responsibility		4.04	0.99	1 to 5
Victim responsibility		2.91	1.17	1 to 5
Nonconsent or resistance		3.73	1.08	1 to 5
Fear		3.08	1.41	1 to 5
Anger		3.48	1.38	1 to 5
Sadness		3.41	1.43	1 to 5
Label event as rape	9.7			
Postassault experiences				
Disclosure	51.4			
Suicidal ideation	19.1			

NOTE: FPR = forceful physical resistance; NFPR = nonforceful physical resistance; FVR = forceful verbal resistance; NFVR = nonforceful verbal resistance.

Bivariate Analyses

Women with and without self-defense or assertiveness training before their assault experiences were compared on assault characteristics and assault-related perceptions to examine how such training may be associated with unique subsequent assault experiences. According to a Bonferroni correction, $p = .002$ ($.05/22 = .002$) would be the level necessary for a conservative correction to the alpha level (Miller, 1966). However, because of the exploratory nature of this research, these results would need to be replicated before the important factors can be determined with certainty.

Women with self-defense or assertiveness training prior to their assault experiences were less likely to have experienced unwanted sexual contact and marginally more likely to have experienced attempted rape (see Table 2 for percentages, Likelihood Ratio Test statistics, and p values). Preassault training participants experienced assaults with marginally fewer verbal threats than did nonparticipants. Victims with preassault training were more likely to report that their resistance stopped the offender or made him less aggressive than those without training. There were no differences between women who had self-defense or assertiveness training before their assaults and those who did not in offender aggression, victim-offender relationship, social situation, offender preassault alcohol use, victim preassault alcohol use, FPR, NFPR, FVR, NFVR, labeling the event as rape, postassault disclosure, or suicidal ideation.

In terms of assault-related perceptions, victims who took self-defense or assertiveness training before their assaults felt more responsible for the assault and believed that the level of their nonconsent or resistance was lower than those without training (see Table 3 for means, F ratios, and p values). Women with preassault training were less scared at the time of the incident than women without training. Perceptions of offender aggression, offender responsibility, anger, and sadness during the incident did not differ by training status.

Logistic Regression Models

Logistic regression models were calculated to assess whether assault characteristics, victim assault-related perceptions, and postassault experiences were jointly related to whether women took self-defense or assertiveness training prior to their assault experiences. Given that so little is known about the relationship between self-defense or assertiveness training and rape avoidance, these multivariate analyses were intended to help determine how participation in preassault training may affect women's physical and

TABLE 2: Comparisons of Assault Characteristics and Postassault Experiences by Preassault Training Status

Variable ^a	<i>Self-Defense or Assertiveness</i>		χ^2	df	N	p
	No (N = 1,226)	Yes (N = 177)				
Assault characteristics						
Sexual victimization severity						
Sexual contact	22.1%	15.3%	8.19	3	1,403	.042
Sexual coercion	22.5%	27.1%				
Attempted rape	22.7%	28.8%				
Completed rape	32.7%	28.8%				
Offender aggression	38.8%	32.9%	2.23	1	1,369	.135
Verbal threat	16.3%	11.4%	3.06	1	1,365	.080
Victim-offender relationship						
Stranger	6.6%	5.6%	.41	2	1,400	.817
Acquaintance	45.1%	44.1%				
Intimate	48.2%	50.3%				
Unplanned situation	56.0%	54.9%	.08	1	1,397	.781
Offender alcohol use	51.7%	47.1%	1.05	1	1,108	.305
Victim alcohol use	42.5%	38.0%	1.19	1	1,313	.276
FPR	48.3%	42.2%	2.05	1	1,228	.152
NFPR	9.4%	9.6%	.01	1	1,154	.938
FVR	6.6%	4.5%	1.12	1	1,154	.290
NFVR	79.4%	75.0%	1.66	1	1,320	.197
Offender stopped or less aggressive because of resistance	51.6%	60.7%	4.87	1	1,319	.027
Label event as rape	10.0%	8.8%	.27	1	1,359	.604
Postassault experiences						
Disclosure	51.7%	50.3%	.11	1	1,387	.736
Suicidal ideation	19.0%	20.1%	.13	1	1,376	.721

NOTE: FPR = forceful physical resistance; NFPR = nonforceful physical resistance; FVR = forceful verbal resistance; NFVR = nonforceful verbal resistance.

a. Sexual victimization severity (1 = *sexual contact*, 2 = *sexual coercion*, 3 = *attempted rape*, 4 = *completed rape*), Offender aggression (0 = no, 1 = yes), Verbal threat (0 = no, 1 = yes), Victim-offender relationship (0 = *stranger*, 1 = *acquaintance*, 2 = *intimate*), Social situation (0 = planned, 1 = unplanned), Offender alcohol use (0 = no, 1 = yes), Victim alcohol use (0 = no, 1 = yes), FPR (0 = no, 1 = yes), NFPR (0 = no, 1 = yes), FVR (0 = no, 1 = yes), NFVR (0 = no, 1 = yes), Effect of victim resistance (0 = No effect or more aggressive, 1 = Less aggressive or stopped), Label of event as rape (0 = no, 1 = yes), Disclosure (0 = no, 1 = yes), Suicidal ideation (0 = no, 1 = yes).

psychological responses to subsequent sexual assaults. In exploratory research, it is common to examine how sets of potential independent variables contribute to a dependent variable as a way of identifying important predictors within specific conceptual domains. Therefore, four preliminary

TABLE 3: Comparisons of Victim Assault-Related Perceptions by Preassault Training Status

Variable ^a	<i>Self-Defense or Assertiveness</i>		F	df	p
	<i>No</i>	<i>Yes</i>			
	(N = 1,226) M	(N = 177) M			
Perception of aggression	3.41	3.41	.00	(1, 1,365)	.995
Offender responsibility	4.04	4.08	.18	(1, 1,354)	.672
Victim responsibility	2.88	3.10	5.13	(1, 1,354)	.024
Nonconsent or resistance	3.76	3.48	10.69	(1, 1,353)	.001
Fear during incident	3.14	2.72	13.29	(1, 1,360)	.000
Anger during incident	3.49	3.41	.55	(1, 1,357)	.458
Sadness during incident	3.43	3.27	1.95	(1, 1,360)	.163

a. Perception of aggression (1 to 5), Offender responsibility (1 to 5), Victim responsibility (1 to 5), Nonconsent or resistance (1 to 5), Fear during incident (1 to 5), Anger during incident (1 to 5), Sadness during incident (1 to 5).

models were run with subsets of independent variables each predicting whether respondents took self-defense or assertiveness training before their assaults. Results of the preliminary models are available on request from the authors. The first model included the independent variables of respondent demographic characteristics (race, age, marital status, family income, and live on or off campus). Assault characteristics (sexual victimization severity; offender aggression; verbal threat; victim-offender relationship, using dummy-coded contrasts; social situation; alcohol use, using dummy-coded contrasts; FPR; NFPR; FVR; and NFVR) were the independent variables in the second model. The third model included the independent variables of victim assault-related perceptions (effect of victim resistance, perception of aggression, offender responsibility, victim responsibility, level of nonconsent or resistance, fear, anger, sadness, and label of experience as rape). Postassault experiences (disclosure and suicidal ideation) were the independent variables in the fourth model. One final composite model was run, omitting all nonsignificant independent variables from the four initial models. Only the significant predictors of preassault training in the initial models were included to provide a parsimonious final model and avoid inflating the goodness of fit (Hosmer & Lemeshow, 1989). Results of the final composite logistic regression model are shown in Table 4.

Odds of taking self-defense or assertiveness training prior to their index assault experiences were almost one and a half times greater for victims who thought their resistance stopped the offender or made him less aggressive

TABLE 4: Logistic Regression Model Predicting Participation in Preassault Training

<i>Variable^a</i>	<i>Beta Weight</i>	<i>Odds Ratio</i>	<i>p</i>
Assault-related perceptions			
Effect of victim resistance	.38	1.46	.037
Level of nonconsent or resistance	-.30	.74	.003
Fear during incident	-.23	.80	.001
Anger during incident	.22	1.25	.006

NOTE: The overall statistics for the logistic regression model are as follows: $-2 \log \text{likelihood} = 930.88$, $\chi^2 = 27.90$, $df = 4$, $N = 1,273$, $p = .000$.

a. Effect of victim resistance (0 = no effect or more aggressive, 1 = less aggressive or stopped), Level of nonconsent or resistance (1 to 5), Fear during incident (1 to 5), Anger during incident (1 to 5).

during the assault. In addition, preassault training participation was greater for women reporting a lower degree of nonconsent or resistance, less fear, and more anger during the incident.

DISCUSSION

Victims with preassault self-defense or assertiveness training were compared with victims without training to examine how such training relates to subsequent assault experiences in a national sample of college women. As predicted, victims with training were marginally more likely to experience attempted rape than victims without training (at the bivariate level only), implying that self-defense or assertiveness training may have given these women the tools to prevent the escalation of their attacks. This is further supported by the multivariate finding that women with preassault training were more likely to say that their resistance stopped the offender or made him less aggressive than women without training. In other words, training participants felt their resistance was more effective than did nonparticipants, demonstrating that self-defense or assertiveness training may help women to more successfully fend off attackers. A societal expectation exists about sexual assault that men will be aggressive and women will be passive, which is buttressed by traditional gender role ideology. According to Marcus (1992), women's self-defense helps to rewrite this script by helping women to resist, set boundaries, and act in ways that violate these gender role expectations. The relationship of self-defense or assertiveness training to more rape avoidance is particularly important, given that victims of completed rapes report more psychological symptoms and physical health consequences than victims of attempted rapes (Kilpatrick et al., 1985, Koss, Heise, & Russo, 1994;

Sales, Baum, & Shore, 1984; Scheppele & Bart, 1983; Selkin, 1978; Siegel, Golding, Stein, Burnam, & Sorenson, 1990).

Contrary to prediction, preassault training participants did not scream, run away, or physically struggle more often than nonparticipants. Perhaps victims with training were more selective about when to resist, and, when they did choose to fight back, it was more successful. According to Searles and Follansbee (1984), women with self-defense training are less likely to allow an assault situation to develop to the point where physical resistance is needed. It is also possible that the context of the assault affected the likelihood of resistance. Risk of acquaintance rape is embedded in circumstances of normal socializing, in which women are faced with conflicting goals: their wish to affiliate with their friends or dates versus their need to be able to detect threats (Cue, George, & Norris, 1996; Nurius, 2000). Because the mind-set for self-protection conflicts with a social mind-set (Nurius, 2000), women may be less likely to recognize signs of danger and simply feel uncomfortable physically or verbally resisting acquaintances (Amick & Calhoun, 1987; Cue et al., 1996; Norris, Nurius, & Dimeff, 1996; Nurius, 2000; Rentschler, 1999). In Norris et al.'s (1996) study of sorority members, endorsement of psychological barriers (e.g., embarrassment, rejection by men) was positively correlated with saying that they would use indirect resistance and negatively associated with the likelihood of verbal assertiveness and physical resistance (Norris et al., 1996). Breitenbecher and Scarce (2001) recently evaluated a modified rape education program for female participants ($N = 94$) addressing these psychological barriers to resistance. Unfortunately, participating in the program did not influence any of the outcome variables, including incidence of sexual assault, dating behaviors, sexual communication, and resistance strategy choices. If psychological barriers to resistance were incorporated into self-defense training, women's ability to resist and avoid acquaintance rape might be increased, a topic that should be addressed in future research.

As predicted, according to the multivariate analyses, victims with preassault training were angrier and less scared during the incident than victims without training. Self-defense courses often teach women the importance of channeling their fear into anger during an assault (Gaddis, 1990; Kidder et al., 1983; McCaughey, 1997, 1998; Rentschler, 1999; Rowe, 1993; Searles & Follansbee, 1984), and possibly the women with training in this sample may have followed this advice. These findings are also important because past research has shown that women who reported feeling more anger and less fear during their attacks were more likely to avoid rape (Bart & O'Brien, 1985; Levine-MacCombie & Koss, 1986; Queen's Bench Foundation, 1976; Scheppele & Bart, 1983; Selkin, 1978).

Unexpectedly, preassault training participants felt more responsible for their assault experiences compared with nonparticipants (only at the bivariate level). Women with training may retrospectively think that they should have known better than to get themselves into a potentially dangerous situation, as self-defense training often teaches women to distinguish safe and risky situations (Ozer & Bandura, 1990). According to Frazier (2000), perceptions of future control over assault are most predictive of recovery, whereas attributions of control over a past assault are not related to perceptions of future control. Furthermore, research shows that attributions of responsibility for a past problem are less important than attributions of responsibility for its solution (Brickman et al., 1982). This implies that even if women feel more responsible for past assaults, they may report less psychological distress if they believe they can avoid rape in the future.

Furthermore, the finding that preassault training participants felt more responsible for their assaults is unexpected in light of the finding that training participation was related to more anger during the incident because increased anger is typically accompanied by decreased self-blame (Nurius, Norris, Young, Graham, & Gaylord, 2000). However, vignette research has shown that self-blame attributions and responsibility attributions are theoretically and empirically distinct (Krulowitz & Nash, 1979), which may explain this result. Blame implies more of a moral wrongdoing, whereas attribution of responsibility may imply a perception that the victim is capable of controlling the event in the future (Krulowitz & Nash, 1979). It is also surprising that victims with preassault training did not hold the offenders more responsible, especially given past research showing that holding the offender more responsible is key to anger (Frijda, Kuipers, & ter Schure, 1989).

Contrary to prediction, in both the bivariate and multivariate analyses, preassault training participants rated their degree of nonconsent or resistance as lower than did nonparticipants. Perhaps, women with preassault training held themselves to a higher standard. Because they have taken self-defense or assertiveness training, these victims may retrospectively evaluate their behavior during the assault more harshly and feel that they should have done more to protect themselves. Using rape crisis counselors' reports of victims' attributions of self-blame, Janoff-Bulman (1979) discovered that behavioral self-blame (blaming one's behavior) was more commonly reported than characterological self-blame (blaming one's personality). She proposed that behavioral self-blame is related to better postrape adjustment by reflecting attempts to reestablish control. However, based on victims' self-reports, other studies have shown that both behavioral self-blame and characterological self-blame are related to more postrape psychological distress (e.g., depression, anxiety, and post-traumatic stress disorder; Frazier, 2000; Meyer

& Taylor, 1986). Given these negative effects, self-defense classes should emphasize that responsibility for assault always lies with the offenders and that women are not responsible for defending themselves from an attack (Cummings, 1992; Kidder et al., 1983; Madden & Sokol, 1994). It is also possible that these findings on victim responsibility and level of nonconsent or resistance are an artifact of the time in which these data were collected (mid-1980s), and different findings may result from more recent cohorts because of increased awareness of sexual assault issues.

Studies of the relationship between rape and resistance have been criticized for reinforcing the idea that women are responsible for avoiding rape and that if they fail to do so, it is their fault. Some critics of women's self-defense feel that self-defense training encourages women to feel responsible for an assault if they do not successfully defend themselves (Madden & Sokol, 1994, 1997). Given that women with training held themselves more responsible for their assaults than women without training in this study, self-defense instructors should always emphasize that it is the women's choice whether to resist. Only the woman herself can decide what is the best strategy (or lack thereof) to use when faced with a potential assailant (Rowe, 1993). However, it is possible to show women that they can reduce their likelihood of rape without blaming victims.

There are several limitations of this study that may have affected the results. The survey asked respondents, "Have you ever studied self-defense or taken assertiveness training?" before (no or yes) or after (no or yes) their sexual assault experience. Because of this question's wording, it was not possible to determine which of these two types of training respondents had completed. Self-defense and assertiveness training do have some similar goals, such as teaching women to stand up for their rights and to say no (Kidder et al., 1983). However, the two types of training do have one major difference: Self-defense training prepares women physically for potential attacks, whereas assertiveness training teaches only verbal techniques. If this survey question were divided into two separate questions (e.g., "Have you ever studied self-defense?" and "Have you ever taken assertiveness training?"), study results may have been different. The analyses of the current study should be replicated in the future, using two separate questions assessing self-defense and assertiveness training.

Furthermore, no details on the depth, duration, or type of self-defense training were included in the survey, important variables that may affect women's physical abilities (Cummings, 1992). For example, feminist and nonfeminist self-defense training may differ in techniques, sexual assault scenarios, and attention to psychological barriers. Feminist self-defense training demonstrates how gender socialization inhibits women from fight-

ing back against assault (Cummings, 1992; Searles & Berger, 1987; Searles & Follansbee, 1984). Past research has also shown that a feminist self-defense class resulted in an increase in female participants' perceived right to resist and their likelihood of resisting, whereas a nonfeminist class did not (Kidder et al., 1983). It is possible that women who take feminist self-defense training may be less likely to blame themselves for assaults, which should be investigated in future research.

It is also possible that women who choose to enroll in self-defense or assertiveness training differ from women who do not take this training. Although the survey asked respondents if they took self-defense or assertiveness training before their index assault experiences, the length of time between the incident and the training is not known. For respondents who took self-defense or assertiveness training years before their assault and had not practiced the techniques more recently, some decrease in skill level may have occurred. Perhaps, women would benefit from periodic booster sessions of self-defense training to remind them of skills and techniques.

The resistance strategies (e.g., turn cold; reason, plead, quarrel, or tell him to stop; cry or sob; scream for help; run away; physically struggle; push him away, hit, or scratch) captured in this survey were limited in scope, as there are many diverse ways women can respond to sexual assault. Furthermore, the response option of physically struggle could have different meanings for each respondent and may represent a variety of responses. A content-analysis of 50 books, articles, and pamphlets on self-defense and rape prevention showed that fighting and struggling are used differently by self-defense experts, with some using the terms interchangeably and others distinguishing between the two (Morgan, 1986). When the terms are differentiated, fighting is defined as more effective, including calculated moves where women aim for vulnerable body parts of the attackers, whereas struggling involves "grappling, flailing, free swinging strikes at the attacker" (Morgan, 1986, p. 163). It is possible that respondents included these less effective strategies under the category of physically struggle, which might be inconsistent with our operationalization of this as a type of forceful physical resistance.

Because all accounts of index assault experiences were retrospective and self-reported, it is possible that perceptions and even assault behaviors could be biased. Furthermore, because of the cross-sectional design of this study, results should be viewed cautiously as causal inferences cannot be made. Lack of a separate measure of victim physical injury is an additional limitation, as self-defense training also may have affected this outcome.

Finally, the data used in this study were collected in 1984 and 1985 in the United States, therefore results may have differed if a more current sample were examined. As a result of Koss's original collection of these data (Koss,

1988), the high prevalence of acquaintance rape on college campuses was discovered, and the term *date rape* came into common usage. Student awareness of the problem of rape (especially by acquaintances) is likely greater now because of the proliferation of college rape prevention programs and increased media exposure. It is also possible that self-defense training focuses more on acquaintance rape scenarios now than it did in the mid-1980s. Given the strengths of this sample (e.g., national scope, large size, wide variety of questions), it was still useful for examining questions surrounding self-defense or assertiveness training and women's responses to sexual assault. A replication of this analysis with a new sample would be useful to assess for any changes since the mid-1980s. Because of the above limitations and the exploratory nature of this study, the findings presented here are only preliminary and need to be verified with more recent data.

Because only two previous studies examined how self-defense affects women's attempts to fight back during attacks (Bart & O'Brien, 1985; Peri, 1991), this study is critical in that it examined the relationships of self-defense or assertiveness training and college women's physical and psychological responses to sexual victimization using a national sample. Women need to know what may help them to avoid rape and severe assault outcomes (e.g., completed rape, severe injuries). As shown in this study, victims with preassault self-defense or assertiveness training were marginally more likely to suffer attempted rape and were more likely to say that their resistance was effective than victims without training. Clearly, in the future, more rigorous longitudinal evaluations of self-defense training programs are necessary to assess their efficacy in helping women avoid rape and its negative consequences. Self-defense program evaluations should include larger samples of diverse women randomly assigned to treatment and control groups. In addition, evaluations of self-defense programs should incorporate more behavioral assessments of avoidance behaviors, victimization experiences, and women's responses to actual assaults.

Rape prevention efforts still need to be focused on changing the sexually aggressive behavior of males. However, while men continue to commit sexual assault, women should have the opportunity to be educated about how they can effectively respond to potential assaults to decrease the negative consequences of rape. Self-defense training needs to become a priority of the antirape movement, with more educational, political, and social service organizations focusing attention on the role of self-defense training in the prevention of sexual violence. Self-defense or assertiveness training for women may enhance rape prevention strategies and provide women with the skills to effectively fight back against future assaults.

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