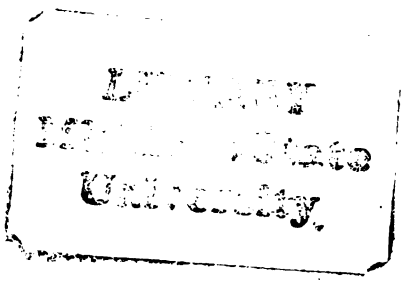


This is to certify that the

dissertation entitled

A PROGRAM EVALUATION: THE EFFECTS OF WOMEN'S SELF-DEFENSE TRAINING UPON EFFICACY EXPECTANCIES. BEHAVIORS, AND PERSONALITY VARIABLES

presented by

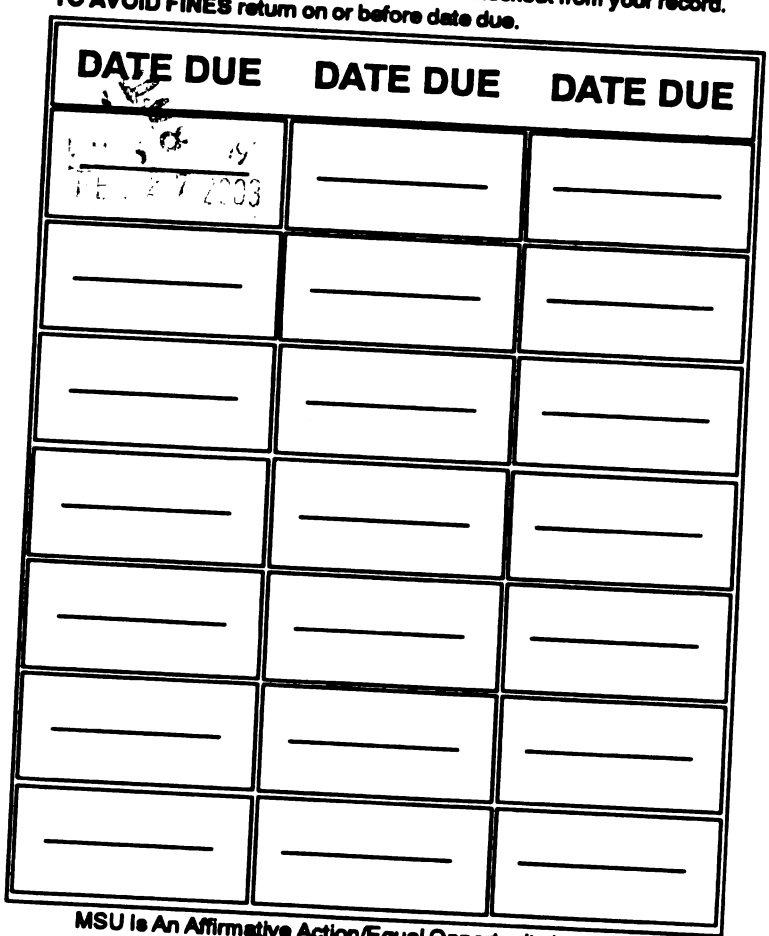
Devorah Ruth Smith

has been accepted towards fulfillment
of the requirements for

Ph.D. degree in Psychology

Major professor

Date 8/16/83



A PROGRAM EVALUATION:

THE EFFECTS OF WOMEN'S SELF-DEFENSE TRAINING UPON EFFICACY EXPECTANCIES, BEHAVIORS, AND PERSONALITY VARIABLES

By

Devorah Ruth Smith

A DISSERTATION

Submitted to
Michigan State University
in partial fulfillment of the requirements
for the degree of

DOCTOR OF PHILOSOPHY

Department of Psychology

1983

ABSTRACT

A PROGRAM EVALUATION:
THE EFFECTS OF WOMEN'S SELF-DEFENSE TRAINING UPON
EFFICACY EXPECTANCIES, BEHAVIORS, AND PERSONALITY VARIABLES

by

Devorah Ruth Smith

This study examined the effects of a woman's self-defense training course upon self-efficacy expectancies, self-reported behaviors, and personality characteristics. Its design improved upon previous related works in its use of follow-up questioning, its emphasis on specific behaviors, and its theoretical orientation, specifically Bandura's model. To assess self-efficacy beliefs, an original measure was designed that tapped both outcome and efficacy perceptions.

The ten-week feminist self-defense training was a university course that integrated skill and strength building physical exercises with discussions. To assess training effects, 44 female self-defense students were compared to 31 motivation controls (women who had wanted to take defense training) and 26 physical fitness controls (dance aerobics students). All completed questionnnaires at pretraining, course end, and 6 month follow-up. Statistical analyses included multivariate analyses of variance which, when significant, were followed by one-way analyses of variance to assess between-group and across-time differences.

Before training, the three groups were statistically equivalent on most measures. At course end and follow-up,

defense-trained women reported greater vigilance and wariness when out alone at night, compared to the controls, but did not decrease their risk avoidance nor fear of sexual assault. Defense students' outcome and efficacy expectancies also increased: They were more likely than the controls to believe that assertive resistances could deter assault and that they could use such tactics successfully themselves. Also, only defense-trained women reported increases over time in their self-esteem and Bem Sex-Role Inventory "masculinity" scores.

In summary, defense-trained women, like both control groups, reported that they continued to avoid risks. Unlike the controls, defense-trained women increased their vigilance and their beliefs that assertive responses could effectively stop an assailant. The relevant literature has generally associated assault deterrence with this very combination of safety precautions and the willingness to resist assertively when necessary. The defense-trained women's additional shifts on personality measures may reflect that their enhanced sense of self-efficacy favorably influenced other aspects of their lives.

To women, in strength.

ACKNOWLEDGMENTS

In the two years that I worked on this project my life has been filled with many people who inspired, cheered, loved, and challenged me. It felt that at each hurdle, external or internal, there was always a friend nearby to encourage me onward.

Let me first thank my committee -- it was a good one. The members represented different disciplines and personal styles, so that I was able to tap different strenths from each. First and foremost, I thank my chair, John Hurley, a mentor and friend from whom I learned much about psychology and myself. He gave freely of his time and successfully taught a long-winded writer like myself to keep this document at 100 pages. From Norb Kerr, I took the model of a person able to be a productive and competent researcher while maintaining a life full of family, friends, and pleasure. Ellen Strommen was the teacher who introduced me to feminist psychology, and in so doing deeply influenced my understanding women and men. From Robert Caldwell I learned much about research, leadership, and social supports. Deb Feltz not only smoothed administrative hurtles but also encouraged my first professional presentation of this work. The study participants have also earned my gratitude. They willingly

complied with repeated requests for yet one more questionnaire and in so doing had much to teach.

There are many others I want to acknowledge. Joan Nelson is a woman I admire. She taught me how to defend myself and in the process I discovered much about myself. I thank too the Woman's Research Group, for its acknowledgment that being a researcher is an exciting and fulfilling goal for a woman.

And still there are others who helped me in this task. I thank my parents, who may not have always understood my life choices but nonetheless never failed to be generous with their support and encouragement. I remember Dave Wenger for never wavering in his confidence that the developmental path I had embarked upon was the right one for me. Ed Warner was the person who taught me that life need not be so intense nor coping so difficult. He is a special man who, throughout this process, never ceased to respect my independence nor my dedication to career and who gave me much to look forward to in my always too limited free time.

I've saved for last a special group of friends, known collectively as the Feminist Volleyball Association. Without those summer nights filled with friendship and joy I am not sure I would have found the inner conviction and drive to work so steadily so that I would be able to move on to the next step in my life.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

CHAPTER I

INTRODUCTION

Rape impacts all women: raped women and women fearful of rape. "A world without rapists would be a world in which women moved freely without fear of men. That some men rape provides a sufficient threat to keep all women in a constant state of intimidation" (Brownmiller, 1975, p. 229). Feminists argue that the threat of rape acts as an instrument of social control. Fear of rape limits women's personal freedom, restricts their access to the resources of their communities, and maintains their dependency on men. Feelings of powerlessness to prevent rape may also adversely affect their sense of potency in other areas of their lives (Riger & Gordon, 1981).

Police reports of rape have risen sharply since the FBI began collecting these data in 1933. In 1980, the FBI (Uniform Crime Reports) reported 82,088 "founded" cases of forcible rape, a 45% increase since 1976. Arrests for rape had increased by only 18% in that same five-year period. The FBI report identified forcible rape as "one of the most underreported of all ... crimes" (p. 15).

The actual incidence of rape in this nation is unclear. FBI estimates may reflect only one in five, or possibly one

in twenty, actual rapes and attempted rapes (Amir, 1971; Brownmiller, 1975). In an interview study (Russell & Howell, 1983) of a randomly selected sample of 930 San Francisco women, 24% reported an experience of a completed rape and an additional 20% reported an experience of an attempted rape. That study used the standard legal definition of rape: attempted or completed intercourse by force, threat of force, or when the person is unable to consent because she is unconscious, drugged, or in some other manner totally helpless. Applying these interview data to life-table demographic analyses, Russell and Howell (1983) concluded that there is a 46% probability, if the rape rate remains stable, that a woman in that city would be a victim of completed or attempted rape sometime in her life.

Women adopt many strategies for coping with the threat of rape and recovering from past rapes. Some restrict their activities, some deny their fears, some attempt to gain a degree of control over the threat. Acquiring self-defense skills against sexual assault is one method for developing some control. The present project is an evaluation of one self-defense training program. The question organizing the study is how such training affects women's behaviors, fears, and strategies for resisting assault.

Throughout this report, the focus is on women's responses to anticipated assaults. Such attention to women's behaviors does not imply that the victims are

responsible for, or even wholly able to, prevent rape. It is men who rape and men who must be made to stop raping. Self-defense training remains just one aspect of rape prevention policy and one way for women to gain some sense of control over this threat. As long as rapes continue, such control can never be complete.

State of the Art of Evaluation of Self-Defense Training

To date, psychological research on the effectiveness of self-defense training courses has been limited, and what has been done is of questionable validity. The studies have been of a pretest-posttest design, with posttest data collection taking place at the end of class. Obtained scores were possibly contaminated by such transient influences as feelings about the training's ending or the desire to thank a helpful teacher. Follow-up evaluation was not pursued.

One example is Mastria's (1975) doctoral dissertation which compared self-defense with assertiveness and no training. The assessed defense course was a short, police-based program with an information and demonstration format. Outcomes examined were behavioral and psychological assertiveness in non-assault situations and self-concept. Alone, defense training was reported as relatively ineffective in changing overall assertiveness or

self-esteem.

Donaldson's (1979) dissertation research compared women enrolled in self-defense, physical fitness, and psychology classes on a range of personality variables: self-esteem, locus of control, and various other global self-descriptions as measured by the Adjective Checklist. The assessed course was a three-month long physical training experience. At the end of training, defense students reported an increase in self-esteem, dominance, and succorance.

Cohn, Kidder, and Harvey (1978) evaluated a 13-week self-defense course which was similar to the training program assessed by the present study. Thirty-seven students rated themselves on 12 adjectives at the class's start and end. After training, they described themselves as more strong, brave, active, in control, independent, able to defend themselves, big, and safe. Open-ended comments were consistent with these findings, as respondents described a greater sense of confidence, security, and preparedness to fight when necessary.

These three studies shared some methodological problems. Little time was allowed between the learning of skills and the evaluation of their impact. More importantly, these researchers all focused upon broad personality constructs (self-esteem, locus of control) and general ways of looking at the self (assertive, dominant, strong, brave). The hypothesis implicitly underlying these studies was that a relatively brief, non-intensive group

experience could have an ameliorative impact upon long-standing ways of feeling, acting, and being in the world. However true this may or may not have been, it did not appear to address the reason why women enrolled in such courses: to learn to deter physical assault. The ability of self-defense training to teach women to better protect themselves from assault has not been established empirically.

Before considering better evaluation strategies for self-defense training programs, two main issues must be addressed. First, is fighting-back against assailants an effective deterrent? If so, then the second question: why do more women not fight back? Is it simply due to skill deficits, or are there other factors that mitigate against women's learning and using effective defense skills?

The Value of an Aggressive Resistance to Rape

Until recently, little was known about women's behaviors during rape. Instead, most energy was put into studies of assailants or of post-assault services for women. Amir (1971) was the first to study women's resistances during sexual assault. Examining Philadelphia police records of 646 charges of forcible rape, he concluded that 45% of rape victims resisted by screamining, attempting to escape, or putting up a strong fight. Amir excluded "verbal

protest" and "expression of reluctance" from his definition of resistance and included young children, usually more submissive, in his sample. Later estimates of resistance have been higher, probably due to differences in methodology and sample. In a study of community respondents, 90% of assaulted women reported resisting verbally or physically (Queen's Bench Foundation, 1976). In another study of hospital rape crisis center users, 86% of the women reported resisting the assault verbally or physically (Atkeson, Calhoun, & Morris, 1982).

Women have resisted assault, but how effective were their resistances? Researchers have addressed this question by comparing the behaviors and situations of women who were raped with women who avoided rape. The first such study was undertaken by the Queen's Bench Foundation (1976), which advertised for participants in local media and through neighborhood and women's networks. One hundred eight women responded and, in structured interviews, described 112 assaults, 52% of which had never been reported to the police. Their perceptions of effective deterrents were supplemented by interviews with a sample of incarcerated rapists.

No demographic differences were found between women who were raped and women who had successfully avoided rape. All types of women had been assaulted; but many of them, representing all ages, races, educational levels, and life styles, had successfully resisted rape, even against armed

and multiple assailants. Assertive victim resistances, verbal and physical, correlated with deterrence. Rape avoiders generally used more resistance measures; were more likely to be suspicious of their future assailants and trust those feelings, even though they might not know why they felt uneasy; and were more likely to reply rudely to the assailant, even though casual conversation preceded over half of the attacks. In contrast, more raped women had repressed, rationalized, or disregarded their own uneasy feelings and responded in their customary friendly, polite manner during the prelude to the attack. Once the attack was initiated, they tended to use fewer types of resistances. Though most women feared that they would be killed during the assault, raped women thought primarily of survival and death and rape avoiders were better able to put aside their fears and consider methods of resistance (Queen's Bench Foundation, 1976).

Interviews with convicted assailants corroborated the experiences of the women. Men who had been deterred from rape reported that they were less likely to have perceived their intended victims as afraid. On the other hand, men who had completed their rapes claimed that their victims' fearfulness (i.e., crying, overt nervousness, unassertive body language, and verbal stalling) encouraged them to complete the assault. Though 90% of the women interviewed reported resisting, only 68% of the assailant group (not necessarily the interviewed women's assailants) had

perceived their victims as having resisted.

McIntyre (1980) interviewed 320 assaulted women contacted throught rape counseling centers and local advertisements. Her findings agreed with those of the Queen's Bench Foundation: Women who employed aggressive resistances (fought, screamed, ran, spoke assertively) were more likely to escape rape than were women who talked, cried, attempted to gain the assailant's empathy, or tried to make themselves appear undesirable. Timing of aggression was important. Women who assertively resisted as soon as they first felt afraid or suspicious were more likely to escape than those who waited until unwanted sexual advances were initiated. Successful resistances did not usually require that the women overcome their attackers (and in most cases they lacked the size, strength, and skill to do so), but only that they cause their assailants more trouble than anticipated.

The core of these findings--the effectiveness of an assertive response--was replicated in another study of Chicago women. Out of a larger sample of raped women solicited through advertisements and social networks, 13 women were identified as having been assaulted twice, once in which they were raped and another time in which they had successfully resisted rape, though not necessarily other injuries. These women were more likely to escape rape when they used multiple aggressive behaviors (i.e., screamed and fought) and when their primary concern was not being raped.

In contrast, these same women were more likely to have been raped when their main resistances were talking or pleading and when their primary concern was not being killed or mutilated (Bart, 1981).

The effectiveness of vigorous resistance received further support in analyses of 1070 mail-in responses to a sexual assault questionnaire published in Viva, a women's sex and glamour magazine. Here, self-described rape avoiders (7% of the sample) were more likely to have been attacked on the street and to have resisted by screaming and physically fighting back as compared to the respondents who were actually raped (Bart, 1975).

These studies substantially agreed that women's assertive resistances correlated with rape deterrence. There was also a consensus, though, that resistance correlated with injury. Amir (1971), Queen's Bench Foundation (1976), McIntyre (1980), Bart (1975), and Atkinson et al., (1982) all noted a positive relationship between assertive resistances and injury. McIntyre speculated that assertive behavior reduced the likelihood of rape, but that escape often was not immediate and frequently involved some "rough treatment" before freedom from the assailant.

This correlation between resistance and greater injury was complex. First, most of the reported injuries were traumatic but medically "minor," defined as not requiring hospitalization or medical treatment. Second, injury

tabulations often excluded rape-related trauma to the genital area and post-assault gynecological problems. Third, the relationship was a correlation which precluded understanding of causality. Assailants may have been more likely to harm women because they were resisting or women may have resisted more as a consequence of greater violence by their attackers.

Although resistance correlated with greater likelihood of injury, it was not significantly associated with serious injury (McIntyre, 1980; Queen's Bench Foundation, 1976). The dichotomy, comply and be raped but not hurt or resist and be injured but not raped, proved false. Docility was no guarantee against injury. Some of the most viciously beaten women had complied with their attackers' demands. In addition, lack of assertive resistances also correlated with greater sexual abuse beyond the abuse of rape itself. The behavioral sequences most commonly associated with extreme violence (and these findings were tentative) were no assertive resistances, assertive resistance early in the attack only (McIntyre, 1980), and resistances during coitus (Queen's Bench Foundation, 1976). More work is needed on understanding the relationship of violence and resistances. Violence was what women most feared during the attack. Its presence in an assault also was a significant predictor of prolonged, post-assault symptoms (Smith, 1982).

Submission did not guarantee less violence, nor did assertive resistances guarantee escape in these studies.

The effectiveness of women's responses depended, in part, upon the context within which they were undertaken. For example, women were more likely to escape an assault in a public area than one in an enclosed area, such as their homes (Bart, 1975; McIntyre, 1980). Women were also more likely to avoid rape when their assailant was a stranger than when he was an acquaintance (Bart, 1981) and when the assailant's initial approach was hostile rather than friendly (McIntyre, 1980). Assailant characteristics and motivations no doubt also played a large role in determining assault outcome.

In sum, women could not successfully resist all rapes nor were there simple rules to be followed in each situation. It was not true that if women always reacted assertively rape would not happen, but the assault was less likely to be completed. These studies suggested that the ability and willingness to resist aggressively (as well as risk injury) were related to rape deterrence.

Consequences of Not Presenting an Aggressive Defense

Societal attitudes toward rape. Rape is embedded in myths and stereotypes. These attitudes touch all segments of society, from raped women to their rapists, their support networks, and their police officers, juries, doctors, and psychotherapists. The core of these myths is that women

are, to varying degrees, responsible for their rape (Thornton, Robbins, & Johnson, 1981). These prejudicial, stereotyped, and false beliefs about rape, raped women and rapists have contributed to a climate conducive to the act of rape and hostile to raped women.

Rape myths are pervasive. In the general population (for example, Burt's (1980) random sampling of 598 Minnesota adults) rape myths have been found to correlate with other deeply held attitudes, such as sex-role stereotying, distrust of the opposite sex, and acceptance of interpersonal violence. In her conclusions, Burt stated:

> When over half of the sampled individuals agree with statements such as "A woman who goes to the home or apartment of a man on the first date implies she is willing to have sex" and "In the majority of rapes, the victim was promiscuous or had a bad reputation," and when the same number think that 50% or more of reported rapes are reported as rape only because the woman was trying to get back at a man she was angry with or was trying to cover up an illegitimate pregnancy, the world is indeed not a safe place for rape victims. (p. 229)

Assignment of responsibility for assault has depended, to a large degree, on raped women's reactions to their assailants. In an experimental study, undergraduate students judged responsiblity in variations on the following assault vignette:

> Following a night class at the University, Judy W. walked across campus toward her car, which was parked two blocks from central campus. A man, Charles E., was walking in the same direction as Judy and began to follow her. Less than a block from her car, he approached her. He grabbed her and . . . (Krulewitz & Nash, 1979, p. 561)

Depending on the manipulation, Judy either did as he said, screamed, or screamed and kicked him hard. The outcome of the assault was either Judy's being stripped and raped or stripped but not raped. Attributions of responsibility varied with assault outcome. The woman was attributed more responsibility when she was raped than when she was just stripped (uncompleted rape). The obverse was true of perceptions of the assailant, who was perceived as more responsible when he did not complete the rape than when he did. Respondents of both sexes agreed that it was unclear whether or not a "rape" had occurred when Judy had not offered obvious physical resistances.

Sex differences were observed in this study, with female raters attributing more responsibility to the victim than male raters. Similarly, Coates, Wortman, & Abbey (1979) reported that though female respondents generally empathized more with the victim, they also attributed greater blame to her and perceived her as less attractive. These researchers speculated that the women respondents' empathy and their shared sense of vulnerability may have motivated the blaming of victims, in an effort to justify raped women's suffering in a "just world," where bad things do not happen to good people like themselves. However, patterns of harsher attributions by females were not consistent across studies. Males in two other studies, with college students (Feild, 1978) and with adults (Thornton et al., 1981), assigned greater responsibility to the rape

victims than did females.

Rape myths also infected the belief systems of professionals responsible for punishing rapists and helping raped women. An Attitudes Toward Rape Questionnaire was administered to citizens, police officers, rape-crisis counselors, and rapists. Knowledge about rape did not impact attitudes, but professional affiliation did. Police officers', citizens', and rapists' views of raped women differed significantly from those of counselors. Police and citizens exhibited the most agreement; police and rapists agreed on half the attitudinal variables; and police and rape-crisis counselors agreed on only one attitude, that women should physically resist rape.

A theme consistent throughout these studies was that women and men, citizens and police, rape counselors and rapists all agreed that a woman who did not physically resist probably was not truly raped. Thus, if a woman's only concern was her need for social supports after her attack, it would be to her advantage to put up a vigorous, physical defense. And if her struggles were successful in deterring the rape, she would likely receive even more support. However, most women reported, at least in interviews after their rapes (Bart, 1981; McIntyre, 1980; Queen's Bench Foundation, 1976), that thoughts of survival, injury, and escape were foremost on their minds during the assault. Concerns about others' judgments were more common in the minutes directly preceding the assaults and sometimes

during assaults by acquaintances.

Socialization of the "legitimate" victim. A theory on the roots of myths about rape has been presented by Weis and Borges (1973), researchers in criminology and victimology. From their perspective, rape and societal reactions to it can be understood as common sex-role stereotypes taken to hurtful extremes. These stereotypes set up and legitimize women as victims.

Traditional sex-role learning has taught girls and women to see themselves as weak, passive, and in need of emotional and economic support. Part of learning to be submissive and never being encouraged to rely on their own resources is learning to rely on others, especially men. In such unbalanced interactions between the genders, women, fearful of losing the love of their men, learn that sexual favors can become valuable commodities, to be traded for relationships, security, and protection.

Paradoxically, another important part of traditional female socialization is that women are taught to be chaste and sexually unavailable. Traditional dating rules assign women the responsibility of setting the limits. They are also assigned the blame when these limits are transgressed. Women are thus socialized to control how far sexual relations will proceed but to do so in a feminine, nonaggressive manner (Weis & Borges, 1973).

Male socialization re-affirms and complements female development and has its own pressures. Weis and Borges (1973) described the demands on boys and men to be always strong, active, independent, successful. Insecurity about maleness takes, for some men, over-subscription to "he-men" exaggerations of masculinity. One sure proof of maleness is an aggressive sexual style. It may be labeled impolite, primitive, uncouth, but never "unmasculine."

This extreme masculine style is upheld in traditional dating rules. In this society, it is understood that men intitiate sexual activity, that women protest (no matter their true feelings), and that men then try to overcome women's "inhibitions." Members of both sexes are likely to label men's successes at having sexual intercourse as seductions or "wins." Both sexes will also tend to perceive men's failures to make moves, to push their advantage, as unmanly. Weis and Borges (1973) argued that such sexual roles may have acted to blur the line between consensual sex and rape.

Reactions of a group of students provided some evidence that rape is not always considered a deviant act in this society. Following exposure to written erotic and rape stimuli, Los Angeles college students of both genders believed that close to half of the male population would rape if they could be assured that they would neither be caught nor punished. With respect to their own potential involvement, over half of the male participants did not rule

out the possibility of sexual assault if guaranteed no punishment. Both genders also shared the belief that some women would find rape pleasurable, though very few women believed that they personally would feel pleasure in an assault (Malamuth, Haber, & Feshbach, 1980).

An examination of cross-cultural patterns of rape also lent some support to the idea that certain societal configurations are related to the cultural acceptance of rape. The anthropologist Sanday (1981) compared 95 societies for which information on rape was available. She concluded that the incidence of rape varied cross-culturally and that rape in tribal societies was part of a cultural configuration that included interpersonal violence, male dominance, and sexual separation. Societies in which rape was less common, in contrast, were more likely to equally value characteristics associated with maleness and femaleness.

In America, cultural mores socialize against women's offering vigorous, assertive resistances to forced sexual contact. Instead of developing physical strength and learning self-defense skills, most women have learned "feminine," dependent styles of relating and protesting. They feel psychologically and physically unable to effectively protect themselves. Almost all are scared. Their feminine clothing, such as high heels and constricting skirts, restrict movement. Many women believe that their aggression will only provoke their attackers to greater

anger and cruelty. In addition, women are not only usually physically weaker than their assailants, but, after years of being taught to nuture and heal, many are also reluctant to physically injure their attackers, even when given the opportunity.

The situation becomes more complex when the woman knows her assailant. She usually trusted him, so that when he begins to act in an untrustworthy manner, she is most likely to deny the situation, blame herself, worry about hurting him, and generally not act forcefully until it is too late to protect herself (Weis & Borges, 1976; McIntyre, 1980).

There is some experimental support for this socialization theory of women's reluctance to powerfully defend themselves. In a laboratory setting, women generally displayed less dominance than men in problem-solving situations. However, when the environmental contingencies were altered so that dominant behaviors were explicitly rewarded, women were observed to increase their level of expressed dominance to equal that of men. Klein and Willermen (1979) concluded that women's tendency to express less dominance than they were capable of reflected adherence to traditional sex-role standards that rewarded women's inhibition of assertive behaviors.

Gender differences have also been observed in autonomic responses to aggression directed against the self. In another laboratory experiment, women preferred friendly counterresponses to perceived interpersonal provocations.

Manipulating reward and punishment contingencies to reinforce aggressive responding did increase women's rate of aggressive responses, but vasoconstriction readings indicated that women's anxiety over responding aggressively never decreased (Hokanson, Willers, and Koropsak, 1968). Clearly, the expression of assertiveness and aggression is a conflictual and avoided behavior for many women.

In assaultive situations, female and male respondents across studies generally agreed the woman was responsible for preventing rape; and if a woman did not resist, she probably was not very determined to prevent the sexual contact. Confounding these shared expectations are female socialization practices that encourage passive self-protection strategies. Not only are such responses often ineffectual, but their use has been misrepresented, after the assault, as evidence of consent. A woman's responses to her assailant are thus important. They determine, to a large extent, reactions by her assailant and by members of her social networks.

Feminist Self-Defense Training

Because women have been trained, since childhood, both not to resist and that they are incapable of successful resistance, simply teaching them self-defense skills would probably be insufficient. Such training may free women to

confront, scream, hit, and kick in the classroom, where such behaviors were clearly encouraged and rewarded, but before these same actions could be generalized to the stranger in the street or the pushy acquaintance in their homes, women must confront their feelings about aggressing.

The focus of this study was the Women's Self-Defense Course (three sections) taught through Michigan State University's Department of Health and Physical Education. The course strove to address psychological defenses against assertively resisting as it taught skills in assertive behaviors. The instructor, Joan Nelson, held a black belt in karate and was a co-founder of the national Feminist Self-Defense and Karate Association. Both a skilled fighter and feminist, she integrated, in her course, the technical and psychological aspects of women's defending themselves against sexual assault.

The course placed the learning and practicing of physical techniques within an atmosphere supportive of women, their fears, and their strengths. Movement was interspersed with discussions. In the process of learning to take some control over their own safety, students began to consider as a group what taking control of their lives might feel like and to what it might lead.

Physical activity always complemented these discussions. Women who could not work through their fears of aggressing in words might come to terms with these fears as they practiced striking, punching, and kicking. In this

way, feminist self-defense training resembled one aspect of behavioral therapy: a cognitive beginning reinforced and strengthened by behavioral repetitions. In self-defense training, neither the technical nor psychological components alone was considered sufficient.

By the course's end, women had practiced communicating to an "assailant," through their words, stance, and punches, that they had control over their bodies and that they were not going to give up that control easily. Consistent with the course's underlying respect for women was explicit acceptance of all reactions to assault, past and future. Women may have resisted, frozen, or cooperated. No matter, these decisions were to be trusted, as only the woman assaulted was there and only she could best judge, given the complexities of the assault situation, how or if to resist. The course taught women not to blame themselves nor other victims, but to consider different behaviors and to learn new responses that could provide them with more options in the eventuality of an assault. (The course syllabus has been provided in Appendix A.)

The present study was a program evaluation of this self-defense training program. The behaviors and perceptions assessed, and the reasons for choosing them, are presented in the following section.

Statement of Purpose

Assessment Strategies. This study's aim was to evaluate one self-defense training program. Women take training to learn to protect themselves, and effective training should teach participants those attitudes and skills that the research record has shown to correlate with assault deterrence.

In its conclusions, the Queen's Bench Foundation (1976) outlined two ways in which women could decrease their vulnerability to rape. The first involved women's decreasing their likelihood of assault, by observing safety precautions, practicing wariness, projecting an aura of strength, and accepting the dangers of rape. The second was a willingness to respond aggressively to an assailant.

The components of decreasing likelihood of assault were straightforward in their operationalization. Measures were needed that assessed women's behavioral habits, their perceptions of their strength, and their fears of assault. Operationalization of the second component, the willingness to fight back, was more difficult. Responses to general questions of likelihoood of resisting would be of limited value. In an actual assault, women must weigh many variables in determining their responses. In her extensive interviews, McIntyre (1980) identified one important component in that decision-making process: "If [a woman] recognizes the situation as dangerous but believes that

there is some hope of escape, she is more likely to resist aggressively and to avoid being raped" (p. 6). Thus, the best assessment of a women's behaviors in a particular assault must take into account her assessment of her chances for escape in that situation as well as her confidence in her fighting skills. It is exactly these aspects of behavioral decision-making that Bandura's (1982) self-efficacy theory addressed.

Bandura (1977,1982) based his theory of self-efficacy on work with phobic individuals. He observed in laboratory situations that people who judged themselves inefficacious in coping dwelled on their supposed personal deficiencies, imagined potential difficulties to be more formidable than they really were, and consequently slackened their efforts. For example, when severe spider phobics were presented with tasks for which they held low efficacy expectations, most promptly dismissed the tasks as too far beyond their coping capacities and did not even attempt the tasks. In contrast, individuals with strong self-efficacy beliefs were more likely to persist in efforts until they succeeded. These latter people expected, and attained, higher performance accomplishments.

There were two components to efficacy expectancies. Outcome expectancies concerned beliefs that certain behaviors would lead to desired outcomes. Self-efficacy expectancies concerned beliefs that the person could successfully perform those behaviors. Bandura contended

that behaviors in the world inside and outside the laboratory were best predicted by considering both outcome and self-efficacy beliefs (although outcome expectancies have been ignored in most studies to date).

Efficacy theory predicts that women's outcome and self-efficacy beliefs about resistance behaviors will influence women's behavioral responses in assault situations. For example, women who believe resistance to be futile (outcome-based futility) would be expected to give up resisting early on if their initial resistances are not immediately successful. Women who doubt their capabilities to effectively aggress against a powerful assailant (efficacy-based futility) are also predicted to give up resistance early on in an attack. However, women who believe certain behaviors to be generally effective in some assault situations and who perceive themselves to have skills equivalent to other women who have successfully escaped similar situations would be more likely, according to theory, to resist assault with prolonged vigor and determination. In the rape literature, such confident, sustained protests were the behaviors most often associated with assault deterrence.

Hypotheses. The study hypotheses tap the major points of the Queen's Bench Foundations recommendations for decreasing vulnerability to rape. To evaluate how self-defense training affected students, defense-trained

women were compared at three points of time (before training, after training, and 6 months later) to two control groups: motivation controls (women who had wanted to take self-defense training but for various reasons had not), and fitness controls (women who were enrolled in an dance aerobics class).

Hypothesis 1: No significant differences were expected (the null hypothesis) between the self-defense students, the motivation controls, and the physical fitness controls at pretest on the following variables:

1. Self-reported restrictions in behaviors.
2. Perception of physical competence.
3. Fear of sexual assault.
4. Outcome and efficacy expectancies of assault deterrence.
5. Various personality variables (self-esteem, locus of control, sex-role identity).

Hypothesis 2: Women trained in self-defense would practice fewer restrictions on their behaviors than the control women. These changes would persist over time.

Hypothesis 3: Women trained in self-defense would increase their sense of physical competence in comparison to the control women. This change would persist over time.

Hypothesis 4: Women trained in self-defense would be no less fearful of sexual assault than the control women.

Hypothesis 5: Women trained in self-defense would embrace more assertive versus passive strategies (outcome expectancies) for deterring sexual assailants than would the control women. Defense women would also have greater confidence (self-efficacy) in their ability to carry through with such assertive behaviors if assaulted than would the control women. These changes would persist over time.

Exploratory: Measures of personality traits (self-esteem, locus of control, and sex-role identity) were collected for pretest comparisons and were assessed again at follow-up. Though no predictions were made that this brief self-defense training course would impact general ways of perceiving and being in the world, these personality measures will be examined for changes over time.

CHAPTER II

METHOD

Subjects

Three groups of university women, representing naturally assembled collectives, participated in this study. The Defense group (n = 69 at pretest) was composed of participants in a university self-defense course. The Motivation control group (n = 45 at pretest) included women who expressed an interest, during the registration sequence, in taking the self-defense course but for various reasons did not. The Fitness control group (n = 65 at pretest) included students in a university dance aerobics class. A total of 179 women participated in the pretest and their responses were used in measure development. (Four women were eliminated from later analyses when it was learned that they had participated in the defense training program being assessed prior to the start of this study). All respondents volunteered, without offers of payment nor extra course credit.

Procedure

Women were surveyed three times: pre-course (April, 1982), post-course (June, 1982), and follow-up (December, 1982). For the Defense and Fitness women, pretest and posttest data collection took place in the classroom. I visited three self-defense and one dance aerobics class on their initial and last class meeting. All classes were entirely female. I was introduced as a doctoral student in clinical psychology doing a study on women and their experiences at the university. The dance aerobics class was large, about 80 women, and not all chose to participate. Most who declined needed to consult with the instructor about registration problems. The self-defense classes were smaller (average size was 23). All self-defense students present at the targeted class meetings filled out questionnaires.

The introduction to the study was constant across all classes and is reproduced in Appendix B. Following a short description of the study, women were asked to review the consent to participate form. Once signed, it was detached from the rest of the questionnaire. To insure anonymity, students were instructed to create a personal code-number, one that was both confidential and easily remembered. This was recorded on the questionnaire booklet and a small "research card" (which supplied the study's name and how I could be contacted in case of subsequent emotional upset

related to study participation) that was theirs to keep. Further instructions sensitized them to potentially intrusive questions. Throughout the introduction, I strove to create an atmosphere of respect for their feelings and experiences.

While completing the research questionnaire, the women appeared to be serious and attentive. Afterwards, some initiated conversations, expressed gratitude for the study, or asked for more information about the topic. Five women offered to help with the study. (All such offers were graciously refused.)

Contacting the Motivation controls was more difficult. They were identified through their efforts to enroll in the self-defense class at various points in the registration process (pre-registration, early registration, and regular registration). These included women who had pre-enrolled but were denied class space due to overenrollments or later chose to drop the class (n = 28) as well as women waiting in registration lines who hoped to add the already filled course (n = 24). At the start of Spring term, all women so identified were sent a letter (shown in Appendix C) that described the study. Each was then called, by either myself or a female undergraduate research assistant, and personally invited to participate in the study. (Guidelines for these calls are provided in Appendix D.) Arrangements were then made to either have the women come to a university office to complete the research questionnaire (the preferred

arrangement), have it personally delivered to their homes (second choice), or have it mailed to their homes (the least preferred solution). In the first two cases, instructions were presented orally, as with the self-defense and dance aerobic administrations. In the latter case, these same instructions were provided in writing. Of the 52 targeted women, 49 returned the pretest surveys, four of whom were subsequently eliminated for they had late-added the self-defense course and had been exposed to at least one class meeting before completing the survey.

This process was repeated with the Motivation controls at posttest and follow-up. The identical procedure was used with the Defense and Fitness women at follow-up time.

Measure Development

Steps in development. The scientific study of the effects of self-defense training is at an early stage. Throughout study development, questions that were important needed to be balanced against those aspects of women's experiences for which reliable measures had been developed. A diversity of resources were tapped in the formation of this study's research questionnaire:

1. Former self-defense students were interviewed. An open-ended format was used to elicit their conceptions and feelings before, during, and after self-defense training. Their responses were then organized by

content area. It was from this list that the the study's organizing questions were developed.

2. The literature was then searched for relevant measures or, if unavailable, at least ideas on how to operationalize the questions of interest.

3. Consultations with both local and national experts on rape (for example, Martha Burt, attitudinal researcher) were arranged.

4. The self-defense instructor served as a consultant throughout questionnaire development. She offered materials on the philosophies of self-defense training, ideas of what was important to assess, and opinions during early stages of survey development.

5. An original measure of efficacy beliefs was designed and pretested on a class of self-defense students. The goal was to determine those situations and strategies that were most relevant to these women and most powerfully differentiated among them.

6. A preliminary draft of the completed questionnaire was given to former self-defense students, clinical psychology graduate students, and the self-defense instructor. Respondents were asked to be critical, especially in regard to ambiguous items and content coverage (i.e., were important aspects of the attitudes and behaviors surveyed omitted?). Particular attention was paid to the experience of completing the questionnaire, in order to eliminate sections that

might needlessly bore or alienate volunteer respondents.

The final form of the questionnaire is presented in Appendix E.

Scale analyses. Once the data were collected, the next step was to reduce the multitude of items contained within the research questionnaire into a smaller set of meaningful and cohesive scales. The goal was to identify item clusters, with each measuring a single underlying variable. This was realized via the measurement model outlined by Hunter (1977).

The factor analytic approach of PACKAGE (Hunter, Cohen, & Nicol, 1982) was applied to the responses of the 179 women who completed the pretest questionnaire of the present study. Items were provisionally grouped according to content areas. These initial clusters were then tested empirically using exploratory factor analysis, with Varimax rotation and communalities in the diagonals to correct for errors of measurement. The output, particularly the factor loadings and inter-item correlations, served as information for more intelligently regrouping items into scales. Oblique multiple group factor analysis followed to check each scale's integrity. The goal was to group items into scales on the basis of content, internal consistency, and external consistency, in order that the resulting measures would be both conceptually meaningful and statistically

sound.

In describing the scales used in this study, item-factor correlations are commonly reported. Item clusters were defined in their final form via oblique multiple group factor analysis, and thus the factors were NOT rotated. Also, the alpha values reported are usually standard score coefficient alphas. These are figured by applying Cronbach's alpha formula to standardized data. When a scale consisted of items with equivalent or similar Likert-type response formats, as was always the case here, the standardized coefficient alpha closely approximated Cronbach's alpha.

The description of instruments that follows is divided into three parts: (1) measures adapted from a large study on fear of urban crime, (2) measures of efficacy beliefs, and (3) measures of personality variables.

Measures Adapted from the Fear of Crime Literature

Riger, Gordon, and associates (1978, 1981) collaborated in an extensive survey on the fear of crime in 1977 under the auspices of the Center for Urban Affairs at Northwestern University. Telephone surveys were conducted with 1620 randomly selected women and men living within the city limits of Philadelphia, San Francisco, and Chicago. Follow-up in-person interviews were performed with a subset of 299 women and 68 men from this larger sample. Women were

deliberately oversampled in this later stage so as to better understand the reasons for their greater fear of crime and their strategies for coping with perceived risks. The modal woman in both the telephone and in-person sample was white, below 30 years of age, educated at the high school level or less, employed outside of the home, and living on a household income of under $10,000.

Similar to the present study's goals, Gordon and Riger had an interest in uncovering women's strategies for coping with the threat of rape. Accordingly, their conceptualizations of women's fears and many of their items (taken from the protocols of their original interviews) were the basis of this study's measures of behaviors, attitudes, and experiences. However, the final collection of items used in the present investigation's questionnaire was not identical to those items used by Gordon and Riger. This was in part due to necessity: This study's questionnaire was designed before applicable portions of Gordon and Riger's findings were published. Also, the two studies had different emphases and assessed different samples. Other changes were needed to fit the questionnaire within time limits necessitated by in-class administration. Modifications were made in consultation with the self-defense instructor or as a result of the pretest of the instrument.

Measure of precautionary behaviors. Respondents were asked how frequently they used certain common precautionary

behaviors. These items were largely selected from protocols of Riger and Gordon's interviews, with some additions from the self-defense strategies being taught and from behaviors mentioned by university women in pre-study interviews.

In their 1982 article, Riger, Gordon, and LeBailly factor analyzed a subset of the precautionary behavior items used in their in-person interviews. The resulting two-factor, eight-item solution reflected the analytic distinction between avoidance behaviors (actions believed to decrease exposure to perceived dangerous situations) and risk-management behaviors (actions believed to minimize or manage the risk of being victimized when the user either cannot or will not avoid possibly dangerous situations). They labeled their factors Isolation and Street Savvy.

This distinction between Isolation (restricting mobility for fear of safety) and Street Savvy (attempting to reduce risk in potentially threatening situations) had much support in the literature on crime. DuBow, McCabe, and Kaplan's (1979) review of published and unpublished literature on reactions to crime identified two similar styles of precautionary behaviors: avoidance reactions (intended to decrease exposure to perceived dangerous situations) and risk-management behaviors (intended to minimize risks when dangerous situations were not avoided). A similar division was described by Harris (1981) from an information processing perspective. Here, avoidance was defined as not making use of stress-relevant information,

such as not thinking about the stressor. Conversely, vigilance referred to the active seeking of information about a potential stressor.

From the present study's questions on precautionary behaviors, 23 items (including 7 of the 8 items in Riger et al.'s (1982) factor solution) were selected for exploratory and confirmatory factor analysis according to the measurement model outlined earlier. Both statistical loadings and item content guided final factor composition. In the end, two factors were obtained from analyses of responses by participants in this study. Shown in Table 1, the factors fit well the theoretical distinction between risk-management and avoidance strategies.

The first factor, labeled Vigilance, contained 11 items and encompassed a heterogenous set of behaviors designed to promote awareness and management of potential risks. Its internal consistency, as measured by standardized coefficient alpha, was .74. It included such behaviors as being alert and watchful when out on the street alone at night, avoiding dark and deserted paths, and mentally planning escape strategies in case of danger. Among its items were three from Riger et al's Street Savvy factor. A high score on this factor did not necessarily indicate a lack of concern with safety, but rather concern for the vigilant management of risks. A woman unconcerned for her safety would likely have scored low on Vigilance and also low on the next factor, Avoidance.

Table 1

Item-Factor Correlations of Precautionary Behaviors Measures

Factor		Behavior
Vigilance	Avoidance	
57	25	When walking at night, check often behind you to be sure you aren't being followed?
53	13	When out alone at night, mentally figure out escape routes or strategies in case you are assaulted?
50	17	Lock the outside doors when home alone during the day?
50	19	When you see someone suspicious on the street at night, cross the street or change your route?
49	21	*When at a movie or on a bus, choose a seat with an eye to who will be sitting nearby?
48	26	When walking on the street alone at night, make a point of being alert and watchful?
45	18	Lock ground floor windows at night?
43	35	When out alone at night, avoid using streets or paths that are not well-lit or well-traveled?
35	11	*Ask salesmen or repairmen for identification before opening the door?
35	15	*In case of danger at night, try to wear shoes that are easy to run in?
35	17	Lock the outside doors when home alone during the night?
26	82	+Avoid doing at night things you HAVE to do (such as shopping, laundry, or library) because of fear for your safety?
24	80	+At night, not do things that you WANT to do, but don't HAVE to do (such as visiting, sports, or evening classes) because of fear for your safety?
29	78	When planning your day, consider what you will have to give up in order to be someplace safe by the time it becomes dark?
34	75	Stay home because you couldn't find someone to accompany you out at night?
16	59	+Restrict your going out to only during the daytime?
45	52	Drive or take a taxi/bus, rather than walk at night, because of fear of being harmed?
34	51	Avoid being home alone at night?
13	29	*When out alone at night, try not to dress in a provocative or sexy manner?

Note. All numbers are correlations. Decimals are omitted.

* Item in Riger, Gordon, & LeBailly's (1982) Street Savvy Factor
\+ Item in Riger, Gordon, & LeBailly's (1982) Isolate Factor

The second factor, labeled Avoidance, had eight items. It included all items in Riger et al.'s (1982) Isolation factor, modified somewhat to better fit the university experience, plus one item, "not dressing in a provacative or sexy manner," from their Street Savvy factor. In the thoughts of the college students surveyed here, limiting one's dress cognitively clustered more with limiting one's freedom than with managing risks. The Avoidance factor generally had high inter-item correlations, high item-factor correlations, and high internal consistency (standardized coefficient alpha was .84). It encompassed tactics designed to prevent sexual assault by attempting to limit exposure to risk, such as women going out only during the day or avoiding things they wanted to do because of fears for their safety. The Avoidance and Vigilance factors moderately correlated (r = .44).

The assessment of self-protective behaviors undertaken here started with a different item-set and sampled a different population than the work of Riger, Gordon, and LeBailley (1982). Still, parallel factor structures were found, attesting to the robustness of the distinction between vigilant and avoidant tactics among women's strategies for feeling safe.

Scales were formed by reflecting responses (a score of 1 was transformed to a score of 4 and vice versa) then averaging the responses to the items within each cluster. Scores ranged from never using that set of behaviors (1) to

behaviors (1) to using such behaviors all or most of the time (4).

Measure of perceived physical competence. Taken directly from Gordon, Riger, and LeBailley (1982), the four-item perception of physical competence scale proved a strong measure. For their in-person interview sample, it had respectable internal consistency (Cronbach alpha = .76) and was a powerful predictor of the use of avoidance behaviors that restricted freedom and access (r = .35, p < .001).

Factor analysis was repeated to determine the scale's structure with this college sample. Internal consistency was again respectable (standardized coefficient alpha = .70) and item-factor correlations were moderate to high (r = .51 to .71). The scale is shown in Table 2.

As used here, responses to all items were first reflected then averaged to form the competence scale. A scale score of 1 corresponded to self-perceptions of limited physical competence and that of 7 to perceptions of high competence (i.e., strength and speed).

Measure of fear of sexual assault. Tyler (1980; personal communication, March 9, 1982) developed a questionnaire to assess people's fearfulness of assault and robbery. This instrument was slightly modified by Riger and

Table 2

Item-Factor Correlations of Perceived

Physical Competence Measure

Item-factor correlation	Item
.79	And compared to the average man, would you say you can run faster, about as fast, not as fast?
.59	What about speed? Would you say you can run faster than the average woman, about as fast, or not as fast?
.54	Do you see yourself as stonger, equally as strong, or weaker than the average woman?
.51	And compared to the average man, do you think you are stronger, equally as strong, or weaker?

Gordon in their interviews and further adapted by myself to the campus setting for this study. The scale's items and factor loadings are shown in Table 3. (One of Tyler's original items, "Is there any area on campus where you would be afraid to walk alone at night?" was eliminated from this scale as it had limited variability and low correlations with other items. Almost every women feared some campus area.)

The first question, "How safe do you feel or would you feel being out alone in your neigborhood [campus] at night?" has been the most widely used research measure of fear of crime. This item has been shown to be sensitive to sex differences (women report feeling less safe than men), age differences (older persons report feeling less safe than younger), and neighborhood differences (women in racially changing and mixed neighborhoods feel less safe than those in white middle-class and stable ethnic working-class neighborhoods, Riger & Gordon, 1978).

The impact of fear upon behavior is well-documented. For example, Tyler (1980) found that worry about crime and perceived likelihood of future victimization combined, in respondents' minds, into a personal vulnerability factor. This personal-level factor proved distinct from, and statistically unrelated to, more general-level judgments of the rate of crime in respondents' neighborhoods. In addition, Tyler found that crime prevention behaviors were related to judgments of personal vulnerability rather than

Table 3

Item-Factor Correlations of Fear of

Sexual Assault Measure

Item-factor correlation	Item
.55	How safe do you feel, or would you feel, being out alone on campus AT NIGHT?
.69	How much do you worry about the possibility of being sexually assaulted AT NIGHT?
.43	How much do you worry about the possibility of being sexually assaulted on campus DURING THE DAY?
.54	How likely do you think it is that you will be a victim of sexual assault in the next 12 months?

to judgments about the general rate of crime. He concluded that "individuals do not use knowledge of population base rates [of crime] to predict behavior of individuals, particularly themselves" (Tyler, 1980, p. 23).

Factor analysis of the scale used with the present sample demonstrated that perceived personal risk and worry about crime also combined into a single personal vulnerability measure. The four-item scale had a standardized coefficient alpha value of .63. Responses to the items were reflected, summed, then averaged. Scale scores ranged from no fear (1) to high fear (4).

Measure of Efficacy Expectancies

Bandura (1977, 1982) has proposed a model of self-efficacy to explain individual differences in coping behavior. The theory divided cognitions of a task at hand into two types of expectancies. OUTCOME EXPECTANCIES concerned an individual's belief that certain behaviors in specific situations would lead to a desired outcome. SELF-EFFICACY EXPECTANCIES reflected an individual's belief in her/his ability to successfully perform such behaviors in specific situations.

To assess women's sense of efficacy in assault situations, a measure was needed that tapped both types of expectancies across a range of relevant situations.

Behavioral tests of reactions to assailants proved infeasible, so self-reports were used. A matrix was designed that listed behaviors by rows and assault situations by columns. The specific behavioral and situational items were culled from pre-study interviews. What had been those women's strategies before and after learning self-defense? What types of assailants most concerned them? The initial matrix was further refined in consultation with the self-defense instructor, then pretested on 20 current self-defense students who were asked to comment on the clarity of instructions and situations. From their responses, salient characteristics of potential assailants (acquaintance or stranger, armed or not) and women's responses (from passive to aggressive) were identified.

The end-products were two 12 (behaviors) by 3 (assailant characteristics) matrices, (reproduced on pages 122-123 in Appendix E). To assess outcome expectancies, women were asked to rate (from very uncertain to very certain) how EFFECTIVE they believed a specific strategy would be in deterring each type of assailant. To assess efficacy expectancies, women were asked to rate (from very uncertain to very certain) how CONFIDENT they were in their ability to perform successfully certain behaviors in each situation.

Hunter's (1977) measurement model was used to determine scale scores for both matrices. Participants' responses to

the 36 items of each matrix were entered into exploratory factor analyses. In both cases, the two-factor solution made greatest conceptual sense. Confirmatory factor analysis closely paralleled the original factor solutions, with minor realignments guided by item content. Each matrix could be divided into two statistically sound and meaningful scales that reflected the analytical distinction between assertive and dependent strategies and behaviors across the three types of assailants (male acquaintance, stranger without weapon, stranger with knife). These factors are shown in Tables 4 and 5.

The first set of factors divided outcome expectancies into two main types of resistance stratagies. The Assertive Strategies factor consisted of 21 items (7 strategies by 3 situations) and had an alpha value of .89. Its items described verbal and physical aggressive responses to assaults, such as "be verbally confrontative/assertive," "punch and kick," and "act immediately." These same behaviors have been identified in the literature (Bart,1981; McIntyre, 1980; Queen's Bench Foundation, 1976) as being generally the most effective assailant deterrent strategies. In those studies, such behaviors seemed most common when women experienced anger in addition to their feeling fear.

The second outcome expectancy factor, labeled Dependent Strategies, contained 15 items (5 strategies by 3 situations) and had an alpha value of .80. Its items described less assertive responses, such as "plead, cry,"

Table 4

Item-Factor Correlations of the Outcome Expectancy Measures

Behavior	Factor		
	Assertive	Dependent	Mace
Assertive strategies			
Acquaintance assailant			
Punch and kick	61	1	21
Break his hold/block his blows	60	2	33
Act immediately	53	-5	11
Run away	48	24	21
Scream loudly	39	21	31
Be verbally confrontative/ assertive	30	17	-3
Walk/appear confident	25	19	2
Unarmed stranger assailant			
Punch and kick	75	0	23
Break his hold/block his blows	71	-5	27
Act immediately	60	-9	8
Run away	58	15	22
Scream loudly	54	10	24
Be verbally confrontative/ assertive	44	17	1
Walk/appear confident	51	13	0
Stranger with knife assailant			
Punch and kick	71	-12	12
Break his hold/block his blows	64	-4	26
Act immediately	48	-22	10
Run away	52	0	12
Scream loudly	41	0	8
Be verbally confrontative/ assertive	53	13	-1
Walk/appear confident	52	25	-5
Dependent strategies			
Acquaintance assailant			
Verbally stall	7	59	11
Wait for right opportunity	9	52	29
Plead, cry	-21	50	8
Make self look unattractive or sick	-15	41	14
Unarmed stranger assailant			
Verbally stall	22	66	13
Wait for right opportunity	17	56	29
Plead, cry	-2	61	9
Make self look unattractive or sick	-10	45	9
Stranger with knife assailant			
Verbally stall	27	46	1
Wait for right opportunity	25	36	16
Plead, cry	7	53	10
Make self look unattractive or sick	-1	36	4
Mace strategy			
Acquaintance - Use mace	20	25	88
Unarmed stranger - Use mace	24	23	98
Stranger with knife - Use mace	24	21	84

Note. All decimals omitted.

Table 5

Item-Factor Correlations of the Efficacy Expectancy Measures

Behavior	Factor		
	Assertive	Dependent	Mace
Assertive responses			
Acquaintance assailant			
Punch and kick	65	20	37
Break his hold/block his blows	61	2	30
Act immediately	55	22	38
Run away	51	11	16
Scream loudly	48	29	36
Be verbally confrontative/ assertive	42	31	37
Walk/appear confident	40	40	30
Unarmed stranger assailant			
Punch and kick	68	26	33
Break his hold/block his blows	62	2	31
Act immediately	64	33	34
Run away	59	14	19
Scream loudly	63	38	41
Be verbally confrontative/ assertive	52	31	40
Walk/appear confident	46	40	24
Stranger with knife assailant			
Punch and kick	58	26	32
Break his hold/block his blows	59	5	30
Act immediately	54	18	26
Run away	60	17	15
Scream loudly	59	30	35
Be verbally confrontative/ assertive	43	21	30
Walk/appear confident	35	25	12
Dependent responses			
Acquaintance assailant			
Verbally stall	26	65	19
Wait for right opportunity	34	53	23
Plead, cry	1	51	15
Make self look unattractive or sick	13	48	23
Unarmed stranger assailant			
Verbally stall	38	73	26
Wait for right opportunity	40	51	24
Plead, cry	6	54	24
Make self look unattractive or sick	14	54	26
Stranger with knife assailant			
Verbally stall	39	57	21
Wait for right opportunity	43	50	27
Plead, cry	8	54	17
Make self look unattractive or sick	14	49	24
Mace response			
Acquaintance - Use mace	94	38	85
Unarmed stranger - Use mace	97	35	96
Stranger with knife - Use mace	58	38	90

Note. All decimals omitted.

"make self look unattractive or sick," and "wait for the right opportunity." Such strategies suggested more passive efforts to deter potential assailants. According to the literature (Bart, 1981; McIntyre, 1980; Queen's Bench Foundation, 1976), these behaviors were most common when women's dominant emotion was fear and were generally less effective than the more assertive strategies. The Assertive Strategies and Dependent Strategies factors were relatively independent, as they correlated only .11.

The use of mace did not fit clearly into either of the above clusters, but it was a strategy of special interest. In pre-study interviews, it had been a common precautionary behavior among college women. It was analyzed separately. The 3 item (1 strategy by 3 situations) scale had an alpha value of .93 and a .25 Pearson correlation with the Assertive Strategies factor and a .26 Pearson correlation with the Dependent Strategies factor.

The measure of self-efficacy employed an identical matrix, only with different instructions. While in the outcome expectancy section women were asked to rate how effective they thought a particular strategy would be in deterring a sexual assault, here they were asked how confident they were in their ability to perform each task successfully in a particular situation.

The determination of the self-efficacy factors followed the same process outlined for the outcome expectancy matrix. The two-factor solution to the exploratory factor analysis

roughly fit that found with the outcome matrix. To facilitate comparisons across matrices, items were slightly realigned so that the efficacy scales matched the outcome scales. This cluster arrangement was then subjected to oblique multiple groups factor analysis, which confirmed that the factors so designed fit the data statistically and meaningfully. These factors are shown in Table 5.

The first factor, labeled Assertive Responses, consisted of 21 items (7 strategies by 3 situations that duplicated those in the Assertive Strategies factor) and had an alpha value of .90. Again, the items described aggressive responses, such as confront/assert, punch and kick, and act immediately.

The second efficacy factor, labeled Dependent Responses, consisted of 12 items (4 behaviors by 3 situations that matched those in the Dependent Strategies factor) and had an alpha value of .84. Its items were "make self look unattractive," "plead, cry," "verbally stall," and "wait for the right opportunity."

Again, the use of mace did not clearly fit either cluster; and its three items (1 response by 3 situations) were analyzed separately. The resulting Mace Response factor had an alpha value of .93.

Correlations among these three efficacy factors were moderately high: Assertive Responses to Dependent Responses, r = .42; Mace Response to Assertive Responses, r = .55; Mace Response to Dependent Responses, r = .41.

Clearly, the factors were not independent. They appeared to measure different facets of a larger, underlying variable, perhaps general confidence to successfully deter an assailant. However, the exploratory factor analysis and trends of internal and external consistency supported the conceptualization and measurement of the three factors as separate components of self-efficacy in assaultive situations.

Measure of Personality Traits

Three personality scales (self-esteem, locus of control, and sex-role identity) were included at pretest to gain information about possible differences between the three groups before any intervention. Time constraints prevented these scales' inclusion at posttest. They were included again at follow-up. Such broad personality traits have been the focus of previous evaluations of self-defense training.

Rosenberg's self-esteem scale. Rosenberg (1965) developed this scale as an easily administered, short, and unidimensional measure of the attitude toward the self as part of a study on the effects of social experiences upon adolescents' levels of self-esteem. His original sample consisted of 5024 high school juniors and seniors from 10 randomly selected New York state high schools. High self-esteem was conceptualized as the feeling that one is

"good enough," self-acceptance while recognizing one's limits, and confidently expecting further growth and improvement. Low self-esteem was conceptualized as self-rejection, self-dissatisfaction, self-contempt.

Crandall (1973) considered this one of the eight best self-report measures of self-esteem. Though originally designed as a Guttman Scale, the ten-item scale has been most frequently used as a Likert-type scale (Dobson, Goudy, Keith, & Powers, 1979). It has been found to have respectable internal consistency (Cronbach alpha was .72 in a sample of adults reported by Jacques and Chason, 1977) and high test-retest reliablity (r = .86 across two weeks among two college samples reported by Rosenberg, 1979). Construct validity has also been demonstrated. Self-esteem, as measured by this scale, correlated negatively with observers' ratings of students' depression, disappointment, and self-critical skills; correlated negatively with physiological indicators of neurosis and self-reports of psychosomatic symptoms; and correlated positively with peer ratings of interpersonal adjustment (Rosenberg, 1965).

Lately, there has been controversy around the scale's alleged unidimensionality (Dobson et al, 1979). However, with college age populations, the age group for which it was developed, this scale repeatedly has been found to be unidimensional (Hensley & Roberts, 1976; Hensley, 1977).

The Rosenberg self-esteem scale was used here (see page 128 in Appendix E) in a four-step Likert format. The

pretest data showed it to be both unidimensional and internally consistent (alpha was .82). Scores to the items were averaged to yield a scaled score such that 1 corresponded to low self-esteem and 4 to high self-esteem.

Measure of locus of control. Rotter's Internal-External Locus of Control Scale was designed to assess people's perceptions of the contingencies between their behavior and the events which follow those behaviors. It is the most widely used test of locus of control perceptions and has been demonstrated to have good internal consistency and high test-retest reliability (MacDonald, 1973). However, it is also rather long, consisting of 25 forced-choice statement pairs plus 6 filler pairs. Due to time constraints in the present study, a shorter version of this test was sought.

Most shortened versions of this scale followed factor solutions. Though Rotter originally believed his measure to be unidimensional, others (MacDonald, 1973; Mirels, 1970; Strickland & Haley, 1980) have found it to be multidimensional. Originally, it was also thought independent of gender, as overall patterns of means and standard deviations were similar for males and females. Recently, though, evidence for sex differences has been accumulating. When subjects were asked to respond to the Rotter I-E scale according to extreme sex roles (the "super" woman or man) the differences were striking and suggested

possible sex role bias (Strickland & Haley, 1980).

Strickland and Haley (1980) more carefully tested for hypothesized sex differences by first matching scores of females and males then performing factor analyses. Though starting with identical means and standard deviations, females and males responded quite differenty to some items, especially items relating to personal control. The two resulting factors were similar in meaning to those found by Mirels (1970) but were composed of different items.

The first factor encompassed perceptions related to political control and its four items were identical for respondents of both sexes. The second was a personal control factor. Its items differed across sexes, with no overlap. Females and males seemed to express personal control expectancies in different ways. Items loading highest for females concerned self-directed activities (i.e, planning ahead and personal self-direction), while those items loading highest for males related to influencing others (i.e., leadership roles). For females, the two factors accounted for 12% and 5% of the variance, respectively. As these two aspects might differentiate between self-defense students and the controls, both factors were included in the research questionnaire (see page 128 in Appendix E).

Measure of sex-role identity. The Bem Sex-Role Inventory (BSRI) was developed as a measure of masculinity

and femininity, conceptualized as independent dimensions. Items were selected on the basis of cultural definitions of sex-typed social desirability, as judged by student raters (Bem, 1981a). Originally designed as a 60-item scale, the shortened 30-item version (10 masculine, 10 feminine, and 10 neutral items) was used in this study (see page 129 in Appendix E).

The Short BSRI has been judged to be psychometrically sound. Items were selected to maximize internal consistency of the two scales as well as to tap the most desirable personality characteristics for a given sex-role. In a sample of university women, coefficient alphas for the two scales were .84 (Masculine) and .87 (Feminine), their intercorrelation was low (r = .19), and four-week test-retest reliability was high (r = 88; Bem, 1981a).

The adjectives best summarizing the BSRI's masculinity dimension have been found to be "dominant" and "assertive" and those best summarizing the feminity dimension were "compassionate" and "tender" (Bernard, 1980). According to some (including Bem, 1981b and Jones, Chernovetz, & Hansson, 1978), these scales are believed to also tap instrumental (i.e., agentic, strong) and expressive (i.e., communal, nuturant, emotional) interactional styles.

The BSRI traditionally has been used to measure androgynous (high on both dimensions) and undifferentiatied (low on both dimensions) sex-role orientations in addition to masculinity and femininity. In Bem's (1974) original

conceptualization, androgyny was hypothesized to be the style permitting greatest behavioral flexibility and adjustment. Current research, though, has not supported this model.

In discriminant analyses, androgynous and masculine groups shared many of the same traits (Bernard, 1980). In another examination of a wide range of personality characteristics (Jones et al., 1978), the most flexible, adaptive, unconventional, and competent patterns of responding occurred among the more masculine-scoring persons of both genders. For example, though "androgynous" females were less conventional, awkward, sensitive to criticism, and more outgoing, creative, and politically aware than were "feminine" women, the "masculine" females were even more adaptive, competent, and secure than the androgynous-scoring women. Jones and colleagues noted that "the less masculine the female, the more desirable increased masculinity became" (p. 312), perhaps a reflection of the higher value that this society places upon masculine tendencies. Because sex-role identity was included in most prior studies of self-defense training and because self-perceptions as instrumental and expressive appeared applicable to learning assertive defense techniques, the BSRI was included here. Responses were scored from very uncharacteristic (1) to very characteristic (7) on the masculine and feminine dimensions only.

CHAPTER III

RESULTS

Data Analyses

This study evaluated a woman's self-defense training program. It compared the responses of self-defense students (the Defense group) with women who wanted to enroll in the class but did not (the Motivation group) and women who were enrolled in a dance aerobics class (the Fitness group) at pretest, posttest, and follow-up 6 months later.

In determining the equivalency of these groups at pretest, univariate analyses of variance (ANONAS) and *t* tests were used. For examinations of the effects of defense training across time, and in comparison to the controls, multivariate analyses of variance (MANOVAS) were used. In an effort to limit experimentwise error rate, further comparisons were made only when the most inclusive test of a hypothesized relationship was significant. For example, if a multivariate analysis of variance yielded significant findings, it would be followed by univariate ANOVAS across groups and repeated-measures ANOVAS across time periods. If these were significant and further comparisons were of interest, post hoc Newman-Keuls' tests were performed to

probe relationships among pairs of means. Another safeguard against Type 1 errors was the decision to report only findings significant at the .05 probability level or below.

Comparisons of Groups at Pretest

Attrition rate. This evaluation of self-defense training centered upon the comparison of Defense women, Motivation controls, and Fitness controls. Although neither control group duplicated the defense skill-building nor the feminist philosophical components of the training program, together they controlled for two important aspects--interest and fitness--of the experimental condition.

One hundred seventy-five eligible women (68 Defense, 44 Motivation, and 63 Fitness) completed the first questionnaire at the start of Spring term, 1982. Attrition occurred at each subsequent data collection. At posttest 10 weeks later, 132 women (75% of the original sample) participated. At follow-up 6 months later, 101 women (58% of the original sample, or 76% of the two-time participants) returned questionnaires. These included 44 Defense, 31 Motivation, and 26 Fitness women.

The attrition rate varied for the three groups. Continuing participation rates of the Defense women (65%) and Motivation controls (70%) were roughly equivalent and well above that of the Fitness controls (41%). This last

group's lower rate may have reflected the larger class setting of their pre- and post-data collections. There was both a higher turnover of students from the first and last class meetings and less personal contact with the investigator.

Participation figures for all groups were also conservative underestimates. Questionnaires were anonymous and were matched over time via participant-created code numbers. In at least three cases, and perhaps a few more, there was evidence that a woman had returned all three questionnaires but the lack of matching code numbers and sufficient demographic information precluded their being reliably matched. Overall, the 42% loss of subjects over 8 months seemed reasonable, given study expectations that participant complete the same hour-long questionnarie three times without remuneration.

The loss of subjects appeared random with respect to the variables assessed. At pretest, there were few differences between the 101 women who completed three questionnaires and the 74 women who had completed only one or two of them. The three-time completers were equivalent to the one- and two-time completers on such demographic characteristics as age, race, religion, marital status, position in family, sex of siblings, years enrolled in college, location and type of residence, and roommate situation. There were no significant differences in the type of place (urban or rural) they grew up nor their

perceptions of neighborhood safety when in high school. In terms of variables central to the evaluation of defense training, the two groups did not differ significantly in terms of their use of avoidant or vigilant precautionary behaviors; self-perceptions of physical competence; fear of assault; outcome expectancies of assertive, passive, or mace strategies; efficacy expectancies of assertive or passive behavioral responses; perceptions of locus of control; or sex-role identity. Of this group of 29 variables and scales assessed at pretest, only 3 differed significantly: number of siblings ($t[173] = 2.75$, $p < .01$); self-esteem ($t[169] = -2.62$, $p = .01$); and confidence in their ability to use mace ($t[170] = 2.76$, $p < .01$). Women who remained active participants in this study had fewer siblings, higher self-esteem, and less confidence in their ability to use mace. This random drop-out pattern observed supports the external validity of the self-selected sample of the continuing participants. These 101 women were the focus of all later analyses.

Hypothesis 1: Pretest Equivalence. No significant differences were expected (the null hypothesis) between the self-defense students, the motivation controls, and the physical fitness controls at pretest.

Responses of the 101 women who completed all 3 questionnaires were compared via 3 x 1 (Groups x Time) ANOVAS and, following a significant F, by post hoc

Newman-Keuls' tests. Of the 15 variables compared, only 3 differed significantly across groups, as shown in Table 6. All three were perceptions of self-efficacy and in each case the Defense group was statistically equivalent to at least one if not both controls. Overall, these groups differed little at pretest.

When comparisons between Defense, Motivation, and Fitness groups were repeated with the total 175 women pretest sample, a similar pattern held. These groups were equivalent on 13 of 15 variables. The exceptions were measures of dependent efficacy expectancies and BSRI femininity.

General description of study sample. The 101 women who completed three questionnaires generally represented the university population from which they were drawn. They ranged in age from 18 to 29 (M = 20.8) and from freshperson to graduate student, with the majority being sophomores through seniors. They were predominantly white (95%) and never married (90%). Approximately half lived on campus in dorms (48%), while most of the remainder rented apartments (32%) or homes (14%) in the small city surrounding the campus. Most (71%) lived with other women, although 11% lived alone, 8% in mixed-sex households, 9% with male friends, lovers, or husbands, and 1% with their children.

A little was learned of their history. They grew up in suburbs (35%), small cities (23%), rural areas (22%), medium

Table 6

ANOVA Comparisons Across Groups at Pretest

	Sample			
	Three-Time Completers (n = 101)		Total Pretest Subjects (n = 175)	
Variable	F level	Post hoc comparison[a]	F level	Post hoc comparison[a]
Precautionary Behaviors				
Vigilant Behaviors	ns		ns	
Avoidant Behaviors	ns		ns	
Physical Competence	ns		ns	
Fear of Sexual Assault	ns		ns	
Outcome Expectancies				
Assertive Strategies	ns		ns	
Dependent Strategies	ns		ns	
Mace Strategies	ns		ns	
Efficacy Expectancies				
Assertive Behaviors	.009	Mot Def Fit	ns	
Dependent Behaviors	.013	Mot Fit Def	.050	Mot Fit Def
Mace Behaviors	.032	Mot Fit Def	ns	
Personality Variables				
Self-Esteem	ns		ns	
Locus of Control-Personal	ns		ns	
Locus of Control-Political	ns		ns	
BSRI-Masculinity	ns		ns	
BSRI-Femininity	ns		.017	Fit Mot Def

[a]Groups ordered by mean score from highest to lowest. Groups sharing common line do not differ significantly.

cities (14%), and a small number (4%) in large cities. Only a few reported being worried about assault when in high school. Fifty-three percent worried "not much at all" and 31% "little." Only 1% worried about assault "a great deal" and 15% "some" in that period of their lives. The overwhelming majority considered their high school neighborhood safe (57%) or at least "somewhat safe." Only 4% described it as "not very safe."

These women were also asked about previous experiences with family violence and sexual assault. Few volunteered reports of family violence. Approximately 23% shared that they had "sometimes" been hit during childhood and 4% more frequently. Five percent said that their parents had "sometimes" hit one another, and 11% reported having been hit by their latest lover.

Sexual assaults were more commonly reported. Twenty-five percent affirmed that they had had someone "force sex on [them], in any way, against [their] will." Five percent said that they had been raped. Another 8% reported being "sexually assaulted by a relative." Nearly half (46%) responded that someone had "attempted to force sex on [them,] in any way, but unsuccessfully"; and 10% said they had sex with someone only because they "were afraid that physical force would be used against [them] if [they] did not go along." Also, 58% reported that during dating they had been pushed "to go farther sexually than [they] wanted to." The Defense women's assault experiences did not

differ statistically from those of the controls. Some women without past assaults chose to learn self-defense, and many others, including the exercisers, were coping with the aftermath of sexual assault and/or incest. As the breakdown by group is of interest, it is provided in Table 7.

These figures seem sobering, especially considering the possibility that they may well be underestimates. The FBI, in its Uniform Crime Reports (1980), considered sexual assault one of the most under-reported crimes due primarily to victim fear or embarrassment. Researchers (Gordon et al., 1980; Russell, 1982) have found that reports of rape increased as personal contact between the investigator and respondent increased. Paper-and-pencil surveys, such as this one, are likely to elicit fewer reports of assault than would personal interviews.

The Effects of Self-Defense Training

Statistical Approaches. Each of the following hypotheses made a prediction about the effects of self-defense training upon specified criteria. Accordingly, this study encompassed a multiplicity of comparisons, the values of each of the chosen variables across three groups and three time periods. Due to this large number of tests, there was a need to control the experimentwise error rate. Multivariate analysis of variance (MANOVA) was selected for

Table 7

Percentages of Respondents Reporting

Sexual Assaults at Present

Experience	Defense (n = 44)	Motivation (n = 31)	Fitness (n = 26)	Total (n = 101)
Forced sex against will	20	35	19	25
Raped	5	13	0	6
Sexually assaulted by relative	9	10	4	8
Forced sex, deterred	48	45	42	46
Forced sex, because afraid	7	16	8	10
During dating, pushed farther than wanted to go	66	52	52	58
At least one of the above experiences	80	68	65	72

Note. Percentages do not add to 100 as women could report more than one experience.

this purpose as this statistic provides one overall probability statement for a set of dependent variables (Bray & Maxwell, 1982).

The hypothesis was used as a conceptual unit for the MANOVA equations. To have put all variables into a single equation would have been overwhelming and difficult to interpret. Bochner and Fitzpatrick (1980) argued that a MANOVA must involve a conceptually meaningful set of dependent variables. Otherwise, its results confuse rather than inform.

All scales relating to a single hypothesis were combined into a single MANOVA analysis. An exception was the physical competence and fear hypotheses. Each concerned only a single variable and, as combining them made statistical and conceptual sense, they were entered together into a single MANOVA. The three personality measures, assessed at pretest and follow-up only, were also combined into one analysis. All MANOVA results are shown in Table 8.

In each MANOVA test of a hypothesis, significant main and interaction effects were observed. To better understand the relationships of the Defense women over time and in comparison to the controls, univariate ANOVAS were subsequently performed. The results of these tests are displayed in the figures that accompany the discussions of each hypothesis. In these figures, statistics across the horizontal axis represented 3 x 1 (Group x Time) ANOVA comparisons that assessed group differences at each time

TABLE 8

Significance Levels for MANOVA's:
Hypotheses 2 Through 5 and Personality Variables

	MAIN EFFECTS				INTERACTION EFFECTS				
	Time 1 (Pre vs Post)	Time 2 (Post vs F-up)	Group 1 (Def vs Mot)	Group 2 (Def vs Fit)	Time 1 x Group 1	Time 1 x Group 2	Time 2 x Group 1	Time 2 x Group 2	df
Precautionary Behaviors	.000[a]	ns	ns	.007	.010	.017	ns	ns	2, 92
Physical Competence & Fearfulness	.000[a]	.011	ns	.022	ns	.002	ns	ns	2, 92
Efficacy Expectancies	.000[a]	.022	.018	.000[a]	.000[a]	.000[a]	ns	.004	6, 89

	MAIN EFFECTS			INTERACTION EFFECTS		
	Time (Pre vs F-Up)	Group 1 (Def vs Mot)	Group 2 (Def vs Fit)	Time x Group 1	Time x Group 2	df
Personality Variables	.036	ns	ns	ns	ns	5, 90

[a] $p < .001$

period. F-tests along the vertical axis represented 1 x 3 (Group x Time) repeated-measures ANOVA comparisons that analyzed each groups' development over time. Each ANOVA was a comparison of 3 means, three groups in the former case and three time periods in the latter. In those cases where it was important to understand individual relationships among the means, as in which group or time period contributed the most variance to a statistically significant relationship, post hoc Newman-Keuls' tests were performed. Means and standard deviations for each scale are provided in Appendix F.

Hypothesis 2: Precautionary behaviors. Women trained in self-defense will practice less restrictions on their behaviors than the control women. These changes will persist over time.

Precautionary behaviors were measured by two scales. The first, an 11-item Vigilance scale, explored women's risk-management strategies, such as reports of being alert and watchful when out alone at night and mentally planning escape strategies in case of danger. The second, an 8-item Avoidance scale, measured women's practices of limiting their exposure to perceived risks, such as by going out alone only during the day and avoiding some activities because of fear for safety. Each was measured on a never (1) to all or most of the time (4) Likert scale. As the only behavioral assessments in this study, these self-reports were of particular importance. The results partially supported the hypothesis and are graphed in

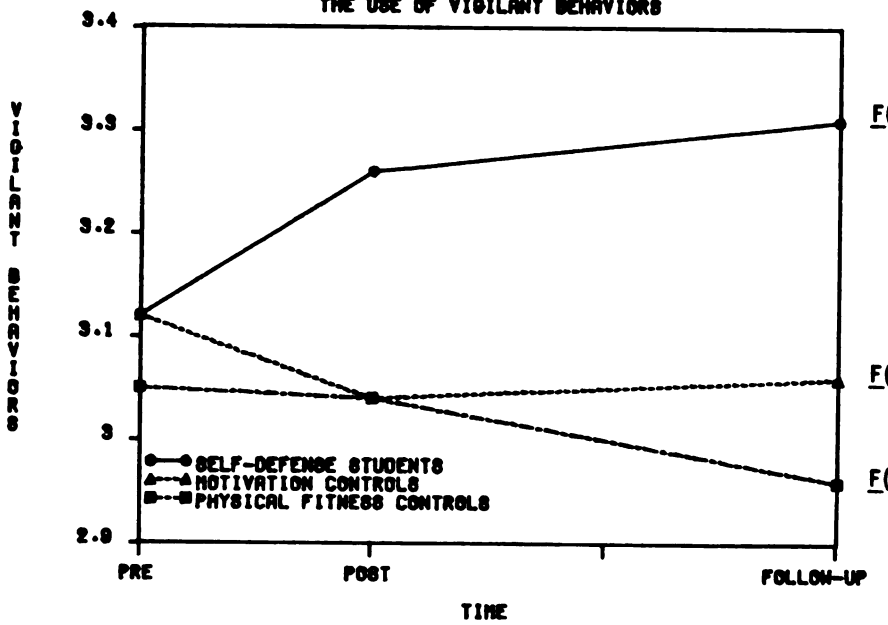
Figures 1 and 2. Defense students increased their use of vigilant behaviors but did not decrease their use of avoidance behaviors.

With respect to vigilant behaviors, the groups were statistically equivalent at pretest. The Defense women reported a significant increase in their use of vigilant behaviors at posttest and sustained this increase at follow-up. Motivation and Fitness controls did not exhibit parallel increases, so that at both posttest and follow-up the groups differed significantly. Post hoc Newman-Keuls' tests indicated that 6 months after training the Defense women used vigilant behaviors significantly more often than either control.

The pattern of changes in avoidance behaviors, self-restrictions employed by women to reduce their exposure to assault risks, was different. No statistically detectable between-group differences were observed at pretest, posttest, or follow-up. Analyses of each group's development over time (repeated-measures ANOVAS), revealed a significant reduction in avoidant behaviors only among the Motivation controls. Defense and Fitness women did not change their avoidant patterns significantly.

In sum, Defense-trained women did not increase their exposure to dangerous situations, as their reported use of behaviors designed to avoid risks paralleled that of the controls. However, when out alone and feeling at risk, Defense-trained women described themselves as more vigilant,

FIGURE 1
THE USE OF VIGILANT BEHAVIORS



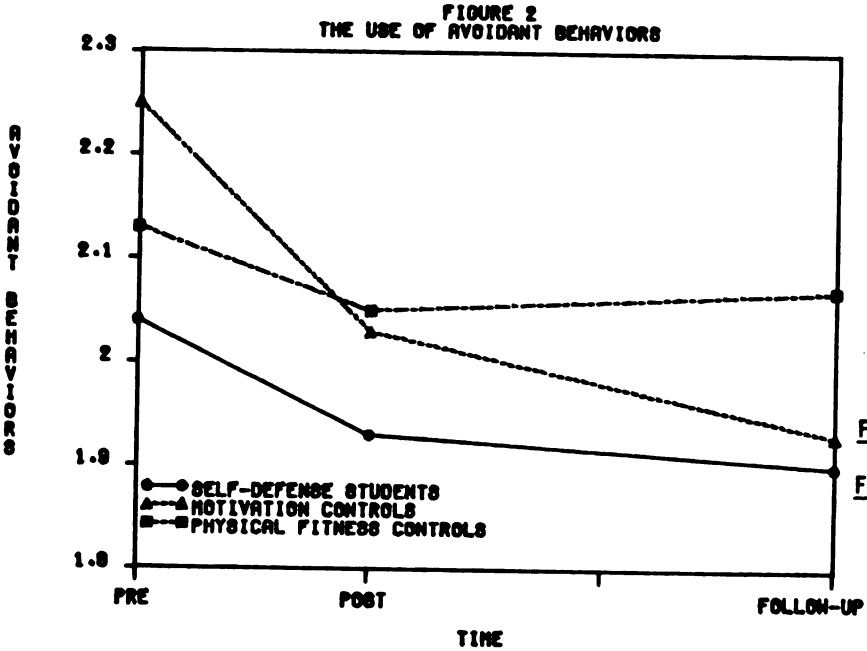
$F(2, 80) = 7.95^{***}$

$F(2, 60) < 1$

$F(2, 46) = 1.14$

$F(2, 96) < 1$ $F(2, 97) = 3.09^{*}$ $F(2, 97) = 5.70^{**}$

FIGURE 2
THE USE OF AVOIDANT BEHAVIORS



$F(2, 46) = 1.89$

$F(2, 60) = 9.48^{***}$

$F(2, 80) = 2.78$

$F(2, 95) = 1.14$ $F(2, 98) < 1$ $F(2, 98) < 1$

$^{*}\ p < .05$
$^{**}\ p < .01$
$^{***}\ p < .001$

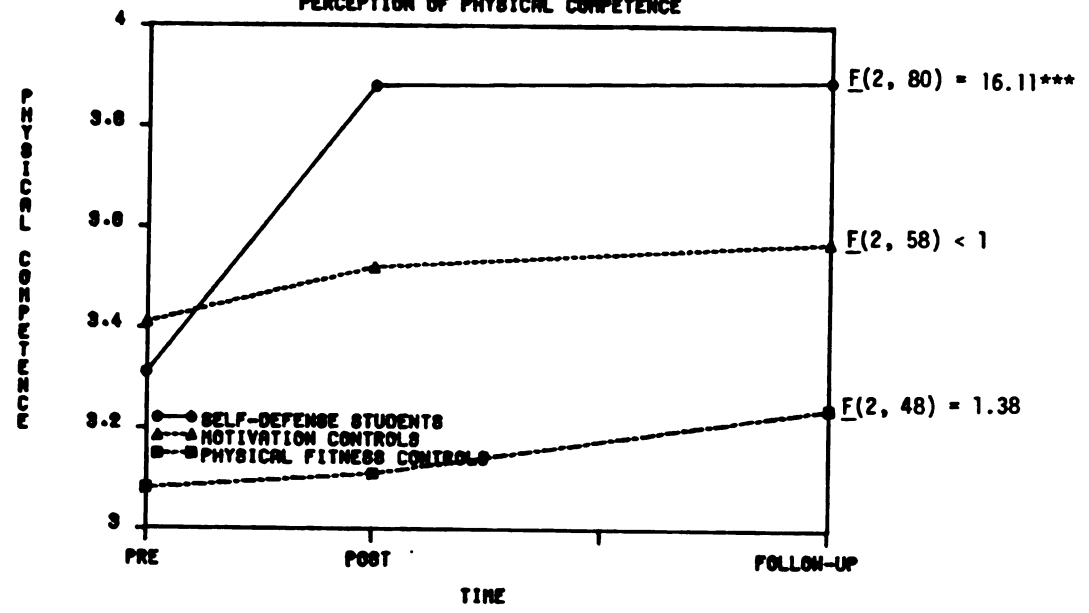
wary, and ready. These gains, evident at posttest, were even stronger at follow-up.

Hypothesis 3: Perceptions of physical competence. Women trained in self-defense will increase their sense of physical competence in comparison to the controls. This change will persist over time.

Physical competence was measured by a 4-item Perceptions of Physical Competence scale that asked women to compare themselves to the average woman and man. Scored from weak and not so fast (1) to strong and fast (7), it tapped views of those physical qualities important to women's decisions of if and how they might resist an assailant. The results, which strongly supported the hypothesis, are presented in Figure 3.

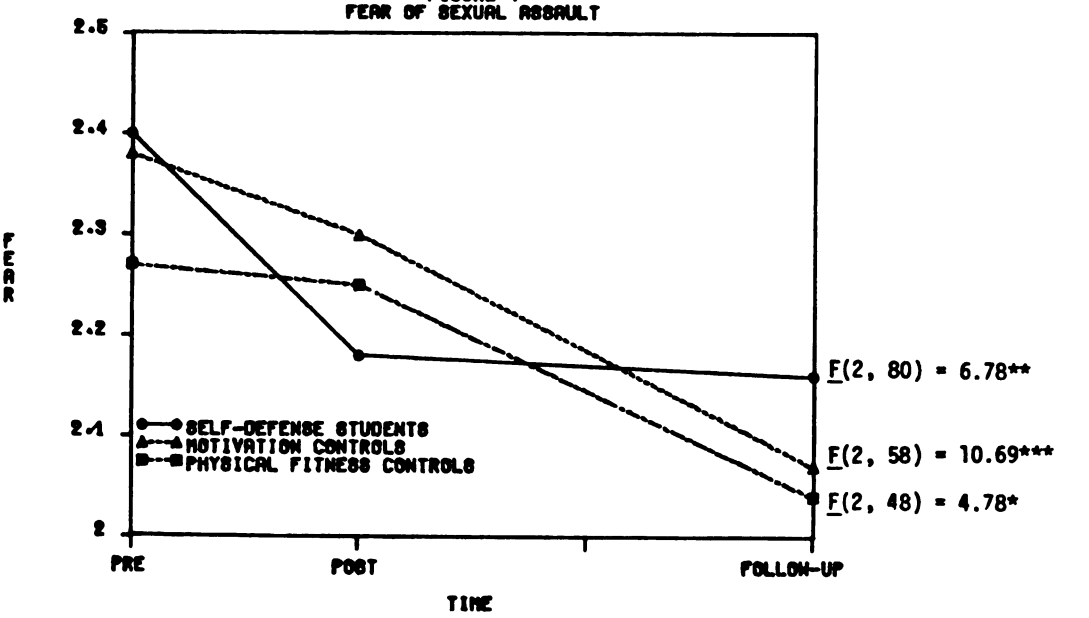
Statistically equivalent to both controls at pretest, the Defense women significantly increased their perceptions of their physical competence at posttest and sustained this gain at follow-up. At these later times, significant group differences were observed The Defense women's mean self-perceptions of physical competence were statistically greater than the Fitness controls and also exceeded (albeit not significantly) those of the Motivation controls.

FIGURE 3
PERCEPTION OF PHYSICAL COMPETENCE



$F(2, 97) = 1.04$ $F(2, 97) = 6.94^{**}$ $F(2, 98) = 4.44^{*}$

FIGURE 4
FEAR OF SEXUAL ASSAULT



$F(2, 95) < 1$ $F(2, 95) < 1$ $F(2, 95) < 1$

$^{*}\ p < .05$
$^{**}\ p < .01$
$^{***}\ p < .001$

Hypothesis 4: Fear of sexual assault. Women trained in self-defense will be no less fearful of sexual assault than the control women.

Worry about sexual assault was measured by a 4-item Fear scale that asked women how safe they felt being out alone on campus at night, how much they worried about the possibility of being sexually assaulted on campus at night and in day, and their perceived likelihood of being sexually assaulted within the next 12 months. Campus was chosen as the site for the fear assessment as it was the environment all participants shared at pretest and posttest. A score of 1 corresponded to no fear and a score of 4 reflected high fear of sexual assault.

The measurement of fear was complicated by the fact that at follow-up time 30 women (16 Defense, 5 Motivation, and 9 Fitness) had terminated their university involvement and could no longer rate their fears of sexual assault on campus. They were instructed on the follow-up to report instead on their fears of sexual assault in their current neighborhoods. Though slightly less fearful, women who had left the university area did not differ significantly on this measure ($t[99] = 1.78$, ns) from the women who had maintained access to the campus at follow-up. The results including the responses of all women (those near and those no longer near campus) are presented in Figure 4. As predicted, there were no group differences. Unexpected, though, was the general decrease in level of fearfulness

over time reported by all three groups.

Specifically, at pretest, posttest, and follow-up, there were no statistically detectable differences among the three groups when the scores of all women were analyzed together as well as when the scores of the 70 women remaining near campus were analyzed separately (at follow-up, $F[2, 68] < 1$, ns). Later, all three groups decreased their reports of fearfulness. Some element in the passage of time, perhaps changes in season or in reports of local rapes, had a greater influence upon most women's fears than did the experimental intervention upon the Defense women's fears. This decrease across all three groups was similar to the downward trend over time in practices of avoidant behaviors.

Hypothesis 5: Self-efficacy expectancies. Women trained in self-defense will embrace more assertive versus dependent strategies (outcome expectancies) for deterring sexual assailants than will the control women. Defense women will also have greater confidence (self-efficacy) in their ability to carry through with such assertive behaviors if assaulted than will the control women. These changes will persist over time.

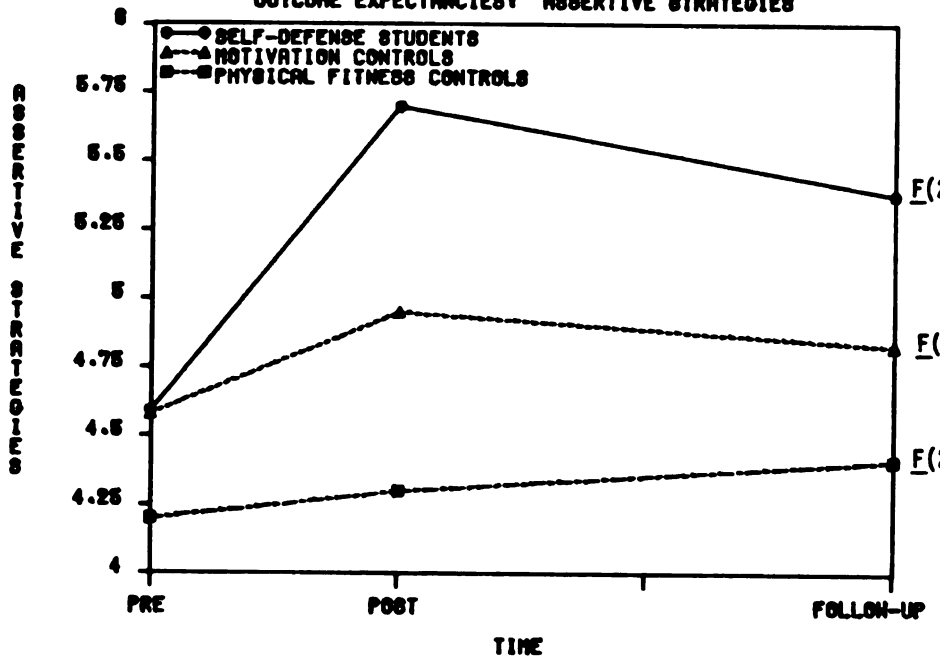
The women were presented with two matrices that explored their outcome and efficacy expectancies across three assault situations (by an acquaintance, an unarmed

stranger, and an armed stranger). On the first matrix they rated the perceived effectiveness (outcome expectancies) of certain escape strategies. On the second, they rated their personal confidence (self-efficacy) in performing each response. Factor analyses yielded two factors per matrix, with mace items not fitting clearly into either factor. Outcome expectancies were thus divided into assertive strategies, dependent strategies, and mace strategies scales. Parallel scales, assertive behaviors, dependent behaviors, and mace behaviors, were formed from the efficacy matrix.

Changes in outcome expectancies were as predicted. As can be seen in Figures 5 and 6, Defense-trained women increased their outcome expectancies of the effectiveness of assertive strategies and decreased their outcome expectancies of the effectiveness dependent strategies. Assertive strategies included such assault responses as "punch and kick," "scream," and "run." The three groups were statistically equivalent on this measure at pretest. Over time, both Defense and Motivation women reported significant increases in their confidence in such assertive strategies. The increase by the Defense women was most dramatic, as they showed a statistically greater belief in the effectiveness of such strategies than either the Motivation or the Fitness groups at both posttest and follow-up.

A different pattern was observed in women's beliefs in

FIGURE 5
OUTCOME EXPECTANCIES: ASSERTIVE STRATEGIES



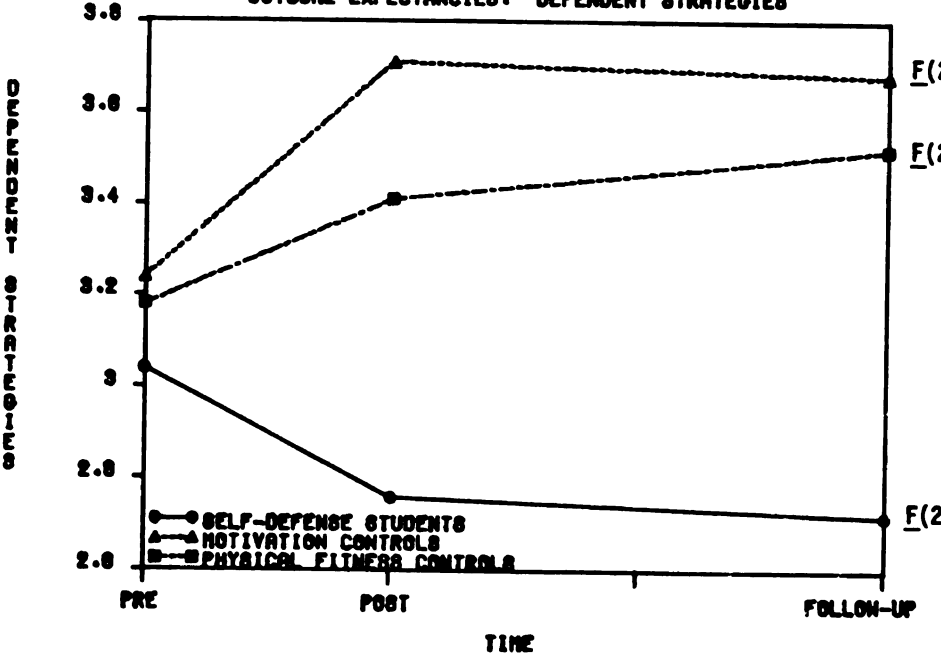
$F(2, 84) = 51.80^{***}$

$F(2, 60) = 3.56^{*}$

$F(2, 48) = 1.49$

$F(2, 97) = 1.79$ $F(2, 98) = 28.18^{***}$ $F(2, 98) = 9.08^{***}$

FIGURE 6
OUTCOME EXPECTANCIES: DEPENDENT STRATEGIES



$F(2, 60) = 6.47^{**}$

$F(2, 48) = 3.84^{*}$

$F(2, 84) = 3.12^{*}$

$F(2, 98) < 1$ $F(2, 98) = 9.05^{***}$ $F(2, 98) = 10.19^{***}$

* $p < .05$
** $p < .01$
*** $p < .001$

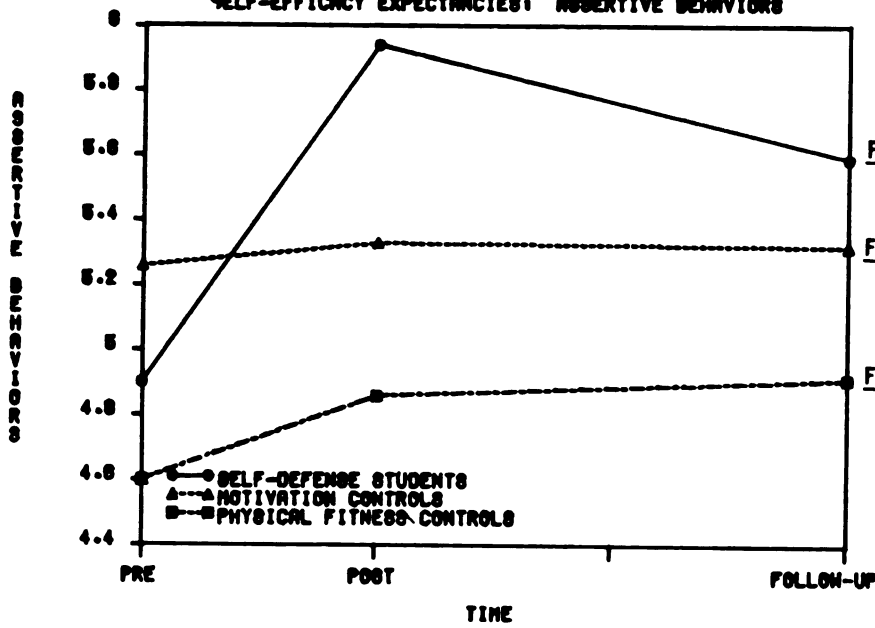
the effectiveness of dependent strategies in deterring an assailant. These included such behaviors as "plead, cry," "verbally stall," and "make self look unattractive or sick." Again, the three groups were statistically equivalent on this measure at pretest. Over time, the Defense women significantly decreased their beliefs in the efficacy of such behaviors while the two controls significantly increased their beliefs. At posttest, the Defense women's lower expectancies of passive strategies differed sharply from those of the Motivation and Fitness women. This difference was sustained at follow-up.

The use of mace did not fit into either the assertive nor the dependent strategies scales, thus it was analyzed separately. There were no significantly detectable differences in these groups' perceptions of the effectiveness of mace at either pretest or follow-up.

The efficacy expectancy results are presented in Figures 7 and 8. Again, the results matched the predictions. Defense-trained women became more confident in their abilities to act assertively in assault situations, as compared to their judgments of their skills before training and those of the controls.

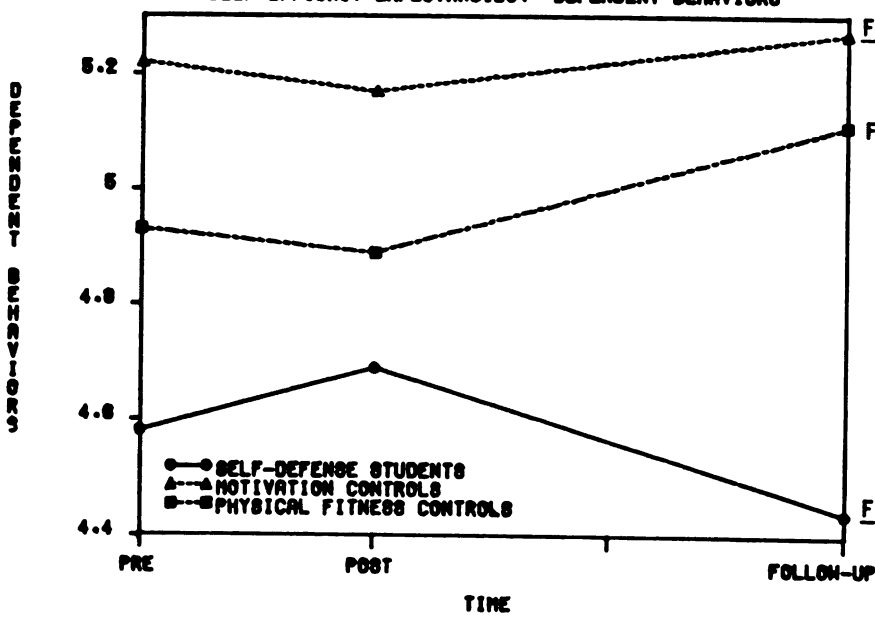
Assertive self-efficacy expectancies tapped women's beliefs in their abilities to successfully punch, kick, scream, and run when assaulted. At pretest, the groups differed statistically. The Motivation group was significantly more confident than the Fitness group, and the

FIGURE 7
SELF-EFFICACY EXPECTANCIES: ASSERTIVE BEHAVIORS



$F(2, 98) = 4.94^{**}$ $F(2, 98) = 18.29^{***}$ $F(2, 97) = 5.57^{**}$

FIGURE 8
SELF-EFFICACY EXPECTANCIES: DEPENDENT BEHAVIORS



$F(2, 98) = 4.50^{*}$ $F(2, 97) = 1.19$ $F(2, 97) = 5.39^{**}$

* $p < .05$
** $p < .01$
*** $p < .001$

Defense group was statistically equivalent to both controls. Over time, the Defense women significantly increased their assertive self-efficacy perceptions, so that they were more confident than both of the control groups at posttest. This confidence declined somewhat during the next six months. Still, the defense women remained the most confident of the three groups and remained significantly more confident of their assertive skills at follow-up than at pretest.

Self-efficacy expectations of dependent responses to assailants followed a different pattern. Here again, the groups were not equivalent at pretest. The Defense and Fitness women believed themselves to be significantly less efficacious than the Motivation women in their abilities to plead, cry, verbally stall, and make themselves look unattractive and weak in assault situations. However, there were no significant changes in any of the groups over time, so that at follow-up the relationships between groups differed only slightly from pretest relationships. At that later time, the Defense women felt significantly less confident in their ability to respond dependently than either control group.

There were no clear trends in Defense women's self-efficacy expectations of mace responses. At pretest, Defense and Fitness women had only moderate confidence in their ability to use mace while Motivation women were significantly more sure of their mace skills. By posttest and follow-up, the groups were equivalent on this measure,

mainly due to the Motivation group's drop in confidence.

The present self-defense course taught women that assertive responses were the most effective rape deterrents and trained women in their use. The course also questioned the overall effectiveness of passive responses to assailants. Hypothesis 5 reflected this perspective and was supported by the data. Compared to the two control groups, the Defense women believed that assertive strategies were more effective in deterring assailants and that passive strategies were less effective. They also increased their confidence in their abilities to successfully carry through such assertive strategies with assailants.

Personality variables. No hypotheses were made as to the effects of self-defense training upon personality variables. However, the repeated-measures MANOVA encompassing the five personality scales (self-esteem, personal and political locus of control, and masculine and feminine sex role identity) revealed a main effect for Time (multivariate $F[5,90] = 2.51$, $p < .05$). Having passed this threshold of significance, further analyses were undertaken.

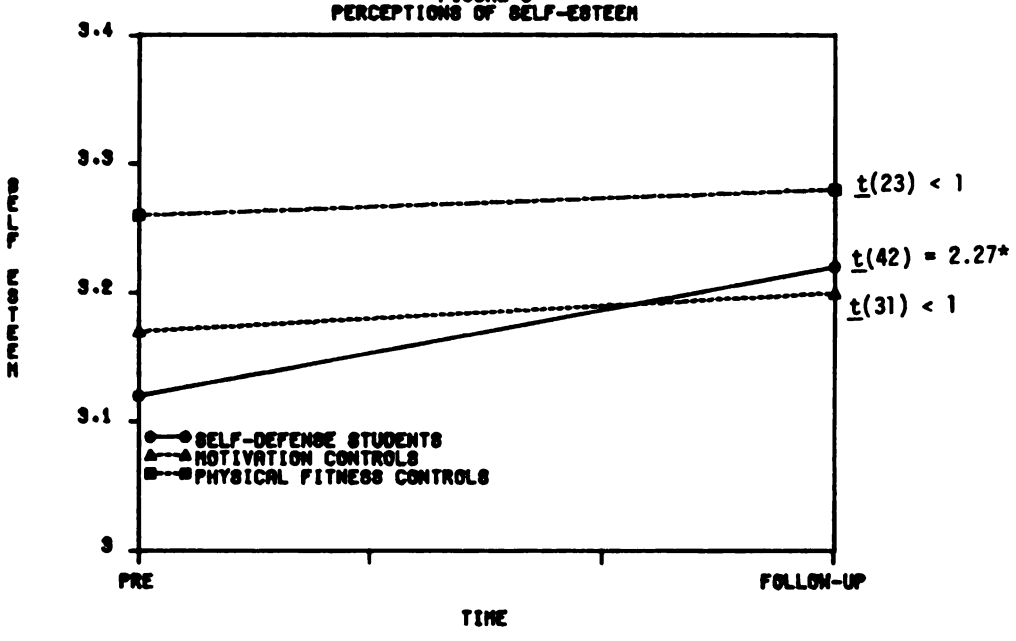
Paired t tests, comparing the pretest and follow-up scores within each of the groups, were performed for each of the five variables. Only two of the 15 comparisons reached statistical significance. Both involved the Defense women

only. They increased, over an 8-month time span, their self-esteem and "masculine" sex-role identity.

The Rosenberg Self-Esteem Scale measured self-esteem from low self esteem (1) to high self esteem (4). Changes over time are presented in Figure 9. The Defense group was the only one to report a statistically significant increase. Still, in comparisons across groups, the Defense, Motivation, and Fitness women were statistically equivalent at both pretest and follow-up.

The Short BSRI assessed sex-role identity on a scale of very uncharacteristic (1) to very characteristic (7). These results are graphed in Figures 10 and 11. The Defense women increased their perceptions of themselves as masculine and did not significantly alter their self-perceptions as feminine. In the literature, high masculinity has been characterized as a dominant, assertive, and agentic style of interacting. Despite this increase by the Defense women, there were no statistically detectable between-group differences at pretest or follow-up. Here, as with self-esteem, though defense training appeared to have had a lasting impact upon women's personalities, the changes were not large enough to distinguish the Defense-trained women from the controls.

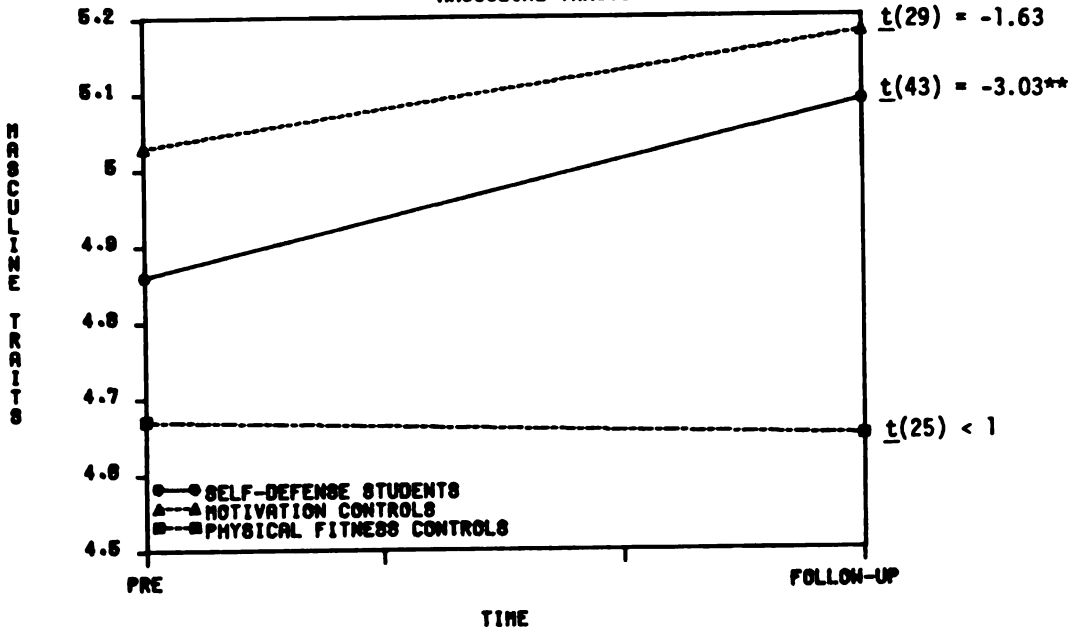
FIGURE 8
PERCEPTIONS OF SELF-ESTEEM



$F(2, 95) < 1$ $F(2, 95) < 1$

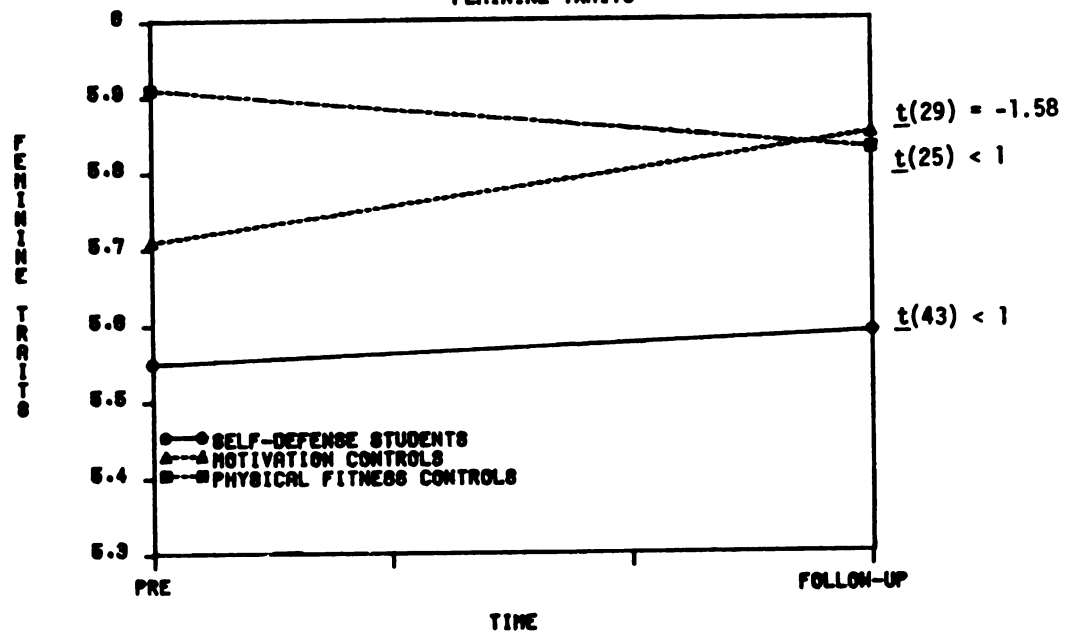
* $p < .05$
** $p < .01$
*** $p < .001$

FIGURE 10
MASCULINE TRAITS



$F(2, 97) < 1$ $F(2, 97) = 4.30^{*}$

FIGURE 11
FEMININE TRAITS



$F(2, 97) = 2.10$ $F(2, 97) = 1.42$

* $p < .05$
** $p < .01$
*** $p < .001$

CHAPTER IV

DISCUSSION

Summary of Findings

By comparing the pretraining, end-of-training, and 6-month posttraining reports of three naturally-assembled groups of women (Defense women, Motivation controls, Fitness controls), this study assessed the effects of a self-defense course. The project's design improved upon prior related works by including a follow-up phase, by emphasizing specific behaviors and attitudes related to assault deterrence in addition to the traditional attention to general personality traits, and by attempting to link observations to psychological theories.

To briefly review the findings, the three groups of women were largely equivalent on the assault-relevant measures at pretest. Participation in this defense training program had significant impact upon those behaviors and attitudes that had correlated with assault deterrence in interviews with assaulted women (Bart, 1981; McIntyre, 1980; Queen's Bench Foundation, 1976). Defense-trained women increased their reports of vigilant behaviors, their

perceptions of physical strength, their belief in the effectiveness of assertive behaviors to deter assaults, and their confidence in their ability to act assertively in assault situations. They also increased reports of self-esteem and the "masculinity" of their self-descriptions. These changes were significant both over time (with the exception of the personality variables) and in comparison with the controls. Defense training did not impact their reported use of avoidant behaviors nor their fear of sexual assault.

More specifically, Defense-trained women reported more frequent use of vigilant behaviors but no change in their use of avoidant behaviors in comparison to their own pretest reports and to the controls at all times. Thus, while Defense women did not increase their exposure to risks, they reported being more vigilant, wary, and ready when they sensed risk in the course of their normal activities. It was precisely this combination of behaviors, to "observe safety precautions" and "be wary," that the Queen's Bench Foundation (1976, p.109) recommended as strategies for women to reduce their likelihood of assault.

Other findings were that Defense-trained women perceived themselves as stronger and faster, again relative to both their own pretest self-descriptions and the control groups' self-reports at all times. Strength and speed may be important considerations in women's decisions to resist assailants. Fear decreased significantly over time, a drop

that was observed in all three groups. The explanation of this decline was unclear, but the parallel reports across groups suggested that it was not due to training. The equivalent fear levels of the controls and Defense women also implied that the latter group continued to be aware of the danger or rape, also recommended by the Queen's Bench Foundation (1976), despite the trained women's clear gains in other aspects of assault prevention.

Participation in defense training also increased women's outcome and efficacy expectancies of assertive resistances to potential assailants. As Defense women's confidence in the effectiveness of assertive responses climbed, their confidence in the efficacy of more dependent responses declined, though their view of their abilities to act dependently did not change. These changes implied a strengthening of fighting skills, another of the Queen's Bench Foundations's (1976) recommendations.

Personality measures were included at pretest and follow-up to reassess changes reported in previous studies. Significant changes were observed only among Defense-trained women, who reported increased self-esteem and "masculinity" of their self-perceptions. In the literature, masculine characteristics were highly desired by respondents of both genders and were believed to relate to an instrumental, agentic, assertive style of interacting. These findings suggested that the experience of participating in self-defense training may have affected deeper layers of the

personality than just assault-relevent behaviors and attitudes. However, these changes were not large enough to distinguish Defense women from the controls.

Development of an Assertive Style

One argument against the provision of self-defense training is that by inflating women's confidence in their defense skills, such training may increase women's exposing themselves to greater risks than they can realistically handle. This perception of training leading to greater risk-taking was not supported by these data. All groups in the present study, including the Defense-trained women, reported similar levels of precautions to avoid obviously dangerous situations. Staying at home or finding an escort due to fear of going out alone at night are some of the ways these women reported limiting their exposure to risks. However, frequent use of such avoidant behaviors has been shown to be more effective in reducing property crimes than personal victimization (Riger & Gordon, 1981). Such restrictions cannot prevent assaults in the women's own homes or by people they know. This is especially important in view of the relatively high frequency of such assaults.

Protection from rape demands a defensive style that women can always have available, on the streets, in their homes, and among both strangers and acquaintances (Cohn et al., 1979). These Defense women appeared to have developed

such a defensive style. Their reports of more frequent use of vigilant behaviors implied an increased wariness that could serve to protect them from dangers in the home and minimize their risks of being assaulted elsewhere. Due to this vigilance, one can speculate that they might be less likely to be surprised or to naively linger in potentially dangerous situations. This again was consistent with research findings that rape avoiders were more likely than raped women to be rude and assertive in the casual conversations that often proceeded their assaults.

Possibly the most important contributor to such a defensive style were the Defense women's beliefs (their outcome expectancies) that their assertive responses to assailants could impact the outcome of the assault. Neither control group displayed a similar level of confidence that any of their own behaviors, dependent or assertive, would deter sexual assault. Added to this general belief in their potential efficaciousness, Defense women developed greater confidence in their ability to act assertively against assailants.

Taken together, these several changes by Defense women suggest that they may have gained a sense of control over their fear of the threat of rape. Their maintenance of avoidant behaviors and increase in vigilant behaviors may influence, to some extent, their likelihood of being assaulted. Their higher outcome and efficacy expectancies of assertive responses also suggest that they believed

they could have some control over the outcome of assaults they could not prevent.

Theoretical Implications of a Sense of Control

Several psychological theories offer predictions as to how these changed attitudes and self-perceptions might translate into behaviors during and following assault. The theoretical applications that follow are speculations only, possible hypotheses for further studies on women and rape.

Self-efficacy. Bandura's (1982) theory predicts that efficacy beliefs mediate efforts and outcomes. People who believe themselves to be highly efficacious are more likely to persist in their efforts, even in face of aversive events, until they succeed. In contrast, people who judge themselves inefficacious dwell on their personal deficiences and overestimate obstacles. In experimental situations, people with low efficacy slackened their efforts or did not even attempt the task at hand (Bandura, 1982).

Beliefs in the effectiveness of assault resistance strategies and in the capability to carry out such strategies thus seem likely to influence, in interaction with a rich array of situational variables, what resistances women may consider and how long they may persevere in such efforts in actual assault situations. In this study, Defense women increased, over time and in comparison to the

controls, their outcome and efficacy expectations of assertive responses. This combination of greater confidence that resisting assertively could generally be effective and that they personally had the skills to act assertively might result, according to self-efficacy theory, in greater willingness to fight back and persistence in these struggles. Such a persistant, assertive style of resistance correlated with rape deterrence across a range of interview studies with assaulted women (Bart, 1981; McIntyre, 1980; Queen's Bench Foundation, 1976).

Attribution theory. Defense-trained women believed that they had greater control over assault outcome than untrained women. Perceptions of control may not only affect behaviors during assault, they also seem likely to influence post-assault recovery. This is an important issue as one-quarter of a sample of emergency room rape victims who had received some crisis intervention treatment reported that they had not recovered four to six years after their rapes (Burgess & Holmstrom, 1979) and the majority of uncounseled raped women in another community sample reported as many symptoms six or more years after their rapes as a group of recently raped women seeking counseling (Smith, 1982).

According to attribution theory, a model for understanding people's attempts to make sense of what happens to them, blame is an important factor in coping with

aversive life events. Although generally people tend to take more responsibility for good occurrences than bad ones and for expected events rather than unexpected, women and victims follow a different pattern. They tend to blame themselves for aversive events, such as victimizations and failures (Frieze, 1979). In rape situations, when such self-blame is behavioral (specific attributions to some act or its omission), it generally is adaptive. Behavioral self-blame is different from characterological self-blame (global attributions to some personality characteristic or flaw), which correlate with depression and learned helplessness (Janoff-Bulman, 1979).

Raped women who blame their own behaviors generally recover better. Janoff-Bulman (1979) attributed this faster recovery to a link between self-blame and control. If a woman believes that she somehow contributed to the situation--if she feels responsible for it--she establishes a sense of control over her rape. Burgess and Holmstrom (1979) made similar observations. Victims who were able to come up with explanations for the reasons of their attacks appeared more likely than victims who could not find explanations to develop some sense of control that appeared to aid recovery.

Self-blame also may serve a preventative function. In a study of raped women seeking counseling, self-blame motivated actions designed to reestablish a sense of safety, such as improving home security or increasing behavioral

restrictions (Janoff-Bulman, 1979).

By focusing upon behavioral responses to attacks and their potential for influencing assault outcome, self-defense training may have accentuated the positive retrospective and prospective functions of self-blame. With respect to recovery, raped women who take defense training after their rapes may learn techniques that perhaps could have stopped their assailants. Women raped after training may be better able to understand the behavioral interactions that contributed to their assaults. With respect to prevention, trained women are sensitized to a range of vigilant behaviors that they could adopt in order to lessen their probability of assault. In teaching women to focus on behavioral responses, defense training may have heightened the tendency to make specific behavioral attributions of causality.

Social support. Social support has been demonstrated to be an important predictor of good emotional adjustment to a variety of stressful life events, including rape. Raped women who perceive their social network as helpful are significantly less depressed and experience significantly fewer symptoms than raped women who tell no one or who perceive their networks as not helpful (Webb, 1982).

Many raped women do not receive adequate support. A substantial number of raped women (estimates range from 22% to 40%) do not discuss their experiences with virtually

anyone (Webb, 1982). Only 58% of a community sample of raped women told at least one significant other (friend, relative, or spouse) of their rapes within a week of their occurrences. The remaining 42% told no one or only professional helpers.

Women who share their rapes with members of their network often alienate these significant others. The expression of self-blame and negative affect, important to recovery from rape, ironically also causes assaulted women to appear less attractive to the others with whom they shared these feelings. Raped women also find that other women and, to a lesser extent, men in their networks blame and derogate them for their rape (Coates et al., 1979; Krulewitz et al., 1977). These observations have prompted suggestions that postrape counseling include intervention with the raped women's support network members.

A significant part of the defense training course was social support. Students were supported in their feelings of power and their feelings of powerlessness. They shared stories of their victimizations. Another benefit was the Defense students' introduction to a network of activist, feminist women. Because these women were knowledgeable about rape, because they did not blame the assaulted woman, and because they had experience helping other victims, they were able to support the Defense students who reached out to them. Anecdotal evidence for this point was the experience of one study participant who suffered prolonged, negative

reactions to her rape a year earlier. During training, she met individually with the defense instructor to talk about her shame, anger, and depression. This helped, as did a subsequent referral to a therapist experienced with raped women. At follow-up, the student described herself as having changed considerably:

> I feel much more confident and comfortable with myself. I've diligently worked to resolve old conflicts. I've decided there is no point in being secretive with friends. If they can't accept me as is, it reflects more on them than on me. So I feel more secure in my relations with others too.

The defense instructor also modeled and openly discussed how to support assaulted women. In addition to increasing Defense women's capacity to support others, this instruction may also have served to inoculate these students against future mixed messages and negative reactions by members of their support networks. Being able to identify what other raped women have found helpful in recovering may motivate these women to seek other supports if those that they first turn to after an assault behave in ways that are less than helpful.

The illusion of control. Across situations and studies, researchers in the area of control have concluded that (a) perceived loss of control results in stress when it is acute and learned helplessness when chronic, and (b) enhanced sense of control has positive psychological

consequences (Langer, 1979). With rape, developing a sense of control may be empowering. Recall that defense students not only increased their estimation of their ability to stop assaults, they also increased their reported self-esteem and the "masculinity" of their self-descriptions (i.e., saw themselves as more assertive and independent).

With respect to rape, however, any sense of control seems partially illusory. Installing better locks and learning how to fight will never guarantee protection. All women continue to live with the possibility of rape. As one woman recently wrote the editor of the Michigan State University student paper:

> ... Believe me, none can predict how s/he will react when surprised by an attacker. None can know the disbelief, the shock, and finally, the horror of what one is facing: a rape and possible death....Do not tell us that if you scream, if you walk confidently, if you glare at your assaulter, he will just automatically vanish like a bad dream. Rape is not something a person walks into; the act itself involves the element of surprise. (State News, August 1, 1982).

Women do not deserve blame for their rapes nor can they expect to gain total control over preventing them. Still, learning self-defense appears to have positive effects, both in heightening women's ability to defend themselves in some situations and in affording the psychological benefits of believeing that they have at least some control over what they fear.

Comments on the Study

Cautions. A few cautions are in order in generalizing from these results. As in virtually all related works, the present findings were based entirely upon self-reports and may be biased. Also, this study is a program evaluation of three repetitions of one self-defense course taught by a single instructor. Wortman (1983) argued that the evaluation of an exemplary program provides important information on the benefit to individuals under "ideal conditions of use", which is different information than the evaluation of program effectiveness under "average conditions of use" (p. 230). The self-defense training program assessed here may well be exemplary. The instructor is a competent, sensitive, and charismatic teacher and national leader of the feminist self-defense training organization. To what degree the impact of her instruction would be duplicated in similar courses taught by other instructors is unknown. It seems likely, though, that the not uncommon practice of having a male self-defense instructor for women or even mixed-sex classes would greatly alter the experience's impact upon female students.

Nearly all of the present participants were middle-class, white, university students living on a suburban campus and its immediate surrounds. Generalizations to older and younger women, to women of different racial backgrounds, and to women living in large

cities are uncertain.

Strengths. The findings of this evaluation of a self-defense training program seem clear and impressive. They indicate the utility of assessing outcomes relevant to the program being assessed rather than general, situation-nonspecific outcomes.

Of particular importance was the self-efficacy measure developed for this present study. It proved both reliable and capable of distinguishing among groups of women. A contribution to understanding the impact of efficacy perceptions upon behaviors was its inclusion of outcome expectancies, an aspect omitted in much of the current efficacy research. In sexual assault situations, outcome beliefs may prove to be a more powerful, or at least equally powerful, predictor of actual behaviors than self-efficacy judgments. As McIntyre (1980) observed, few of the women who deterred assailants possessed the size, strength, or skills to overcome their attackers; yet, they succeeded in deterring rape, perhaps because they assertively and persistently resisted. Most assailants, it appeared, were seeking easier targets. These women's unwillingness to give in or give up seemed to have been primary, rather than the skill with which they fought. No study to date has uncovered a relationship between women's size or fighting skills and deterrence, but then this could be due to weaknesses in existing research rather than the nonexistence

of such relationships.

More work is needed on understanding outcome expectancies and their relationship to assault deterrence. In future studies, it would be informative to include more than one possible outcome: for example, a matrix depicting outcome beliefs of deterrence and one depicting beliefs of injury, mutilation, and possible death. This last outcome is especially important in view of research that has shown that safety is what women most thought about during assaults (Burgess & Holmstrom, 1979). Some women may believe that assertive strategies are more likely than dependent strategies to lead to escape, but choose not to actively resist because they also believe that assertive strategies might also lead to greater injury and personal harm. Women's choices in rape situations may depend upon the relative valences they place upon each of these outcomes, and these valances may change in reaction to many situational variables beyond their control. For example, women who might choose not to fight their assailant at the start of the assault may change their strategies if their assailants become violent despite the lack of assertive resistances to the attacker's sexual and domination demands. It would be useful to understand what in assailants' behaviors and in rape situations have most influenced assaulted women's choices to resist dependently, assertively, or not at all.

Implications for Further Research. This study demonstrated that this self-defense training program increased women's confidence in their abilities to deter sexual assault. Yet, as is typical of research, the results raise many new questions. These include the duration of these effects and whether short workshops would help maintain outcome and behavioral confidence over time. There is also the question of how Defense-trained women will handle actual sexual harrassments and assaults in the coming years.

Other questions concern which features of the training experience contributed to the observed changes. If taken out of the present feminist philosophical framework, would the information and skill-training aspects of training have been as effective? This is a particularly important issue given current educational policies that prohibit single-sex courses and the common practice of providing male martial arts instructors or police officers as self-defense instructors. Would a ten-week experience with just words, the common group therapy model, be equally effective as this combination of words and defense skill-building in increasing women's sense of control over their rape-related feelings? Was this course long enough for most women to develop lasting competencies in assertive resistances?

Another question concerns the identification of effective resistance strategies. Though research based on interviews with assaulted women has consistently found that

assertive defenses correlate with assault deterrence, methodological flaws limit confidence in this conclusion. Statistical analyses of the Queen's Bench Foundation's (1976) data, the principal document on rape prevention, included multiple chi-square comparisons without control for Type 1 errors. Some of the reported findings may be simply chance variations. In addition, resistance studies have usually been based, like the larger literature on rape, almost entirely on women who volunteer to talk with researchers or those who seek formal legal, medical, and therapeutic help following rape. Little is known about the experiences of women who keep the trauma to themselves, or of those who deter an assault before physical contact is made. If a randomly-selected population were sensitively interviewed concerning assault resistances, the results may be different. That was the strategy followed by Russell (1982) and her findings, that at least 14% of married women had been raped by their husbands, differed from more conventional studies derived from biased samplings and more superficial questioning.

Conclusion

Women who learned self-defense perceived themselves as more vigilant, as more physically competent, and as more efficacious in deterring assailants than women in either

comparison group. These effects, which have been maintained at least 6 months after training's end, were the exact behaviors and attitudes that previous studies had identified as primary to women's reducing their vulnerability to rape. An enhanced sense of control appeared to undergird these several changes. Women who face an assailant believing themselves better able to influence the assault outcome seem less likely to be raped; and, if raped, may be better able to use this same sense of personal control to recover more quickly. In short, this self-defense program was effective in its stated goal: increasing women's sense of power to prevent sexual assault.

LIST OF REFERENCES

LIST OF REFERENCES

Amir, M. (1971). Patterns in forcible rape. Chicago: University of Chicago Press.

Atkeson, B. M., Calhoun, K. S., & Morris, K. T. (1982). An examination of variables associated with victim resistance to rape. Manuscript submitted for publication.

Bandura, A. (1977). Self-efficacy: Toward a unifying theory of behavioral change. Psychological Review, 84, 191-215.

Bandura, A. (1982). Self-efficacy mechanism in human agency. American Psychologist, 37, 122-147.

Bart, P. B. (1975, June). Rape doesn't end with a kiss. Viva, pp. 39-41, 100-101.

Bart, P. B. (1981). A study of women who both were raped and avoided rape. Journal of Social Issues, 37, 123-137.

Bem, S. L. (1974). The measurement of psychological androgyny. Journal of Consulting and Clinical Psychology, 31, 634-643.

Bem, S. L. (1981a). Bem sex-role inventory: Professional manual. Palo Alto, CA: Consulting Psychology Press.

Bem, S. L. (1981b). The BSRI and gender schema theory: A reply to Spence and Helmreich. Psychological Review, 88, 369-371.

Bernard L. C. (1980). Multivariate analyses of new sex role formulations and personality. Journal of Personality and Social Psychology, 38, 323-336.

Bochner, A. P., & Fitzpatrick, M. A. (1980). Multivariate analysis of variance: Techniques, models, and applications in communication research. In P. R. Monge & J. N. Cappella (Eds.), Multivariate techniques in human communications research (pp. 143-174). New York: Academic Press.

Bray, J. G., & Maxwell, S. E. (1982). Analyzing and interpreting significant MANOVAs. Review of Educational Research, 52, 340-367.

Broverman, I. K., Vogel, S. R., Broverman, D. M., Clarkson, F., & Rosencrantz, P. S. (1972). Sex-role stereotypes: A current appraisal. Journal of Social Issues, 28, 59-79.

Brownmiller, S. (1975). Against our will: Men, women, and rape. New York: Bantam.

Burgess, A. N., & Homstrom, L. L. (1979). Rape: Crisis and recovery, Bowie, MD: Brady Co.

Burt, M. R. (1980). Cultural myths and supports for rape. Journal of Personality and Social Pyschology, 38, 217-230.

Burt, M. R. (1981). Rape myths, rape definitions, and probability of conviction. Journal of Applied Social Psychology, 11, 212-230.

Coates, D., Wortman, C. B., & Abbey, A. (1979). Reactions to victims. In I. H. Frieze, D. Bar-Tal, & J. S. Carroll (Eds.), New approaches to social problems (pp. 21-52). San Francisco: Jossey-Bass.

Cohn, E. S., Kidder, L. H., & Harvey, J. (1978). Crime prevention vs. victimization prevention: The psychology of two different reactions. Victimology, 3, 285-296.

Crandall, R. (1973). The measurement of self-esteem and related constructs. In J. P. Robinson & P. R. Shaver (Eds.), Measures of social psychological attitudes, Ann Arbor, MI: Institute for Social Research.

Dobson, C. Goudy, W. J., Keith, P.M., & Powers, E. (1979). Further analyses of Rosenberg's self-esteem scale. Psychological Reports, 44, 639-641.

Donaldson, C. S. (1979). The effects of self-defense training on women's self-esteem and locus of control orientation. Dissertation Abstracts International, 39, 3905B.

Dubow, F., McCabe, E., & Kaplan, G. (1979). Reactions to crime: A critical review of the literature, executive summary. Washington, DC: National Institute of Law Enforcement and Criminal Justice.

Federal Bureau of Investigation (1980). Uniform crime reports of the United States. Washington, DC: U.S. Department of Justice.

Feild, H. S. (1978). Attitudes toward rape: A comparative analysis of police, rapists, crisis counselors, and citizens. Journal of Personality and Social Psychology, 36, 156-179.

Frieze, I. H. (1979). Perceptions of battered wives. In I. H. Frieze, D. Bar-Tal, & J. S. Carroll, (Eds.), New approaches to social problems (pp. 79-108). San Francisco: Josey-Bass.

Gordon, M. T., & Riger, S. (1979). Fear and avoidance: A link between attitudes and behavior. Victimology, 4, 395-402.

Gordon, M. T. , Riger, S., LeBailly, R. K., & Heath, L. (1980). Crime, women, and the quality of urban life. Signs, 5(3), S144-S160.

Harris, R. M. (1981). Conceptual complexity and preferred coping strategies in anticipation of temporally predictable and unpredictable threat. Journal of Personality and Social Psychology, 41, 380-390.

Hensley, W. E. (1977). Differences between males and females on Rosenberg scale of self-esteem. Psychological Reports, 41, 829-830.

Hensley, W. E., & Roberts, M. K. (1976). Dimensions of Rosenberg's self-esteem scale. Psychological Reports, 38, 583-584.

Hokanson, J. E., Willers, K. R., & Koropsak, E. (1968). The modification of autonomic responses during aggressive interchanges. Journal of Personality, 36, 386-404.

Hunter, J. E. (1977, Feb.). Cluster analysis: Reliability, construct validity, and the multiple indicators approach to measurement. Paper presented at workshop of the U.S. Civil Service Commission.

Hunter, J. E., Cohen, S. H., & Nicol, T. S. (1982). PACKAGE manual. Unpublished manuscript, Michigan State University, East Lansing.

Jacques, J. M., & Chason, K. J. (1977). Self-esteem and low status groups: A changing scene? Sociological Quarterly, 18, 399-412.

Janoff-Bulman, R. (1979). Characterological versus behavioral self-blame: Inquiries into depression and rape. Journal of Personality and Social Psychology, 10, 1798-1809.

Jones, W. H., Chernovetz, M. E., & Hansson, R. O. (1978). The enigma of androgyny: Differential implications for males and females? Journal of Consulting and Clinical Psychology, 46, 298-313.

Klein, H. M., & Willerman, L. (1979). Psychological masculinity and femininity and typical and maximal dominance expression in women. Journal of Personality and Social Psychology, 37, 2059-2070.

Krulewitz, J. E., & Nash, J. E. (1979). Effects of rape victim resistance, assault outcome, and sex of observer on attributions about rape. Journal of Personality, 47, 557-574.

Langer, E. J. (1979). The illusion of incompetence. In L. C. Permuter & R. A. Monty (Eds.), Choice and perceived control (pp. 301-314). Hillsdale, NJ: Erlbaum.

Larwood, L., O'Neal, E., & Brennan, P. (1977). Increasing the physical aggressiveness of women. Journal of Social Psychology, 101, 97-101.

Malamuth, N. M., Haber, S., & Fesbach, S. (1980). Testing hypotheses regarding rape: Exposure to sexual violence, sex differences, and the "normality" of rapists. Journal of Research in Personality, 14, 121-137.

Mastria, M. A. (1975). A study of assertiveness as a function of training in rape prevention and assertiveness training. Dissertation Abstracts International, 36, 1923B-1924B.

McIntyre, J. J. (1980). Victims' response to rape: Alternate outcomes. Final report, Grant 29045, Rockville, MD: National Institute of Mental Health.

Mirels, H.L. (1970). Dimensions of internal versus external control. Journal of Consulting and Clinical Psychology, 34, 226-228.

Queen's Bench Foundation. (1976). Rape: Prevention and resistance. San Francisco.

Riger, S., & Gordon, M. T. (1979). The structure of rape prevention beliefs. Personality and Social Psychology Bulletin, 5, 186-190.

Riger, S., & Gordon, M. T. (1981). The fear of rape: A study in social control. Journal of Social Issues, 37, 71-92.

Riger, S., Gordon, M. T., & LeBailly, R. (1979). Women's fear of crime: From blaming to restricting the victim. Victimology, 3, 274-284.

Riger, S., Gordon, M. T., & LeBailly, R. (1982). Coping with urban crime: Women's use of precautionary behaviors. American Journal of Community Psychology, 10, 369-386.

Rosenberg, M. (1965). Society and the adolescent self-image. Princenton, NJ: Princeton University Press.

Rosenberg, M. (1979). Conceiving the self. New York: Basic.

Russell, D. E. (1982). Rape in marriage. New York: MacMillan.

Russell, D. E. H., & Howell, N. (1983). The prevalence of rape in the United States revisited. Signs, 8, 688-695.

Sanday, P. R. (1981). The sociocultural context of rape: A cross-cultural study. Journal of Social Issues, 37, 5-27.

Skogan, W. G., Lewis, D. A., Podolefsky, A. P., Dubow, F., Gordon, M. T. (1982). The reactions to crime project: Executive summary. Washinton, DC: National Institute of Justice.

Smith, J. A. (1982). Psychological features of rape victims: Trauma, counseling, and recovery. Unpublished doctoral dissertation, Michigan State University, MI.

Stake, J. E., & Orlofsky, J. L. (1981). On the use of global and specific measures in assessing the self-esteem of males and females. Sex Roles, 7, 653-661.

Strickland, B. R., & Haley, W. E. (1980). Sex differences on the Rotter I-E Scale. Journal of Personality and Social Psychology, 39, 930-939.

Thornton, B., Robbins, M. A., & Johnson, J. A. (1981). Social perception of the rape victim's culpability: The influence of respondents' personal-environmental causal attribution tendencies. Human Relations, 34, 225-237.

Tyler, T. R. Impact of directly and indirectly experienced events: The origin of crime-related judgments and behaviors. Journal of Personality and Social Psychology, 39, 13-28.

Webb, C. (1982, September). The effects of the social network on the rape victim. Paper presented at the meeting of the American Psychological Association, Washington, DC.

Weis, K., & Borges, S. (1973). Victimology and rape: The case of the legitimate victim. Issues in Criminality, 8, 71-115.

Winer, B. J. (1971). Statistical principles in experimental design. New York: McGraw Hill.

Wortman, P. M. (1983). Evaluation research: A methodological perspective. Annual Review of Psychology, 34, 223-260.

APPENDICES

APPENDIX A

SELF-DEFENSE COURSE DESCRIPTION

MICHIGAN STATE UNIVERSITY

Department of Health & Physical Education

WOMEN'S SELF-DEFENSE

HPE 107C

Class Description:

Narrowly defined, self-defense is "the right to protect oneself against violence or threatened violence with whatever force or means are reasonably necessary." A broader definition would identify it further as a process of unlearning thinking and behaving like a victim. It is a reclaiming of a sense of physical integrity that results, as Py Bateman has pointed out, in turning our fears into anger at intrusions upon our self-respect. It is the process of insuring that we have options from which to make reasonable choices in attach situations.

For most of us, this process takes time and work. By focusing on the following more immediate goals in the next few weeks, we can get a good start. The goals of this class are to enable women 1) to become familiar with a variety of physical, verbal and psychological self-protection techniques; 2) to begin to develop a sense of physical well-being and confidence in one's judgment in determining appropriate responses to violent or potentially violent situations; and 3) to examine the politics of woman harassment/assault in this culture in order that we might develop successful strategies for collectively and individually insuring our safety and lessening our vulnerability to attack.

Class Outline:

Week I
- Introduction
- Warm-ups
- 6^2 Introduction

Week II
- Warm-up with 6^2 review
- Front snap kick/Front choke hold break
- Side snap kick
- Makeshift weapons/shields

Week III
- Warm-ups, front choke hold break review
- Ground Defense (avoiding the fall, ground kicks/ spins, rolling breaks, body tosses, departing)
- Wall releases and Wrist Breaks, time permitting

Week IV
- Warm-ups and basics review
- Six-Elbow Drill and Back Kick
- Rear Forearm Grab (with shields)

Week V
- Warm-ups and basics review
- Front choke hold break-review
- Rear forearm grab-review
- Introduction to blocking

Week VI Confrontation Training

Week VII Warm-ups and brief basic review
Introduction to Bludgeons: Evasion, Immobilizing the Follow-Through and Backswing

Week VIII Warm-ups
Introduction to Knife Defense
A. Evasion: Side-step review
B. Distractions: Clothing, sand, coins, makeshift shields, kicks
C. The Active Knife-Defense against a downward thrust.
D. Reactive Knives-Series of drills designed to provide practice in thinking tactically in passive knife attacks.

Week IX Warm-ups
Defense Against Multiple Attackers
Gun Discussion
Improvisational Work (Realistic Attacks)

Week X Warm-ups and basics review
Improvisational work with various holds
Field Trip-Situation Analysis (thinking strategically)

Grading:
Instruction in this class progresses from simple self-defense techniques to much more complicated self-defense strategies. New skills introduced each week build on skills learned in preceding weeks. For this reason, attendance at each class is essential and fully 70% of your grade will be based on this. The remaining 30% will be based on class participation and performance.

Suggested Project:
Many women have found it helpful to keep a class journal over the course of the term in which to record reactions to the class, problems, insights, feelings about fear, aggression, pain, panic, confidence and whatever else participation in this class evokes.

Office Hours:
I am usually in my office between 1:00 and 1:45 p.m., Monday-Thursday and will be happy to see people then. I'm also available to meet at odd hours through the week by appointment. Please feel free to contact me with any questions or concerns about class.

APPENDIX B

INTRODUCTION TO THE STUDY

INTRODUCTION

We're doing a study on the experience of being a woman. We're particularly interested in what women think about safety and sexual assault. It's an important study --so little is known about the degree of women's fears and their strategies for coping with dangerous situations.

In order to learn as much as we can about these issues, we ask you a wide range of written questions. For most, just circle the answer that best matches your views. For others, we'd like you to tell us what you feel in your own words.

Before you begin, I'd like you to look over this consent form. It is our guarantee that your answers will be kept totally confidential. In fact, it is the only time we will ask for your name today. We will detach this consent form before you begin the questionnaire. That way your name can never be connected with your answers, that way all your responses will remain anonymous. Take a minute to look this form over and sign it if you agree to again take part in this study. Please note your right to discontinue your participation at any time.

(TAKE CONSENT FORM AND PUT IN SEPARATE ENVELOPE)

Now, to begin. Let me also remind you that when this study is all done, sometime in the spring, we will be sending you a summary of the overall results. And thank you for all your help in this important study.

APPENDIX C

LETTER DESCRIBING STUDY

MICHIGAN STATE UNIVERSITY

DEPARTMENT OF PSYCHOLOGY
PSYCHOLOGY RESEARCH BUILDING

EAST LANSING · MICHIGAN · 48824-1117

April 1, 1982

Hello,

My name is Devorah Smith and I'm working on my doctorate in clinical psychology. Right now, I'm doing a study on the experience of being a woman at MSU, particularly what women here on campus think about safety and sexual assault. I think it's an important study as so little is known about the degree of women's fears and their strategies for coping with dangerous situations.

To learn about this, I'll be meeting with a wide cross-section of students. Of special interest are women wanting to learn self-defense. That's why I'm writing you. According to the registrar's records, you at one time enrolled in HPR 107, Women's Self-Defense. Would you be willing to help out?

What help entails is completing a survey questionnaire on this topic. It will take about 30 minutes of your time. You can complete it at my office (Department of Psychology -- 41 Snyder) any time or I can bring the questionnaire to your home. Someone, either myself or one of my research assistants, will be calling you soon to make arrangements.

You don't have to do this. Participation in this study is completely voluntary and totally confidential. However, with your help, we can learn what women here think, feel, and cope with. That's important information. It can be used to help evaluate rape prevention services offered on campus. And, when the study's completed, I'd like to share the results with you in thanks for your help.

I look forward to talking with you and hope you will choose to help out. If you have any questions, please do not hesitate to call. My office number is 355-9561. Leave a message and I'll get back to you as soon as I can.

Sincerely,

Devorah Smith, MA

APPENDIX D

PARTICIPANT TELEPHONE CONTACT OUTLINE

TELEPHONE CONTACT

Hello, is _____ here?

This is _____. I'm a research assistant working with Devorah Smith on her doctoral study of women's perceptions of safety and sexual assault. Do you have a few minutes to talk right now?

A. You may have gotten a letter in the mail describing the study. Has it arrived yet? Good, as you may remember . . . OK, then let me tell you briefly about it . . .

B. You gave us your name while you were waiting on the HPR line at registration. Let me take this opportunity to tell you briefly about this study.

The purpose of this study is to learn what women here at MSU think about safety and sexual assault. It's an approved doctoral study originating out of the Department of Psychology here. We're going to be talking with women all over campus, but we're particularly interested in women like yourself who were at one time interested in learning self-defense. We feel it's an important study -- so little research has been done on women or on sexual assault and women's strategies for coping with such dangers.

We'd like to get YOUR views on these issues. What that entails is completing a questionnaire. It will take about 45 minutes of your time. You can do it at home or at Devorah's office on campus. Whichever you choose.

And, of course, all your responses will be totally confidential. In fact, we won't ask for your name anywhere on the questionnaire.

Would you be willing to help us out? Good! Let's set up a time to meet. (Let them choose location. If they don't care, go with my office because we can better control distractions. LOCATION NOT AS IMPORTANT AS PARTICIPATION!)

APPENDIX E

RESEARCH QUESTIONNAIRE

Michigan State University
Department of Psychology

1. I freely consent to take part in this doctoral study on perceptions of safety and sexual assault on campus.
   Principal Researcher: Devorah Smith, MA
   Under Supervision of: John Hurley, PhD
   Professor of Psychology

2. This study and what my participation will involve have been explained to me.

3. I understand that my participation will not affect my grade in any way, nor does filling out this questionnaire guarantee any beneficial results to me.

4. I have been told that I am free to discontinue my participation at any time without penalty.

5. I understand that all my answers will remain totally anonymous.

6. I understand that, at my request, I can received additional explanation of the study after my participation is completed.

7. I give my permission to be contacted for later phases of this study.

Signed_____ Date _____

Name (printed) _____

Address _____

_____

The third phase of this study takes place in October, 1982. We'd like to contact you then to invite your participation one last time. We also need to know where to send the study's final results. Do you know where you'll be living this fall?

Address _____

_____

Phone _____

If not, who (preferably, but not necessarily, someone local) might know your address then?

Contact Person _____

Address _____

Phone _____

A SURVEY OF WOMEN'S PERCEPTIONS OF SAFETY AND SEXUAL ASSAULT

Now to begin. Remember, this study explores what students at MSU think about safety and sexual assault. The questions that follow ask you to tell us about yourself, your patterns of everyday behavior, and some of your opinions on rape and sexual assault. Please be as truthful as you can. There are no points we are trying to prove. We simply want to get as accurate a sense of some of your thoughts and feelings on these issues as possible. Accordingly, there are no good nor bad opinions, no smart nor foolish answers. Try not to debate a long time over your answers. Simply put down what first comes into your head.

We realize that on some questions it may be hard to choose among the alternatives offered, but try anyway. We will have a better picture of your stands on these issues if you complete all items. For each question, remember to pick just ONE answer.

Let us thank you in advance for your help. Your answers will allow us to better understand what women at MSU think and feel about sexual assault as well as their strategies for coping with it.

PLACE YOUR PERSONAL CODE NUMBER HERE: ____ ____ ____ ____

Remember, this code protects your anonymity. No where on this questionnaire will I ask for your name. There is no way I nor anyone else will ever be able to connect your answers to your identity.

Introduction

This study explores what students at MSU think about safety and sexual assault. The questions that follow ask you to tell us about yourself, your patterns of everyday behavior, and some of your opinions on rape and sexual assault. Please be as truthful as you can. There are no points we are trying to prove. We simply want to get as accurate a sense of some of your thoughts and feelings on these issues as possible. Accordingly, there are no good nor bad opinions, no smart nor foolish answers. Try not to debate a long time over your answers. Simply put down what first comes into your head.

In filling out this questionnaire, keep in mind that if you find a question embarrassing or uncomfortably intrusive, you are at full liberty not to answer it. Though we will have a better understanding of what women think and feel and must cope with if you complete all items, we do not want this to be a painful experience. Use your own judgment. And be assured that we have designed this study so that there is no way that we will ever be able to trace your answers to you. Also, if you have any feelings that get stirred up or just want to share your reactions to this study, please give Devorah Smith a call. She's the psychologist who organized this study. She's provided her telephone number on the research card that you're keeping.

We also realize that on some questions it may be hard to choose among the alternatives offered, but try anyway. We will have a better picture of your stands on these issues if you complete all items. For each question, remember to pick just ONE answer. After you've marked your answer, feel free to write any explanations or thoughts right on the page. We welcome all comments!

To help us read your responses correctly, we'd like a chart of your typical way of writing numbers when you are in a hurry. Please write each of the digits here.

1 2 3 4 5 6 7 8 9

As principal researcher on this project, let me thank you for all your help thus far. Your answers will allow me to better understand what women at MSU think about sexual assault and their strategies for coping with it. If you have any questions or comments at all, please do not hesitate to give me a call.

Thank you,
Devorah Smith

Let's begin with some background information about yourself. Fill in the blank or circle the answer that best describes yourself. Choose just one answer for each item.

Did you participate in this study at the start of Spring term? Yes No

Your age _____ Month born in? _____

Your height ____ ft. ____ in. Your GPA _____

Current school standing
1. freshperson
2. sophomore
3. junior
4. senior
5. graduate student
6. special student

Major _____ Career Goal _____
In the past 10 weeks, has this changed? 1. Yes 2. No
In the past 10 weeks, has this changed? 1. Yes 2. No

In your family, were you
1. the oldest child
2. a middle child
3. the youngest child
4. the only child

Number of siblings
1. 0
2. 1
3. 2
4. 3
5. 4 or more

Were your siblings
1. all female
2. all male
3. both females and males
4. I was the only child

What is your race? Are you
1. White
2. Black
3. Asian
4. Other _____

Your current marital status
1. never married
2. currently married
3. separated
4. divorced
5. living with someone
6. widowed

The religion in which you were raised

1. Protestant
2. Catholic
3. Jewish
4. Muslim
5. Atheist
6. Other _____

Participation in religious activities as a child

1. attended regularly
2. attended sporadically
3. hardly ever attended religious school or services

Where do you live now?

1. on campus
2. in East Lansing
3. in Lansing
4. in Okemos or Haslett
5. in Mason, Holt, or Grand Ledge
6. other _____

In what type of home?

1. in a dorm
2. in a rented apartment
3. in a rented home
4. in a home I own

Current living arrangement

1. live alone
2. live with another woman/women
3. live with a man/men as friends
4. live with both women and men
5. live with my spouse/lover
6. live with my children
7. live with my parents

Would you describe the place where you did most of your growing up as

1. a rural area
2. a suburb
3. a small city or township (such as Okemos)
4. a medium sized city (such as Lansing)
5. a large city (such as Detroit)

When in high school, how much did you worry about assault? (By assault we mean when someone attacks or threatens to attack a person.)

1. a great deal
2. some
3. little
4. not much at all

In high school, how safe did you think it was to walk around your neighborhood?

1. not safe at all
2. not very safe
3. somewhat safe
4. very safe

In high school, was the outside door to your house or apartment

1. usually locked all the time
2. usually locked only part of the time
3. usually not locked

There are many different opinions about how to prevent rape or sexual assault from happening. We'd like to know what you think of these ideas. Read each one then circle the number that corresponds to how much you think it would help to prevent rape. Would it help a great deal (circle 3), help somewhat (circle 2), or not help much at all (circle 1). Give us your opinion for each of these ideas.

	Help a Great Deal	Help Somewhat	Not Help Much at All
A. Stronger security measures at home, like better locks or alarms.	3	2	1
B. Women not going out alone, especially at night.	3	2	1
C. Women dressing more modestly, or in a less sexy way.	3	2	1
D. Providing psychological treatment for rapists.	3	2	1
E. Women learning to fight back against their attackers.	3	2	1
F. Women carrying weapons for protection, like knives or guns.	3	2	1
G. Newspapers publicizing names and pictures of known rapists.	3	2	1
H. Stopping the push for women's rights and women's liberation.	3	2	1
I. Changing girls' and women's role in society--to be less passive, polite and dependent upon others.	3	2	1
J. Lowering society's tolerance of rape and violence against women.	3	2	1
K. Changing boys' and men's roles in society--to be more respectful toward women.	3	2	1

From all of these ideas above, put the letter for the one that you feel would work best to prevent rape: ____ and the one that would work second best: ____

Now we'd like to know how physically strong you think you are. Circle the one number on the scale from 1 to 7 that best describes how you see yourself. For example, if in the first question you see yourself as very much stronger or very much weaker, you would circle 1 or 7, depending on which extreme. Or, if you see yourself as slightly stronger or slightly weaker, choose 3 or 5. The middle choice, 4, means you see yourself as equally as strong, and so forth. Try to answer every question.

Do you see yourself as stronger, equally as strong, or weaker than the average woman?

1	2	3	4	5	6	7
stronger			equally as strong			weaker

And compared to the average man, do you think you are

1	2	3	4	5	6	7
stronger			equally as strong			weaker

What about speed? Would you say you can run faster than the average woman, about as fast, or not as fast?

1	2	3	4	5	6	7
faster			about as fast			not as fast

And compared to the average man, would you say you can run

1	2	3	4	5	6	7
faster			about as fast			not as fast

If you were sexually assaulted, in general, how likely do you think you would be to fight back?

1	2	3	4	5	6	7
very likely			somewhat likely			not likely at all

In general, do you think you would be able to defend yourself effectively against an attacker? (Pick just one.)

1. yes
2. no

Have you ever taken a self-defense or martial arts (like karate or judo) class before?

1. yes, and it helped a great deal
2. yes, and it helped somewhat
3. yes, but it didn't help much at all
4. yes, but it hurt more than helped
5. no, I never took such a course

If YES, briefly describe the course:

What type? _____
Length of course? _____
Teacher's training? _____
Teacher's sex? _____

Some people report that they do certain things, or act in certain ways, in order to increase their safety. Below is a list of such activities. We'd like to know how often you do any of these things. For each activity, circle the number that corresponds to how often you do it. Circle 1 if you do that thing all or most of the time, circle 2 if you do it fairly often, circle 3 if you seldom do it, and circle 4 if you never do it.

	Something I Do:			
	All or Most of the time	Fairly Often	Seldom	Never
FIRST, THINK ABOUT WHEN YOU ARE AT HOME:				
A. Lock the outside doors when home alone during the day?	1	2	3	4
B. Lock the outside doors when home alone during the night?	1	2	3	4
C. Ask salesmen or repairmen for identification before opening the door?	1	2	3	4
NOW, WHEN YOU ARE OUT OF YOUR HOME:				
D. When no one will be home for several hours, deliberately leave on a light or a radio?	1	2	3	4
E. When at a movie or on a bus, choose a seat with an eye to who will be sitting nearby?	1	2	3	4
F. When walking down the street, look people you don't know right in the eye?	1	2	3	4
G. When going out, take a friend or two as protection?	1	2	3	4
H. When out at night, avoid using streets or alleys that are not well-lit or well-traveled?	1	2	3	4
I. When out alone, try not to dress in a provocative or sexy manner?	1	2	3	4
J. In case of danger, try to wear shoes that are easy to run in?	1	2	3	4
K. When out alone, take something along for protection, like a dog or whistle or mace?	1	2	3	4
L. When out alone, take a gun for protection?	1	2	3	4
M. Restrict your going out to only during the daytime?	1	2	3	4
N. Drive or take a taxi or a bus, rather than walk, because of fear of being harmed?	1	2	3	4

	Something I Do: All or Most of the time	Fairly Often	Seldom	Never
O. Avoid doing at night things you have to do (such as shopping, laundry, or library) because of fear for your safety?	1	2	3	4
P. At night, not do things that you want to do, but don't have to do (such as visiting, sports, or evening classes) because of fear for your safety?	1	2	3	4
Q. When walking on the street, make a point of being alert and watchful?	1	2	3	4
R. When you see someone suspicious on the street, cross the street?	1	2	3	4
S. When out alone at night, mentally figure out escape routes or strategies in case you are assaulted?	1	2	3	4
T. When out alone at night, wait or change your route because you see a stranger in your path?	1	2	3	4
U. When looking for parking places at night, think about safety?	1	2	3	4
V. Decide not to go where you had planned to if you cannot find a safe parking space close to your destination?	1	2	3	4
W. Carry your keys in your hand when going to the car, instead of waiting to get them out after reaching the car?	1	2	3	4
X. When returning to your parked car, check the back seat for intruders before getting in?	1	2	3	4

The following questions discuss rapes or sexual assaults that either you or friends have experienced. You don't have to answer a question if you find it too painful or intrusive. However, the more questions you do answer, the more we will learn about what women here think and feel and must cope with.

How often does rape or sexual assault worry you? Would you say

1. more than once a week
2. once a week
3. monthly
4. one or two times a year
5. never

STRATEGIES

Here we want to learn what strategies you feel are most effective in stopping sexual assault. The grid below describes different self-defense techniques and different assaultive situations. For each square, rate how effective you think a certain strategy would be in deterring a sexual assault in that particular situation. Work across rows, from left to right. Use this scale for your ratings:

1	2	3	4	5	6	7
VERY UNCERTAIN that action would work						VERY CERTAIN that action would work

Note: Do NOT worry about whether you can do that action. (We ask that question on the next page.) Concentrate here ONLY on whether such an action would stop an assault of the type described. Put down what you really believe, not just what you've been told. Try to fill in every square.

TECHNIQUES	SITUATIONS: Male Acquaintance	Stranger (without weapon)	Stranger with knife
Walk/appear confident			
Make self look unattractive or sick			
Be verbally confrontative/assertive			
Plead, cry			
Verbally stall			
Run away			
Scream loudly			
Use mace			
Break his hold on you/ block his blows			
Punch and kick			
Act immediately			
Wait for the right opportunity			

MASTERY

Here's a similar grid, but this time we want yo to do something different. Rate how confident you are in your ability to perform each task successfully. Again, work across each row, from left to right. Use this scale:

1 2 3 4 5 6 7

VERY UNCERTAIN that I can do it — VERY CERTAIN that I can do it

Remember, this time we want you to rate your sense of competence--do you think you could successfully perform that technique in that situation? Don't worry here whether you think that action is a good idea or not. Think only about whether you would be able to do it if you chose to.

	SITUATIONS		
TECHNIQUES	Male Acquaintance	Stranger (without weapon)	Stranger with knife
Walk/appear confident			
Make self look unattractive or sick			
Be verbally confrontative/assertive			
Plead, cry			
Verbally stall			
Run away			
Scream loudly			
Use mace			
Break his hold on you/ block his blows			
Punch and kick			
Act immediately			
Wait for the right opportunity			

Now we would like to ask you some questions about your thoughts on crime on campus, specifically sexual assault and rape. By sexual assault we mean when someone attacks a person or threatens to do that person sexual harm. This would include rape, by which we mean any type of forced sexual intercourse, and any other form of sexual coercion. Fill in the blank or circle the answer that best describes your behavior or feelings.

How important in your life is learning to fight against assailants?

1	2	3	4	5	6	7
not very important						very important

How safe do you feel, or would you feel, being out alone on campus <u>at night</u>?

1. very safe
2. somewhat safe
3. somewhat unsafe
4. very unsafe

How about <u>during the day</u>. How safe do you feel, or would you feel, being out alone on campus during the day?

1. very safe
2. somewhat safe
3. somewhat unsafe
4. very unsafe

Is there any area on campus where you would be afraid to walk alone at night?

1. yes
2. no

Is fear for your own safety something that you think about

1. all or most of the time
2. fairly often
3. seldom
4. never

How much do you worry about the possibility of being sexually assaulted on campus <u>at night</u>?

1. a great deal
2. some
3. a little
4. not much at all

How much do you worry about the possibility of being sexually assaulted on campus <u>during the day</u>?

1. a great deal
2. some
3. a little
4. not much at all

How likely do you think it is that you will be a victim of sexual assault in the next 12 months?

1. very likely
2. somewhat likely
3. not very likely
4. not likely at all

Now, think about the last time you went out alone after dark on campus. How worried were you then about being sexually assaulted?

1. very worried
2. somewhat worried
3. a little worried
4. not much worried at all

How many sexual assaults and rapes would you say there are on campus?

1. a lot
2. some
3. a few
4. not many at all

Do you think that the number of sexual assaults and rapes on campus is

1. going up
2. going down
3. staying about the same

Estimate HOW MANY rapes or attempted rapes occurred on campus in the past 12 months.
Put your best guess here _____

What PERCENTAGE of women using the campus would you estimate were victims of rape or attempted rape on campus during the past 12 months?
Put your best guess here _____%

What PERCENTAGE of women using this campus (students, staff, faculty) do you estimate were victims of rape or attempted rape anywhere during the past 12 months?
Put your best guess here _____%

The next questions are quite personal. You don't have to answer a question if you find it too painful or too intrusive. However, the more questions you do answer, the more we will learn about what women here think and feel and must cope with.

How often did your parents hit you when you were growing up? (Circle your answer on this scale.)

1	2	3	4	5
Always		Sometimes		Never

In your family when growing up, how often did your parents hit each other?

1	2	3	4	5
Always		Sometimes		Never

In your current or last love relationship, how often did/does your partner hit you?

1	2	3	4	5
Always		Sometimes		Never

How often does rape or sexual assault worry you? Would you say

1. more than once a week
2. once a week
3. monthly
4. one or two times a year
5. never

We know that rape is a terrible crime, for many reasons. What do you believe is the very worst aspect of rape? (Pick only one.)

1. the possibility of being killed
2. the fear of being permanently maimed or injured
3. emotional damage to the victim
4. the sexual violation
5. the shame of being a rape victim
6. the fear of men that results
7. other (specify) _____

What do you believe is the second worst aspect of rape? (Again, pick only one.)

1. the possibility of being killed
2. the fear of being permanently maimed or injured
3. emotional damage to the victim
4. the sexual violation
5. the shame of being a rape victim
6. the fear of men that results
7. other (specify) _____

Have you ever had anyone force sex on you, in any way, against your will?
1. yes
2. no

Have you ever been raped?
1. yes
2. no

Have you ever been sexully assaulted by a relative?
1. yes
2. no

Have you ever had anyone attempt to force sex on you, in any way, but unsuccessfully?
1. yes
2. no

Have you ever had sex with someone only because you were afraid physical force would be used against you if you did not go along?
1. yes
2. no

During dating, has anyone ever pushed you to go farther sexually than you wanted to?
1. yes
2. no

We are also concerned about other things that happen to people that may or may not be considered sexual assault. Has anything ever happened to you, besides forced sex, that might be considered sexual assault. That is, anything from being hugged or touched in a way that made you uncomfortable, having someone expose themselves to you, or anything else?
1. yes
2. no

Have you ever known someone who was a victim of rape or attempted rape?
1. yes
2. no

How many rape or attempted rape victims, not counting yourself, have you known?
Put number here _____

Using the following scale, circle the number which best represents your feelings about each of the following statements:

1	2	3	4
Strongly Disagree	Disagree	Agree	Strongly Agree

On the whole, I am satisfied with myself 1 2 3 4
I feel I have a number of good qualities 1 2 3 4
At times I think I'm no good at all. 1 2 3 4
I am able to do things as well as most other people. 1 2 3 4
I feel I do not have much to be proud of 1 2 3 4
I certainly feel useless at times. 1 2 3 4
I take a positive attitude toward myself 1 2 3 4
I wish I could have more respect for myself. 1 2 3 4
All in all, I'm inclined to think I'm a failure. 1 2 3 4
I feel I am a person of worth, at least on an equal basis with others. 1 2 3 4

Below are a series of paired statements. For each pair, please circle the number of the statement that comes closest to your position. Choose one statement from each pair.

a. The average citizen can have an influence in government decisions.
b. The world is run by the few people in power, and there is not much the little guy can do about it.

a. When I make plans, I am almost certain that I can make them work.
b. It is not always wise to plan too far ahead because many things turn out to be a matter of good and bad fortune anyway.

a. In my case getting what I want has little or nothing to do with luck.
b. Many times we might just as well decide what to do by flipping a coin.

a. As far as world affairs are concerned, most of us are the victims of forces we can neither understand nor control.
b. By taking an active part in political and social affairs the people can control world events.

a. With enough effort we can wipe out political corruption.
b. It is difficult for people to have much control over the things politicians do in office.

a. Many times I feel that I have little influence over the things that happen to me.
b. It is impossible for me to believe that chance or luck plays an important role in my life.

a. What happens to me is my own doing.
b. Sometimes I feel that I don't have enough control over the direction my life is taking.

a. Most of the time I can't understand why politicians behave the way they do.
b. In the long run the people are responsible for bad government on a national as well as on a local level.

Put your code number again on this page ____ ____ ____ ____

Finally, you're at the end. Look at this list of personality characteristics. We would like you to use these characteristics to describe yourself, that is, we would like you to indicate, on a scale from 1 to 7, how true of you each of these characteristics is. Just write the number next to the characteristic. Please do not leave any unmarked.

1	2	3	4	5	6	7
Never or almost never true	Usually not true	Sometimes but infre-quently true	Occasionally true	Often true	Usually true	Always or almost always true

Defend my own beliefs	____	Eager to soothe hurt feelings	____
Affectionate	____	Secretive	____
Conscientious	____	Willing to take risks	____
Independent	____	Warm	____
Sympathetic	____	Dominant	____
Moody	____	Adaptable	____
Assertive	____	Tender	____
Sensitive to needs of others	____	Conceited	____
Reliable	____	Willing to take a stand	____
Strong personality	____	Love Children	____
Understanding	____	Tactful	____
Jealous	____	Aggressive	____
Forceful	____	Gentle	____
Compassionate	____	Conventional	____
Truthful	____	Have leadership abilities	____
		Joyful	____
		Free	____
Thank you.		Angry	____
		Trusting	____

APPENDIX F

TABLES OF MEANS AND STANDARD DEVIATIONS OF RESEARCH VARIABLES

Table F-1

Precautionary Behavior Means and Standard Deviations

	Time					
	Pre		Post		F-up	
Group	M	SD	M	SD	M	SD
Vigilant Behaviors						
Defense[a]	3.12	.45	3.26	.45	3.31	.42
Motivation[b]	3.12	.43	3.04	.46	3.06	.50
Fitness[c]	3.05	.40	3.04	.43	2.96	.42
Avoidant Behaviors						
Defense[d]	2.04	.64	1.93	.63	1.90	.52
Motivation[e]	2.25	.55	2.03	.56	1.94	.60
Fitness[f]	2.14	.58	2.05	.58	2.07	.62

Note. N's change due to missing date.

[a] $n = 43$.

[b] $n = 31$.

[c] Pre $n = 25$; Post and F-up $n = 26$.

[d] Pre $n = 43$; Post and F-up $n = 44$.

[e] $n = 31$.

[f] Pre $n = 24$; Post and F-up $n = 26$.

Table F-2

Perception of Physical Competence Means and Standard Deviations

	Time					
	Pre		Post		F-up	
Group	M	SD	M	SD	M	SD
Defense[a]	3.31	.90	3.88	.76	3.89	.76
Motivation[b]	3.41	.91	3.52	.99	3.57	1.01
Fitness[c]	3.08	.83	3.11	.71	3.24	.91

[a]Pre n = 43; Post and F-up n = 44.
[b]n = 31.
[c]Pre and F-up n = 26; Post n = 25.

Table F-3

Fear of Sexual Assault Means and Standard Deviations

	Time					
	Pre		Post		F-up	
Group	M	SD	M	SD	M	SD
Defense[a]	2.40	.48	2.18	.46	2.16	.47
Motivation[b]	2.38	.48	2.30	.45	2.08	.52
Fitness[c]	2.27	.42	2.25	.40	2.04	.46

[a] $n = 42$.
[b] $n = 30$.
[c] $n = 26$.

Table F-4

Outcome Expectancies Means and Standard Deviations

	Time					
	Pre		Post		F-up	
Group	M	SD	M	SD	M	SD
Assertive Strategies						
Defense[a]	4.59	.94	5.70	.71	5.38	.81
Motivation[b]	4.58	.83	4.96	.79	4.83	1.03
Fitness[c]	4.20	.85	4.30	.84	4.41	1.05
Dependent Strategies						
Defense[d]	3.07	.90	2.77	.82	2.74	.80
Motivation[e]	3.24	.95	3.71	1.14	3.68	1.19
Fitness[f]	3.12	1.10	3.41	1.00	3.57	.99

[a] $n = 44$.
[b] $n = 31$.
[c] Pre $n = 23$; Post and F-up $n = 26$.
[d] $n = 44$.
[e] $n = 31$.
[f] $n = 26$.

Table F-5

Efficacy Expectancies Means and Standard Deviations

	Time					
	Pre		Post		F-up	
Group	M	SD	M	SD	M	SD
Assertive Behaviors						
Defense[a]	4.90	.82	5.94	.65	5.59	.70
Motivation[b]	5.26	.74	5.33	.76	5.32	.79
Fitness[c]	4.60	.82	4.86	.85	4.91	1.02
Dependent Behaviors						
Defense[d]	4.58	.98	4.69	1.60	4.44	1.31
Motivation[e]	5.22	.81	5.17	1.07	5.27	.99
Fitness[f]	4.93	.92	4.89	1.09	5.10	1.06

[a]Pre and Post n = 44; F-up n = 43.
[b]n = 31.
[c]n = 26.
[d]Pre n = 44. Post and F-up n = 43.
[e]n = 31.
[f]n = 26.

Table F-6

Self-Esteem Means and Standard Deviations

	Time			
	Pre		F-up	
Group	M	SD	M	SD
Defense[a]	3.12	.35	3.22	.44
Motivation[b]	3.17	.42	3.20	.42
Fitness[c]	3.25	.41	3.29	.31

[a] $n = 43$.
[b] $n = 31$.
[c] Pre $n = 25$; F-up $n = 24$

Table F-7

Sex Role Identity Means and Standard Deviation

	Time			
	Pre		F-up	
Group	M	SD	M	SD
	BSRI Masculine Traits			
Defense[a]	4.86	.69	5.09	.66
Motivation[b]	5.03	.88	5.18	.81
Fitness[c]	4.67	.79	4.65	.70
	BSRI Feminine Traits			
Defense[d]	5.55	.79	5.59	.87
Motivation[e]	5.71	.62	5.84	.49
Fitness[f]	5.91	.64	5.83	.69

[a] $n = 44$.
[b] $n = 30$.
[c] $n = 26$.
[d] $n = 44$.
[e] $n = 30$.
[f] $n = 26$.