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LOYOLA UNIVERSITY OF CHICAGO

WOMEN'S SELF-DEFENSE TRAINING:
AN APPLIED ANALYSIS OF SELF-EFFICACY THEORY

A DISSERTATION SUBMITTED TO THE FACULTY OF THE
GRADUATE SCHOOL IN CANDIDACY FOR THE DEGREE OF
DOCTOR OF PHILOSOPHY
DEPARTMENT OF PSYCHOLOGY

BY
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CHAPTER I

INTRODUCTION AND REVIEW OF RELATED LITERATURE

Sexual violence against women is a serious social problem in our society. Estimates of the incidence of rape in the United States vary; however, several studies have suggested that at least one in five women will experience an attempted or successful sexual assault during her lifetime (e.g., Koss & Harvey, 1991; Russell, 1984). Based on their survey of 4,000 women, the National Victim Center (1991) estimated that in 1990, 78 rapes occurred every hour in the United States. These statistics are alarming, especially when considered in terms of the effects rape has upon its victims. Research has shown that about one-third of victims develop Post Traumatic Stress Disorder (PTSD) after being assaulted, and that rape victims are over ten times more likely to have substance abuse problems than non-victims (National Victim Center, 1991). In addition, victims of sexual assault have been found to be three times more likely to have a major depressive episode than non-victims, and thirteen times more likely to attempt suicide (National Victim Center, 1991). Rape also affects its victims' relationships with others; for example, between 75 and 85% of married rape victims are divorced within two years of being attacked (Gordon & Riger, 1989). Thus, rape is a shockingly regular occurrence and its consequences can be devastating.

The prevalence of rape in our society affects all women, not just those who are actually attacked. Most women experience the fear of rape; it is the gnawing fear of potential danger looming ahead (Gordon & Riger, 1989). In
their study of the "female fear," Gordon and Riger (1989, p. 1) found that fear of rape was a daily pre-occupation for one-third of the women they sampled. Fear of rape leads women to alter their lifestyles and restrict their behaviors in hopes of avoiding being attacked (Gordon & Riger, 1989). Unfortunately, however, most women are misinformed about rape. For example, most women think that rapists are strangers (Gordon & Riger, 1989; Heath, Gordon, Riger, & LeBailly, 1981), when in fact 80% of all rape victims know their attackers (Koss & Harvey, 1991). Therefore, while women are driven by their fear of rape to be more vigilant and cautious, their decisions about how to protect themselves are likely to be based on misinformation and thus may not be helpful in preventing rape (Gordon & Riger, 1989; Telsey, 1981).

Rape Resistance

Perhaps the most detrimental rape myth is that it is useless and possibly dangerous for women to fight back in rape situations. Contrary to the belief that women are helpless to defend themselves, recent research has shown that women can successfully prevent being raped by fighting back (Bart & O'Brien, 1984; Kleck & Sayles, 1990; Lizotte, 1986; Quinsey & Upfold, 1985; Seigel, Sorenson, Golding, Burnam, & Stein, 1989; Ullman & Knight, 1993). Although women may be physically weaker than men overall, every male body has areas of weakness just as every woman's body has weapons to use against those vulnerable areas (Caignon & Groves, 1987). Women who have successfully resisted rape generally have used some combination of verbal and physical strategies (Bart & O'Brien, 1984). Previous studies have provided mixed interpretations of findings about injury related to resistance.
(see Kleck & Sayles, 1990 for summary). However, recently researchers have concluded that although resistance has been found to be correlated with increased injury, victim resistance seems to be a response to injury incurred during the attack rather than injury being the result of resistance (Kleck & Sayles, 1990; Quinsey & Upfold, 1985). Taken together, these results indicate that women are capable of resisting rape without necessarily sustaining increased injury as a result of fighting back.

Unfortunately, however, women rarely are informed about women who successfully defend themselves; instead, they are bombarded with stories of women who are raped (Gordon & Riger, 1989; Telsey, 1981). In their study of newspaper reports of rape, Heath, Gordon, Riger, and LeBailly (1981) found that while there are three attempted rapes for every one completed rape, the ratio of attempted to completed rapes reported in the newspapers they sampled was 1 to 13. Women are also misinformed about the likelihood of other physical injury or death during sexual assault. Gordon and Riger (1989) found that the women they sampled believed that most rape victims are seriously injured and that about one-fourth of rape victims are killed during their attacks; the actual statistics are that 8% of victims are seriously injured and 3% are killed during rape attacks. Given the misrepresentation in the media of sexual violence against women, it is not surprising that women believe they are incapable of resisting rape and that to do so would be dangerous.

Self-Efficacy Theory

Albert Bandura's (1977) research and theory regarding the effects of self-efficacy on coping behavior suggests that women's beliefs about their
abilities to defend themselves in rape situations may be more important than their actual abilities to do so. Bandura suggested that "expectations of personal efficacy determine whether coping behavior will be initiated, how much effort will be expended and how long it will be sustained in the face of obstacles and aversive experiences" (1977, p. 191). For example, in a study of coping behavior among snake phobics, Bandura, Adams, and Beyer (1977) found that expectations about personal efficacy were a better predictor of coping behavior in new situations than was past coping behavior. Thus, according to self-efficacy theory, women who believe that they are helpless to defend themselves in rape situations are unlikely to resist successfully, regardless of their actual self-defense abilities.

Bandura's (1977) theory suggests that expectations about self-efficacy develop based on exposure to four main sources of information. The first source of efficacy information is performance experience. Experiences of performance mastery increase expectations of efficacy, while experiences of performance failure lower efficacy expectations. Thus, a woman who successfully defends herself during an attempted rape is predicted to have higher expectations regarding her self-defense efficacy in future situations than a woman who is unable to defend herself from being raped.

A second source of efficacy information is vicarious experience. People develop expectations about their abilities to successfully execute specific behaviors based on their observations of other people's performance experiences. Bandura (1977) stated that the impact of the vicarious experience on personal self-efficacy expectations depends upon the extent to which the model is perceived as similar to the observer, and the
extent to which the behavior is linked to a clear outcome. These findings suggest that women's personal self-efficacy expectations will be influenced by what they learn, either through personal contact or media presentation, about the self-defense successes and failures of other women.

Verbal persuasion is a third source of information used in forming expectations about efficacy. According to self-efficacy theory, statements regarding the likelihood that a behavior can be successfully completed impact efficacy expectations. For example, those who are told that women are capable of physically defending themselves are expected to have higher expectations of self-defense efficacy than women who are told that it is useless and possibly dangerous to fight back.

Finally, a fourth source of efficacy information is level of physiological arousal. In stressful situations, physiological arousal is generally associated with anxiety, and people are less likely to expect success when they are feeling anxious. As such, the theory suggests that women who feel intensely fearful and anxious during an attack situation will interpret this as an indication that they are unprepared to cope successfully with the situation.

Bandura's research comparing the effects on efficacy expectations of these four sources of information has shown that expectations about self-efficacy are "altered most readily by experience of mastery arising from effective performance" (1977, p. 191). For example, Bandura and his colleagues (1977) found that snake phobics who were given the opportunity to gradually and successfully interact with snakes developed higher expectations about their personal self-efficacy than did phobics who
observed a model interacting with a snake. The findings of this and other similar studies (Emmelkamp & Wessels, 1975; LoPicollo, 1970; Sherman, 1972; Strahley, 1966; Wolpe, 1974) suggest that experience of personal mastery is the most influential of the four sources of efficacy information.

Mastery experiences do not necessarily lead to high expectations of personal efficacy, however (Bandura, 1977). Bandura's self-efficacy theory suggests that individuals' cognitive appraisals of their performance experiences determine the impact these mastery experiences will have upon their personal efficacy expectations. The same mastery experience may be interpreted differently by two people, leading them to develop different expectations about personal efficacy.

According to self-efficacy theory, a critical dimension along which efficacy information appraisals are made is the global-specific continuum. People evaluate the extent to which efficacy information provided to them within a practice context also applies to other situations. The effect of mastery experiences can be attenuated if the individual draws a distinction between the staged, practice situation in which the mastery occurred and the real situation in which future coping behavior should occur. Concluding that mastery is specific to the practice context will prevent the improved efficacy expectations from generalizing to the situation of concern (thus, resulting in a specific appraisal). As such, practice experiences should be realistic and varied so that people do not view their performance as being specific to the practice situation.

Another important cognitive dimension in the development of efficacy expectations is whether successful performance in the practice
situation is attributed to internal/personal or external/situational factors. Bandura's theory predicts that successful performance will enhance efficacy expectations if it is attributed to internal skills. However, if success is attributed to situational circumstances, then the experience of mastery is not expected to influence personal efficacy expectations. Practice situations that are too obviously set up to facilitate success may prevent people from making internal attributions for their mastery experiences; as a result, efficacy expectations may be lowered.

Previous research has examined the relationship between efficacy expectations and internal and global attributions (Etringer, Altmaier, & Bowers, 1989; Glass & Levy, 1982; Schiaffino & Revenson, 1992). For example, Bandura, Jeffery, and Gajdos (1975) compared the effects of three different performance experiences designed to alleviate snake phobia; the treatments varied in realism and external aid. All participants in the study received participant modeling, during which they completed a hierarchy of interactions with a boa constrictor while aided by a therapist. Participants in two of the conditions were then given additional mastery experiences; in these conditions, the therapist left the room while participants engaged in self-directed interactions with the snake. Participants in one of the independent mastery conditions interacted with the familiar boa constrictor, while participants in the other condition interacted with an unfamiliar king snake. The goal of the independent interaction conditions was to provide participants with experiences which would facilitate the formation of global and internal attributions for their success experiences. The results of this study revealed that participants who were given the chance to interact
independently with a snake reported higher efficacy expectations and more
generalized behavioral changes than participants who were aided by a
therapist during their snake interactions. Furthermore, in spite of initial
startled reactions to the unfamiliar king snake, participants in this condition
adjusted quickly to this situation and had similar efficacy expectations and
behavioral responses to those who engaged in self-directed interactions with
the familiar boa constrictor. These results suggest that practice situations
which foster global and internal attributions for successful performance
lead to strong efficacy expectations, as predicted by self-efficacy theory.

In summary, Bandura's theory and research suggests that the
performance of successful coping behavior is determined by expectations
about self-efficacy. The greatest improvement in efficacy expectations, and
thus coping behavior, are brought about by experiences of personal
mastery. The effect of performance experiences on efficacy expectations
depends upon cognitive assessments of these experiences in terms of
perceived success (i.e., mastery), global-specific appraisal, and internal-
external attribution.

Self-Defense Training

Bandura's (1977) theory and research regarding self-efficacy has
clear implications for self-defense courses that teach rape resistance. Based
on this theory, it is not enough to provide women with physical self-defense
skills. They must also be convinced that they are capable of successfully
executing their new skills in real attack situations.

Self-efficacy theory suggests that the most effective way to improve
self-defense efficacy expectations is to provide course participants with
personal experiences of successfully executing their newly-learned self-defense skills in attack-like situations. This is consistent with recommendations made by researchers studying women's self-defense training (Quinsey, Marion, Upfold, & Popple, 1986; Telsey, 1981; Thompson, 1991). Most women's self-defense courses include performance experiences; however, courses vary in the types of performance experiences that are offered to participants. Usually, participants practice their self-defense skills in drills using imaginary or inanimate targets. Some courses also enable participants to practice their skills in simulated attack scenarios. In these scenarios, the male instructors, wearing extensive protective gear, act as mock assailants. This type of performance experience provides participants with experience using their self-defense skills at full-force against a human target.

The type of target utilized in self-defense training is thought to impact the development of self-efficacy expectations. According to Bandura's theory and research, people must perceive the practice experience to be similar to the real coping situation (i.e., make global appraisals) in order for the practice experience to impact efficacy expectations. In the case of women's self-defense training, practice experiences with a padded mock assailant are likely to be perceived as more similar to a real attack situation than practice with imaginary or inanimate targets. Thus, practice with a padded mock assailant is hypothesized to lead to stronger self-efficacy expectations, and this relationship is thought to be mediated by the women's cognitive appraisals of the practice situation on the global-specific continuum. Specifically, women who practice against a padded mock
assailant are expected to make more global appraisals about successful practice experiences, and thus are predicted to experience greater changes in their efficacy expectations, whereas women who practice with imaginary or inanimate targets are expected to consider their success to be specific to the practice situation, and to experience less change in their efficacy expectations as a result.

**Previous Findings**

Previous studies of women's self-defense courses have primarily examined behavioral and perceived efficacy outcome variables. Research regarding courses offering extensive practice against a padded mock assailant (e.g., IMPACT and Model Mugging courses) have found individual improvements in self-defense efficacy expectations from pre-course to post-course. Henderson and Albright (1994) found that after taking the IMPACT Basics Course, women reported greater willingness to fight back if attacked and increased confidence in their abilities to handle both verbal and physical attacks. Similarly, Ozer and Bandura (1990) found that after taking the Model Mugging course, participants were highly proficient in using their self-defense skills to disable mock assailants. In addition, participants reported an increase in perceived personal efficacy, a decrease in perceived vulnerability, and a decrease in self-imposed lifestyle limitations (Ozer & Bandura, 1990). Furthermore, Frost (1991) examined between-group differences, comparing women who had taken the Model Mugging course to women who had not, and found that course participants reported feeling less helpless, and had higher levels of interpersonal and self-defense self-efficacy.
These findings provide support for the effectiveness of courses offering practice against a padded mock assailant. However, the self-defense courses examined in these studies are multifaceted, and practice with a padded mock assailant is only one of the many course components involved. Thus, the results obtained by Henderson and Albright (1994), Ozer and Bandura (1990), and Frost (1991) do not provide information regarding the specific components that lead to changes in women's self-defense skills and efficacy expectations.

A recent study conducted by Henderson, Thompson, Albright, Amoroso, and Pintzuk (1995) more closely examined specific IMPACT course features in order to begin the process of better understanding this multifaceted course. Henderson and her colleagues used a correlational design and examined participants' ratings of various course variables in relation to their self-defense efficacy ratings. The study's results indicated that the most important course feature in predicting change in self-defense efficacy was the extent to which participants perceived their practice experiences to be realistic. This finding is consistent with Bandura's theory, and highlights the impact of global-specific appraisal on self-efficacy expectations.

While the Henderson et al. (1995) study is informative, its correlational nature makes it impossible to determine whether a causal relationship exists between increased global appraisals of practice situations and self-efficacy expectations. The variable of cognitive appraisal must be manipulated in order to examine its causal impact. Although cognitive appraisal cannot be manipulated directly, it could be manipulated indirectly
by systematically varying the practice situation. This was the goal of the current study.

Overview of the Current Study

The purpose of this study was to examine women's self-defense training within the context of Bandura's (1977) self-efficacy theory. Specifically, the type of target used in self-defense practice situations was manipulated in an attempt to systematically vary the extent to which participants would make global appraisals of their practice situation. It was hypothesized that participants who practiced with a padded mock assailant would consider their performance experience to be more similar to a real attack situation than those who practiced only with inanimate targets. Those who viewed their practice experiences to be more realistic were further expected to generalize their efficacy expectations more readily from practice to real attack situations. Thus, the goal of manipulating perceived realism was to assess the impact of global-specific appraisals on the development of self-defense efficacy expectations.

This study was conducted during four 3-hour IMPACT workshops. One independent variable in this study was type of practice experience; it was manipulated at two levels by offering practice with differing targets. Participants in the control workshops practiced against inanimate targets only, while those in the intervention workshops practiced against inanimate targets and a padded mock assailant. All other course variables were held constant, including instructors, modeling, verbal persuasion, and number of times each technique was practiced.
The cognitive appraisal variables described in Bandura's theory were also examined in this study. Immediately after the intervention phase of the study, participants rated their self-defense practice experiences in terms of (1) perceived success, (2) global-specific appraisal, and (3) internal-external attribution.

The dependent variables in this study were participants' self-defense efficacy expectations and objective ratings of their actual self-defense performance. Self-defense efficacy expectations were examined pre- and post-treatment in order to assess changes across time. Actual self-defense performance was assessed post-treatment using objective ratings of participants' videotaped performances in an attack situation with a padded mock assailant.

In an attempt to extend Bandura's theory, this study also examined individual differences in locus of control in relation to self-efficacy expectations. In conceptualizing self-efficacy, Bandura explicitly differentiated efficacy expectations from locus of control, but stated that "while causal beliefs and self-efficacy refer to different phenomena, . . . causal ascriptions of behavior to skill or to chance can mediate the effects of performance attainments on self-efficacy" (1977, p. 204). In keeping with Bandura's formulation of self-efficacy, the current study did not attempt to equate self-efficacy with locus of control. However, it is possible that individual differences in locus of control impact efficacy expectations through influencing internal-external attributions for performance outcomes. The inclusion of this variable was based on previous research (e.g., Cunningham, Gerard, & Miller, 1978; Newman, 1977) demonstrating a
relationship between locus of control and causal attributions for performance.

**Hypotheses**

Figure 1 presents a summary of the model which was tested in the current study. Listed below are the study's specific hypotheses.

**Hypothesis 1.** Self-efficacy theory stated that successful performance experiences lead to changes in self-efficacy expectations. As such, it was hypothesized that all study participants, regardless of type of practice, would show an increase in efficacy expectations. The repeated measures t-test conducted to test this hypothesis was expected to reveal a significant effect of time (pre, post). Specifically, all participants were expected to have significantly higher ratings of self-defense efficacy following the workshops, as compared to their pre-workshop efficacy ratings. (The relationship between pre and post-workshop efficacy expectations is not depicted in Figure 1.)

**Hypothesis 2.** Self-efficacy theory stated that coping behavior can be predicted based on self-efficacy expectations. Specifically, individuals with higher self-efficacy expectations were expected to be more likely to successfully execute coping behaviors as compared to people with lower self-efficacy expectations. Based on this aspect of the theory, it was predicted that participants' self-defense efficacy expectations would be related to their actual self-defense skill performance. As such, the correlations conducted to test this hypothesis were expected to reveal statistically significant positive correlations between skill performance and efficacy ratings.
Figure 1. Theoretical model tested in the current study.
Hypothesis 3. Self-efficacy theory suggested that cognitive appraisals of performance experiences impact the development of self-efficacy expectations. Based on the theory, it was predicted that participants' self-defense efficacy expectations would be related to participants' ratings of their practice experiences in terms of perceived success, global-specific appraisal, and internal-external attribution. The regression analysis conducted to test this hypothesis was expected to yield a regression equation including perceived success, global appraisal, and internal attribution as independent variables predicting participants' ratings of self-defense efficacy.

Hypothesis 4. This study attempted to manipulate participants' perceptions of their practice experiences in terms of global-specific appraisal. Participants in the intervention workshops were expected to generalize their efficacy expectations from practice to real attack situations more readily as compared to participants in the control workshops. As such, the multivariate analysis of variance (MANOVA) conducted to test this hypothesis was expected to reveal a significant effect of practice conditions on participants' global-specific appraisals. Specifically, participants who practiced with the padded mock assailant were expected to make stronger global appraisals than those who practiced only with inanimate targets.

Hypothesis 5. Type of practice was not expected to impact participants' ratings of perceived success or internal-external attributions. As such, the MANOVA and follow-up analyses of variance (ANOVAs) examining differences between the treatment and control groups for the cognitive variables (perceived success, global-specific appraisal, and internal-
external attributions) were expected to reveal no significant differences between conditions in perceived success or internal-external attributions.

**Hypothesis 6.** Previous research has demonstrated a relationship between causal attributions for performance experiences and individual differences in locus of control. Based on these findings, a mediational relationship between locus of control, internal-external attributions, and efficacy expectations was predicted. It was hypothesized that participants with a more internal locus of control would be more likely to attribute performance during practice to personal factors, whereas those with a more external locus of control would be more likely to make attributions to situational factors. In addition, it was predicted that those with a more internal locus of control would report higher efficacy expectations as compared to those with a more external locus of control; however, the relationship between locus of control and efficacy expectations was expected to be mediated by participants' causal attributions for their practice experience.

A series of regression analyses conducted to test this hypothesis was expected to demonstrate a mediational relationship between these variables (see Baron & Kenny, 1986). These analyses were expected to demonstrate the following relationships: (1) locus of control was predicted to be related to self-defense efficacy expectations, with participants who had a more internal locus of control demonstrating higher efficacy expectations; (2) locus of control was expected to predict internal-external attributions, with participants who had a more internal locus of control demonstrating stronger internal attributions for their practice experiences; and (3)
internal-external attributions were predicted to be related to efficacy expectations. Further, internal-external attributions were expected to mediate the relationship between locus of control and efficacy expectations. Thus, the relationship between locus of control and efficacy expectations should become nonsignificant when controlling for the effect of internal-external attributions. In other words, when the shared variance between locus of control and internal-external attributions was taken into account, it was expected that internal-external attributions alone would account for a significant proportion of variability in self-defense efficacy expectations. These findings would support the hypothesized mediational relationship between locus of control, internal-external attributions, and self-defense efficacy expectations.

Hypothesis 7. Self-efficacy theory suggested that global appraisal of successful performance experiences would lead to stronger self-efficacy expectations. Based on this aspect of the theory, it was expected that predicted group differences in global appraisal would lead to group differences in self-defense efficacy expectations. Those who practiced with the padded mock assailant were expected to develop higher efficacy expectations as compared to those who practiced only with inanimate targets; and this predicted relationship between type of practice and self-defense efficacy expectations was expected to be mediated by the group differences in global appraisal described above.

A series of regression analyses conducted to test this hypothesis was expected to demonstrate a mediational relationship between these variables. These analyses were expected to demonstrate the following relationships: (1)
type of practice was predicted to influence self-defense efficacy expectations, with participants in the treatment condition demonstrating higher efficacy expectations; (2) type of practice was expected to predict global-specific appraisal, with participants in the treatment condition demonstrating more global appraisals; and (3) global-specific appraisals were predicted to be related to efficacy expectations. Further, global-specific appraisals were expected to mediate the relationship between type of practice and efficacy expectations. Thus, the relationship between type of practice and efficacy expectations should become nonsignificant when controlling for the effect of global-specific appraisals. In other words, when the shared variance between type of practice and global appraisal was taken into account, it was expected that global appraisal alone would account for a significant proportion of variability in self-defense efficacy expectations. These findings would support the hypothesized mediational relationship between type of practice, global appraisal, and self-defense efficacy expectations.

**Hypothesis 8:** Given the hypothesized relationships between efficacy expectations and skill performance (see Hypothesis 3) and the hypothesized difference in efficacy expectations based on type of practice (see Hypothesis 6), it was further predicted that a difference in actual skill performance would be observed based on type of practice. Specifically, those in the intervention workshops were expected to perform their self-defense skills more effectively than those in the control workshop. Based on self-efficacy theory, it was predicted that group differences in skill performance would be mediated by group differences in efficacy expectations.
A series of regression analyses conducted to test this hypothesis was expected to demonstrate a mediational relationship between these variables. These analyses were expected to demonstrate the following relationships: (1) type of practice was predicted to influence skill performance, with participants in the treatment condition demonstrating stronger self-defense skills; (2) type of practice was expected to predict self-defense efficacy expectations, with participants in the treatment condition demonstrating stronger efficacy expectations; and (3) self-defense efficacy expectations were predicted to be related to skill performance. Further, efficacy expectations were expected to mediate the relationship between type of practice and skill performance. Thus, the relationship between type of practice and skill performance should become nonsignificant when controlling for the effect of efficacy expectations. In other words, when the shared variance between type of practice and efficacy expectations was taken into account, it was expected that efficacy expectations alone would account for a significant proportion of variability in self-defense skill performance. These findings would support the hypothesized mediational relationship between type of practice, self-defense efficacy expectations, and self-defense skill performance.
Participants

Participants in the current study were students from four 3-hour IMPACT workshops (two workshops for each condition). Women over 18-years-old were recruited to participate in the course-evaluation study. In exchange for their participation in the study, the women were given three hours of self-defense training free of charge. There were 20 participants in the control condition and 22 participants in the treatment condition. They were randomly assigned to the treatment or control condition upon registration.

All participants in this study were female. The average age was 29 years (SD = 9.55; range: 18 - 63). Sixty-seven percent of the participants were Caucasian, 12% were African-American, and 12% were Latina (9% other). The majority of participants (95%) had at least some college education; however, 50% of this sample earned under $20,000 per year. Sixty-two percent of the workshop participants were single; the others were either married (14%) or in a committed relationship (24%). Finally, over half of the women in this study (52%) reported having some history of physical and/or sexual abuse.

Materials

The Locus of Control Scale (Levenson, 1974) is a 24-item scale which classifies individuals' characteristic locus of control as Internal or External.
with two subscales for external locus of control: **Belief in Chance** and **Powerful Other**. The scale uses a 6-point Likert-type scale which ranges from "applies" (1) to "does not apply" (6). Levenson (1974) reported Kuder-Richardson reliability coefficients ranging from .64 to .78, and one-week test-retest reliability coefficients ranging from .64 to .78 for this measure. In addition, the *Locus of Control Scale* has been shown to have acceptable construct validity (Levenson, 1974). However, this measure's reliability with the current sample was somewhat weaker; split-half reliability coefficients: internal, $r (36) = .42$; belief in chance, $r (36) = .61$, powerful other, $r (36) = .75$. Furthermore, in this sample, the distribution of scores on these scales seemed to be somewhat truncated; internal: 90% of scores were greater than 3.5, $M = 4.46$, $SD = .71$; belief in chance: 90% of scores were less than 3.5, $M = 2.55$, $SD = .76$; powerful other: 97% of scores were less than 3.5, $M = 2.33$, $SD = .80$.

The *General Self-Defense Efficacy Scale* is an 8-item measure created for this study to assess perceived self-defense efficacy in various real attack situations. Participants are asked to rate their confidence in their ability to effectively defend themselves from an unarmed assailant in eight situations that vary along two dimensions: setting and presence of others. The items from this measure are presented in Table 1. Level of self-defense confidence in each situation is indicated on a 10-point Likert-type scale that ranges from "not at all confident" (1) to "very confident" (10). Analyses of this data set revealed that this measure is reliable (split-half reliability: pre-intervention, $r (40) = .84$; post-intervention, $r (40) = .93$) and valid (convergence between Skills Efficacy-Real Attack (see below) and post-intervention General Self-Defense Efficacy, $r (40) = .75$).
### Table 1
**Items from the General Self-Defense Efficacy Scale**

<table>
<thead>
<tr>
<th>Scale variable</th>
<th>Item wording</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Setting</strong></td>
<td>You are waiting for the bus and an assailant grabs you.</td>
</tr>
<tr>
<td></td>
<td>You are at work or school and an assailant grabs you.</td>
</tr>
<tr>
<td></td>
<td>You are entering the front door of your home and an assailant grabs you.</td>
</tr>
<tr>
<td></td>
<td>You are walking down the street and an assailant grabs you.</td>
</tr>
<tr>
<td><strong>Presence of Others</strong></td>
<td>Other people are nearby.</td>
</tr>
<tr>
<td></td>
<td>No one else in nearby.</td>
</tr>
</tbody>
</table>

*Note:* The scale variables were combined factorially to create eight unique items. Each item was rated on a 10-point Likert-type scale ranging from 1 (not at all confident) to 10 (very confident).

The **Skills Efficacy Scale** is a 6-item scale created for this study to assess participants' confidence in their abilities to use effectively each self-defense technique taught in the workshop. Confidence is assessed for the following techniques: eye strike, palm heel, butt strike, stomp-fist, knee to the groin, and knee to the head. Level of confidence in the use of each technique is rated on a 10-point Likert-type scale that ranges from "not at all confident" (1) to "very confident" (10).
Two versions of the **Skills Efficacy Scale** were used. The **Practice Form** assesses participants' confidence in their abilities to use each self-defense technique effectively during in-class practice situations (against either an inanimate target or padded mock assailant). The **Real Attack Form** assesses their confidence in using their skills in a real attack situation. Analyses of these data showed that these measures are reliable (split-half reliability: Skills Efficacy-Practice, \( r(40) = .81 \), Skills Efficacy-Real Attack, \( r(40) = .86 \)) and valid (convergence between two versions, \( r(40) = .71 \), and between Skills Efficacy-Real Attack and post-intervention General Self-Defense Efficacy, \( r(40) = .75 \)).

Comparisons between skill efficacy ratings for practice versus real attack situations provided information about participants' cognitive appraisals of their performance experiences in terms of the global-specific dimension. A **Global Appraisal** score was calculated by subtracting participants' Skills Efficacy during Practice scores from their Skills Efficacy during a Real Attack scores, and then subtracting the absolute value of this amount from 9.\(^1\) **Global Appraisal** scores range from 0 (no generalization of

\(^1\) The purpose of this transformation was to recode the score to reflect the level of generalization (rather than differentiation) of efficacy expectations from practice to real attack situations. The absolute value of the difference between Skills Efficacy during Practice and Skills Efficacy during a Real Attack was taken because the direction of the distinction was unimportant for this assessment. The range of these difference scores was 0 (no distinction in confidence between practice and real attack situations) to 9
The Personal Performance Evaluation Scale is a 12-item scale created for this study to assess participants' cognitive assessments of their performance experiences. Two versions of this scale were created with the only difference between the two being that one refers to practice against inanimate targets (for the control group) and the other refers to practice against a padded mock assailant (for the treatment group). On each, participants are asked to indicate (a) the extent to which they considered their performance in the practice situations to have been successful (perceived success), (b) the extent to which their performance was due to internal versus external factors (internal attribution, external attribution), and (c) the extent to which they believed that their practice situation was similar to a real attack situation (perceived realism). The items for this measure are presented in Table 2. Each item is rated on a Likert-type scale (clear distinction: "10" maximum confidence in one situation minus "1" minimum confidence in the other situation). This initial score represents the level of distinction drawn between practice and real attack situations. In order for the score value to reflect global appraisal, the variable emphasized in Bandura's theory, the score was reverse scored by subtracting the absolute value of the difference from 9. Thus, a higher global appraisal score indicates a higher level of generalization from practice to real attack situations.
### TABLE 2
ITEMS AND FACTOR LOADINGS FOR THE PERSONAL PERFORMANCE EVALUATION SCALE

<table>
<thead>
<tr>
<th>Subscale</th>
<th>Item Wording</th>
<th>Factor Loading</th>
</tr>
</thead>
<tbody>
<tr>
<td>Perceived Success</td>
<td>Which face(^a) best shows how you feel about your performance?</td>
<td>.80</td>
</tr>
<tr>
<td></td>
<td>To what extent do you consider your performance to have been successful?</td>
<td>.95</td>
</tr>
<tr>
<td></td>
<td>How would you score (grade) your performance?</td>
<td>.93</td>
</tr>
<tr>
<td>Internal Attribution</td>
<td>To what extent do you think your performance was due to things about you or</td>
<td></td>
</tr>
<tr>
<td></td>
<td>to things about the practice situation?</td>
<td>.85</td>
</tr>
<tr>
<td></td>
<td>To what extent do you think your performance was due to:</td>
<td></td>
</tr>
<tr>
<td></td>
<td>your newly acquired self-defense skills</td>
<td>.59</td>
</tr>
<tr>
<td></td>
<td>your physical strength or lack of strength</td>
<td>.60</td>
</tr>
<tr>
<td></td>
<td>your effort or lack of effort</td>
<td>.39</td>
</tr>
<tr>
<td>External Attribution</td>
<td>To what extent do you think your performance was due to:</td>
<td></td>
</tr>
<tr>
<td></td>
<td>the instructors' behavior</td>
<td>.83</td>
</tr>
<tr>
<td></td>
<td>the behavior of the other women</td>
<td>.89</td>
</tr>
<tr>
<td></td>
<td>good or bad luck</td>
<td>.46</td>
</tr>
</tbody>
</table>

\(^a\) The rating scale for this item consisted of five "smiley faces" ranging from a large frown to a large smile.
with unique endpoints. The items for this measure were written to be face valid and representative of the factors described above. In order to assess the structure of this measure, a factor analysis was conducted with the data from this sample; the results of this analysis are presented in Table 2.¹

Four subscale scores were calculated based on participants' responses on the Personal Performance Evaluation Scale. The Perceived Success score is based on the average of three items. Because these items use unique response scales, ratings were transformed to the same scale so that each item would be equally weighted. The subscale ranges from 1 (not at all successful) to 10 (very successful). Analyses of these data revealed that this subscale is reliable (average item-total correlation: \( r(38) = .91 \)). The Internal Attribution score is based on the average of four items, and the External Attribution score is based on the average of three items. Both attribution scores range from 1 (not at all due to specified factors) to 10 (totally due to specified factors). Analyses of these data showed that the attribution subscales have moderate internal reliability (average item-total correlation: Internal Attribution Scale, \( r(38) = .62 \); External Attribution Scale, \( r(38) = .76 \)). The Perceived

¹ One item intended to assess internal attribution (To what extent do you think that your performance was due to your quickness or lack of quickness?) was excluded from this subscale in response to a previous factor analysis with this data set which revealed that this item did not load with the other internal attribution items.
Realism score is based on a single item: To what extent were the simulated attack scenarios/drills you just completed similar to what you think a real attack situation would be like? This item was used to check participants' cognitive appraisals of the type of practice manipulation. Analyses of these data revealed a statistically significant relationship between Perceived Realism and Global Appraisal scores, \( r (40) = .52 \), offering evidence of moderate convergent validity.

The Skills Assessment Form was used to code the quality of participants' self-defense skills from videotape. Each participant received a Skill Performance Rating based upon her use of self-defense skills during a videotaped practice fight against a padded mock assailant. The skills taught during the workshop included the eye strike, palm heel, butt strike, stomp-fist, knee to groin, and knee to head. Each self-defense skill used in the fight was rated on several dimensions. The first dimension was Target Availability: Does the woman select the available target? (yes, no). The second dimension examined was her Technique Selection: Does the woman select the appropriate technique for the target presented? (yes, no). Strike Accuracy was also examined: Where does the woman strike the assailant? (hit target area, hit body near target area, hit body missed target area, missed body). Finally, the quality of each technique was assessed. Technique Quality was rated as either "strong," "weak," or "not applicable" (when missed the body), based on specific criteria for each technique. The criteria for Technique Quality were observable behaviors that required minimal interpretation. These criteria were established by an IMPACT instructor and an expert in martial arts who is an IMPACT graduate.
Ratings of Target Availability, Technique Selection, Strike Accuracy and Technique Quality were transformed into scores ranging from 0 to 1 so that each factor would be equally weighted; ratings of the four skill components were then summed for an overall skill rating for each technique used. These summed ratings range from 0 (totally inadequate use of techniques) to 4 (excellent use of techniques). The Skill Performance Rating for each participant represents the average skill rating across all techniques used in the woman's fight. Although the fights were generally scripted, every participant made her own decisions regarding which techniques to utilize, and thus, each fight represented a unique combination and number of techniques. Participants' skills were assessed by two independent raters. Analyses of this data set revealed high inter-rater reliability for the Skill Performance Ratings, $r (40) = .84$. The ratings of the two observers were combined to create an average Skill Performance Rating.

For each fight, the padded mock assailant feigned unconsciousness only once a series of adequately strong blows had been struck. This suggests that participants with weaker skills should have needed to utilize additional strikes in order to disable the padded mock assailant. In addition to rating the overall quality of participants' self-defense skills, the number of skills needed to disable the padded mock assailant was recorded. Analyses of these data revealed high inter-rater reliability for observations of Number of Techniques Used, $r (40) = .97$. The ratings of the two observers were combined to create an average score for Number of Techniques Used. As expected, a strong negative relationship was observed in these data between Number of Techniques Used and Skills Performance Ratings, $r (40) = -.74$. 
This finding demonstrates the construct validity of these two performance measures; women with stronger skills required fewer blows to disable the padded mock assailant, while women with weaker skills needed to use additional blows to ward off their assailant.

The Video Coding Guide provided the specific behavioral requirements for assessing Technique Selection, Strike Accuracy, and Technique Quality of each technique. This guide is included in Appendix A.

The Background Information Questionnaire was developed to assess age, race, level of education and income, relationship status and history of abuse. This measure is included in Appendix B.

Procedure

Posters and advertisements announcing a free 3-hour self-defense workshop for women were circulated on the campuses of Loyola University of Chicago and Northeastern Illinois University. The announcements included a short description of the workshop and course-evaluation study, and mentioned the date and location; it was indicated that the time of the workshop was to be announced. Women who called to inquire about the workshop were given more information about the workshop and study. All women were told that they would be learning physical self-defense skills designed for women's bodies and that they would be practicing these skills in drills and simulated attack scenarios. (Those in the control group practiced with the padded mock assailant following the data collection for this study.) Women who expressed interest in participating in the study/workshop were randomly assigned to either the control workshop or the treatment workshop. Potential participants were not informed that multiple workshops
were taking place; those who could not participate in the assigned workshop were excluded.

Women who registered for the workshops were sent an information packet within a week of the initial phone contact. This packet included a more detailed description of the study, and information about clothing, snacks, and directions. Participants were strongly encouraged to call with any questions. During the week prior to the workshop, participants received a confirmation phone call reminding them of the workshop and answering any last minute questions.

Once participants arrived, the workshop began with an "opening circle." Following preliminary introductions, the women were asked to complete the study consent form and the first packet of measures, which included the General Self-Defense Efficacy Scale and the Locus of Control Scale. The consent forms were given to the research coordinator, who kept them separate from the other study materials. The packet of measures was inserted into an envelope given to each woman. This envelope was marked with a subject number which was covered by a removable sticker showing the woman's name. (This was done so that participants could easily find their own materials during the workshops.) The envelope was used to collect all measures during the course of the study.

After a short break, the women gathered on the mats and participated in vocal and physical warm-up exercises. Following the warm-ups, the female and male instructors demonstrated the first scenario. Participants then began practicing the techniques presented in the demonstration. Those in the control group practiced only against inanimate targets, and
those in the treatment group practiced against inanimate targets and the padded mock assailant. Three different attack scenarios were presented in both workshops, and the number of times each technique was practiced was held constant across groups.

During the drills, all participants started by practicing each technique striking the air, as if against an imaginary opponent. As the drills progressed, participants moved from striking the air to striking an inanimate target held by the male instructor. The techniques for each scenario were eventually drilled in sequence. Only those in the treatment group had the experience of using their techniques at full-force against the body of the well-protected male instructor. The mock assailant wore a large padded helmet, large overalls lined with padding, pads on his arms, legs, and feet, as well as a substantial groin protector. For the control group, the same male instructor, dressed in street clothes with no protection, held the inanimate target near the appropriate body target (e.g., groin, head). Thus, the only difference between the two groups was the type of target used in the practice situations.

Following the intervention phase of the study, participants completed the second packet of measures, which included the Personal Performance Evaluation Scale, the Skills Efficacy Scales (Practice and Real Attack Forms) and the General Self-Defense Efficacy Scale. Then, both groups were videotaped using their skills against the padded mock assailant. Level of attack was held constant across conditions; that is, the padded mock assailant used the same degree of force against participants in the treatment and control workshops. After the skills assessment, participants completed the
Background Information Questionnaire. Participants then removed the name sticker from their envelopes and handed in their packet of measures. Once the study was completed, participants in the control condition were given additional practice opportunities with the padded mock assailant. Finally, during the "closing circle," the women were debriefed about the study and given the opportunity to ask questions and provide additional feedback about their experience.
CHAPTER III

RESULTS

Due to the large number of analyses conducted for this study, a more stringent alpha level was adopted in order to reduce the likelihood of Type I error. For this study, an analysis was considered statistically significant if the probability of obtaining the finding was less than .01. A finding with a probability greater than .01 and less than .05 was treated as a trend towards statistical significance. In addition, for directional hypotheses, one-tailed tests of significance were used.

Efficacy in Relation to Performance Experience

Self-efficacy theory predicts that successful performance experiences will be related to changes in efficacy expectations (Hypothesis 1). In order to test this prediction, a within-subjects t-test was conducted comparing participants' ratings of general self-defense efficacy before and after the workshops. Results of this analysis revealed a statistically significant difference between pre- and post-intervention ratings of general self-defense efficacy, $t(41) = -8.78, p < .001$. Prior to the workshops, participants' general self-defense efficacy ratings were significantly lower ($M = 4.67, SD = 1.78$) than after completing the workshops ($M = 7.32, SD = 1.52$). A score of "10" was labeled "totally confident." This finding supports the predictions of Hypothesis 1.
Relationship between Efficacy and Skill Performance

Based on self-efficacy theory and research, it was predicted that efficacy expectations would be related to skill performance (Hypothesis 2). A series of correlations were calculated in order to examine the relationship between participants' post-intervention ratings of their efficacy expectations (general self-defense efficacy, skills efficacy during a real attack, and skills efficacy during practice) and their actual skill level as assessed by expert raters (average skill performance ratings). These analyses revealed a trend toward a statistically significant relationship between average skill performance ratings and general self-defense efficacy, \( r(40) = .35, p < .05 \), as well as a statistically significant relationship between average skill performance ratings and skills efficacy during practice, \( r(40) = .37, p < .01 \). The relationship between average skill performance ratings and skills efficacy during a real attack was not statistically significant, \( r(40) = .24 \). These findings provided some support for Hypothesis 2.

Efficacy as a Function of Cognitive Appraisal Variables

Bandura's self-efficacy theory predicts that changes in self-efficacy will be impacted by an individual's cognitive appraisal of completed practice experiences. According to the theory, efficacy expectations will vary as a function of perceived success, global-specific appraisal, and internal-external attribution (Hypothesis 3). A series of regression analyses were conducted in order to examine this aspect of Bandura's theory more closely.

Three regression equations were calculated. Pre-intervention general self-defense efficacy and the cognitive appraisal variables
(perceived success, global appraisal, internal attribution, and external attribution) were entered as the independent variables in all three equations. The regression equations attempted to account for the variability in the following post-intervention efficacy variables: (1) general self-defense efficacy, (2) skills efficacy during a real attack, and (3) skills efficacy during practice. All three regression equations predicted statistically significant portions of variability in the dependent variables: (1) general self-defense efficacy, $E(S,34) = 7.09, p < .0001, R^2 = .51$; (2) skills efficacy during a real attack, $E(S,34) = 16.20, p < .0001, R^2 = .70$; (3) skills efficacy during practice, $E(S,34) = 8.73, p < .0001, R^2 = .56$. The results for each equation are shown in Table 3. Perceived success was a significant predictor of all three types of post-intervention efficacy expectations. Those who perceived their performance during practice as successful developed stronger efficacy expectations than those who did not consider themselves to have been successful. In addition, global appraisal significantly contributed to the prediction of general self-defense efficacy and skills efficacy during a real attack. Those who generalized their efficacy expectations from practice to real attack situations developed stronger self-defense efficacy expectations than those who drew a distinction between practice and real attack situations. These findings provided support of Hypothesis 3 in terms of perceived success and global appraisal being related to self-defense efficacy expectations. However, it was also expected that internal attributions would contribute to the prediction of self-defense efficacy expectations, and this relationship was not observed in these data.
<table>
<thead>
<tr>
<th>Dependent Variable</th>
<th>Predictor</th>
<th>B</th>
<th>Beta</th>
<th>T</th>
</tr>
</thead>
<tbody>
<tr>
<td>General Self-Defense Efficacy</td>
<td>Perceived Success</td>
<td>.46</td>
<td>.41</td>
<td>3.32**</td>
</tr>
<tr>
<td></td>
<td>Global Appraisal</td>
<td>.52</td>
<td>.35</td>
<td>2.82*</td>
</tr>
<tr>
<td></td>
<td>Internal Attribution</td>
<td>.20</td>
<td>.20</td>
<td>1.67</td>
</tr>
<tr>
<td></td>
<td>External Attribution</td>
<td>.18</td>
<td>.22</td>
<td>1.78</td>
</tr>
<tr>
<td></td>
<td>Pre Efficacy</td>
<td>.18</td>
<td>.22</td>
<td>1.80</td>
</tr>
<tr>
<td>Skills Efficacy - Real</td>
<td>Perceived Success</td>
<td>.61</td>
<td>.55</td>
<td>5.82***</td>
</tr>
<tr>
<td></td>
<td>Global Appraisal</td>
<td>.86</td>
<td>.60</td>
<td>6.17***</td>
</tr>
<tr>
<td></td>
<td>Internal Attribution</td>
<td>.11</td>
<td>.12</td>
<td>1.28</td>
</tr>
<tr>
<td></td>
<td>External Attribution</td>
<td>.10</td>
<td>.13</td>
<td>1.33</td>
</tr>
<tr>
<td></td>
<td>Pre Efficacy</td>
<td>-.10</td>
<td>-.12</td>
<td>-1.26</td>
</tr>
<tr>
<td>Skills Efficacy - Practice</td>
<td>Perceived Success</td>
<td>.60</td>
<td>.64</td>
<td>5.56***</td>
</tr>
<tr>
<td></td>
<td>Global Appraisal</td>
<td>-.17</td>
<td>-.14</td>
<td>-1.19</td>
</tr>
<tr>
<td></td>
<td>Internal Attribution</td>
<td>.13</td>
<td>.17</td>
<td>1.45</td>
</tr>
<tr>
<td></td>
<td>External Attribution</td>
<td>.09</td>
<td>.14</td>
<td>1.21</td>
</tr>
<tr>
<td></td>
<td>Pre Efficacy</td>
<td>-.08</td>
<td>-.12</td>
<td>-1.01</td>
</tr>
</tbody>
</table>

*p < .01.  **p < .005  ***p < .001.
Examination of the Type of Practice Manipulation

Pre-intervention equivalence of groups. A series of analyses were conducted in order to assess the effectiveness of random assignment in creating equivalent groups prior to intervention. A multivariate analysis of variance (MANOVA) was conducted comparing the age, locus of control, and incoming general self-defense confidence of the two groups.\(^1\) This analysis revealed no statistically significant differences overall, \(F(5, 32) = .96.\) Chi-squared analyses were conducted to examine the categorical subject variables. No statistically significant relationships were found between condition and the following variables: race, \(X^2(5) = 4.49,\) education, \(X^2(5) = 3.23,\) income, \(X^2(4) = 6.91,\) and relationship status, \(X^2(2) = 2.79.\) However, a significant relationship between condition and history of physical/sexual abuse was observed, \(X^2(1) = 15.50, p < .0005.\) Sixteen of the 20 women in the control condition had a history of physical/sexual abuse as compared to only six of the 22 women in the treatment condition.

In order to assess further the impact of the confounding between condition and history of physical/sexual abuse, MANOVAs were conducted comparing those with and without an abuse history on all other study variables. The MANOVA comparing these groups on the pre-intervention variables (pre-treatment general self-defense efficacy and locus of control: internal, belief in chance, and powerful other) revealed no statistically significant differences between survivors and those with no abuse history, \(F(4, 28) = .77.\) The MANOVA examining the groups on the cognitive appraisal

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\(^1\) Scale scores were standardized for all MANOVAs conducted for this study.
variables (perceived success, global appraisal, internal attribution, and external attribution) showed no statistically significant group differences, $E (4, 30) = 1.12$. Finally, the MANOVA comparing the groups on the outcome variables (post-treatment general self-defense efficacy, skills efficacy during practice, skills efficacy during a real attack, skill performance ratings, and number of techniques used) also found no statistically significant differences between groups, $E (5, 30) = 1.42$. Thus, although abuse history is clearly a confounding variable, it does not seem to account for any significant variability in the variables of interest in the present study.

**Manipulation check.** The hypothesis that practice against a padded mock assailant would lead to greater changes in self-defense efficacy expectations than practice against inanimate targets was based on the assumption that participants would perceive the mock assailant scenarios to be more similar to a real attack situation than practice with inanimate targets. In order to test this assumption, a $t$-test was conducted comparing the perceived realism ratings associated with each type of practice (padded mock assailant versus inanimate targets only). This analysis revealed no statistically significant differences between the groups, $t(40) = .78$.

Participants in both types of workshops perceived their practice experiences to be moderately realistic ($M = 6.45, SD = 1.88$). A score of "10" indicates "just the same as a real attack." Given the apparent failure of the manipulation to create systematic variability in cognitive appraisals of practice experiences, no differences as a function of type of practice were expected.

**Cognitive appraisal.** Analyses were conducted in order to examine the relationship between type of practice and participants' cognitive appraisals
of their practice experiences (to examine Hypotheses 4 and 5). A MANOVA was conducted which compared the two groups on the cognitive appraisal variables (perceived success, global appraisal, internal attribution, and external attribution). This analysis revealed no differences between groups on these variables, $F(4, 35) = .49$. Participants in both workshops rated their practice experiences as successful (perceived success: $M = 7.78, SD = 1.34$). A score of "10" indicates "very successful." They also generalized their confidence from the practice situation to real attack situations (global appraisal: $M = 7.95, SD = 1.02$). A rating of "9" indicates "no distinction between confidence in practice and real attack situations." Furthermore, both groups attributed their success mostly to internal factors (internal attribution: $M = 6.59, SD = 1.54$; external attribution: $M = 4.92, SD = 1.85$, possible ranges: 1 to 10). These analyses provided support for Hypothesis 5, and evidence for the rejection of Hypothesis 4.

**Efficacy ratings.** The effect of type of practice (padded mock assailant versus inanimate targets only) on participants' ratings of post-treatment efficacy was also assessed (in relation to Hypothesis 7). A MANOVA examining post-treatment general self-defense efficacy, skills efficacy during practice, and skills efficacy during a real attack revealed no

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1 In order to control for the accumulation of alpha, the relationships between type of practice and the cognitive appraisal, efficacy, and skill performance variables were examined using MANOVAs rather than a series of regression equations.
statistically significant differences as a function of type of practice, \( F(3, 38) = .35 \). Following the workshops, efficacy ratings were high for all participants (general self-defense efficacy: \( M = 7.32, SD = 1.52 \); skills efficacy during practice: \( M = 8.62, SD = 1.24 \); skills efficacy during a real attack: \( M = 7.55, SD = 1.50 \)). A "10" on these scales was labeled "totally confident."

**Skill performance.** The effect of type of practice (padded mock assailant versus inanimate targets only) on post-treatment skill performance was assessed (in relation to Hypothesis 8). Videotaped skill performance was evaluated by two independent, experienced raters. A MANOVA examining post-treatment self-defense skills and number of techniques used revealed a trend toward a statistically significant overall difference between types of practice, \( F(2, 39) = 3.78, p < .05 \). For the purpose of providing direction for future research, this trend was explored further. Follow-up ANOVAs revealed trends toward statistically significant differences between conditions for skill performance, \( F(1, 40) = 7.41, p < .05 \), and number of techniques used, \( F(1, 40) = 5.74, p < .05 \). Participants in the treatment workshops had somewhat stronger skills (\( M = 3.80, SD = .18 \)) and needed to use fewer techniques to disable the padded mock assailant (\( M = 5.27, SD = .70 \)) than did participants in the control workshops (skill rating: \( M = 3.60, SD = .31 \); number of techniques used: \( M = 6.15, SD = 1.53 \)). A skill performance rating of "4" indicates "excellent use of technique." The assessed defense scenario, as scripted, included five techniques; however, if a strike was not executed effectively, it may have needed to be repeated, resulting in higher scores for the number of techniques used variable.
Mediational relationships. As described above, no statistically significant relationships were observed between type of practice and post-workshop efficacy expectations, or between type of practice and global appraisal. Because these initial relationships did not exist, the proposed mediated pathways cannot be tested. As such, Hypotheses 7 and 8 were rejected without further analyses.

Relationship between Locus of Control and Causal Attributions

A series of correlations were calculated in order to examine the relationship between individual differences in locus of control and participants' attributions for their performance experiences. It was hypothesized that participants with a more internal locus of control would make more internal attributions for performance success, whereas participants with a more external locus of control (i.e., belief in chance and powerful others) would make more external attributions for performance success (Hypothesis 6). No statistically significant relationships were revealed (internal attributions and internal locus of control: $r (36) = -.04$; external attributions and powerful others: $r (36) = .23$; external attributions and belief in chance: $r (36) = .05$). Because individual differences in locus of control were not related to internal and external attributions for performance, and because no relationship was observed between causal attributions and efficacy expectations, Hypothesis 6 was rejected without assessment of its mediational component.

Predicting Skill Performance

To follow up on the analyses described above, an additional regression equation was calculated in order to identify more clearly factors that
uniquely contribute to the prediction of self-defense skill performance ratings. The variables in the above analyses that were found to be related to skill performance (type of practice, general self-defense efficacy, and skills efficacy during practice) were entered as independent variables into a regression equation to predict variability in skill performance ratings. This analysis was conducted in order to obtain partial correlations which would reveal the amount of unique variance in skill performance accounted for by each variable. The regression equation predicted a statistically significant portion of variability in skill performance ratings, $F(3, 38) = 6.47, p < .005, R^2 = .34$. The results of this equation are shown in Table 4. Type of practice was a significant contributor to the prediction of skill performance. Those who practiced with the padded mock assailant developed stronger self-defense skills as compared to those who practice with inanimate targets only. A trend towards significant contribution of skill performance was observed for skills efficacy during practice. Those with stronger efficacy expectations regarding their capabilities in practice situations developed somewhat stronger self-defense skills as compared to those with weaker efficacy expectations regarding practice. General self-defense efficacy did not contribute significantly to the prediction of skill performance ratings in this analysis. Figure 2 presents a summary of the statistically significant relationships described above.
### TABLE 4
RESULTS OF REGRESSION EQUATIONS PREDICTING AVERAGE SKILL PERFORMANCE

<table>
<thead>
<tr>
<th>Predictor</th>
<th>B</th>
<th>Beta</th>
<th>T</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type of Practice</td>
<td>.20</td>
<td>.41</td>
<td>3.11*</td>
</tr>
<tr>
<td>Skills Efficacy - Practice</td>
<td>.06</td>
<td>.33</td>
<td>2.09*</td>
</tr>
<tr>
<td>General Self-Defense Efficacy</td>
<td>.02</td>
<td>.14</td>
<td>0.91</td>
</tr>
</tbody>
</table>

*p < .05.  **p < .005.
Figure 2. Summary of partial correlations between cognitive appraisal, efficacy, and performance variables (non-partial correlations are shown in parentheses).

Note: Bold arrows between variables indicate statistically significant relationships. Thin lines between variables indicate a relationship that was examined but found to be non-significant statistically.
CHAPTER IV
DISCUSSION

The purpose of the current study was to examine women's self-defense training in relation to Bandura's (1977) self-efficacy theory. Specifically, this study attempted to vary systematically the extent to which participants made generalizations of efficacy expectations from practice to real situations by manipulating the type of self-defense practice. The goal of this procedure was to isolate and vary global-specific appraisals and to assess the impact of this variable on the development of self-defense efficacy expectations.

The study was conducted during four 3-hour IMPACT workshops. One independent variable was type of practice experience. Participants in the control workshop practiced against inanimate targets only, while those in the intervention workshop practiced against a padded mock assailant. Also examined were the cognitive variables specified in Bandura's theory: perceived success, global-specific appraisal, and internal-external attributions. Individual differences in locus of control were assessed in relation to internal-external attributions for performance experiences. Finally, the dependent variables in this study were self-defense efficacy expectations (participants' ratings) and self-defense skill performance (objectively rated).
Self-Efficacy Theory

In many ways, the findings of the current study were consistent with Bandura's (1977) self-efficacy theory. First, the results provided further support for the assertion that performance experiences impact self-efficacy expectations. Both workshops in this study offered performance experiences; the control workshop provided practice with inanimate targets, while the treatment workshop offered practice with inanimate targets and a padded mock assailant. Consistent with predictions based on self-efficacy theory, all workshop participants reported an increase in their self-defense efficacy expectations after completing the workshops. This finding is similar to results of previous research regarding the relationship between performance experiences and self-efficacy expectations (Bandura et al., 1977; Emmelkamp & Wessels, 1975; LoPicollo, 1970; Sherman, 1972; Strahley, 1966; Wolpe, 1974).

Other factors may also have contributed to the observed increases in self-defense efficacy expectations. Both workshops offered multiple sources of efficacy information in addition to performance experiences. The vicarious experience of watching the female instructor and other course participants successfully execute self-defense techniques may have heightened participants' efficacy expectations. In addition, the messages from the instructors that women are powerful and can successfully defend themselves (verbal persuasion) also may have positively influenced efficacy expectations. Finally, the experience of successfully executing self-defense techniques in spite of the presumed physiological arousal associated with this type of physical and emotional experience may also have contributed to
the observed increase in participants' self-defense efficacy expectations. Although these variables were not isolated and specifically examined in this study, Bandura's theory suggested that each of these sources of efficacy information was likely to have been influential.

Self-efficacy theory further specified that the experience of mastery during practice is important in improving self-efficacy expectations. The results of the present study provided support for this assertion. Perceived success was found to be a strong predictor of all types of self-defense efficacy examined in this study. Participants who believed that they had successfully executed their newly-learned self-defense skills during the workshops had greater confidence in their self-defense skills than those who believed they were less successful during their practice experiences.

The results of this study were also consistent with the theory's emphasis on global appraisal of performance experiences. Participants who drew less of a distinction between practice and real attack situations had greater confidence in their abilities to defend themselves in real attack situations than did those who differentiated between the two situations. This result was similar to the findings of Henderson and her colleagues (1995), which highlighted the importance of perceived realism of self-defense practice situations.

It was the intention of this study to examine global-specific appraisal more systematically than had been done by Henderson et al. (1995). Participants in the current study were randomly assigned to practice against a padded mock assailant or inanimate targets only. The use of this design was based on the assumption that participants in the workshops with the padded
mock assailant would be more likely to generalize their efficacy expectations from practice to real attack situations, whereas those who practiced with inanimate targets only were expected to consider their performance to be more specific to the practice situation. Unfortunately, however, this assumption was not met; participants in both workshops generalized their efficacy expectations from practice to real attack situations, and no differences between groups were observed in self-defense efficacy expectations. Since the manipulation of perceptions of the practice experience was unsuccessful, the only way to assess the relationship between global-specific appraisals and self-efficacy expectations in this study was correlational. As is stated above, the results of the correlational analyses were consistent with Bandura's theory.

Another feature of self-efficacy theory that was examined in this study is the impact of internal-external attributions on perceived efficacy. The theory suggested that success during practice must be attributed to internal factors in order for the mastery experience to result in an increase in self-efficacy expectations. The results of the current study did not support this aspect of the theory, in that internal attributions for self-defense performance did not contribute significantly to the prediction of participants' self-defense efficacy expectations. These findings contrasted with previous research emphasizing the importance of internal attributions (Bandura et al., 1975; Etringer et al., 1989; Glass & Levy, 1982; Schiaffino & Revenson, 1992).

In an attempt to extend self-efficacy theory, the current study examined the relationship between internal-external attributions and
individual differences in locus of control. It was hypothesized that variability in attributions along the internal-external dimension might, in part, be accounted for by differences in locus of control. Specifically, participants with a more internal locus of control were expected to attribute performance success to personal factors, while participants with a more external locus of control were predicted to make more situational attributions for successful performance. This prediction was not supported by the findings of the current study; no relationship between the three types of control (internal, belief in chance, or powerful other) and internal-external attributions for performance outcomes was observed. It is possible, however, that this finding is due to limited variability of participants' locus of control ratings; the restricted range of these variables may have resulted in a spurious finding of no relationship between locus of control and causal attributions.

Based on self-efficacy theory and previous research, it was predicted that self-defense skill performance would be related to self-defense efficacy expectations. The findings of this study provided some support for this hypothesis. Modest positive correlations were observed between ratings of self-defense skill performance and participants' perceptions of their skill efficacy during practice, as well as between performance ratings and perceived self-defense efficacy in various real attack situations. These results were consistent with the findings of previous research regarding the relationship between performance and perceived efficacy (e.g., Bandura et al, 1975; Bandura et al., 1977; Mone & Baker, 1992). It is troublesome, however, that the correlations observed in this study were not stronger. The
average skill performance rating for participants in this study was very high overall, so it is unlikely that the modest relationship between skill and efficacy expectations reflected false confidence in weak self-defense abilities. Rather, the weakness in the relationship between performance and perceived efficacy probably represented participants' lack of confidence in their self-defense abilities in spite of having strong self-defense skills. This may be cause for concern given the assertion of self-efficacy theory that efficacy expectations determine the initiation and persistence of coping efforts. This suggests that participants who possess strong self-defense skills without the commensurate level of self-defense confidence may not defend themselves successfully if attacked.

Self-Defense Training

The findings of the current study have several implications regarding self-defense training for women. First and most importantly, the results of this study suggested that performance-oriented training is an effective method for teaching self-defense skills and increasing the confidence of women who seek such instruction. Furthermore, the study revealed that the type of practice target was only moderately important. Participants in both workshops showed a dramatic increase in confidence as a function of their training, and overall, participants attained a high level of skill during the workshops. Thus, self-defense courses offering practice either with inanimate targets or padded mock assailants are likely to help participants increase their self-defense confidence and skills.

It should further be specified, however, that while both types of practice experiences led to strong self-defense skills, the current study
found that practice with a padded mock assailant resulted in somewhat stronger self-defense skills than did practice with inanimate targets only. This modest difference in skill level was observed following a 3-hour workshop; however, most courses offering practice with a padded mock assailant are much more extensive than the workshops evaluated in this study. The IMPACT and Model Mugging courses are over 20 hours in length, and the simulated attack scenarios with the padded mock assailant used in these courses are generally more elaborate. The scenarios in this study's intervention workshops were highly scripted, and involved slow movement and no verbal behavior by the padded mock assailant. In contrast, the simulated attack scenarios used in the IMPACT and Model Mugging classes become less scripted and more realistic as the course progresses. By the end of the IMPACT and Model Mugging classes, the simulated attacks are completely unscripted and involve intense verbal and physical intimidation by the padded mock assailant. Given the modest difference in skill level observed after the 3-hour workshops examined in this study, it is hypothesized that such differences would be even more dramatic following the more extensive training usually offered with the padded mock assailant.

The results regarding participants' cognitive appraisals of their practice experiences also provided useful information regarding self-defense training. Analyses of the cognitive variables highlighted the importance of perceived success in increasing self-defense confidence. As such, self-defense courses should offer participants practice opportunities which enable them to execute their skills successfully. The behavioral principles of shaping and chaining learned behaviors (Chance, 1988) are
likely to be useful in self-defense training, as these approaches enable learners to build on small successes. This suggestion is consistent with the findings of Ozer and Bandura (1990) which emphasized the importance of using a sequential learning process in self-defense training.

The findings of this study and those of Henderson et al. (1995) converged to suggest that global appraisal of self-defense practice situations also contributes to higher levels of confidence. However, as of yet, the variability in participants' global appraisals remains unexplained. In the current study, manipulation of type of target (padded mock assailant versus inanimate targets) did not account for a significant proportion of the variability in participants' global-specific appraisals.

Limitations and Directions for Future Research

The most significant limitation of the current study was the failure of random assignment in creating equivalent groups prior to intervention. Survivors of physical and/or sexual assault were overrepresented in the control group (practice with inanimate targets) and underrepresented in the intervention group (practice with the padded mock assailant). Although follow-up analyses revealed that abuse history did not relate statistically to any of the other variables in this study, the confounding remains a drawback. As such, a future study should be conducted examining groups that are equivalent prior to intervention. This could be accomplished by utilizing a larger sample to increase the effectiveness of random assignment, or by using block randomization to ensure equivalence of groups in terms of abuse history. If such a study replicates the results of the current study, then the conclusions of this study can be considered sound.
It is possible, though, that the confounding of abuse history and type of practice resulted in a spurious finding of no differences between the two conditions in cognitive assessments and efficacy expectations. Henderson and her colleagues (1995) examined participants in the 24-hour IMPACT course (holding treatment condition constant; all participants engaged in simulated attack scenarios) and found a main effect of abuse history for perceived realism of simulated attacks. Survivors of physical/sexual abuse found the simulated attacks to be significantly more realistic than did those who had not been abused. Furthermore, this difference in perceived realism between those with and without abuse histories mediated group differences in pre-post self-defense efficacy changes. These findings raise the possibility that a combination of a main effect of abuse history and a main effect of type of practice might have resulted in the equivalence of groups in perceived realism ratings observed in the current study. Figure 3 shows the hypothesized relationship between perceived realism, type of practice, and abuse history, in which the perceived realism of those in the simulated attack scenario/no abuse history condition is similar to that of the inanimate target/abuse history condition. Self-defense practice situations may be generally more realistic for survivors of abuse if they bring to mind their past abuse experiences. Given that, in this study, most of the participants in the control condition were survivors of abuse, while most of the participants in the intervention condition had no history of abuse, it is possible that an existing main effect of type of practice went unobserved. A future study examining this hypothesis could assess the independent and combined influences of each variable by utilizing a $2 \times$
Figure 3. Hypothesized relationship between perceived realism, type of practice, and history of abuse.
2 (condition: intervention, control) design. It is predicted that participants who practice with the padded mock assailant would perceive their practice situation to be more realistic than participants who practice with inanimate targets only, and that survivors of abuse would perceive their practice experiences to be more realistic than those who had not been abused.

Future research regarding women's self-defense should also further explore the issue of global appraisals of practice experiences. This study and the findings of Henderson et al. (1995) have emphasized the importance of this variable; yet little is known about the determinants of global appraisals of practice experiences. Global appraisals may be related to course variables, individual perceptual variables, or some combination of the two. For example, history of abuse seems to be an individual perceptual variable which affects perceived realism and global appraisal. Also, type of target may be a course variable that is related to global appraisal. In this study, participants who practiced with different targets made similar global appraisal and perceived realism ratings. If this finding is accurate, it is possible that the similar level of generalization from practice to real attack situations was based on different target features for each group. For example, in the present study, the control condition may have been visually realistic because the male instructor holding the target was not wearing a large helmet and bulky protective gear, whereas the treatment condition may have been realistic due to the complexity of the target. That is, in the control condition, a realistic target was presented in which participants could see the assailant's face. In the treatment condition, the assailant's entire body (although covered) was an available target, and the participants
decided where they would strike and were able to make more "realistic" full-force strikes. Thus, both conditions had elements of realism, although different aspects of the situation were realistic. As such, several factors might influence the extent to which participants consider a practice situation to be similar to a real attack situation. Future studies examining the independent and combined influences of such course and individual perceptual variables will be important in gaining a greater understanding of global appraisals of practice experiences.

Henderson and Thompson (1996) are currently conducting a follow-up study that further examines global appraisals of practice situations. This study uses a multiple-item measure of global-specific appraisals of practice experiences in order to gain a multifaceted perspective on this variable. The measure being used in the follow-up study inquires about various features of the interactions with the padded mock assailants (e.g., the attack approaches, the assailant's verbal behavior, the assailant's physical behavior, and the participant's emotional reaction during the attack) in relation to what participants think a real attack would be like. Hopefully, this more detailed analysis will provide further understanding about the factors which might contribute to participants' global appraisals of practice situations.

Another important issue deserving exploration is the role of emotional arousal in self-defense training. Bandura's discussion of physiological arousal suggested that emotional arousal during a performance experience may impact the development efficacy expectations. In addition, global appraisals of the practice situation are likely to be impacted to the extent that emotional arousal (e.g.,
fear, anxiety, anger) during practice is similar to the experience of emotional arousal expected in a real attack situation. Similarly, research regarding emotional role playing (Clore & Jeffery, 1972; Janis & Mann, 1965; Mann, 1967; Mann & Janis, 1968) has documented the impact of emotion in changing attitudes and behavior. As such, future research should examine the relationship between emotional arousal during self-defense training and the development of efficacy expectations. Henderson and Thompson are currently conducting a study that closely examines the experience of participants in the IMPACT course by assessing their self-defense efficacy as well as their experience of emotional arousal after each of the five course sessions. This detailed analysis of the self-defense training experience should provide some guidance for future research regarding the role of emotional arousal in self-defense training.

Future research about women's self-defense training also should further examine the relationship between ratings of perceived self-defense efficacy and actual self-defense performance. The results of this study suggest that this relationship, while existent, is weaker than it should be ideally; although objective ratings revealed that the participants' skills were quite strong, their efficacy expectations did not conform to their skill level. Future research should seek to identify teaching methods that strengthen the relationship between self-defense confidence and skill. Furthermore, the ultimate goal of self-defense training is to increase the likelihood that a participant will successfully be able to defend herself in a real attack situation. Previous research has shown that women can and do successfully
resist rape by fighting back (Bart & O'Brien, 1984; Kleck & Sayles, 1990; Lizotte, 1986; Quinsey & Upfold, 1985; Seigel, Sorenson, Golding, Burnam, & Stein, 1989; Ullman & Knight, 1993); however, research has yet to examine to the extent to which self-defense training for women actually increases their chances of deterring sexual assault. The assumption is that teaching women to fight back ultimately reduces violence; it is vital that this assumption be directly assessed.

Finally, future research in this area should also consider using different measures of self-defense skill than those employed in this study. Examination of the descriptive statistics for skill ratings in this study reveals the possibility of a ceiling effect for this measure. This apparent restricted range may have impacted the findings of this study. More sensitive measures of self-defense skill should be developed, perhaps focusing more strongly on the strike force variable. In addition, it might be useful to have the male instructor provide immediate ratings of each participant's skills based on the kinesthetic feedback he receives. Another measurement issue for future researchers to consider is the impact of social desirability. In order to be assured that reported changes are genuine and not responses to perceived demand characteristics of the study, it will be important to include assessments of efficacy variables that are not expected to change in response to a self-defense workshop experience.

In conclusion, the current study, with some limitations, contributed to the growing body of literature examining effective methods of teaching women to defend themselves from physical and sexual assault. In addition, this study provided a specific test of Bandura's self-efficacy (1977) theory,
offering support for many aspects of the theory. Importantly, the results of the study suggested that self-defense courses incorporating practice opportunities are effective in teaching self-defense skills, and that perceived success during practice and global appraisals of practice situations are strong contributors to increased self-defense confidence.
APPENDIX A
VIDEO CODING GUIDE

Technique Selection

1 = selected appropriate technique
0 = technique selected not appropriate

Eye Strike: Assailant is standing and facing participant, and other vital
targets (e.g., groin) are unavailable.

Palm Heel: Assailant is standing and facing participant, and other vital
targets (e.g., groin) are unavailable.

Butt Strike: Assailant has engulfed participant from behind (assailants
arms are around torso of participant).

Stomp-Fist: To be used after butt strike. Assailant has recoiled from butt
strike and has released his grasp on the participant's torso.

Knee to the Groin: Participant is standing and facing the assailant, and the
groin area is available.

Knee to the Head: Participant is standing and the assailant has dropped to his
knees in recoiling from previous blows. Assailant's head is an
available target.

Strike Accuracy

3 = hit target 1 = hit body, missed target
2 = near hit 0 = missed body

Eye Strike: 3 = eyes; 2 = elsewhere on face; 1 = other body part

Palm Heel: 3 = nose or chin; 2 = elsewhere on face; 1 = other body part

Butt Strike: 3 = groin; 0 = missed body

Stomp: 3 = arch to toe area; 2 = hit foot but slipped off; 1 = nicked toe or
side of foot

Fist: 3 = groin; 2 = low stomach; 1 = high stomach
Knee to Groin: 3 = under groin; 2 = front of groin; 1 = thigh, etc.

Knee to Head: 3 = center of face; 2 = side of face or forehead; 1 = side of head (e.g., nicked ear)

Technique Quality

2 = strong hit 1 = weak hit 0 = not applicable (missed)

Eye Strike: strong hit = snap to strike and chamber/rechamber weak hit = none or one of the above

Palm Heel: strong hit = snap to strike and chamber/rechamber weak hit = none or one of the above

Butt Strike: strong hit = knees bent and snap to strike weak hit = none or one of the above

Stomp: strong hit = at least two of: cross the "t," extension of the leg, and weighted stomp weak hit = none or one of the above

Fist: strong hit = hip turn and follow-through with fist weak hit = none or one of the above

Knee: strong hit = appropriate distance, follow-through, and balance weak hit = none, one or two of the above
APPENDIX B
BACKGROUND INFORMATION QUESTIONNAIRE

Please provide the following information.

1. Race (check one):
   - Caucasian
   - Latina/Hispanic American
   - African American
   - Asian American
   - Other

2. Age: __________

3. Education: (check one - indicate the highest level of education you have completed)
   - some high school
   - high school degree
   - some college
   - college degree
   - some graduate work
   - graduate degree
   - post-graduate work

4. Occupation: __________________________

5. Annual Income (check one):
   - under $20,000
   - $20,001-$30,000
   - $30,001-$40,000
   - $40,001-$50,000
   - $50,001-$65,000
   - $65,001-$80,000
   - $80,001-$100,000
   - over $100,000

6. Relationship Status (check one):
   - single
   - committed relationship
   - married

7. The following questions are about your history of emotional, physical and sexual abuse/assault. We realize that for some of you it may be difficult to read and respond to these questions. Please answer them honestly as best you can.

   Circle "T" for True, "F" for False or "NS" for Not Sure. Please use the back of this page if you would like to elaborate on any of your responses.

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<td>True</td>
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<td>a. I was emotionally abused as a child.</td>
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<td>b. I have been emotionally abused as an adult.</td>
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<td>c. I was physically abused as a child.</td>
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<td>d. I have been physically abused/assaulted as an adult.</td>
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<td>e. I was sexually abused/assaulted as a child.</td>
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<td>f. I have been sexually abused/assaulted as an adult.</td>
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REFERENCES


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The final copies have been examined by the director of the dissertation and the signature which appears below verifies the fact that any necessary changes have been incorporated and that the dissertation is now given final approval by the committee with reference to content and form.

The dissertation is, therefore, accepted in partial fulfillment of the requirements for the degree of Doctor of Philosophy.

Date Director's Signature

8-26-96