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Treatment of Fear and  
Anxiety in Victims of Rape

Medical Univ. of South Carolina, Charleston

Prepared for  
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<b>16. Abstract (Limit: 200 words)</b>  A series of interrelated experiments on the identification and treatment of rape-related fear and anxiety responses was conducted. Subjects were approximately 300 rape victims and a comparison group of 200 nonvictims. Considerable evidence was produced that fear and anxiety are significant problems for many rape victims and that fear, anxiety and avoidance behavior can be acquired via classical conditioning in a rape experience.			
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FINAL REPORT GUIDELINES

INSTRUCTIONS

PHS policy requires that grantees submit a "terminal progress report" (final report) within 90 days after completion of the grant.

Please complete this series of items *as this final report*. The report will be filed with your applications, reports and other grant business in NIMH's central files. It will be read by staff in research program areas, and may be read by other Institute staff concerned with program analysis, communication, evaluation and planning. The report will be used for information about your research, i.e., to describe and summarize the information (*procedural as well as substantive*) resulting from NIMH support, and to relate that information to mental health problems and research. Your report will often be used apart from your application; however, other documents, such as publications and applications, will be available from the project file if needed.

These guidelines have been designed with relatively small response spaces to encourage brevity. However, do not restrict your response if more space is needed: be complete, using additional labeled pages inserted where necessary (*sample page included*). Extensive descriptions and discussions, if desired, should be made *in addition to your summary response to the item*, and should be placed as appendices. Discussions of issues not covered by these guidelines are also welcome as appendices. Use clear, concise language, avoiding highly technical language *where practicable (this will vary for different types of research)*; appendices could be more technical than responses to the items.

All publications resulting from this project, and not previously submitted, should be submitted with this report (*or as soon as available*); see the section on Dissemination. Publications should *not* be used in lieu of responses to particular items.

Send copies of this report and all appendices as indicated below.

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ADMINISTRATIVE DATA:  (NOTE: If items 1-4 have changed, give the latest information.)	1. GRANT NUMBER <table border="1" style="width: 100%; text-align: center;"><tr><td> </td><td> </td><td>M</td><td>H</td><td>2</td><td>9</td><td>6</td><td>0</td><td>2</td></tr></table> (05) (06) (07) (08) (09) (10) (11) (12) (13) (14)			M	H	2	9	6	0	2	2. TITLE OF GRANT  Treatment of Fear and Anxiety in Victims of Rape
			M	H	2	9	6	0	2		
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SIGNATURE OF PRINCIPAL INVESTIGATOR  <i>Dean G. Kilpatrick Ph.D.</i>	5. NAME AND POSITION OF PERSON WRITING THIS REPORT IF OTHER THAN ITEM 3										

FEB 16 1984

CONDUCT  
OF  
RESEARCH:

9. Describe the *methodology* used in your research, including characteristics of any sample used:

See attached continuation pages.

10. Did you have significant *technical methodological* difficulties?  
(Examples: *necessary measurement tools undeveloped; unexpected inadequate data base*)  
If yes, describe, and explain how you dealt with them.

- 1  Yes (21)
- 2  No

See attached continuation pages.

11. Did you have significant *practical operational* difficulties?  
(Examples: *trouble with equipment; loss of sample or data; difficulties with cooperating units*)  
If yes, describe, and explain how you dealt with them.

- 1  Yes
- 2  No (22)

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RESULTS  
(Continued)13. Did you have *other findings* not directly related to the specific aims ("*serendipitous findings*")?*If yes, describe:*

- 1
- 
- Yes (23)
- 
- 2
- 
- No

14. How do the *overall results* of your project fit into these descriptions?  
(*If you had multiple expectations or hypotheses, base your response on the predominant trend of the results.*)

- 
- Confirming your hypotheses or expectations (24)
- 
- 
- Disproving your hypotheses or expectations (25)
- 
- 
- Inconclusive (26)

15. Did your research result in significant *methodological developments*?*If yes, describe:*

- 1
- 
- Yes (27)
- 
- 2
- 
- No

This project resulted in three significant methodological developments. First, the Veronen-Kilpatrick Modified Fear Survey was developed as a measure of rape-related fear. This inventory of potentially disturbing items and situations has proven quite useful in rape victim research and is being used by several other investigators. Second, the procedure we used to identify and recruit a comparison group of normal, nonvictimized women was based on a similar procedure developed by Weissman and Paykel (1974). However, our procedure represented a major advance in rape victim research with respect to obtaining a comparison group of nonvictimized women. Third, the Stress Inoculation Training treatment package was an advance in the treatment of rape-induced fear and anxiety.

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<p>IMPLICATIONS</p> <p>(Continued)</p>	<p>20. Are you aware of <i>other researchers</i> using your techniques, or planning to replicate your study, or of some individual or organization continuing your work? <i>If yes, describe, and check the type of impact which best characterizes the impact of your research at this time.</i></p> <p style="text-align: right;">1 <input checked="" type="checkbox"/> Yes (36)</p> <p style="text-align: right;">2 <input type="checkbox"/> No</p> <p style="text-align: right;"><input checked="" type="checkbox"/> Specific utilization (38)</p> <p style="text-align: right;"><input checked="" type="checkbox"/> General field impact (38)</p> <p style="text-align: center;">See attached continuation pages.</p>
<p>DISSEMINATION:</p>	<p>21. As an appendix, list <i>all publications (and articles accepted for publication)</i> resulting from this project. Send any publications which have not already been submitted as <i>appendices</i>, with grant number indicated on each. <i>(See instructions, page 1, regarding submission of books)</i></p> <p>22. Do you have any plans for future publications, papers, and/or demonstrations dealing with the results of this project? If so, describe briefly. Send in any future publications based on this project as per instructions on page one.</p> <p style="text-align: right;">1 <input checked="" type="checkbox"/> Yes (37)</p> <p style="text-align: right;">2 <input type="checkbox"/> No</p> <p style="text-align: center;">We plan to write up findings for publication in professional journals.</p> <p style="text-align: center;">(See Appendix C for listing of scientific presentations already made on the research project.)</p>
<p>APPENDICES:</p>	<p><i>See instructions, page 1, paragraph 3.</i></p> <p>Appendix A: Description of Stress Inoculation Training (SIT) Procedure for Rape Victims</p> <p>Appendix B: Item 21 of Final Report, Publications</p> <p>Appendix C: Presentations</p>

6. Specific Aims

a. Introduction and Hypotheses

The Sexual Assault Research Project developed out of a desire to empirically investigate the psychological aftermath of rape for victims and to develop and evaluate the efficacy of treatment procedures for rape-induced problems. Based on clinical observations gained working with recent rape victims at People Against Rape, the Charleston, South Carolina-based rape crisis center, the Principal Investigators learned that many rape victims describe their rape experience as a life-threatening experience during which they are terrified and experience overwhelming levels of fear and anxiety. In an attempt to better understand and predict the types of problems victims were most likely to develop after a rape, we developed a social learning theory model emphasizing the role of classical conditioning in rape victims' acquisition of fear and anxiety after a rape experience.

This model is described in detail elsewhere (Kilpatrick, Veronen, & Resick, 1982; Veronen & Kilpatrick, 1983), but its major elements may be summarized as follows:

First, the essence of a rape experience for victims is being powerless, helpless, vulnerable, and fearful of receiving serious physical harm or even being killed.

Second, when subjected to such a dangerous and painful experience, it is reasonable to assume that the rape victim would respond by experiencing high levels of fear and anxiety [an assumption that received strong support from victims' ratings of physiological and cognitive symptoms of anxiety during the rape (Veronen, Kilpatrick, & Resick, 1979)].

Third, a rape experience, therefore, can be conceptualized as a classical conditioning situation in which the confinement, helplessness, pain, and/or threat of physical harm or death are unconditioned stimuli that evoke unconditioned responses of terror and extreme anxiety. Stimuli associated with these rape-induced unconditioned stimuli acquire the capacity to evoke fear and anxiety as well. Thus, conditioned stimuli such as persons, situations, or events present at the time of the rape acquire the capacity to produce conditioned responses of fear and anxiety through their association with rape-induced terror. Some stimuli that are present in all rape situations, such as a man and cues associated with sexual intercourse, should be conditioned stimuli for fear and anxiety for practically all victims. Other stimuli are more idiosyncratic to each specific rape case, and these stimuli should be conditioned stimuli only in those cases in which they are involved. The proposed classical conditioning model predicts that a victim's observed fears are related to the particular circumstances of her rape situation.

Fourth, classical conditioning literature also suggests that fear and anxiety responses can generalize to other stimuli similar to conditioned stimuli present during the rape. Thus, the anxiety response elicited by the stimulus of the rapist might generalize to other men with similar physical characteristics.

Fifth, it appears likely that cognitive events (i.e., thoughts or images) can become conditioned stimuli and, as such, are capable of evoking



anxiety. Thus, thoughts (cognitions) associated with the rape experience become conditioned stimuli (cues) for fear and anxiety. An excellent example of this phenomenon is the rape victim who becomes anxious when asked to describe her rape experience to a friend, law enforcement officials, a crisis counselor, a therapist, or a researcher. In such a case, there are few, if any, physical stimuli to remind the victim of the rape. Rather, it is the cognitive stimuli (cues) that evoke anxiety through their association with the rape experience. Regardless of whether rape cues are physical or cognitive, their presence will provoke anxiety in the victim. When such a cue produces a conditioned anxiety response, the victim is once more in a state of high arousal and subjective distress. According to the principles of classical conditioning, any stimuli or cues present during this state can become conditioned stimuli for conditioned emotional responses via their association with the original rape cues or conditioned stimuli.

Sixth, having described the development of rape-related conditioned stimuli or cues that elicit fear and anxiety, it is important to consider the likely effects of encountering these cues. Anxiety can be experienced in the cognitive "channel," the autonomic channel, or the overt behavioral channel (Lang, 1969). However, perhaps the most common response to rape-related conditioned stimuli is the development of avoidance behavior. Therefore, rape victims could be expected to avoid all stimuli or situations that remind them of the rape. Because making an avoidance response is negatively reinforced by the anxiety reduction following the avoidance behavior, avoidance behavior frequently becomes quite resistant to extinction. Moreover, the number of cues precipitating avoidance behavior can be so numerous that the victim's behavior becomes quite restricted. Given that it is generally agreed that nonreinforced exposure to the feared object, or extinction, is the key element in resolution of a phobia (e.g., Bandura, 1969, O'Leary & Wilson, 1975), avoidance behavior must be changed if fear responses are to be reduced.

Using this theoretical model as a guide, several predictions can be made about the aftermath of rape. The first is that rape victims should exhibit greater amounts of fear and anxiety than nonvictims. The second is that analysis of the situations most feared by victims should reveal the presence of rape-related stimuli or cues. The third is that, because of victims' tendency to make avoidance responses in the presence of rape-related cues, extinction of anxiety responses should not occur and fear and anxiety should tend to be relatively long-term problems for victims.

Since the primary focus of this project was assessment and treatment of rape-induced fear and anxiety, the bulk of our theoretical predictions dealt with this topic. However, there is also reason to hypothesize that victims might develop other problems such as depression and sexual dysfunction following a rape (See Kilpatrick, Veronen, & Resick, 1982, for explanation of how such problems might develop). Moreover, given the traumatic nature of rape, it was reasonable to expect that rape might affect the victims' mood state, symptomatology, and/or social role performance as well.

Finally, although the American Psychiatric Association DSM-III diagnostic category of Post-Traumatic Stress Disorder (PTSD) was developed after the onset of the Sexual Assault Research Project, it is clear that rape is the type of stressor that would evoke significant distress in almost everyone. Thus,

it was reasonable to hypothesize that rape victims might experience some of the key features of PTSD, including: 1) reexperiencing of trauma, 2) numbing of responsiveness to or reduced involvement with the external world, and 3) experiencing one or more symptoms, including hyperalertness, sleep disturbance, guilt about survival, avoidance of activities that arouse recollection of the traumatic event, or intensification of symptoms by exposure to events that symbolize or resemble the traumatic event.

If victims were found to experience such rape-induced problems, it was reasonable to hypothesize that some form of treatment intervention might help victims cope with their rape induced-problems.

b. Specific Aims

Our program of research originally had two major objectives: 1) to systematically investigate rape-induced fear and anxiety, and 2) to compare the efficacy of three treatment procedures for rape-induced fear and anxiety. On the basis of experience gathered prior to submission of a competing renewal in 1979, the original objectives were modified and expanded to include the following five objectives: 1) to systematically study rape-induced fear as well as other measures of psychological functioning subsequent to a sexual assault experience, 2) to evaluate the efficacy of a cognitive-behavioral treatment procedure for persistent rape-related fears, 3) to investigate the reactivity of and possible therapeutic effect of assessment procedures, 4) to evaluate the efficacy of a brief behavioral intervention procedure to be used with recent rape victims, and 5) to examine variables correlated with or influencing appropriateness for and willingness to participate in treatment.

9. Methodology

This project included three major studies each of which will be described separately. Although not a major study per se, an examination was also done of factors that appeared to predict psychological distress at 3 months posttrape. This investigation and its results will also be described.

a. Study 1 : A Longitudinal Assessment of the Psychological Impact of Rape

1) Rationale and Overview of Study Design: When this project was begun (1977), existing studies of victims' psychological reactions to rape suffered from serious methodological limitations that included: a) failure to include an appropriate comparison group of nonraped women, b) failure to use standardized, reliable instruments for measuring responses to rape, c) inadequate selection or description of the sample of victims, and d) inadequate description of crucially important aspects of study design. Therefore, the major objective of this study was to address these methodological limitations by designing a study that would assess longitudinally the effects of a rape experience upon several objective measures of fear and anxiety, other mood states, psychological distress and symptomatology, and self-esteem. Additionally, a comparison group of normal, nonvictimized women was identified and assessed at the same intervals as the victim group, and the scores of the two groups were compared. Assessments were performed at 6-21 days, 1 month, 3 months, 6 months, 1 year, 18 months, 2 years, 3 years, and 4 years posttrape. Background information was gathered about participants' biographic/demographic characteristics, previous history, and the occurrence of potentially stressful life events in the year prior to the rape.

2) Research Participants: Participants in this study were 204 recent rape victims, age 16 or older, and 173 members of a nonvictim comparison group matched for age, racial status, and residential neighborhood. Victims had sought counseling or advocacy services from People Against Rape (PAR), and the majority of PAR's clients were referred by a hospital-based emergency room to which all rape victims are taken under provisions of a three-county protocol for the medical/legal treatment of rape victims. Of victims contacted by the project staff, 62.1% participated in the project. Nonvictims were recruited in the following manner. After locating a victim's residence at the time of the rape, a letter requesting volunteers for a research project evaluating the effects of stressful life events was sent to women living in that neighborhood. From respondents to that letter, a woman was selected whose racial status and age (within 5 years) matched that of the victim. Selecting a "normal" woman from the same neighborhood as the victim is also likely to provide some control for other social class, environment, and cultural variables (Kilpatrick, 1981).

3) Characteristics of Rape Incidents: The following information about the characteristics of the rape incidents was obtained from reports made by the PAR volunteer counselor/advocates.

Physical force was reported in 90.9% of the 198 cases for which this information was recorded. Weapons, generally knives or guns, were used in 36.4% of the 195 cases in which this variable was recorded. Victims sustained physical injury in 53.0% of 198 cases, although most injuries were not severe. The location of the rape was recorded in 201 of the cases, and the victim's home

(41.8%) was the most frequently reported site of the rape. Other sites reported were outside (22.4%), in a house or building other than the victim's home (19.9%), or in an automobile (15.9%). With respect to the type of sexual activity involved in the assault, 92.0% of the 203 cases for which information was obtained involved completed vaginal, oral, and/or anal intercourse, while 8% involved attempted rape.

Information about the victim's relationship to the assailant(s) was reported in all 204 cases. Victims stated that their assailant was a total stranger in 52.0% of the cases and known by sight only in 5.4% of the cases. Victims described assailants as acquaintances in 27.9% of the cases, as friends or dates in 8.8%, as relatives in 2.5%, and as mixed in 3.4% of the cases. In 84.3% of the 204 cases, there was a single assailant. Of the 201 cases where the race of the assailant was recorded, 33.8% involved Caucasian assailants, 60.2% black assailants, 1.5% assailants of other racial groups, and 1.5% involved integrated groups of assailants. In 3.0% of the cases, victims were unable to identify the race of their assailants.

Of the 201 cases in which information was recorded, 93.0% of victims reported the rape to police, and 7.0% did not report.

4) Biographic/Demographic Characteristics of Victims and Nonvictim

Samples: The mean age of victims (26.1 years) did not differ significantly from that of nonvictims (27.9 years). Nor were there significant differences in the racial breakdown of the two samples as is indicated by inspection of Table 1, which depicts the biographic/demographic characteristics of the two groups. The occupations of victims and nonvictims did not differ. However, there were significant differences between victims and nonvictims with respect to educational status, with victims having completed somewhat fewer years in school than nonvictims. As Table 1 indicates, there were significant differences between samples in marital status, with the modal status of victims being never married (41.4%) and that for nonvictims being married (42.7%). Even though victims and nonvictims lived in the same neighborhoods, there were significant differences in the types of residence each lived in. Victims were more likely than nonvictims to live in apartments (39.1% vs. 23.4%) or trailers (14.4% vs. 7.0%) and less likely to live in houses (35.6% vs. 63.7%). Significantly fewer victims than nonvictims were legal residents of the State of South Carolina (85.8% vs. 98.3%), and the length of time residing in South Carolina was significantly less for victims than for nonvictims. Although most members of both samples were Protestant, somewhat fewer victims than nonvictims gave this as their religious preference (61.6% vs. 70.2%). More victims than nonvictims listed their preference as Catholic (15.3% vs. 9.9%) or no preference (15.3% vs. 7.0%). Victims also reported attending church somewhat less often than nonvictims.

5) Assessment Battery Instruments: Since a major focus of this report is to provide normative data for victims and nonvictims at each posttrauma assessment period, we will describe major assessment instruments in some detail. The core assessment instruments included objective, standardized measures of anxiety, fear, other mood states, psychological distress and symptomatology, self-esteem, and important elements of Post-traumatic Stress Disorder. The following instruments were included in the core battery:

a) The Derogatis Symptom Checklist (SCL-90-R; Derogatis, 1977), a 90-item symptom checklist that generates three overall scores and nine symptom dimensions: somatization, depression, anxiety, hostility, phobic anxiety, paranoid ideation, obsessive-compulsive, interpersonal sensitivity, and psychotocism. The comparison norms selected for presentation were nonpatient norms derived from a stratified random sample of 480 women. High scores on these scales reflect greater symptomatology.

b) The Impact of Event Scale (IES; Horowitz, Wilner, & Alvarez, 1979), a 15-item scale developed to measure two key elements of Post-traumatic Stress Disorder: 1) Event-related Intrusion (intrusively experienced ideas, images, feelings, or bad dreams) and 2) Event-related Avoidance (consciously recognized avoidance of certain ideas, feelings, or situations). The IES was administered to victims only and was added to the assessment battery in 1980.

c) The Veronen-Kilpatrick Modified Fear Survey (MFS; Veronen & Kilpatrick, 1980), a 120-item inventory of potentially fear-producing items and situations. Each item is rated on a scale of 1 (not at all disturbing) to 5 (very much disturbing). In addition to an overall score, scores are obtained on the following subscales: animal fears, classical fears, social-interpersonal fears, tissue damage fears, miscellaneous fears, failure/loss of self-esteem fears, and rape fears.

d) Profile of Mood States Scale (POMS; McNair, Lorr, & Droppelman, 1971), a 65-item measure of six transitory mood states: tension-anxiety, depression-dejection, anger-hostility, vigor-activity, fatigue-inertia, and confusion-bewilderment. On all but vigor-activity, high scores reflect greater mood disturbance.

e) The State-Trait Anxiety Inventory (STAI; Spielberger, Gorsuch, & Lushene, 1970), a 40-item scale that measures state anxiety (an individual's state of anxiety at a given moment in time) and trait anxiety (a relatively stable personality disposition of anxiety proneness). High scores reflect greater anxiety than low scores.

f) The Self-Report Inventory (SRI, Bown, 1961), a 48-item measure of self-esteem. Items are rated on a 5-point scale as to how much that item is "like me" or "unlike me." The SRI includes items that relate to self-esteem in a number of settings that yield the following subscale scores: 1) self, 2) others, 3) children, 4) authorities, 5) work, 6) parents, 7) hope, and 8) reality. High scores on the SRI reflect greater self-esteem.

In addition to the aforementioned instruments that were administered several times, the following background information was collected at the initial assessment only:

g) Biographic/Demographic Data Form. Information is collected about the respondent's age, race, occupational status, educational status, current marital status, current living arrangements, religious preference, and number of children. Victims are asked for additional information about marital status, living arrangements, length of time in their city and neighborhood at the time of the rape, and where (city and state) they were raped.

h) The Previous History Inventory, a structured interview designed to measure the respondent's prior functioning in several areas. The inventory contains five sections: a) job history, which measures history of employment-related problems, b) legal history, which measures history of problems with the criminal justice system, c) drug or alcohol abuse history, d) assault history, which measures history of robbery, physical abuse, sexual molestation, attempted rape or rape, and e) psychological problems and treatment history.

i) The Life Events Inventory, a modification of the Holmes and Rahe (1967) social readjustment rating scale. Victims were presented with a list of life events and changes and requested to indicate whether each event had occurred in the one year period immediately prior to the rape. In some cases, respondents also provided information about the reasons for and frequency of changes.

6) Procedure: The basic design of this study called for victims and nonvictims to be assessed at each of the following postrape periods: a) 6-21 days, b) 1 month, c) 3 months, d) 6 months, e) 1 year, f) 18 months, g) 2 years, h) 3 years, and i) 4 years postrape. Assessment instruments were administered by one of four female research assistants with extensive experience working with rape victims. Victims and nonvictims were individually assessed.

There are three other aspects of the procedure used in this study that require comment. First, because our major goal was to assess as many rape victims as possible, victims were recruited into the study during the later months of the study even though there would be insufficient time for them to be assessed at the later postrape periods. Thus, there were many more victims assessed at the earlier postrape periods than at the later postrape periods.

Second, the next two major sections of this report (Sections 9.b. and 9.d.) describe treatment efficacy studies, each of which affected the number of participants in this assessment study. As will be described in Section 9.b., 50 recent rape victims participated in a study investigating the efficacy of the Brief Behavioral Intervention Procedure, of whom 21 actually received 4-6 hours of treatment. Other victims participated in repeated (n = 14) and delayed (n = 15) assessment conditions. Examination of 3-month postrape assessment measures revealed no significant effects of either treatment or repeated vs. delayed assessment. Thus, data from these 50 victims and 42 nonvictims were included in the longitudinal assessment study since the "treatment" they received produced no measurable effect.

Third, as will be described in Section 9.d., at 3 months post-rape, all victims in the longitudinal assessment study were offered an opportunity to be evaluated for eligibility in the Stress Inoculation Training treatment study. Since participants in that study received 20 hours of treatment and treatment was efficacious, participants in that study who received at least one treatment session were excluded from further participation in the longitudinal assessment study.

7) Data Analysis: Three separate sets of data analyses were performed. The first set focused on biographic/demographic and other background characteristics of the victims and nonvictims and consisted of a series of chi square analyses on each variable in the three background information instruments.

The second set of analyses consisted of a series of t tests conducted on the core assessment battery scores of the victim and nonvictim groups at each of the nine assessment periods. Note: The Impact of Event Scale scores were obtained only from victims so were not analyzed using this design.

The third set of analyses was conducted on the data from 21 victims and 21 matched nonvictim comparison subjects who had completed assessments at all postrape periods through the 2-year postrape assessment. Each dependent measure was analyzed in a separate 2(Victim Status) x 6(Assessment Period) analysis of variance. Note: As will be described subsequently, there was no difference between the 6-21-day and 1-month postrape assessment results, so either the initial or 1-month assessment was used along with the 3-month, 6-month, 1-year, 18-month, and 2-year assessments.

b. Study 2: Assessment of the Therapeutic Effect of Assessment and The Brief Behavioral Intervention Procedure

1) Rationale and Overview of Study Design: The longitudinal assessment study described in the previous section provided considerable evidence that rape victims improve substantially from the 6-21-day assessment to the 3-month postrape assessment. However, the study also produced evidence that, although some improvement occurs by 3 months post rape, most victims continue to experience significant rape-related problems for months and years after their assault. This suggested that many victims could benefit from some type of early therapeutic intervention. Unfortunately, there is no evidence in the literature that intensive, sustained treatment is feasible for the majority of recent rape victims. For example, Frank (1980) reported that less than 25% of recent victims (1 month postrape or less) were able to complete 14-hour treatment programs developed as part of a large NIMH-funded clinical research project.

Elsewhere (Kilpatrick, Veronen, & Resick, 1982), we described several factors that led us to believe that any treatment procedure used with recent victims must be brief to be feasible. Reasons included: a) victims' high levels of generalized distress that make it difficult for them to focus upon treatment and b) victim's tendency to avoid treatment and/or therapists because they have become cues for rape-induced anxiety via second-order conditioning (i.e., when victims talk about the rape and their rape-induced problems with therapists, therapists become conditioned stimuli for rape-induced fear and anxiety, and victims may avoid treatment because it reminds them of the rape and makes them anxious).

Additionally, there was both objective and subjective evidence that many victims and nonvictims viewed participation in the assessment study as therapeutic. Objective data included a low dropout rate (4.3%) for victims through 6 months postrape and the finding that both victims and nonvictims rated their anxiety as lower when they were being assessed than their general level of anxiety (Kilpatrick, Veronen, & Resick, 1979b). Subjective data included many anecdotal comments made by victims that participation was a positive and meaningful experience. This suggested that recent victims might be able to tolerate treatment that involves brief, infrequent contact. Moreover, it also seemed prudent to specifically investigate the extent to which the assessment procedures were therapeutic.

The design of this study called for random assignment of recent rape victims and a comparison nonvictim group to one of three conditions: a) Brief Behavioral Intervention Procedure, b) Repeated Assessment, or c) Delayed Assessment. All participants were assessed at 6-21 days posttrauma and at 3 months posttrauma. Participants in the Repeated Assessment condition were also assessed at 1 month, 2 months, and 3 months posttrauma. Those in the Delayed Assessment and Brief Behavioral Intervention Procedure Conditions were assessed at 6-21 days and 3 months posttrauma only. Participants in the Brief Behavioral Intervention Procedure condition received 4-6 hours of treatment within the first 28 days posttrauma.

2) Research Participants: Participants were 50 recent rape victims, age 16 or older, and 42 members of a nonvictim comparison group matched for age, race, and neighborhood of residence. Recruitment procedures for victims and nonvictims were identical to those described in Section (9.a.2). The participants in this study and others in the aforementioned assessment study were compared with respect to the characteristics of rape incidents experienced by victims and the biographic/demographic characteristics of victims and nonvictims. No significant differences were found, so the data from the 92 participants in this study were combined with the data from the other 285 participants in Study 1 and are presented in Sections 9.a.3) and 9.a.4).

3) Overview of Study Design: After an initial 6-21-day posttrauma assessment, victims were assigned to one of three treatment conditions: a) Brief Behavioral Intervention Procedure (BBIP; n = 21), b) Repeated Assessment (RA; n = 14), or Delayed Assessment (DA; n = 14). With the exception of 7 victims who were purposefully assigned to the BBIP condition during the latter stages of the study to increase the size of that cell, all victims were assigned to conditions randomly. Analyses revealed no differences between the randomly and purposefully assigned BBIP victims. Women in the nonvictim comparison group were assigned to conditions comparable to their victim counterparts: a) Control Brief Behavioral Intervention Procedure (C-BBIP; n = 14), b) Repeated Assessment for Controls (RAC; n = 12), or c) Delayed Assessment for Controls (DAC, n = 16) and were assessed and/or received treatment identical to that received by victims in the corresponding treatment conditions.

In addition to the initial 6-21-day posttrauma assessment conducted on all groups, participants in the Repeated Assessment conditions were assessed at 1 month, 2 months, and 3 months posttrauma. Participants in the Delayed Assessment and BBIP conditions were assessed at 6-21 days posttrauma and 3 months posttrauma but not at 1 and 2 months posttrauma. Participants in the BBIP conditions received 4-6 hours of treatment following the initial assessment that had to be completed within 28 days posttrauma.

Data analysis consisted of analyses of 6-21-day posttrauma and 3-month posttrauma assessment data.

4) Description of BBIP Content: The Brief Behavioral Intervention Procedure (BBIP) was designed to include elements of feminist rape crisis counseling and behavioral techniques. The development of BBIP was based on the assumptions that: a) the victim's experience must be validated and not questioned, b) victims hold myths and beliefs about rape that make them feel responsible for the rape experience, c) victims lack information regarding the normal reactions to a life-threatening experience such as rape, and d) victims lack skills for dealing with rape-related problems.



The following four components were included in BBIP: a) an induced affect interview of rape experience or training in deep muscle relaxation, b) explanation of origin of rape-related problems of fear and anxiety, c) explanation and discussion of myths and sources of guilt surrounding a rape experience, and d) presentation of coping skills and strategies.

After completing the first nine cases of BBIP, we made a change in the first component of treatment. There was evidence that the induced affect interview was upsetting to some victims and increased, rather than reduced, their distress. Thus, the induced affect interview was replaced with training in deep muscle relaxation.

The second component of BBIP consists of presenting an explanation of the reactions of fear and anxiety from a learning or classical conditioning perspective. The reactions were explained as being expected, predictable, and understandable given that 1) rape is a life-threatening event and 2) situations, people, and events similar to the rape situation will evoke similar feelings. Additionally, the victim was given information that fear, anxiety, or other feelings can occur in stages and degrees, that she need not be overwhelmed or incapacitated by the feelings, and that her feelings may be expressed in three channels: 1) physically, through stomach upset, muscular tension, or increased vigilance and agitation; 2) behaviorally, through action or movement away from the feared object; and 3) cognitively, through unpleasant thoughts, images, or flashbacks.

During the third component of BBIP, the counselor and victim examined ways in which the victim is made to feel responsible or guilty for having been raped. This portion of the BBIP involved a discussion of ways in which women are 1) taught to feel responsible for rape, 2) portrayed as responsible in media and literature, and 3) conditioned to feel responsible by bearing the biological burden of pregnancy as a result of intercourse.

The implications of self-blame or feelings of responsibility for the victim were also examined. For example, if a woman feels responsible, she may limit or restrict her life to insure that a similar situation will not arise. To diminish the victim's feelings of guilt and responsibility, the counselor encouraged the victim to recognize some of the societal forces that may be responsible for the rape or sexual aggression, such as men's socialization to aggressively press for sex and movie representations of women enjoying forced sex.

The last component of BBIP involved teaching coping skills, strategies, and "reentry" procedures (ways to "avoid" avoidance behavior) in order to deal with feelings and behavioral changes that may have occurred since the assault. Victims were urged to become more assertive regarding their victim status by taking care of the activities related to the assault such as calling police, deciding whom they will tell about their assault, and taking more control over situations in their lives. In addition, the victim was taught the specific coping skills of deep breathing, systematic muscle relaxation, and thought stoppage. The victim was offered procedures to enable her to gradually reenter and resume activities she might have been avoiding because of fear.

The Control BBIP treatment followed a format that closely paralleled the format used in BBIP with victims. The foci for treatment were

expression of feelings, assessing personal worth from an assertiveness perspective, and taking control of one's life.

Both BBIP and Control BBIP lasted 4-6 hours. Treatment was conducted by one of four female research assistants/peer counselors with considerable prior experience working with rape victims and occurred in an individual format.

5) Assessment Measures and Data Analysis: The same assessment battery described in Section 9.a.5) was used in the present study. Rather than describing and presenting the results of analyses upon all dependent measures, we will confine our discussion to results of analyses conducted on Distress Index scores. Results of analyses of other dependent measures yielded virtually identical results. The Distress Index was developed to provide a composite measure of the degree of psychological distress an individual was experiencing at a given point in time. Briefly described, this Index is computed by obtaining six scores from three tests in our assessment battery. On each of the six measures used to compile this Index, victims have been shown to have significantly more distressed scores than nonvictims at 3 months postrape (Kilpatrick, Veronen, & Resick, 1979a).

The following instruments contributed to the Distress Index:

a) The SCL-90-R contributed three scores to the Index: Anxiety, Phobic Anxiety, and Global Severity Index. According to the SCL-90-R manual, the Anxiety score measures "...general signs such as nervousness, tension, and trembling... (and) panic attacks, feelings of terror, feelings of apprehension and dread, and some of the somatic correlates of anxiety." Phobic anxiety measures "...a persistent fear response to a specific person, place, object, or situation which is characterized as being irrational and disproportionate to the stimulus and which leads to avoidance or escape behavior." The Global Severity Index is described as "the best single indicator of the current level or depth of... numbers of symptoms and intensity of perceived distress."

b) The State-Trait Anxiety Inventory's contribution to the Index was its trait anxiety score, which measures how anxious the respondent generally is rather than how anxious she or he is at the present time.

c) The Veronen-Kilpatrick Modified Fear Survey contributed two scores to the Index. The Rape subscale score presents "... an estimate of the extent to which a woman was disturbed by an aggregate of stimuli and situations selected by a normative group of other rape victims as fear-engendering and rape-related." The overall MFS score is the sum of fearfulness ratings to all 120 MFS items.

The following procedure was used to compute Distress Index Scores:

a) Scores on each of the six measures comprising the Index [i.e., SCL-90-R Anxiety, Phobic Anxiety, and Global Severity Index; STAI Trait Anxiety; and MFS Rape and Overall scores] were converted to standard scores using the mean 6-21-day postrape scores of all rape victims who had ever participated in the project as the reference mean from which to calculate the z scores for that scale.

b) The resulting  $z$  scores on each of the six measures were summed and then divided by 6, yielding a mean  $z$  score. This latter score is the Distress Index Score.

c) Using the aforementioned procedure, Distress Index scores were calculated for each participant at 6-21 days postrape and 3 months post-rape.

Given this method of computing Distress Index scores, positive scores indicate higher levels of distress than the mean score for all victims at 6-21 days postrape, and negative scores indicate lower levels of distress than the mean for all victims at 6-21 days postrape.

Data analysis efforts focused on two areas. First, a within-BBIP victim group analysis was done in which the victims were grouped on the basis of the therapist from whom they had received treatment. Second, a 2(Victim Status) x 3(Treatment Condition) x 2(Assessment Session) analysis of variance of Distress Index scores was conducted with repeated measures on the last factor.

c. Factors Predicting Psychological Distress at Three Months Postrape

1) Rationale and Overview: Study 1 was primarily designed to measure overall differences between victims and nonvictims at several postrape intervals. Results of this study, which are presented in Section 12.a., suggest that there were significant differences between victims and nonvictims for at least 3 years postrape. However, neither all rape victims nor their experiences are alike, and it is reasonable to assume that there might also be individual differences in response to rape.

Elsewhere (Kilpatrick, Veronen, & Best, in press), we reviewed several studies that examined individual differences in response to rape and concluded that most studies are based on one or more of the following assumptions:

First, the victim brings to the rape a certain ability to cope with stress in general and with the stress of a rape situation in particular. Second, the ability of the victim to cope with stress is based on her previous life history, certain constitutional factors, and level of psychological functioning at the time of the rape. Third, the immediate psychological impact of the rape is a combined function of the potency of the rape as a stressor and the victim's ability to cope with the situation. Fourth, the victim's subsequent psychological adjustment to the rape is a function of the rape's immediate impact and the victim's continuing ability to cope with rape-induced distress. Fifth, and finally, the victim's postrape interactions with significant others, family members, friends, law enforcement agencies, hospitals, and/or treatment providers can have either a positive, negative, or mixed effects on subsequent psychological adjustment in that they can serve as additional sources of stress, enhancers of coping ability, or some combination of the two.

If these assumptions are correct, then there are two major approaches that could be used to understand individual differences in response to rape. The first approach is to measure as many variables as possible which might be expected to influence the victim's distress generated by a rape

experience. Such variables include the victim's previous history, biographic/demographic characteristics, and characteristics of the rape itself which are presumed to influence its potency as a stressor. Additionally, the victim's subsequent interactions with significant others, family, friends, and agencies can be measured in an attempt to tap other variables that might influence postrape adjustment.

A second approach toward understanding the individual differences in psychological adjustment to rape would be to measure initial distress directly rather than indirectly measuring variables which we think ought to influence distress. We could then see if initial distress levels experienced by victims soon after the rape are related to the victims' psychological adjustment at a later time.

Since most victims are improved by 3 months postrape and tend to remain at that approximate level of functioning for at least 1 year postrape (Kilpatrick, Veronen, & Resick, 1979a; Kilpatrick, Resick, & Veronen, 1981), it is important to determine what factors predict low distress, or successful coping, at that time.

In order to determine what factors best predict psychological distress experienced by victims of sexual assault at 3 months postrape, victims were rank ordered and divided into four groups according to scores on a distress index: low distress, moderately low distress, moderately high distress, and high distress. Information obtained at 6 to 21 days postrape was compared across the four distress groups to evaluate the extent to which demographic characteristics, previous history, assault characteristics, or initial distress levels were related to level of distress at 3 months postrape.

2) Research Participants: Participants were 125 female rape victims from Study 1 who had completed the 6-21-day and 3-month postrape assessments.

3) Assessment Instruments: Two groups of assessment instruments were used in the study, those which contributed to the Distress Index and those which were gathered during the 6-21-day assessment to generate predictor variables. Instruments contributing to the Distress Index were described in Section 9.b.5. The same section contains information about how the Distress Index was computed. The second group of assessment instruments was used to generate potential predictor variables and included the following instruments, all of which were described in Section 9.a.5): a) Biographic/ Demographic Data Form, b) the Previous History Inventory, c) the Life Events Inventory, d) the Profile of Mood States Scale, and e) the Self-Report Inventory.

4) Procedure: After 3-months postrape data were collected, the Distress Index was computed for each victim in the following manner. First, scores on each of the six measures comprising the Index (i.e., SCL-90-R Anxiety, Phobic Anxiety and Global Severity Index; STAI Trait Anxiety; and MFS Rape and Overall scores) were converted to standard scores. Second, each victim's standard scores on each of the six measures were summed to yield the total Distress Index for each victim. Third, the Distress Indices for all 125 victims were rank-ordered and divided into quartiles to form the four victim groups: a) Low Distress (n = 31), b) Moderately Low Distress (n = 32), c) Moderately High Distress (n = 32), and d) High Distress (n = 30).

Three separate data analyses were used to evaluate the extent to which 6-21-day postrape data were related to distress at 3 months postrape. First, the biographic/demographic and previous history data of the four Distress groups were compared. Second, the extent to which members of the four groups had experienced different life changes in the year prior to the rape was investigated. Third, the four victim groups' mood state and self-esteem ratings were compared.

d. Study 3: Stress Inoculation Training: Evaluation of Efficacy Study

1) Rationale and Overview of Study Design: Given the fact that many rape victims have persistent, debilitating problems associated with rape-induced fear and anxiety, an important question was whether treatment procedures could be developed to ameliorate fear and anxiety problems of long-term victims (3 months postrape or greater). Three different treatment procedures were developed and were to be evaluated. Because of human subjects considerations (i.e., a desire to give victims as much control as possible and concern over the ethics of random assignment voiced by the Initial Review Group), the original study design did not utilize random assignment to treatment conditions. Rather, victims were given a complete description of each treatment and asked to select which they preferred. As will be described subsequently, one treatment, Stress Inoculation Training (SIT), was by far the most popular with victims. Additionally, a combination of factors resulted in a relatively high attrition rate for treatment candidates during pretreatment evaluation, during treatment itself; and during posttreatment follow-up. Therefore, the focus of this study, and the study design, shifted. The new objectives of this study were: a) to evaluate the efficacy of SIT and b) to evaluate factors associated with motivation for treatment and treatment dropout.

The design for the modified study involved assigning all candidates judged eligible for treatment to SIT. Both individualized target behavior assessment and psychometric test battery were administered prior to, after 14 hours of treatment, at the conclusion of treatment, and at 3 months posttreatment. In addition to evaluation of treatment efficacy obtained by comparing data over each of these four assessment sessions, the characteristics of treatment candidates, treatment eligibles, treatment dropouts, and treatment completers were examined and compared.

2) Research Participants: All victims who participated in our longitudinal assessment study were offered an opportunity to discuss treatment after the 3-month assessment and after each subsequent assessment. If a victim wished to discuss treatment, she was scheduled for a Determination of Treatment Eligibility interview (DOT) with one of the co-principal investigators. Other victims who had been raped more than 3 months ago but had not participated in the assessment study and desired to discuss their need for treatment were given a pretreatment assessment battery and scheduled for a DOT.

As will be described subsequently, no significant biographic/demographic differences were found between victims eligible for treatment, those who entered treatment and then dropped out, and those who completed treatment. Therefore, we will present information about the characteristics of the SIT completers since they were representative of all participants in this study.

The mean age of SIT completers was 32.1 years (SD = 16.1), with ages ranging from 17 to 75 years. Their racial status was 67% Caucasian and 33% black. Occupational status of victims included student (20%), housewife (20%), nurse (7%), no occupation (13%), and other occupations (40%). With respect to educational status, 27% had completed elementary or some high school, 20% were high school graduates, 33% had completed some college, and 20% were college graduates. The mean length of time postrape at the onset of treatment was 2.5 years (SD = 23 months), with a range of 3 months to 8 years.

Criteria for treatment eligibility were: 1) high levels of rape-related fear and anxiety, 2) avoidance behavior or a report that engaging in specific activities provoked substantial fear and anxiety, 3) absence of other mental health problems sufficiently severe to interfere with ability to participate in treatment, 4) time postrape of 3 months or greater, and 5) a willingness to participate.

3) Assessment Procedures:

a) The Psychometric Battery: This included the following measures that are described in Section 9:a.5): 1) the SCL-90-R, 2) The Impact of Event Scale, 3) The POMS, 4) The STAI, 5) The SRI, and 6) The Veronen-Kilpatrick MFS.

b) Individualized Target Behavior Assessment: As a part of treatment, each victim identified three target fears that were to be the focus for treatment. Based on these target fears, two individualized assessment procedures were developed: 1) Emotion Thermometer Ratings and 2) Psychophysiological Assessment. The latter procedures will be described in Section 10. Emotion Thermometer ratings were obtained 3 times per day over consecutive 3 day periods. The degree of fear experienced for each of the three target fears was rated by each victim. Additionally, victims rated their global fear and happiness levels during each rating period. Both types of individualized target behavior assessments were collected 4 times: a) pretreatment, b) after 14 hours of treatment, c) posttreatment, and d) 3 months posttreatment.

4) Procedure: If a victim met the criteria for treatment eligibility, she was given a written description of three treatment procedures from which she was asked to select one. Because of the small number of victims selecting peer counseling and systematic desensitization, all victims were offered SIT in the latter stages of this study.

With the assistance of one of the co-principal investigators, each victim identified three specific target behaviors that were to be the focus of change in treatment. After being instructed in the use of Emotion Thermometer Ratings, victims completed these ratings for three consecutive days prior to the onset of treatment. Then the pretreatment psychophysiological assessment was conducted. The treatment was 20 hours in length and conducted by People Against Rape volunteer counselors who became members of the project staff. All the counselors were women who had been trained by the co-principal investigators to conduct the treatment and were carefully supervised in its use. Treatment was conducted in 2-hour sessions. Every effort was made to conduct two 2-hour sessions per week although, occasionally, victims participated in only one session per week. During sessions 1-14, the first target phobia was treated. During sessions 15-20, the second target phobia was treated.

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Following the 20th session, the psychophysiological assessment, the Emotion Thermometers, and the battery of tests were administered. Victims were reimbursed approximately \$7 an hour for participation in the treatment.

A description of the therapeutic rationale and content of SIT is provided in Appendix A.

10. Significant Technical/Methodological Difficulties

a. Overview

We experienced three major difficulties in this project: 1) recruitment of a representative victim sample, 2) attrition of victims throughout the longitudinal assessment study, and 3) problems with the psychophysiological assessment procedures.

b. Recruitment of a Representative Victim Sample

A problem endemic to all victim reaction studies of this type is that it is difficult to locate and recruit a representative sample of rape victims. The present study recruited its victims from a rape crisis center closely associated with a hospital-based treatment center, and the majority of victims (93%) reported to police. Since the majority of victims neither report to police nor seek treatment from rape crisis centers or hospitals (Kilpatrick, Best, & Veronen, 1983), it cannot be assumed that our sample of victims was representative of the population of all rape victims. Relatively low participation rates in this type of victim reaction study is also a major problem. Our participation rate of 62.1% is higher than that obtained in any other major NIMH-funded clinical research project studying rape victims of which we are aware. However, a 62.1% participation rate means that 37.9% of victims informed about the study elected not to participate. Whether there were systematic differences between participants and nonparticipants is a question that remains unanswered.

c. Attrition

A second major methodological problem was attrition of the sample, both in the longitudinal assessment study and in the SIT study. This had the effect of reducing the sample size at later points in the assessment sequence, which precluded our doing some types of data analysis we had planned. For example, we planned to see if victim distress at the 1-year, 2-year, 3-year, and 4-year posttrauma assessments could be predicted on the basis of information collected at the initial assessment, but the relatively low  $n$  made it impossible to conduct these analyses. Similarly, we planned to divide SIT completers into those who did well and less well and look for factors that predicted treatment outcome. Low  $n$  prevented us from conducting this analysis also. In general, relatively low  $n$  prevented us from conducting multivariate analyses.

Attrition problems were dealt with by attempting to see if there were systematic initial differences between those who stayed in the study and those who did not. All such analyses were negative (e.g., there were no differences in initial distress or in biographic/demographic characteristics between Study 1 dropouts and nondropouts or between Study-3 SIT completers and noncompleters). Still, the relatively high attrition that occurred in spite of aggressive efforts by the project staff to retain victims in the project was troublesome. Additionally, it points out what may be an inherent limitation of attempting to conduct longitudinal research with rape victims.

d. Problems with Psychophysiological Assessment Procedures



1) Introduction: Rape victims often describe experiencing periods of intense, almost panic attack-like, anxiety that includes physiological symptoms of anxiety. Therefore, psychophysiological assessment of such symptoms was included in the evaluation procedures for the Stress Inoculation Training Evaluation study. There was considerable reason to believe that psychophysiological assessment would prove useful in measuring the autonomic component of rape-induced fear and anxiety responses. The idea of using psychophysiological procedures to assess rape-related fear and anxiety has a great deal of face validity, and there have been two published reports describing their use in clinical treatment (Blanchard & Abel, 1976; Rychtarik, Silverman, Van Landingham, & Prue, in press). However, the use of psychophysiological assessment was largely unsuccessful in this project. In hopes that our experience may help other investigators avoid some of the pitfalls we encountered, we will describe our major negative finding, the methodology used, and offer some conclusions and suggestions for others interested in pursuing this type of assessment with rape victims.

2) Description of Apparatus and Psychophysiological Assessment

Procedures: A more complete description of the Psychophysiological Laboratory, apparatus, electrode technique, and data reduction procedures is provided elsewhere (Kilpatrick, Sutker, Best, & Allain, 1980). Psychophysiological parameters were measured in an Industrial Acoustics Corporation (IAC) sound-attenuated chamber at the Psychophysiology Laboratory. The chamber contained a comfortable chair and a television monitor, and psychophysiological responses were recorded on a Grass Model 7C polygraph. Exosomatic electrodermal activity was recorded on Con-Sol BSR-GSR solid state monitor which supplied a constant current of 20  $\mu$  A to the active electrode site. Current density was restricted to 10  $\mu$  A per  $\text{CM}^2$  by a bandage exposing only 2  $\text{CM}^2$  of skin surface to current. The active electrode, a curved Ag-AgCl electrode 3  $\text{CM}^2$ , was placed on the volar surface of the second phalanx of the second digit of the left hand. A curved arm band Ag-AgCl electrode 58  $\text{CM}^2$  placed on the upper portion of the left arm served as the inactive electrode in a monopolar placement as described by Shmavonian, Miller, and Cohen (1968). Heart rate was recorded on a Grass 7 P4 EKG/Tachograph preamplifier.

Prior to assessment, three individualized target scenes of 1-minute duration each were constructed. In addition to these three scenes, a pleasant scene and a neutral scene were constructed, and all five scenes were recorded on an audiostimulus tape to be used in the subsequent psychophysiological assessments. The victim was given a tour of the psychophysiological lab. She was shown the dimly lit chamber, the monitoring devices for skin conductance and heart rate, and was given an explanation of the psychophysiological procedures. She was also told that the psychophysiological procedure was not a polygraph test and that the only stimuli presented would be the habituation tones and target, neutral, or pleasant scenes.

During each of the actual assessment sessions, the victim was escorted to the psychophysiological lab by the research technician. After electrodes for monitoring skin conductance and heart rate were attached in the sound-attenuated chamber, the adaptation period began. Following the 3-minute adaptation period, which allowed psychophysiological responses to stabilize, a 3-minute rest period was conducted. During this time, the resting level of skin conductance, heart rate, and nonspecific electrodermal responses were obtained.

Following this rest period, 20 habituation tones of 100 HZ and 80 db of 1-second duration were presented, with interstimulus intervals ranging from 25 to 35 seconds. A second 3-minute rest period was followed by the presentation of the 1-minute audiotaped description of a pleasant scene. One-minute rest periods followed the presentations of the audiotaped descriptions of the neutral, third target fear scene, and second target fear scene. A 3-minute rest period followed the presentation of the first target fear scene. The designation of the first, second, and third target fear was based on the victim's report of degree of discomfort and/or degree of avoidance behavior which was obtained during the interview with the Co-Principal Investigator. During the time the victim was in the chamber, she was observed by the research technician via a videomonitor. In the event the victim became unduly upset or anxious during one of the scene presentations, the technician was instructed to delay the onset of the next target scene until the victim's psychophysiological responses had returned to recordable levels; however, this never happened. At the conclusion of the psychophysiological assessment procedures, the victim was debriefed.

The psychophysiological assessment was repeated three times: 1) Pretreatment, 2) Midtreatment (after treatment of Target Behavior 1), and 3) Posttreatment.

3) Results of Psychophysiological Assessment: Electrodermal activity and heart rate were monitored within the context of a rigid experimental design that included several minutes of adaptation and baseline resting recordings prior to the presentation of habituation stimuli and target fear scenes. The psychophysiological assessment protocol was constructed after consultation with Lyle Miller, Ph.D., a nationally recognized expert in the area of psychophysiological research. The assessment procedures in this experiment were also consistent with those generally used to assess autonomic anxiety. However, examination of pretreatment psychophysiological data suggest that the procedures used were largely unsuccessful in measuring any autonomic components of anxiety in treatment participants. Both visual inspection of the psychophysiological recordings and observation of the victims' behavior suggests they were not aroused. In fact, they appeared to be quite relaxed. If this had occurred during the posttreatment assessment, this finding would be embraced with great joy, but, as it occurred during the pretreatment assessment, it evoked other, more negative emotions. In summary, no psychophysiological responses consistent with anxiety were obtained using the aforementioned assessment procedures.

4) Explanations for Negative Findings and Suggestions for Future

Researchers: There are at least three possible explanations for this finding of reduced autonomic responsiveness on the part of rape victims. First, it is possible that the victims we assessed were not autonomic responders (i.e., their anxiety was not manifested in the autonomic channel). If this was the case, they would experience and express anxiety in the self-report and/or behavioral channels but not in the autonomic channel, regardless of the manner in which a feared stimulus was presented.

A second possibility is that the target fear scenes themselves, as presented, were not salient cues for anxiety. Out of ethical considerations, the target scenes did not instruct the victim to visualize or contemplate an actual attack but rather dealt with situations such as being approached by a man

and staying alone. The goals of treatment were not to reduce anxiety surrounding fears of rape itself, since such fears are realistic. However, it is possible that victims would demonstrate autonomic anxiety in the laboratory situation if more salient stimuli were used. Human subjects protection and other ethical considerations obviously mitigate the extent to which stimuli can be made more salient.

A third possibility is that the laboratory procedures tended to generally lower the victim's arousal level and psychophysiological responsiveness. At the insistence of the Initial Review Group, which approved the project, all participants were given a tour of the laboratory, offered detailed explanations about all procedures, specifically informed they were not taking a police polygraph examination, and generally reassured. The project staff with whom they interacted were supportive and had a great deal of experience working with rape victims. The laboratory itself is a sound-attenuated chamber with a comfortable chair and dim lighting which is enclosed in another large room. Therefore, the victim may have viewed the laboratory as one of the safest, most relaxing places in her life. Since victims describe themselves as being hypervigilant in the "real world," they may have responded to the laboratory situation by "letting go" and relaxing. If this is the case, manipulating the salience of the stimuli could be expected to have little effect on anxiety in the laboratory. An additional implication is that attempts to measure autonomic anxiety in vivo might prove more successful.

In summary, on the basis of our experience, we do not believe that traditional psychophysiological assessment procedures in the laboratory are likely to be productive for the majority of rape victims. This is not to say that some rape victims will not demonstrate autonomic anxiety in the laboratory. Neither do we believe that rape victims do not experience rape-related autonomic anxiety in the real world. To the contrary, there is considerable evidence that they do. Rather, we believe that in vivo assessment of rape-related anxiety in the victim's natural environment is much more likely to be productive.

12. Results and Significance

a. Findings of Study 1: A Longitudinal Assessment of the Psychological Impact of Rape

1) Overview: One of the most important products of this project is the longitudinal normative data collected from victims and nonvictims at each of the posttrauma assessment periods. Therefore, the major focus in presentation of findings will be to describe significant differences between victims and nonvictims at each posttrauma assessment period. This presentation will include tables of means and standard deviations on major assessment instruments for victims and nonvictims at each posttrauma assessment period. Because of the large amount of data to be presented, individual significant levels and  $t$  values will not be presented in the text. Rather, mean differences between victims and nonvictims must have exceeded the  $p < .05$  level to be described as significant. Results of the biographic/demographic comparisons of victims and nonvictims have already been presented in Section 9.a.4).

2) 6 to 21-Day Assessment: Means and standard deviations of the victim and nonvictim scores on the Modified Fear Survey (MFS), Profile of Mood States Scale (POMS), Self-Report Inventory (SRI), State-Trait Anxiety Inventory (STAI), and the Symptom Checklist (SCL-90-R) at the 6-21-day assessment are presented in Table 2. This Table also contains the Impact of Event Scale (IES) scores of the victims. Victims scored significantly higher than nonvictims on seven of the eight MFS scales, with the Animal Fears scale being the only one upon which victims and nonvictims did not differ. The MFS profiles of victims and nonvictims are presented in Figure 1. On the SCL-90-R, victims scored significantly higher than nonvictims on all 12 symptom dimensions. Symptom profiles of the two groups are also presented in Figure 2. Victims exhibited significantly greater mood disturbance on all six of the POMS scales, having higher scores on the negative mood states and lower on the positive mood state of vigor. The mood state profiles of the two groups are depicted in Figure 3. Victims also scored significantly higher than nonvictims on both State Anxiety and Trait Anxiety as measured by the STAI.

The MFS, SCL-90-R, POMS, and STAI contain 28 scales measuring anxiety, fear, mood disturbance, and symptom disturbance. To review the 6-21-day assessment results to this point, victims reported themselves to be significantly more distressed than nonvictims on 27 of these 28 measures. Given this general tendency for victims to report themselves as experiencing anxiety, fear, mood disturbance, and symptom disturbance, it seems inappropriate to attempt any fine-grained analysis or interpretation of these data except to state that victims rate themselves as highly distressed on a variety of measures.

With respect to self-esteem as measured by the SRI, victims had significantly overt scores on 7 out of the 9 scales as is depicted in Figure 4. This supports the contention that rape has a negative impact on the victims' self-esteem.

Inspection of the Impact of Event scores in Table 2 indicates that victims were experiencing significant levels of rape-related intrusion and avoidance. Note: Intrusion, Avoidance, and Total Distress scores are presented in the Table as the mean score per item. The corresponding mean total score for

Intrusion was 23.8 and for Avoidance was 26.0. That is, the mean score per item for intrusion was multiplied by the number of items in that scale ( $n = 7$ ) to yield the total score, and the mean total score for avoidance was obtained in a similar fashion by multiplying the mean score per item by the number of items ( $n = 8$ ).

3) One-Month Assessment: As is depicted in Table 3, MFS results were identical to those observed during the initial assessment, with victims having significantly higher fear levels than nonvictims on all but the Animal Fears scale. Inspection of the MFS fear profiles of the two groups presented in Figure 5 confirms the fact that little had changed since the initial assessment. The same was true on the SCL-90-R, where victims continued to score significantly higher than nonvictims on all 12 symptom dimensions (See Figure 6). At the 1-month posttrauma assessment victims continued to experience significantly greater mood disturbance than nonvictims as measured by all six scales of the POMS (See Figure 7). Victims continued to have significantly higher levels of state and anxiety as measured by the STAI. Thus, victims reported themselves as more distressed than nonvictims on 27 of 28 measures.

Victims had significantly lower scores on 5 out of 9 measures of self-esteem tapped by the SRI (See Figure 8). The scores on the Work and Reality self-esteem dimensions, upon which victims and nonvictims had differed at 6-21 days, were no longer significantly different.

Victims also continued to experience significant levels of rape-related Intrusion ( $\bar{X} = 21.0$ ) and Avoidance ( $\bar{X} = 25.6$ ) at one-month posttrauma.

4) Three-Month Assessment: Inspection of the assessment battery scores of victims and nonvictims presented in Table 4 indicates that victims had significantly higher fear levels as measured by the MFS than nonvictims on all but the Animal Fears scale. Figure 9, which contains the MFS profiles of the two groups, confirms this continuation of differences in fearfulness between victims and nonvictims. Similarly, victims continued to exhibit significantly greater symptomatology on all 12 of the SCL-90-R measures (See Figure 10). Victims had significantly greater mood disturbance on all of the POMS measures except vigor (See Figure 11) and continued to have significantly higher state and trait anxiety scores as well. Thus, at this assessment victims were more distressed on 26 of the 28 measures.

It should be noted that these results (i.e., the number of significant differences between victim and nonvictim groups) are substantially different from findings from a smaller subset of victims and nonvictims reported upon in a recent publication (Kilpatrick, Veronen, & Resick, 1979a). In that evaluation of 35 victims and 24 nonvictims, only 7 of the 28 measures were significantly different. Comparisons of the victim means presented in our 1979 paper with the current means presented in Table 4 suggests that current victim means are somewhat higher. However, the primary reason for the greater number of significant differences found in the current analyses appears to be the substantially larger  $n$  used in the present study.

Turning to the self-esteem data, victims had significantly lower self-esteem than nonvictims on 7 of the 9 SRI measures. The only aspects of self-esteem that were not different were those related to children and hope (See Figure 12).

On the IES, victims' rape-related intrusion scores ( $\bar{X} = 15.2$ ) had diminished somewhat but their avoidance scores ( $\bar{X} = 21.4$ ) remained rather high.

Examination of the victim means contained in Tables 3 and 3 suggests that victims symptoms at 3 months postrape showed some improvement over their 1-month postrape levels. Thus, even though victims continued to have significantly higher scores than nonvictims on most measures, there was evidence that victims had improved somewhat by the 3-month postrape assessment. As will be discussed in detail subsequently, by 3-months postrape, the individual variability among victims with respect to symptomatology was becoming more pronounced.

5) Six-Month Assessment: As is depicted in Table 5 and Figure 13, 14, 15, and 16, victims' distress and symptomatology decreased slightly at the 6-month postrape assessment, but the victim-nonvictim comparisons yielded exactly the same number of significant differences between groups as was found at the 3-month assessment. That is, victims were significantly more disturbed on 26 of the 28 measures. Moreover, victims were significantly lower on 7 of the 9 SRI self-esteem measures. Analysis of the IES measures of intrusion ( $\bar{X} = 11.7$ ) and avoidance ( $\bar{X} = 19.4$ ) suggested that both had declined somewhat since 3 months postrape, although intrusion declined more than avoidance.

6) One-Year Assessment: Examination of the data in Table 6 and Figures 17, 18, 19, and 20 indicates that there were few changes since the 3- and 6-month assessments. As was the case at these assessments, victims were more disturbed than nonvictims on 26 of the 28 fear, anxiety, mood disturbance, and symptomatology measures. However, there was improvement on victims' SRI authority, work, hope, and total self-esteem measures such that victims and nonvictims no longer differed significantly. Thus, victims and nonvictims differed on only 3 of the self-esteem measures. The victims' scores on the intrusion ( $\bar{X} = 11.7$ ) and avoidance ( $\bar{X} = 19.4$ ) of the IES were exactly the same as at the 6-month assessment.

7) 18-Month Assessment: As can be ascertained by inspection of Table 7 and Figures 21, 22, 23, and 24, the results of the 18-month postrape assessment revealed a major change in victims' symptomatology. On the MFS scores, these were no longer any significant differences between victims and nonvictims (See Figure 21). On the SCL-90-R, only on the phobic anxiety scale were victims higher than nonvictims (See Figure 22). Comparisons of the POMS mood state scores revealed no significant differences between victims and nonvictims (See Figure 23). Similarly, there were no longer significant differences between victims and nonvictims in state or trait anxiety. Thus, only on one (phobic anxiety) out of 28 measures were victims more distressed than nonvictims.

A similar finding was noted on the SRI self-esteem scores, where there were no significant differences between victims and nonvictims (See Figure 24). Victims' intrusion ( $\bar{X} = 12.6$ ) and avoidance ( $\bar{X} = 18.1$ ) scores on the IES were similar to those observed at the 1-year postrape assessment. Therefore, we were eager to examine the 2-year assessment to see if the victims improvement was relatively permanent.

8) Two-Year Assessment: As inspection of Table 8 indicates, victims' improvement at 18 months posttrauma appeared to be at least partially transitory. Victims had significantly higher rape fears than nonvictims (See Figure 25). On the SCL-90-R, victims had significantly higher scores on the interpersonal sensitivity, anxiety, phobic anxiety, paranoid ideation, GSI, and PSDI scales (See Figure 26). There were no significant differences between victims and nonvictims on any of the POMS mood state scores or on state or trait anxiety as measured by the STAI (See Figure 27). Thus, victims were more distressed than nonvictims on 7 of the 28 measures.

The only SRI self-esteem measure upon which victims were lower than nonvictims was the parent scale (See Figure 28). The victims scores on the IES intrusion ( $\bar{X} = 11.2$ ) and avoidance ( $\bar{X} = 16.0$ ) continued to show a slight decline.

9) Three-Year Assessment: At 3 years posttrauma, there were 12 victims who completed this assessment. Given this relatively small number, we elected to compare the assessment battery scores of the 12 victims with their 12 matched comparison nonvictims rather than with all 28 nonvictims who were assessed at 3 years posttrauma. Inspection of Table 9 and Figure 29 indicates that victims had significantly higher scores than nonvictims on the Classical fear, Rape fear, and Overall MFS scales. On the SCL-90-R (See Figure 30), victims' scores were significantly higher than nonvictims' on the psychoticism scale, and there was a trend ( $p < .07$ ) for victims to have higher scores on the phobic anxiety scale. Further inspection of Table 9 reveals that no other significant differences between victims and nonvictims were found on the remaining MFS, SCL-90-R, POMS, STAI, or SRI variables. Note: Because of the low  $n$  and lack of significant differences, figures are not presented for the POMS or SRI at the 3-year assessment. With respect to the IES measures of rape-related intrusion ( $\bar{X} = 7.7$ ) and avoidance ( $\bar{X} = 16.0$ ), there was evidence that intrusion had declined considerably since the 2-year assessment. Avoidance had also declined but remained at a level almost twice that of intrusion. It should be noted that visual comparison of the assessment battery means obtained for victims at the 2-year and 3-year assessments do not appear to differ markedly, particularly on the MFS and SCL-90-R.

10) Four-Year Assessment: Given the small number of participants who completed this assessment (Victims = 7; nonvictims = 13), no statistical comparisons of the two groups were conducted. However, inspection of Table 10 and Figures 31, 32, 33, and 34 suggests the following major conclusions. First, there appears to have been little change since the 3-year assessment. Second, the gap between victims and nonvictims rape fears and classical fears appears to have narrowed somewhat, but victims still appear to have higher fear levels on these MFS scales. Third, on the SCL-90-R, the largest differences between victims and nonvictims appear to be on the anxiety and phobic anxiety scales, suggesting that these areas remain problematic for victims. Fourth, on the POMS, victims appear to be experiencing somewhat more anger and somewhat less vigor than nonvictims. Of course, this latter finding may have been a natural response to having been subjected to so many assessment sessions over so many years! On a more serious note, it remains to be determined whether this finding is an artifact or actually has some theoretical and/or clinical significance. Fifth, for some reason trait and state anxiety scores of victims appear to be elevated over those noted at the 3-year assessment. Sixth, only on the self-esteem related to parents scale of the SRI is there much apparent difference

between victims and nonvictims. Finally, there is still evidence that victims are experiencing rape-related intrusion ( $\bar{X} = 11.6$ ) and avoidance ( $\bar{X} = 16.6$ ), suggesting that even 4 years after their rape, victims are still having intrusive thoughts about their experience and/or are engaging in cognitive maneuvering to avoid such intrusive thoughts, images, and feelings.

Note: Given the small  $n$  at this assessment and considering the high level of attrition on the original sample, we think it would be foolhardy to place much emphasis upon the findings obtained at this assessment session, and we urge readers to take these findings with a large grain of salt.

11) Results of Repeated Measures Analyses of Variance: A series of 2(Victims Status) x 6(Assessment Period) repeated measures analyses of variance were conducted to determine if the two groups differed over the six assessment periods. Scores obtained from the 6-21-day or 1-month, 3-month, 6-month, 1-year, 18-month, and 2-year postrape assessments on the 28 scores from the MFS, SCL-90-R, POMS, and STAI, were analyzed. Significant main effects of the victim status variable were found on 12 of the dependent variables, and significant main effects on the assessment period variable were found on 26 of the dependent variables. Significant interaction effects between victim status and assessment period were found on 27 of the dependent variables. Note: It is such interactions that are of greatest interest because they indicate that the patterns of change differed for victims and nonvictims over time.

Post hoc comparisons of victim and nonvictim mean scores at each of the six assessment periods yielded the following pattern of results: First, on all dependent measures, there were no significant differences among nonvictims' scores at any of the six assessment periods. Second, on most measures, victims' scores were significantly more disturbed at the initial assessment than at any of the subsequent assessments. Third, there were no significant differences among the victims' scores at the 3-month, 6-month, 1-year, 18-month, and 2-year assessments.

This set of repeated measures analyses confirmed the fact that the bulk of the victims' improvement occurred somewhere between the initial 6-21-day/1-month assessment and the 3-month postrape assessment. It also indicated that after that initial improvement, little significant improvement in the victims' status was found for up to 2 years postrape.

A similar set of analyses was conducted on the SRI data. However, significant main effects of the victim status variable were noted only on the Other scale. Significant effects of the assessment period variable were found on the Self, Work, and Total scores. None of the nine interactions between victim status and assessment period were significant. Thus, the rates of change for the self-esteem variables did not differ for the two groups.

12) Comparisons of Dropouts vs. Nondropouts: Given the relatively high attrition rate for victims in this longitudinal study, it was important to investigate whether there were systematic differences between victims who completed the study vs. those who dropped out of the study. Since the  $n$  for the 3- and 4-year assessments was relatively low, we confined our investigations to victims who completed the 2-year assessment vs. those who did not. When these two groups of victims were compared, we found no significant differences in biographic/demographic characteristics or in initial symptomatology. Thus,



while there may be systematic differences between victims who remain in this type of longitudinal study and those who do not, we were unable to discover them.

13) Significance of the Longitudinal Study and Conclusions Regarding the Aftermath of Rape: Considering the vast amount of data that have been presented, it may prove useful to present some conclusions about the psychological aftermath of rape as revealed by the results of this study. Prior to this presentation of conclusions, however, it may also prove useful to review some of the significant aspects of this study.

Although the study was not without problems, it did include major advances over existing rape research investigating the psychological aftermath of rape. To the best of our knowledge, it is the only prospective study to have assessed recent rape victims longitudinally for a period longer than one year postrape. This study included a comparison group of nonvictimized women matched for age, race, and neighborhood of residence. Although the participation rate in this study was not as high as we would have liked, it was substantially higher than in several other similar clinical research projects studying rape victims. This study also used a battery of standardized, psychometrically sound assessment instruments that tap a wide range of psychological functioning. Finally, this study also obtained information about prerape functioning. Thus, the results of the study are quite important because of the methodological strengths of the study just noted.

What, then, are the major conclusions regarding the psychological aftermath of rape?

First, it is undeniable that a rape experience has an immediate, profoundly disruptive effect on the victim in almost all aspects of her psychological functioning. This effect is compellingly demonstrated by the significantly elevated scores of victims on 27 out of 28 anxiety, fear, mood and symptom disturbance measures at the 6-21-day and 1-month assessments. Rape's negative effect is also marked at this time. This initial disruptive effect of rape also includes high levels of intrusion of rape-related images, ideas, and thoughts into consciousness and the frequent use of cognitive strategies to avoid such intrusion. It is clear that most rape victims could easily be diagnosed at this point as suffering from Post-Traumatic Stress Disorder (PTSD).

Second, sometime between 1 month and 3 months postrape, victims tend to show some improvement but are still significantly more distressed than nonvictims on most measures. This tendency of victims to remain significantly more distressed than nonvictims on most measures continues until somewhere between 1 year and 18 months postrape.

Third, there is little, if any, evidence that substantial improvement occurs after 3 months postrape for most victims. Results of the repeated measures analyses indicated that victims' symptom levels remained relatively stable through the 2-year postrape assessment, and examination of the 3- and 4-year postrape data also shows little apparent change in the victims' status. These findings are consistent with what would be predicted by our social learning theory model of classical conditioning followed by avoidance behavior. Such a model does not predict spontaneous or gradual recovery but would expect anxiety and phobias to become gradually more severe as avoidance behavior continues.

Fourth, the findings from this study provide only minimal support for crisis theory or for theories that victims undergo a stage in which they deny the existence of rape-related problems. One could interpret the finding of some victim improvement at 3 months postrape as some support for crisis resolution and resumption of psychological equilibrium. However, the fact that victims' level of distress remains so great for at least 3 years postrape is not consistent with crisis theory predictions. Similarly, the fact that most victims report high levels of symptomatology at all assessments would appear to suggest that few victims are denying their problems.

Fifth, the following picture of the rape victim and her problems emerged at the last assessment where victims and nonvictims were statistically compared (3 years postrape). Most victims continued to experience clinically significant rape-induced problems that included fear, phobic anxiety, and a withdrawn, interpersonally isolated life style. Almost all victims were continuing to show evidence of two PTSD symptoms, intrusion and avoidance.

Sixth, the degree of individual variation in the extent of rape-induced problems appears to be increasing as the time postrape increases. Thus, it is important to remember that this individual variation in response occurs and to consider these individual variations in treatment. We had originally hoped to investigate factors predictive of these individual differences, but the small  $n$  precluded us from doing so.

b. Findings of Therapeutic Effect of Assessment and Brief Behavioral Intervention Procedure Study

As was described previously (Section 9.b.5), analyses on a variety of dependent measures produced virtually the same results, so only results on the Distress Index scores will be presented and discussed.

The 2(Victim Status) x 3(Treatment Condition) x 2(Assessment Session) analysis of variance of Distress Index scores yielded significant ( $p < .001$ ) main effects for victim status ( $F(1, 86) = 41.14$ ) and for assessment session ( $F(1, 86) = 12.07$ ) as well as a significant ( $p < .05$ ) interaction between victim status and assessment session ( $F(1, 86) = 4.66$ ). The main effect for treatment condition ( $F(2, 86) = 1.95$ ) and victim status x treatment condition ( $F(2, 86) = 1.09$ ), treatment condition x assessment session ( $F(2, 86) = 0.43$ ), and victim status x treatment condition x assessment session ( $F(2, 86) = 0.34$ ) interactions all failed to achieve statistical significance ( $p > .10$ ). Examination of the 6-21-day and 3-month Distress Index scores of the victim and nonvictim BBIP, RA, and DA groups presented in Figure 35 reveals that victims were significantly more distressed than nonvictims at 6-21 days and 3 months postrape and that victims' distress appeared to diminish significantly over time, while nonvictims' distress did not decrease significantly. Additionally, inspection of the Figure indicates that there was no significant difference in the rate of decline for the three victim treatment conditions.

This study was designed to provide answers to two relatively simple questions: 1) Is a formal therapeutic intervention such as BBIP effective in reducing rape-induced problems? and 2) Is formal therapeutic intervention more effective in reducing such problems than the contact with staff afforded by participation in our projects' assessment study? The results of this study provided the following answers to the questions posed.

It was clear that BBIP was efficacious in that victims who received it became significantly less distressed. Second, it was equally clear that the two victim groups that received no formal treatment intervention also experienced significant improvement in their distress. Thus, our findings do not support a contention that BBIP is more effective than infrequent, regularly scheduled contact with staff members of our project. This conclusion brings little joy to our hearts, but the silver lining in this cloud is that there was significant improvement in distress experienced by victims not formally treated.

This latter finding is encouraging, but it is important to remember three important qualifications. First, although victims' distress improved, victims were still significantly more distressed than nonvictims at 3 months postrape. Second, there was considerable variation in the amount of distress experienced by victims, both initially and at 3 months postrape. Thus, we must remember that some victims may be nearly symptom-free while others may still be extremely distressed at 3 months postrape. As we have noted elsewhere (Kilpatrick, Veronen, & Best, in press), we must be mindful of individual differences in victims' ability to cope with the stress of a sexual assault experience. Finally, we must remember that distress, while important, is hardly the entire picture of how a woman functions after a rape experience. Measures tapping more complex aspects of functioning and/or behavioral ratings might yield different findings.

The results of this study have important implications for treatment outcome studies with victims of rape:

- 1) Treatment outcome studies conducted with the first 3 months postrape must have nontreated control subjects in order to insure that symptom abatement or apparent improvement among the treated subjects is really a result of treatment and not merely the passage of time.

- 2) Formal treatment for victim problems may be inappropriate within the first month postrape unless some way can be found to reduce rape-induced anxiety.

Previously, we suggested that protracted long-term treatment such as our 20-hour Stress Inoculation Training treatment was inappropriate for the recent victim of rape because she had many other demands for time and was in too severe a crisis state to permit keeping appointments with treatment counselors. Perhaps BBIP was administered too soon subsequent to the rape to permit full concentration on the educational material. Perhaps the victim's desire to avoid all situations and stimuli associated with the assault may interfere with treatment. It must be mentioned, however, that some researchers have provided longer duration treatment (10-14 hours) to victims during the first 3 months postrape and have achieved no greater changes in victims' symptoms than we found attributable to treatment with BBIP or even attributable to simple assessment (e.g., Frank, 1980).

- 3) At the risk of introducing intentional humor into an NIMH Final Report, we offer two simple recommendations to researchers interested in obtaining dramatic treatment effects with rape victims: a) Conduct treatment within the first 3 months postrape, and b) don't use a comparison group of untreated victims.

c. Factors Predicting Psychological Distress at Three Months Postrape

1) Biographic/Demographic and Previous History Data Findings: The five sections of the Previous History Inventory contain 90 items, each of which was analyzed across the four groups via a series of chi square analyses. Only three items were found to have significant differences. All items regarding previous psychiatric history and treatment were nonsignificant. Since one would expect to obtain 4.5 significant differences out of 90 analyses using the  $p < .05$  level of significance, the three significant findings should probably be viewed as spurious and will not be reported or discussed.

2) Life Changes Data Findings: Each of the 50 items in the Life Events Inventory was compared across the four groups via a series of chi square analyses. Out of the 50 items, seven significant findings occurred, which exceeds the 2.5 which should occur by chance at the .05 level of significance. These items are depicted in Table 11. However, given the relatively low percentage of significant findings, these life events' differences among groups should be viewed with great caution. Three of the seven significant findings are particularly interesting. First, a surprisingly large number of victims in all groups reported having been physically assaulted in the year prior to the rape. Second, a relatively large percentage of victims had lost a close family member other than a spouse by death in the year prior to the rape, but considerably fewer of the Low Distress group had done so. Third, women in the High Distress group had a dramatically lower frequency of loving intimate relationships with men in the year prior to the rape than the other groups.

3) Mood State And Self-Esteem Data Findings: The six mood state variables and the nine self-esteem scores were compared across groups by a separate single-factor analysis of variance for each variable. The mood profiles of the four groups are presented in Figure 36. The mood profile of a comparison group of nonvictims is also included in this figure although the nonvictims scores were not used in the analyses of variance. The analyses indicated that significant differences among group means occurred for all of the six mood state variables ( $p < .01$ ). The Duncan multiple range procedure was used to determine which group means differed significantly. For all mood variables except confusion, the Low Distress group was significantly different from the Moderately Low, Moderately High, and High Distress groups. With respect to confusion, the Low Distress group differed significantly from the Moderately Low Distress and High Distress groups but not from the Moderately High Distress group. In summary, the initial mood profile of the Low Distress group was less disturbed than the other three groups.

The mean self-esteem scores of the four groups from the Self-Report Inventory is presented in Table 12. The analyses of variance indicated that significant differences among groups occurred on the Self and Reality self-esteem variables. The Duncan multiple range procedure revealed that, on both of these variables, the Low Distress group was significantly different from the Moderately High Distress and High Distress groups but not from the Moderately Low Distress group.

4) Conclusions: The major questions which prompted this investigation were: 1) Are there factors which appear to predict individual differences in postrape distress?, and 2) Is distress level soon after the rape related to distress at 3 months postrape? Findings of the study suggested that both of

these questions could be answered affirmatively. Several factors were found that predicted 3-month postrape distress, with initial distress proving to be a particularly useful predictor. Let us now examine some of the other questions which emerge from our study.

What is the low distress victim at 3 months postrape like, and how does she compare with her counterparts who are more distressed? First, she did not differ from those who were more distressed on such biographic/demographic characteristics as age, race, educational status, marital status, living arrangements prior to the rape, and religious preference. Second, she did not differ with regard to most areas of personal history, including previous psychological difficulties and/or treatment for such problems. This finding is in contrast to reports by Frank, Turner, & Stewart (1980) and Atkeson, Calhoun, Resick, & Ellis (1982). Third, she tended to have somewhat fewer life changes in the year prior to her rape, particularly fewer than the high distress victims. She was less likely to have lost a close family member (other than spouse) by death during the previous year and was more likely to have had loving, intimate relationships with men. The fact that 44.4% of high distress victims lacked such relationships seems particularly noteworthy. Fourth, her self-esteem was significantly higher than that of the other victims. Self-esteem was found to be negatively correlated with distress in that victims with the greatest self-esteem have the least distress and vice versa. Which comes first, the low self-esteem or the distress, is one of those "chicken or the egg" problems which is almost impossible to answer. In any case, victims with high initial self-esteem are less distressed at 3 months postrape than their counterparts with lower self-esteem. Fifth, her initial distress was much lower than that experienced by other victims. Examination of Figure 36 indicates that her mood profile was within normal limits although it was somewhat higher than that of nonvictims.

What about the relative merits of using initial distress vs. other variables as predictors of subsequent adjustment? Initial distress appears to be a better predictor of subsequent functioning than other variables and is potentially more useful to those who work with victims. More of the variance in 3-month adjustment was predicted in the current study using the single initial mood score of depression than other investigators were able to predict using a combination of several variables. Moreover, the measure of mood state used is relatively easy to obtain; it is a paper-and-pencil test. Previous research indicated that initial distress is pervasive (Kilpatrick, Veronen, & Resick, 1979a), so one might be able to use a variety of other measures to tap initial distress as well. The standardized measures of distress in our assessment battery are simple enough to be used by crisis counselors and mental health care delivery professionals. Although it has not been tested empirically, it seems logical that an interview might also be developed which assessed initial distress. Since victims who experience the least distress soon after the rape are the ones who are most likely to be doing well at 3 months postrape, this information has important implications for the timing and selection of victims for treatment intervention.

The major implication of our findings for treatment is that we now have ample justification for assuming that victims who need the most help are those whose initial distress is greatest. In contrast, it appears that some recent rape victims are doing reasonably well even at 6-21 days postrape.

d. Stress Inoculation Training Evaluation Study

1) Treatment Preference: Prior to the change in procedure providing Stress Inoculation Training (SIT) to all treatment candidates, a total of 15 victims were given descriptions of the three treatment procedures (peer counseling, systematic desensitization, and SIT) and were asked to select the one in which they wished to participate. Three victims selected peer counseling, and the remaining 11 victims selected SIT. No one chose systematic desensitization. One victim was randomly assigned to SIT because she could not make a decision.

The selection process provided interesting anecdotal information. Peer counseling was perceived as quite different from systematic desensitization and SIT. Peer counseling was presented as a treatment that involved the sharing of common experiences and problems with the therapist. The role of women and reactions of society to women in new roles and as victims were examined. Victims either accepted or rejected this approach rather quickly. If peer counseling was rejected, considerable deliberation ensued over the subsequent two treatments. All victims who preferred SIT indicated that systematic desensitization was their second choice. The selection of SIT appeared to be based upon the victims' perception that it seemed more comprehensive.

Stress Inoculation Training was also preferred by counselors conducting the treatment. They enjoyed it because of its variability, the level of participation required of the victim, and the number of skills taught. The victim could use any one of nine coping skills or could use more than one skill.

2) Treatment Candidates, Treatment Participants, Treatment Dropouts, and Treatment Completers: A total of 106 victims requested and received Determination of Treatment Eligibility interviews, of whom 59, or 55.7% were judged to have met the criteria for treatment eligibility and became treatment candidates. Of these 59 victims, 50 (84.7%) were treatment participants, as defined by having had at least one treatment session. Of these treatment participants, 20 (40%) were treatment completers, as defined by having completed all 20 hours of treatment, and 30 (60%) were treatment dropouts, as defined by having discontinued treatment before having completed 20 hours.

3) Target Fears of SIT Treatment Completers: Each victim designated three target fears to be focused upon in treatment. In many ways, such fears are important because they represent the major rape-related problems for which these victims were seeking treatment.

Target fears were feared situations that were precipitating disruption and avoidance in the victims' day-to-day lives. A brief summary of the target fears reveals marked similarity among victims regarding situations they found fear-evoking. Victims reported fears of being alone, particularly after dark, more than fears in any other single category. Forty percent targeted such fears as their first priority for treatment. Some victims expressed simply fear of being alone or fear of night and darkness. More often the fear was related to various activities or specific situations such as being alone in a car after dark, sleeping, or going out alone. One victim was troubled by a feeling of being observed or watched when alone. For another, aloneness was associated with fears of rejection or abandonment.

The second most frequently acknowledged fears were fears related to males. Twenty-eight percent of victims endorsed such fears. These ranged from a general fear of being approached by men or talking to men to more specific kinds of interactions such as being alone with a man or being emotionally close to a man. For one previously independent woman, the fear was related to being protected and dominated by her husband. Some women expressed little or no fear in regard to men in most settings but did seek treatment for fear of being approached for sexual contact or fear of being physically and sexually undesirable.

Another pattern consisted of fears related to helplessness or loss of control. Twenty percent of the victims endorsed these fears as most distressing. It was variously expressed as a fear of never functioning normally again, not being able to get help, getting angry and losing control, and of being used, hurt, or taken advantage of in relationships.

For some women, fears of violence were triggered by the sight of or hearing about violence and by thoughts about being attacked or raped again.

Target phobias related to fears of criticism were endorsed by 6.7% of the victims. They were disturbed by being observed or looked at, or being judged.

Other situations frequently designated as fear-evoking but not designated as the most fear-evoking situations were being touched or spoken to suddenly, talking to the police, and seeing black people on television or on the street. These fears were endorsed as second or third target fears.

#### 4) Evaluation of SIT's Efficacy:

a) Psychometric Battery Results: Scores from the psychometric battery were analyzed in two phases. First, pre- and posttreatment scores of the 15 SIT completers were analyzed in a series of single factor analyses of variance comparing pretreatment and posttreatment data. Second, for 11 of the SIT completers, there was also 3-month posttreatment follow-up information available. Thus, the scores from these victims were analyzed in a series of analyses of variance, with repeated measures at pretreatment, posttreatment, and follow-up.

On the SCL-90-R, the analyses of pre- and posttreatment scores indicated that victims were significantly improved after treatment on the anxiety, phobic anxiety, and positive symptom total scales. On the POMS, victims were significantly improved at posttreatment on the mood states of tension and depression. The MFS Rape Fears scale also reflected significant improvement at posttreatment, as did scores on the SRI measuring self-esteem related to parents and hope.

At 3-month posttreatment follow-up, there was a tendency on some scales for victims to move towards their pretreatment levels. However, in spite of the relatively small  $n$  at follow-up, statistically significant improvement over pretreatment was observed on several measures. These included the SCL-90-R measure of phobic anxiety; the POMS mood state of tension; the SRI measure of self-esteem, derived from association with authorities; and the IES measure of intrusion, which measures frequency of intrusive rape-related thoughts, images, feelings, and dreams.

b) Individualized Target Behavior Assessment Results: Both the Emotion Thermometers and psychophysiological assessment were problematic as evaluation procedures. Thus, data obtained from these procedures will not be presented.

5) Evaluation of Factors Associated with Motivation for Treatment: Given the relatively high attrition rate in this study, it was important to attempt to discover whether there were any systematic differences among those who: a) were eligible for treatment, b) entered treatment but dropped out prior to the completion of treatment, and c) completed treatment. We found no significant differences among these three groups with respect to biographic/demographic characteristics or with respect to scores on the pretreatment psychometric measures. However, we had a clinical impression, undocumented by statistical analysis, that women were more likely to have completed treatment if they were currently involved in a stable interpersonal relationship than if they had no such relationship or were in the process of either developing or breaking off such a relationship.

Should this actually prove to be the case, there appears to be at least two reasons for its importance. First, a spouse or significant other may provide social support that helps the victim to complete treatment. Second, a spouse or significant other may place pressure on the victim to get treatment. Obviously, these two reasons are not mutually exclusive and may occur in combination. In any case, this study did not shed much light on the important topic of motivation for treatment.

6) Qualitative Changes Produced by SIT: In addition to statistical findings related to the outcome of SIT, there were other findings that were difficult to quantify. The decrease in phobic avoidance for some women had important qualitative implications for life changes and life satisfaction.

Celia, a 75-year-old woman, the mother of 7 children and grandmother of 20, and the widow of 3 husbands, was living an independent and satisfying life in her own home when she was attacked and raped in her bed by a man who broke into her house, raped and robbed her. Subsequent to the attack, she became fearful of darkness, being out alone, young men who looked like her assailant, and the possibility of being attacked again. When night fell, she locked herself in her bedroom. She had the windows nailed closed and locks put on the door. Additionally she pushed a dresser in front of her door. She slept poorly, waking up several times during the night. A gun was under her pillow in the event she heard an intruder. She was too frightened to cross the hallway to go to the bathroom at night so she used a slop jar. During the day, she was too fearful to go out in the yard to work on her flower garden and too frightened to visit her neighbors alone. At night, she was too frightened to watch television, lest the sound would muffle the sound of someone trying to break in.

After the 14th session of treatment with SIT, her sleeping improved and she was able to leave her bedroom door unlocked, watch television for one hour each evening, and venture into her yard during the day for gardening. At the conclusion of treatment, she was able to use the bathroom at night, take short walks to her neighbors' house during the day, and watch television in the evening and feel relaxed.



Kathy, a 28-year-old, petite, 85-lb., single parent of a 5-year-old, was raped at knife point while her child slept in the next room. The assailant threatened that, if she did not cooperate, he would harm the child. Subsequent to the rape, she was extremely frightened of being alone, going places alone, darkness, and the welfare of her son. She began to use her son to avoid being alone. She and her son slept together. She would keep her child out of school and would often walk him to school and stay the 3½ hours at school until his kindergarten was complete for the day.

During the treatment, she learned strategies that enabled her to begin to be more comfortable staying alone. She consciously made an effort to permit her child to attend school and take the bus with other children. At the time of the 3-month follow-up subsequent to treatment, she was able to permit her child to stay with his grandparents while she spent the night alone, and his attendance at school was greatly improved.

Elizabeth was an obese female who was raped by a friend of her brother. She did not tell her family of the assault, nor report it to the police, and subsequently had an abortion. Her rape-related problems included feeling used and taken advantage of and being judged.

The portion of the SIT that appeared to be most beneficial to Elizabeth was covert modeling and role playing. She and the peer counselor would role play situations in which family and people outside the family asked for things or made requests of her. She role played refusing them and imagined herself dealing with these situations in a more assertive manner. The skill of thought stoppage was reported as being helpful in dealing with thoughts of being judged or criticized. Subsequent to treatment, she reported she was less passive with family and friends, had few thoughts of being criticized and judged and reported better family and work relationships.

7) Conclusions about SIT and Significance of SIT Study: This study was originally designed to evaluate the efficacy of three treatments as well as to gather information about rape victims' preferences for three treatments. Although attrition posed problems, as did the individualized target fear assessment procedures, the study did provide valuable information. It demonstrated that SIT has greater appeal and face validity for rape victims than either peer counseling or systematic desensitization. It also provided evidence that SIT is an efficacious treatment for rape-related fear and anxiety.

Victims who completed SIT were, at posttreatment, significantly less fearful of situations, things, and events reminiscent of the assault or associated with events related to the assault. They reported less phobic anxiety. That is, they reported that they were less afraid: a) in open places or on the street, b) to go out of the house alone, c) to travel on public transportation, and d) that they would faint in public. Additionally they reported themselves to be less avoidant of frightening things, places, or activities and to feeling less uneasy in crowds and less nervous when left alone.

The posttreatment victim also reported fewer and less intense symptoms of nervousness, trembling, becoming suddenly scared for no reason, feeling fearful, heart pounding, spells of terror and panic, feeling so restless that one cannot sit still, feeling that something bad is going to happen, and thoughts and images of a frightening nature.

The mood state of the victim at posttreatment was less tense and less depressed. Tension descriptors such as panicky, uneasy, nervous, anxious, and terrified were used less frequently and were endorsed as being less severe following treatment. Additionally, the victim posttreatment was less likely to use depressive terms such as sad, hopeless, miserable, gloomy, helpless, and desperate to describe themselves.

Improvement in self-esteem after treatment was also noted. Their improvement on the hope scale was consistent with the often-expressed statement by victims that SIT improved their ability to cope with future stressful situations.

Overall treatment effects were generally maintained at 3-month follow-up, although there was some tendency for negative symptoms to increase. One notable and important exception to an increase in negative symptomatology at follow-up was the intrusion subscale of the Impact of Event Scale. At follow-up, the victims reported that unwanted thoughts and images, troubled dreams, strong pangs or waves of feelings, and thoughts of event were significantly less frequent and less intense than they had been at pre- and posttreatment. Additionally, phobic anxiety was significantly lower than at pretreatment.

We do not think that SIT is appropriate for all rape victims. However, for victims with high levels of rape-related fear, anxiety, avoidance behavior, and intrusion of rape-related images, thoughts, and feelings, SIT does appear to be effective. Moreover, the treatment was effective when administered by paraprofessionals. Although the lack of an untreated control condition in this study is cause for some caution, it is important to note that the findings of Study 1 indicate that little spontaneous improvement in victims occurs after 3 months postrape. Thus, we are on somewhat safer ground attributing change to treatment than during the first 3-month postrape period.

20. Other Researchers Using Our Techniques

Several other rape researchers have used the Veronen-Kilpatrick Modified Fear Survey in their assessment of rape-related problems. The MFS is also being used in an NIMH-funded project studying rape and robbery victims. In a recent review of treatment of rape-induced trauma, our Stress Inoculation Training procedure was described as an example of "the most promising treatment strategies" (Holmes & St. Lawrence, 1983, p. 430). These authors go on to state that "...pioneering efforts by Kilpatrick, Resick, Veronen and their colleagues have introduced more scientific study of post-rape trauma and should influence future research efforts" (p. 430). If this hyperbolic assessment is at least partially correct, we would expect our research to have an effect on the field generally.

References

- Atkeson, B. M., Calhoun, K. S., Resick, P. A., & Ellis, E. M. (1982). Victims of rape: Repeated assessment of depressive symptoms. Journal of Consulting and Clinical Psychology, 50, 96-102.
- Bandura, A. (1969). Principles of behavior modification. New York: Holt, Rinehart & Winston.
- Blanchard, E. B., & Abel, G. (1976). An experimental case study of the biofeedback treatment of a rape-induced psychophysiological cardiovascular disorder. Behavior Therapy, 7, 113-119.
- Bown, O. (1961). The development of a self-report inventory and its function in a mental health assessment battery. American Psychologist, 16, 402.
- Derogatis, L. R. (1977). SCL-90-R manual. Baltimore: Johns Hopkins University Press.
- Frank, E. (1980). Personal communication.
- Frank, E., Turner, S. M., & Stewart, B. D. (1980). Initial response to rape: The impact of factors within the rape situation. Journal of Behavioral Assessment, 2, 39-53.
- Holmes, M. R., & St. Lawrence, J. S. (1983). Treatment of rape-induced trauma: Proposed behavioral conceptualization and review of the literature. Clinical Psychology Review, 3, 417-433.
- Holmes, T. H., & Rahe, R. H. (1967). The social readjustment rating scale. Journal of Psychosomatic Research, 11, 213-218.
- Horowitz, M., Wilner, N., & Alvarez, W. (1979). Impact of Event Scale: A measure of subjective distress. Psychosomatic Medicine, 41(3), 209-218.
- Kilpatrick, D. G. (1981). The scientific study of rape: A clinical research perspective. In R. Green & J. Wiener (Eds.), Methodology in sex research (pp. 179-192). Washington, D.C.: DHHS Publication No. (ADM) 81-766.
- Kilpatrick, D. G., Best, C. L., & Veronen, L. J. (1983, August). Rape victims: Have we studied the tip or the iceberg? Paper presented at the 91st Annual Convention of the American Psychological Association, Anaheim, CA.
- Kilpatrick, D. G., Resick, P. A., & Veronen, L. J. (1981). Effects of a rape experience: A longitudinal study. Journal of Social Issues, 37(4), 105-122.
- Kilpatrick, D. G., Sutker, P. B., Best, C. L., & Allain, A. N. (1980). Acute alcohol intoxication and vicarious emotional responsiveness. Addictive Behaviors, 5, 191-198.
- Kilpatrick, D. G., Veronen, L. J., & Best, C. L. (in press). Factors predicting psychological distress among rape victims. In C. R. Figley (Ed.), Trauma and its wake. New York: Brunner/Mazel.

References (continued)

- Kilpatrick, D. G., Veronen, L. J., & Resick, P. A. (1979a). The aftermath of rape: Recent empirical findings. American Journal of Orthopsychiatry, 49(4), 658-669.
- Kilpatrick, D. G., Veronen, L. J., & Resick, P. A. (1979b). Assessment of the aftermath of rape: Changing patterns of fear. Journal of Behavioral Assessment, 1(2), 133-148.
- Kilpatrick, D. G., Veronen, L. J., & Resick, P. A. (1982). Psychological sequelae to rape: Assessment and treatment strategies. In D. M. Doleys, R. L. Meredith, & A. R. Ciminero (Eds.), Behavioral medicine: Assessment and treatment strategies (pp. 473-497). New York: Plenum.
- Lang, P. J. (1969). The mechanics of desensitization and laboratory studies of human fear. In C. M. Franks (Ed.), Assessment and status of the behavioral therapies and associated developments. New York: McGraw Hill.
- McNair, D., Lorr, M., & Droppleman, L. (1971). Manual, Profile of Mood States. San Diego: Education and Industrial Testing Service.
- O'Leary, K. D., & Wilson, G. T. (1975). Behavior therapy application and outcome. Englewood Cliffs, N. J.: Prentice-Hall.
- Rychtarik, R. G., Silverman, W. K., Van Landingham, W. P., & Prue, D. M. (in press). Treatment of an incest victim with implosive therapy: A case study. Journal of Behavior Therapy.
- Shmavonian, B. M., Miller, L. H., & Cohen, S. I. (1968). Differences among age and sex groups in electrodermal conditioning. Psychophysiology, 5, 119-131.
- Spielberger, C. D., Gorsuch, R. L., & Lushene, R. E. (1970). The State-Trait Anxiety Inventory. Palo Alto, CA: Consulting Psychologists Press.
- Veronen, L. J., & Kilpatrick, D. G. (1980). Self-reported fears of rape victims: A preliminary investigation. Behavior Modification, 4(3), 383-396.
- Veronen, L. J., & Kilpatrick, D. G. (1983). Stress management for rape victims. In D. Meichenbaum & M. E. Jaremko (Eds.), Stress reduction and prevention (pp. 341-374). New York: Plenum.
- Veronen, L. J., Kilpatrick, D. G., & Resick, P. A. (1979). Treatment of fear and anxiety in rape victims: Implications for the criminal justice system. In W. H. Parsonage (Ed.), Perspectives on victimology (pp. 148-159). Beverly Hills, CA: Sage.
- Weissman, M. M., & Paykel, E. S. (1974). The depressed woman: A study of social relationships. Chicago: University of Chicago Press.

Table 1

## Biographic/Demographic Characteristics of Victim and Nonvictim Samples

<u>Variable</u>	<u>Victims</u>	<u>Nonvictims</u>
<b>Race</b>	<b>N = 204</b>	<b>N = 173</b>
Black	40.2%	43.4%
White	57.8	56.1
Other	2.0	0.6
<b>Occupation</b>	<b>N = 203</b>	<b>N = 171</b>
Student	19.7%	17.0%
Teacher	3.0	5.8
Waitress	3.9	7.6
Clerk-Secretary	7.4	10.5
Housewife	14.8	16.4
Salesperson	3.4	1.2
Nurse	3.0	4.1
Other	34.0	31.0
No occupation (never worked over 3 months)	10.8	6.4
<b>**Educational Status</b>	<b>N = 202</b>	<b>N = 171</b>
Attended elementary school	12.4%	5.3%
Completed elementary school	3.5	1.2
Attended high school	36.1	33.3
Completed high school	17.3	12.9
Attended college	24.3	26.9
Completed college	6.4	20.5
<b>Additional Education</b>	<b>N = 200</b>	<b>N = 168</b>
Business or vocational training	35.0%	39.9%
Attended graduate school	4.0	8.3
Completed graduate school	0.0	0.6
None	61.0	51.2
<b>*Marital Status</b>	<b>N = 203</b>	<b>N = 171</b>
Never married	41.4%	33.9%
Married	26.1	42.7
Separated	16.3	9.4
Divorced	11.3	9.4
Widowed	2.0	1.8
Cohabiting	3.0	2.9
<b>**Residence</b>	<b>N = 202</b>	<b>N = 171</b>
Apartment	39.1%	23.4%
Own or rent a house	35.6	63.7
Dormitory/sorority house	3.0	1.2
Trailer	14.4	7.0
Other	7.9	4.7
<b>*Religious Preference</b>	<b>N = 203</b>	<b>N = 171</b>
Protestant	61.6%	70.2%
Catholic	15.3	9.9
Jewish	1.0	1.2
No preference	15.3	7.0
Other	6.9	11.7
<b>**Church Attendance per Month</b>	<b>N = 203</b>	<b>N = 171</b>
None	39.4%	24.6%
1 or 2 times	29.1	29.2
3 or 4 times	16.7	25.1
More than 4 times	14.8	21.1
<b>**State of Legal Residence</b>	<b>N = 204</b>	<b>N = 173</b>
South Carolina	85.8%	98.3%
Other	14.2	1.7
<b>*Length of Time in South Carolina</b>	<b>N = 203</b>	<b>N = 171</b>
1 to 3 years	13.3%	9.4%
3 to 5 years	5.9	7.0
5 to 10 years	11.3	15.8
Over 10 years	59.1	66.1
Do not live in South Carolina	1.0	0.6

\* =  $p < .05$ \*\* =  $p < .01$

Table 2

Mean and Standard Deviation, (in parentheses) MFS, POMS, SRI, STAI, SCL-90-R  
and IES Scores of Victims and Nonvictims at 6 to 21 Days Postrape

	Mean Raw Scores	
	Victims	Nonvictims
<u>Modified Fear Survey (MFS)</u>	N = 139	N = 173
Animal Fears	20.5 (7.5)	19.2 (7.3)
Tissue Damage Fears**	47.5 (15.3)	40.3 (13.9)
Classical Fears**	40.5 (12.8)	30.3 (9.9)
Social Fears**	48.9 (14.5)	38.1 (11.2)
Miscellaneous Fears**	29.6 (9.0)	24.2 (7.1)
Failure Fears**	48.4 (14.9)	37.8 (11.6)
Rape Fears**	121.0 (34.7)	88.9 (23.6)
Overall Fears**	309.6 (82.3)	242.1 (64.7)
<u>Profile of Mood States (POMS)</u>	N = 141	N = 173
Tension**	21.1 (8.5)	8.9 (5.9)
Depression**	27.6 (15.0)	9.4 (8.5)
Anger**	19.9 (11.7)	8.4 (7.5)
Vigor**	10.5 (5.9)	17.0 (5.9)
Fatigue**	13.5 (7.6)	6.7 (5.3)
Confusion**	14.2 (6.6)	6.2 (4.1)
<u>Self-Report Inventory (SRI)</u>	N = 140	N = 172
Self**	14.7 (5.6)	18.0 (5.1)
Other	17.6 (4.0)	18.4 (3.3)
Children	19.1 (5.0)	18.8 (5.1)
Authority**	15.4 (4.2)	17.2 (3.9)
Work*	16.7 (4.0)	17.8 (3.9)
Reality*	14.1 (3.8)	15.0 (3.4)
Parent**	13.4 (6.7)	16.5 (5.5)
Hope*	17.6 (4.6)	18.9 (3.7)
Total**	16.1 (3.0)	17.6 (2.7)
<u>State-Trait Anxiety Inventory (STAI)</u>	N = 143	N = 173
State Anxiety**	46.5 (12.4)	34.3 (9.3)
Trait Anxiety**	48.6 (11.5)	37.9 (9.7)
<u>Symptom Checklist (SCL-90-R)</u>	N = 142	N = 173
Somatization**	1.2 (.8)	.4 (.4)
Obsessive-Compulsive**	1.7 (1.0)	.7 (.6)
Interpersonal Sensitivity**	1.6 (.9)	.7 (.6)
Depression**	1.8 (.9)	.7 (.6)
Anxiety**	2.0 (1.0)	.5 (.5)
Hostility**	1.2 (.9)	.5 (.6)
Phobic Anxiety**	1.8 (1.1)	.3 (.5)
Paranoid Ideation**	1.6 (1.0)	.7 (.7)
Psychoticism**	1.1 (.8)	.4 (.5)
General Severity Index (GSI)**	1.6 (.8)	.6 (.5)
Positive Symptom Distress Index (PSDI)**	2.3 (.6)	1.5 (.4)
Positive Symptom Total (PST)**	59.2 (19.5)	31.9 (18.8)
<u>Impact of Event Scale (IES)</u>	N = 75	
Total Distress	3.3 (.9)	
Intrusion	3.4 (1.3)	
Avoidance	3.2 (.9)	

\* p &lt; .05

\*\* p &lt; .01

Table 3

Mean and Standard Deviation (in parentheses) MFS, POMS, SRI, STAI, SCL-90-R  
and IES Scores of Victims and Nonvictims at 1 Month Postrape

	Mean Raw Scores	
	Victims	Nonvictims
<u>Modified Fear Survey (MFS)</u>	N = 116	N = 83
Animal Fears	19.2 (7.3)	17.5 (6.5)
Tissue Damage Fears**	45.5 (15.4)	35.9 (11.8)
Classical Fears**	37.8 (12.8)	28.5 (9.0)
Social Fears**	45.3 (13.7)	34.6 (10.2)
Miscellaneous Fears**	28.2 (8.4)	22.1 (6.7)
Failure Fears**	45.7 (14.0)	34.3 (10.9)
Rape Fears**	113.1 (32.6)	81.5 (21.9)
Overall Fears**	290.5 (81.0)	221.2 (57.3)
<u>Profile of Mood States (POMS)</u>	N = 116	N = 83
Tension**	16.3 (8.8)	8.3 (6.1)
Depression**	21.7 (15.5)	7.7 (8.4)
Anger**	15.0 (11.7)	7.8 (8.3)
Vigor**	12.3 (6.5)	15.9 (6.5)
Fatigue**	11.1 (7.8)	6.6 (5.9)
Confusion**	11.2 (6.3)	5.5 (4.0)
<u>Self-Report Inventory (SRI)</u>	N = 110	N = 83
Self**	14.3 (5.9)	17.6 (6.3)
Other	17.2 (4.0)	17.4 (5.0)
Children	18.4 (5.7)	18.5 (6.5)
Authority*	15.0 (4.6)	16.7 (5.1)
Work	15.5 (5.1)	16.4 (5.1)
Reality	13.1 (4.0)	14.2 (4.6)
Parent*	13.3 (6.9)	15.9 (6.9)
Hope**	16.4 (4.9)	18.9 (3.3)
Total**	15.7 (3.1)	17.7 (2.8)
<u>State-Trait Anxiety Inventory (STAI)</u>	N = 117	N = 83
State Anxiety**	43.2 (12.9)	32.8 (7.3)
Trait Anxiety**	48.7 (12.1)	35.9 (7.9)
<u>Symptom Checklist (SCL-90-R)</u>	N = 117	N = 82
Somatization**	.9 (.8)	.5 (.5)
Obsessive-Compulsive**	1.4 (.9)	.6 (.5)
Interpersonal Sensitivity**	1.3 (.9)	.5 (.5)
Depression**	1.6 (1.0)	.6 (.5)
Anxiety**	1.5 (1.0)	.4 (.4)
Hostility**	1.1 (1.0)	.5 (.5)
Phobic Anxiety**	1.4 (1.0)	.2 (.2)
Paranoid Ideation**	1.4 (.9)	.5 (.6)
Psychoticism**	1.1 (.8)	.3 (.4)
General Severity Index (GSI)**	1.3 (.8)	.5 (.4)
Positive Symptom Distress Index (PSDI)**	2.0 (.7)	1.4 (.4)
Positive Symptom Total (PST)**	53.1 (22.1)	28.0 (16.4)
<u>Impact of Event Scale (IES)</u>	N = 36	
Total Distress	3.1 (1.0)	* p < .05
Intrusion	3.0 (1.4)	** p < .01
Avoidance	3.2 (.8)	



Table 4

Mean and Standard Deviation (in parentheses) MFS, POMS, SRI, STAI, SCL-90-R  
and IES Scores of Victims and Nonvictims at 3 Months Postrape

	Mean Raw Scores	
	Victims	Nonvictims
<u>Modified Fear Survey (MFS)</u>	N = 145	N = 142
Animal Fears	17.5 (6.9)	17.2 (6.9)
Tissue Damage Fears**	42.1 (15.8)	36.8 (13.4)
Classical Fears**	34.8 (13.8)	27.6 (8.6)
Social Fears**	41.2 (14.8)	34.9 (11.3)
Miscellaneous Fears**	25.3 (8.8)	21.9 (7.0)
Fear of Failure**	40.8 (15.0)	34.5 (11.6)
Rape Fears**	102.3 (34.7)	80.8 (24.7)
Overall Fears**	264.5 (86.7)	220.4 (64.4)
<u>Profile of Mood States (POMS)</u>	N = 149	N = 142
Tension**	12.6 (8.2)	7.8 (5.5)
Depression**	14.3 (12.9)	7.7 (7.8)
Anger**	11.3 (10.5)	7.1 (6.5)
Vigor	15.1 (6.6)	16.1 (6.2)
Fatigue**	8.7 (7.0)	6.4 (5.1)
Confusion**	8.6 (5.5)	5.9 (3.8)
<u>Self-Report Inventory (SRI)</u>	N = 148	N = 140
Self**	15.6 (5.6)	18.6 (4.6)
Other**	17.3 (3.8)	18.6 (3.2)
Children	18.3 (5.5)	18.8 (5.2)
Authority*	16.0 (4.2)	17.0 (4.1)
Work*	16.5 (4.9)	17.9 (4.0)
Reality*	14.2 (4.1)	15.3 (4.0)
Parent**	14.3 (6.5)	16.9 (5.5)
Hope	18.0 (4.2)	18.9 (3.6)
Total**	16.4 (2.9)	17.7 (2.8)
<u>State-Trait Anxiety Inventory (STAI)</u>	N = 149	N = 141
State-Anxiety**	38.3 (11.4)	32.6 (8.7)
Trait Anxiety**	44.0 (11.4)	36.0 (8.4)
<u>Symptom Checklist (SCL-90-R)</u>	N = 149	N = 141
Somatization**	.8 (.8)	.4 (.4)
Obsessive-Compulsive**	1.1 (.8)	.6 (.5)
Interpersonal Sensitivity**	1.1 (.9)	.6 (.6)
Depression**	1.2 (.9)	.6 (.5)
Anxiety**	1.1 (.9)	.4 (.4)
Hostility**	.8 (.9)	.4 (.5)
Phobic Anxiety**	1.1 (1.0)	.2 (.3)
Paranoid Ideation**	1.2 (.9)	.5 (.6)
Psychoticism**	.8 (.8)	.3 (.4)
General Severity Index (GSI)**	1.0 (.8)	.5 (.4)
Positive Symptom Distress Index (PSDI)**	1.8 (.7)	1.4 (.4)
Positive Symptom Total (PST)**	45.9 (24.0)	27.3 (17.4)
<u>Impact of Event Scale (IES)</u>	N = 78	
Total Distress	2.5 (1.2)	
Intrusion	2.3 (1.4)	
Avoidance	2.7 (1.2)	

\* p &lt; .05

\*\* p &lt; .01

Table 5

Mean and Standard Deviation (in parentheses) MFS, POMS, SRI, STAI, SCL-90-R  
and IES Scores of Victims and Nonvictims at 6 Months Posttrape

	Mean Raw Scores	
	Victims	Nonvictims
<u>Modified Fear Survey (MFS)</u>	N = 104	N = 125
Animal Fears	17.0 (7.2)	18.2 (7.3)
Tissue Damage Fears*	41.5 (14.4)	37.5 (13.7)
Classical Fears**	33.6 (12.1)	28.1 (9.1)
Social Fears**	39.5 (14.6)	34.0 (11.2)
Miscellaneous Fears**	24.6 (8.3)	21.6 (7.0)
Fear of Failure**	39.8 (14.8)	33.4 (11.5)
Rape Fears**	98.1 (30.6)	80.1 (23.7)
Overall Fears**	255.6 (75.7)	220.6 (64.3)
<u>Profile of Mood States (POMS)</u>	N = 103	N = 125
Tension**	12.1 (7.8)	8.2 (5.9)
Depression**	14.3 (12.5)	7.6 (7.3)
Anger**	11.5 (10.6)	6.8 (6.8)
Vigor	14.9 (6.0)	15.6 (6.5)
Fatigue*	8.0 (6.9)	6.2 (4.7)
Confusion**	8.6 (5.5)	5.8 (3.8)
<u>Self-Report Inventory (SRI)</u>	N = 103	N = 125
Self**	14.7 (5.6)	18.9 (4.5)
Other**	17.1 (3.8)	18.6 (3.3)
Children	17.5 (5.9)	18.6 (5.6)
Authority**	15.5 (4.9)	17.1 (3.9)
Work*	16.5 (4.8)	17.8 (4.2)
Reality	14.1 (4.3)	14.9 (3.8)
Parent**	13.6 (6.2)	16.7 (6.0)
Hope	18.0 (4.5)	18.9 (3.6)
Total**	16.0 (3.0)	17.7 (2.8)
<u>State-Trait Anxiety Inventory (STAI)</u>	N = 103	N = 125
State Anxiety**	37.9 (11.0)	33.6 (9.7)
Trait Anxiety**	43.2 (10.6)	36.6 (9.1)
<u>Symptom Checklist (SCL-90-R)</u>	N = 104	N = 125
Somatization**	.7 (.6)	.4 (.4)
Obsessive-Compulsive**	.9 (.8)	.6 (.5)
Interpersonal Sensitivity**	1.0 (.8)	.6 (.5)
Depression**	1.1 (.8)	.7 (.6)
Anxiety**	1.0 (.8)	.4 (.5)
Hostility**	.7 (.7)	.4 (.4)
Phobic Anxiety**	.8 (.9)	.2 (.3)
Paranoid Ideation**	1.1 (.9)	.6 (.7)
Psychoticism**	.7 (.7)	.3 (.4)
General Severity Index (GSI)**	.9 (.7)	.5 (.4)
Positive Symptom Distress Index (PSDI)**	1.7 (.6)	1.4 (.4)
Positive Symptom Total (PST)**	43.4 (21.2)	28.8 (18.0)
<u>Impact of Event Scale (IES)</u>	N = 48	
Total Distress	2.2 (1.1)	
Intrusion	1.9 (1.3)	
Avoidance	2.6 (1.3)	

\* p &lt; .05

\*\* p &lt; .01

Table 6

Mean and Standard Deviation (in parentheses) MFS, POMS, SRI, STAI, SCL-90-R, and IES Scores of Victims and Nonvictims at 1 Year Postrape

	Mean Raw Scores	
	Victims	Nonvictims
<u>Modified Fear Survey (MFS)</u>	N = 79	N = 110
Animal Fears	16.9 (7.2)	18.3 (7.3)
Tissue Damage Fears*	41.4 (15.2)	36.8 (13.7)
Classical Fears**	32.8 (12.4)	27.5 (9.7)
Social Fears**	38.8 (14.8)	33.1 (11.2)
Miscellaneous Fears**	24.8 (9.3)	20.9 (7.0)
Fear of Failure**	38.6 (16.0)	32.1 (11.1)
Rape Fears**	97.3 (30.9)	79.0 (23.5)
Overall Fears**	253.1 (80.4)	216.7 (64.3)
<u>Profile of Mood States (POMS)</u>	N = 79	N = 111
Tension**	12.3 (9.2)	7.9 (5.3)
Depression**	13.9 (13.5)	7.2 (7.6)
Anger**	10.8 (9.8)	7.2 (7.0)
Vigor	16.0 (5.8)	16.1 (6.8)
Fatigue*	8.3 (7.1)	6.4 (5.2)
Confusion**	8.4 (6.1)	5.7 (4.1)
<u>Self-Report Inventory (SRI)</u>	N = 77	N = 110
Self**	16.4 (5.1)	18.4 (4.5)
Other*	17.1 (4.0)	18.3 (3.6)
Children	19.0 (5.4)	18.1 (5.4)
Authority	16.8 (4.3)	16.5 (4.1)
Work	17.2 (4.5)	17.6 (4.0)
Reality	14.1 (4.0)	14.9 (3.6)
Parent*	14.6 (6.8)	16.8 (5.6)
Hope	18.4 (4.2)	18.9 (3.5)
Total	16.7 (3.1)	17.4 (2.8)
<u>State-Trait Anxiety Inventory (STAI)</u>	N = 79	N = 111
State Anxiety**	37.2 (12.7)	32.6 (8.5)
Trait Anxiety**	41.2 (11.9)	35.8 (7.9)
<u>Symptom Checklist (SCL-90-R)</u>	N = 78	N = 111
Somatization**	.8 (.8)	.5 (.5)
Obsessive-Compulsive**	.9 (.8)	.6 (.5)
Interpersonal Sensitivity**	.9 (.8)	.5 (.5)
Depression**	1.0 (.9)	.6 (.5)
Anxiety**	.7 (.8)	.4 (.4)
Hostility**	.7 (.8)	.4 (.5)
Phobic Anxiety**	.7 (.8)	.2 (.3)
Paranoid Ideation**	1.1 (.9)	.6 (.6)
Psychoticism**	.6 (.7)	.3 (.4)
General Severity Index (GSI)**	.9 (.7)	.5 (.4)
Positive Symptom Distress Index (PSDI)**	1.7 (.7)	1.4 (.4)
Positive Symptom Total (PST)**	39.7 (23.5)	27.7 (17.1)
<u>Impact of Event Scale (IES)</u>	N = 46	
Total Distress	2.0 (1.2)	
Intrusion	1.8 (1.3)	
Avoidance	2.4 (1.4)	

\*  $p < .05$ \*\*  $p < .01$

Table 7

Mean and Standard Deviation (in parentheses) MFS, POMS, SRI, STAI, SCL-90-R, and IES Scores of Victims and Nonvictims at 18 Months Postrape

	Mean Raw Scores	
	Victims	Nonvictims
<u>Modified Fear Survey (MFS)</u>	N = 46	N = 68
Animal Fears	16.2 (5.9)	17.0 (6.6)
Tissue Damage Fears	34.3 (9.9)	37.0 (14.4)
Classifical Fears	28.2 (9.8)	26.1 (8.1)
Social Fears	33.7 (11.7)	32.8 (11.0)
Miscellaneous Fears	21.1 (6.8)	21.2 (6.7)
Fear of Failure	33.4 (12.4)	32.5 (11.6)
Rape Fears	80.0 (22.4)	77.3 (23.7)
Overall Fears	214.4 (56.5)	212.4 (63.8)
<u>Profile of Mood States (POMS)</u>	N = 46	N = 69
Tension	8.6 (7.2)	8.5 (6.1)
Depression	8.4 (10.0)	8.1 (8.3)
Anger	7.0 (7.9)	7.6 (7.0)
Vigor	15.9 (6.8)	15.8 (6.4)
Fatigue	5.7 (5.8)	7.1 (5.2)
Confusion	6.1 (4.7)	6.0 (4.3)
<u>Self-Report Inventory (SRI)</u>	N = 45	N = 69
Self	17.0 (4.4)	18.6 (3.9)
Other	17.4 (4.2)	18.8 (3.3)
Children	19.2 (5.0)	17.5 (5.9)
Authority	17.6 (3.6)	17.2 (3.6)
Work	17.9 (4.2)	17.5 (3.8)
Reality	15.1 (3.5)	15.5 (3.9)
Parent	14.3 (6.5)	16.3 (6.0)
Hope	19.5 (3.8)	19.0 (3.8)
Total	17.2 (2.7)	17.7 (2.9)
<u>State-Trait Anxiety Inventory (STAI)</u>	N = 46	N = 69
State Anxiety	33.1 (9.1)	32.7 (8.4)
Trait Anxiety	36.7 (8.8)	36.2 (8.5)
<u>Symptom Checklist (SCL-90-R)</u>	N = 46	N = 69
Somatization	.5 (.5)	.5 (.5)
Obsessive-Compulsive	.6 (.6)	.6 (.5)
Interpersonal Sensitivity	.6 (.6)	.5 (.5)
Depression	.7 (.6)	.7 (.6)
Anxiety	.6 (.7)	.4 (.4)
Hostility	.5 (.7)	.5 (.5)
Phobic Anxiety**	.4 (.6)	.2 (.3)
Paranoid Ideation	.7 (.7)	.5 (.7)
Psychoticism	.3 (.4)	.3 (.4)
General Severity Index (GSI)	.6 (.5)	.5 (.4)
Positive Symptom Distress Index (PSDI)	1.5 (.6)	1.4 (.3)
Positive Symptom Total (PST)	30.0 (17.8)	28.5 (17.7)
<u>Impact of Event Scale (IES)</u>	N = 32	
Total Distress	1.4 (1.0)	
Intrusion	.9 (.9)	
Avoidance	1.8 (1.2)	

\*\* p < .01

Table 8

Mean and Standard Deviation (in parentheses) MFS, POMS, SRI, STAI, SCL-90-R,  
and IES Scores of Victims and Nonvictims at 2 years Postrape

	Mean Raw Scores	
	Victims	Nonvictims
<u>Modified Fear Survey (MFS)</u>	N = 34	N = 59
Animal Fears	17.6 (6.5)	17.5 (7.4)
Tissue Damage Fears	37.4 (13.2)	36.7 (16.1)
Classical Fears	30.6 (9.6)	27.3 (9.9)
Social Fears	36.3 (12.5)	34.2 (12.6)
Miscellaneous Fears	22.9 (7.4)	21.1 (7.8)
Fear of Failure	36.4 (13.1)	34.0 (14.0)
Rape Fears*	92.8 (26.4)	79.2 (28.1)
Overall Fears	238.7 (64.7)	217.2 (74.9)
<u>Profile of Mood States (POMS)</u>	N = 34	N = 59
Tension	9.7 (7.3)	9.1 (6.2)
Depression	9.7 (10.2)	7.4 (8.2)
Anger	9.1 (8.5)	7.5 (5.8)
Vigor	15.7 (6.9)	14.6 (5.7)
Fatigue	7.1 (6.4)	6.7 (4.7)
Confusion	6.8 (4.2)	5.4 (3.7)
<u>Self-Report Inventory (SRI)</u>	N = 33	N = 58
Self	17.6 (5.7)	18.9 (4.6)
Other	17.9 (4.4)	18.7 (3.5)
Children	19.4 (4.8)	17.8 (6.4)
Authority	16.8 (3.9)	17.5 (3.7)
Work	18.2 (3.6)	18.3 (4.1)
Reality	14.9 (3.2)	15.2 (3.5)
Parent*	13.9 (6.0)	16.8 (6.3)
Hope	19.5 (4.3)	19.4 (3.7)
Total	17.3 (3.0)	17.8 (3.0)
<u>State-Trait Anxiety Inventory (STAI)</u>	N = 34	N = 59
State Anxiety	33.0 (7.6)	33.1 (10.6)
Trait Anxiety	38.3 (10.5)	34.7 (8.7)
<u>Symptom Checklist (SCL-90-R)</u>	N = 34	N = 59
Somatization	.7 (.7)	.5 (.5)
Obsessive-Compulsive	.8 (.7)	.6 (.5)
Interpersonal Sensitivity**	.9 (.8)	.5 (.5)
Depression	.8 (.7)	.6 (.5)
Anxiety*	.8 (.9)	.4 (.5)
Hostility	.5 (.6)	.5 (.5)
Phobic Anxiety*	.6 (.8)	.2 (.4)
Paranoid Ideation**	1.1 (.9)	.5 (.6)
Psychoticism	.5 (.6)	.3 (.4)
General Severity Index (GSI)*	.7 (.6)	.5 (.4)
Positive Symptom Distress Index (PSDI)*	1.7 (.6)	1.4 (.4)
Positive Symptom Total (PST)	36.9 (23.5)	28.2 (19.0)
<u>Impact of Event Scale (IES)</u>	N = 23	
Total Distress	1.8 (1.3)	
Intrusion	1.6 (1.5)	
Avoidance	2.0 (1.4)	

\* p &lt; .05

\*\* p &lt; .01

Table 9

Mean and Standard Deviation (in parentheses) MFS, POMS, SRI, STAI, SCL-90-R,  
and IES Scores of Victims and Nonvictims at 3 Years Postrape

	Mean Raw Scores	
	Victims	Nonvictims
<u>Modified Fear Survey (MFS)</u>	N = 12	N = 12
Animal Fears	16.5 (3.2)	15.3 (6.6)
Tissue Damage Fears	37.8 (7.9)	31.3 (11.7)
Classical Fears**	31.7 (7.4)	22.8 (5.6)
Social Fears	34.8 (12.8)	30.3 (9.8)
Miscellaneous Fears	20.5 (5.1)	19.5 (6.2)
Fear of Failure	34.9 (13.5)	31.0 (10.8)
Rape Fears**	91.3 (21.3)	65.2 (17.2)
Overall Fears*	233.8 (49.0)	185.4 (51.6)
<u>Profile of Mood States (POMS)</u>	N = 12	N = 12
Tension	6.9 (5.2)	7.7 (4.9)
Depression	9.0 (7.1)	9.5 (7.6)
Anger	7.9 (8.3)	7.4 (6.5)
Vigor	16.5 (8.3)	13.8 (7.5)
Fatigue	7.8 (6.4)	5.9 (4.5)
Confusion	4.6 (2.3)	5.1 (2.8)
<u>Self-Report Inventory (SRI)</u>	N = 11	N = 12
Self	19.2 (3.5)	20.1 (3.3)
Other	16.2 (4.7)	18.6 (4.0)
Children	18.5 (5.0)	16.0 (6.7)
Authority	17.6 (3.8)	16.8 (4.1)
Work	17.4 (4.0)	18.9 (2.8)
Reality	14.1 (2.6)	14.1 (2.8)
Parent	15.1 (5.6)	14.8 (7.2)
Hope	17.8 (5.9)	19.3 (2.9)
Total	17.0 (2.8)	17.3 (1.5)
<u>State-Trait Anxiety Inventory (STAI)</u>	N = 12	N = 12
State Anxiety	31.3 (9.5)	31.4 (8.2)
Trait Anxiety	35.9 (6.9)	32.9 (8.1)
<u>Symptom Checklist (SCL-90-R)</u>	N = 12	N = 12
Somatization	.6 (.4)	.3 (.3)
Obsessive-Compulsive	.7 (.5)	.5 (.4)
Interpersonal Sensitivity	.6 (.6)	.4 (.4)
Depression	.6 (.4)	.5 (.3)
Anxiety	.5 (.7)	.5 (.7)
Hostility	.4 (.6)	.3 (.4)
Phobic Anxiety	.4 (.7)	.0 (.1)
Paranoid Ideation	.6 (.6)	.3 (.4)
Psychoticism*	.4 (.3)	.1 (.2)
General Severity Index (GSI)	.6 (.4)	.4 (.3)
Positive Symptom Distress Index (PSDI)	1.5 (.3)	1.7 (.8)
Positive Symptom Total (PST)	33.8 (23.6)	23.8 (12.7)
<u>Impact of Event Scale (IES)</u>	N = 13	
Total Distress	1.6 (1.0)	
Intrusion	1.1 (1.1)	
Avoidance	2.0 (1.1)	

\*  $p < .05$ \*\*  $p < .01$

Table 10

Mean and Standard Deviation (in parentheses) MFS, POMS, SRI, STAI, SCL-90-R,  
and IES Scores of Victims and Nonvictims at 4 Years Postrape

	Mean Raw Scores	
	Victims	Nonvictims
<u>Modified Fear Survey (MFS)</u>	N = 7	N = 13
Animal Fears	14.6 (4.9)	18.2 (7.3)
Tissue Damage Fears	36.3 (12.5)	32.2 (8.8)
Classical Fears	30.9 (10.0)	26.2 (6.0)
Social Fears	34.9 (13.7)	32.5 (8.5)
Miscellaneous Fears	20.7 (7.7)	20.8 (5.1)
Fear of Failure	34.4 (14.6)	33.4 (8.9)
Rape Fears	92.3 (31.4)	73.9 (14.5)
Overall Fears	231.0 (73.5)	204.8 (44.4)
<u>Profile of Mood States (POMS)</u>	N = 7	N = 13
Tension	12.0 (8.0)	8.5 (6.9)
Depression	12.1 (11.8)	8.9 (7.9)
Anger	16.0 (11.2)	9.7 (8.1)
Vigor	11.6 (4.0)	15.4 (6.6)
Fatigue	10.4 (8.3)	9.3 (6.1)
Confusion	8.3 (3.8)	4.9 (3.3)
<u>Self-Report Inventory (SRI)</u>	N = 7	N = 13
Self	16.0 (4.8)	17.1 (4.0)
Other	16.1 (4.3)	17.8 (3.1)
Children	16.4 (4.8)	18.9 (5.4)
Authority	17.0 (1.5)	16.2 (3.5)
Work	18.0 (2.9)	18.0 (2.8)
Reality	13.7 (3.6)	14.4 (3.9)
Parent	12.3 (5.2)	16.7 (5.9)
Hope	19.0 (3.7)	17.3 (3.7)
Total	16.1 (2.7)	16.8 (2.7)
<u>State-Trait Anxiety Inventory (STAI)</u>	N = 7	N = 13
State Anxiety	44.1 (13.7)	35.2 (9.8)
Trait Anxiety	42.9 (11.8)	37.0 (9.9)
<u>Symptom Checklist (SCL-90-R)</u>	N = 7	N = 13
Somatization	.6 (.4)	.4 (.6)
Obsessive-Compulsive	1.0 (.7)	.6 (.8)
Interpersonal Sensitivity	1.0 (.7)	.6 (.7)
Depression	1.0 (.5)	.8 (.8)
Anxiety	.9 (.8)	.4 (.5)
Hostility	.7 (.5)	.5 (.6)
Phobic Anxiety*	.5 (.4)	.1 (.2)
Paranoid Ideation	1.2 (.8)	.8 (1.0)
Psychoticism	.4 (.4)	.4 (.5)
General Severity Index (GSI)	.8 (.5)	.5 (.6)
Positive Symptom Distress Index (PSDI)	1.5 (.4)	1.4 (.5)
Positive Symptom Total (PST)	46.6 (22.6)	28.5 (20.0)
<u>Impact of Event Scale (IES)</u>	N = 7	
Total Distress	1.9 (1.0)	
Intrusion	1.7 (1.2)	
Avoidance	2.1 (1.0)	

\*  $p < .05$

Table 11

## Life Event Differences among Distress Groups

## 1. Experience change in trouble with boss (a lot more or a lot less)?

<u>Group</u>	<u>Yes</u>	<u>No</u>	<u>NA</u>
Low Distress	9.7%	54.8%	35.5%
Moderately Low Distress	25.0	50.0	25.0
Moderately High Distress	6.5	32.2	61.3
High Distress	20.0	23.3	56.7

## 2. Placed in jail or on probation?

<u>Group</u>	<u>Yes</u>	<u>No</u>	<u>NA</u>
Low Distress	3.2%	0.0%	96.8%
Moderately Low Distress	0.0	0.0	100.0
Moderately High Distress	16.1	0.0	83.9
High Distress	3.3	0.0	96.7

## 3. Experienced major business change?

<u>Group</u>	<u>Yes</u>	<u>No</u>	<u>NA</u>
Low Distress	0.0%	45.2%	54.8%
Moderately Low Distress	6.3	53.1	40.6
Moderately High Distress	6.4	19.4	74.2
High Distress	0.0	26.7	73.3

## 4. Physically assaulted during past year?

<u>Group</u>	<u>Yes</u>	<u>No</u>	<u>NA</u>
Low Distress	25.8%	0.0%	74.2%
Moderately Low Distress	6.2	0.0	93.8
Moderately High Distress	22.6	0.0	77.4
High Distress	23.3	0.0	76.7

## 5. Who was assailant in physical assault?

<u>Group</u>	<u>Stranger</u>	<u>Relative</u>	<u>Acquaintance</u>	<u>Significant Other</u>	<u>NA</u>
Low Distress	9.7%	3.2%	0.0%	12.9%	74.2%
Moderately Low Distress	0.0	3.1	0.0	3.1	93.8
Moderately High Distress	0.0	9.7	9.7	3.2	77.4
High Distress	3.3	3.3	0.0	16.7	76.7

## 6. Lost close family member (other than spouse) by death?

<u>Group</u>	<u>Yes</u>	<u>No</u>
Low Distress	12.9%	87.1%
Moderately Low Distress	37.5	62.5
Moderately High Distress	29.0	71.0
High Distress	33.3	66.7

## 7. Number of times had a loving intimate relationship with a man?

<u>Group</u>	<u>None</u>	<u>1</u>	<u>2</u>	<u>3 or more</u>
Low Distress	13.8%	51.7%	20.7%	13.8%
Moderately Low Distress	16.1	71.0	9.7	3.2
Moderately High Distress	20.0	66.7	10.0	3.3
High Distress	44.4	37.1	18.5	0.0



Table 12

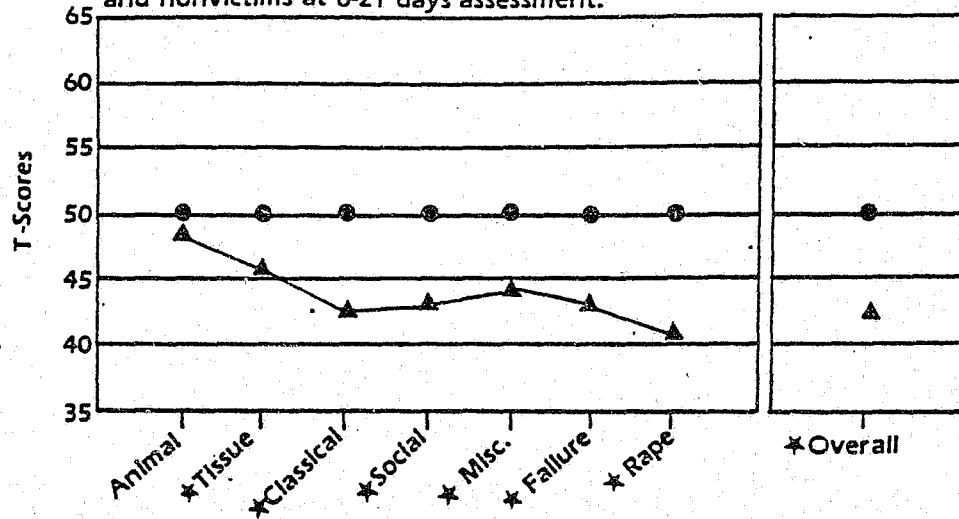
## Self-Esteem Scores of the Coping Success Groups

<u>Group</u>	<u>Self-Report Inventory (SRI) Variable</u>								
	<u>Self*</u>	<u>Other</u>	<u>Authority</u>	<u>Child</u>	<u>Work</u>	<u>Reality**</u>	<u>Parent</u>	<u>Hope</u>	<u>Total</u>
Low Distress	17.33	17.79	15.61	18.67	16.63	15.21	15.13	19.29	16.82
Moderately Low Distress	15.68	17.96	15.55	16.91	16.87	15.50	13.50	18.00	16.28
Moderately High Distress	12.75	16.38	14.00	18.75	16.19	13.00	14.70	17.50	15.40
High Distress	13.67	17.83	15.18	20.26	16.37	12.80	14.71	18.05	15.74

\*  $p < .05$ \*\*  $p < .01$

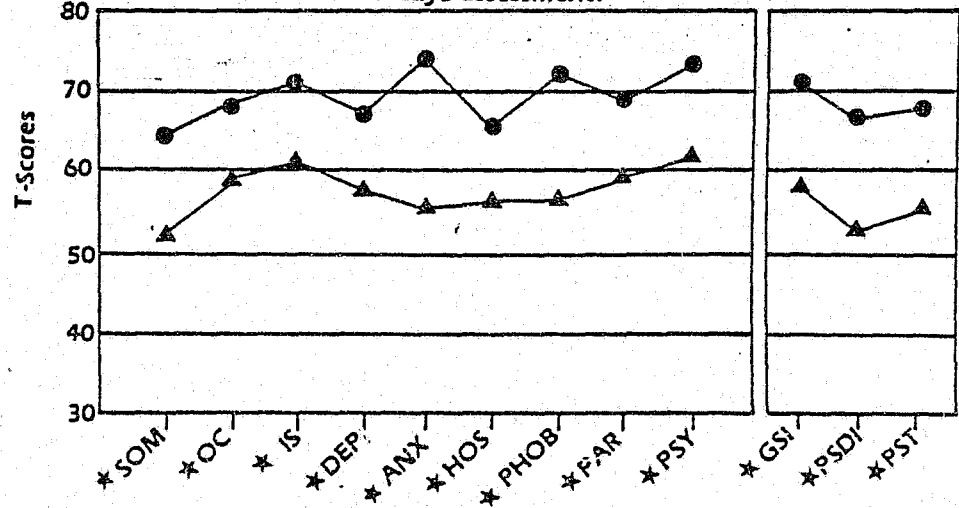
Mean scores on the MFS for victims and nonvictims at 6-21 days assessment.

Figure 1



Mean scores on the SCL-90-R for victims and nonvictims at 6-21 days assessment.

Figure 2



Legend

\* p < .01  
 \* p < .05

victims ●  
 nonvictims ▲

Figure 3

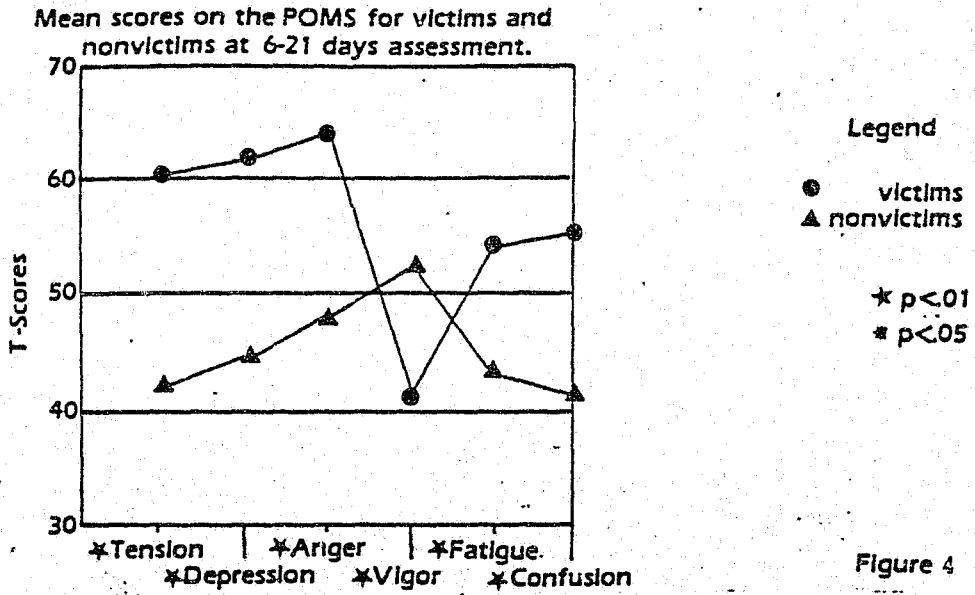
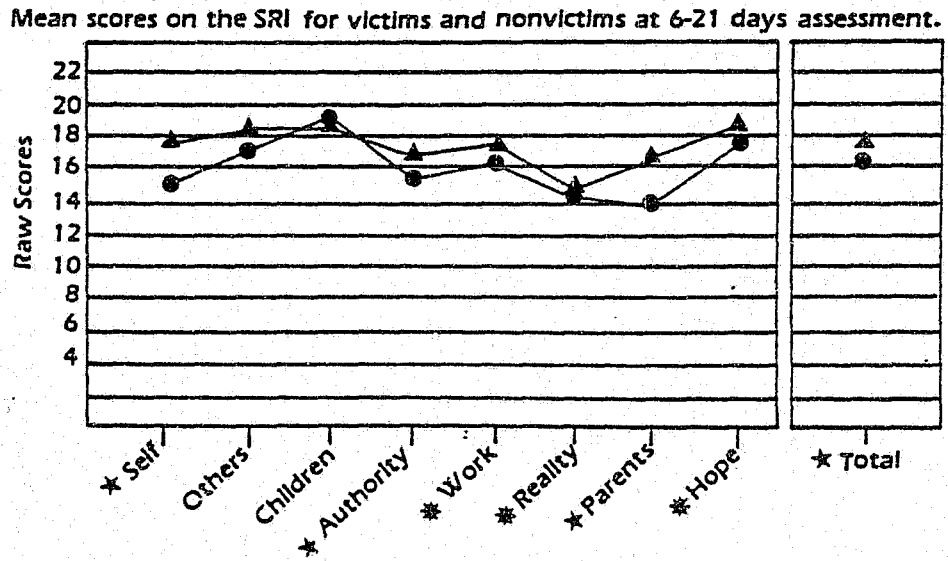
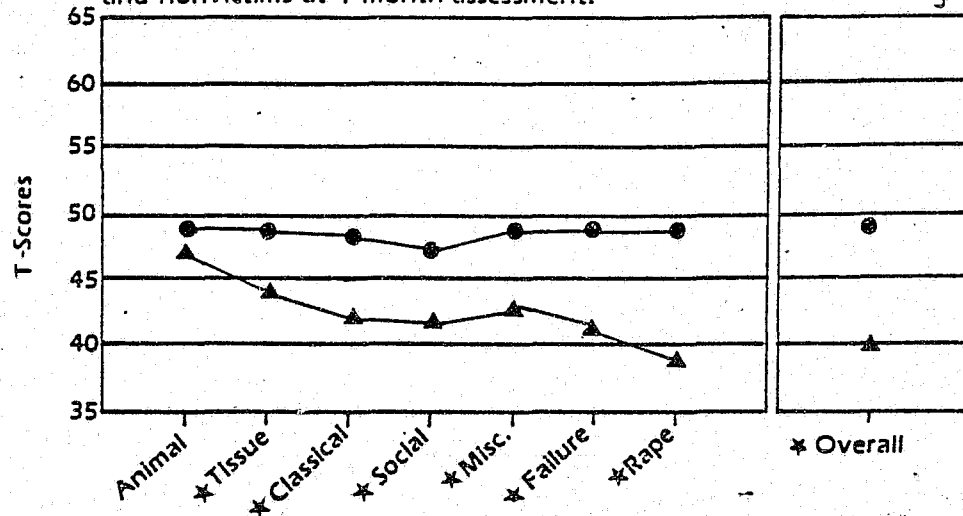


Figure 4



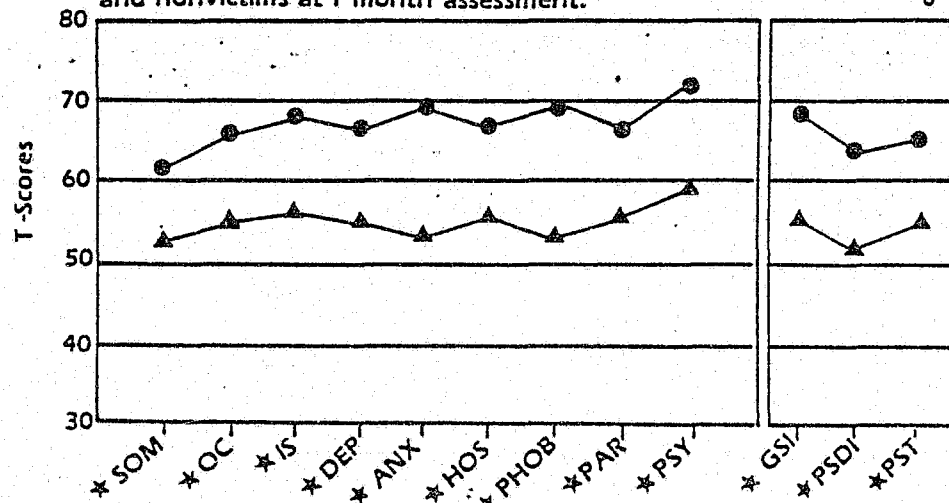
Mean scores on the MFS for victims and nonvictims at 1 month assessment.

Figure 5



Mean scores on the SCL-90-R for victims and nonvictims at 1 month assessment.

Figure 6



Legend

\* p < .01  
 \* p < .05

victims ●  
 nonvictims ▲

Figure 7

Mean scores on the POMS for victims and nonvictims at 1 month assessment.

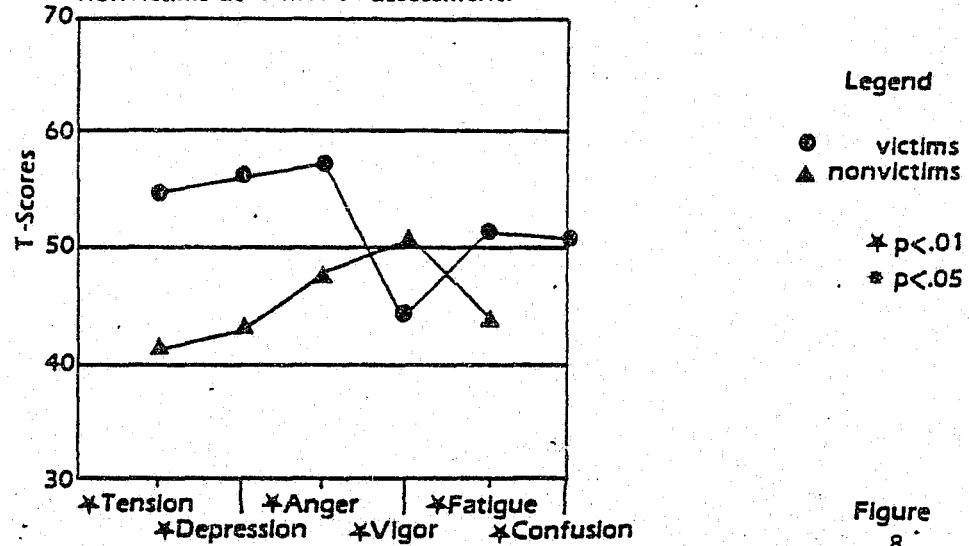
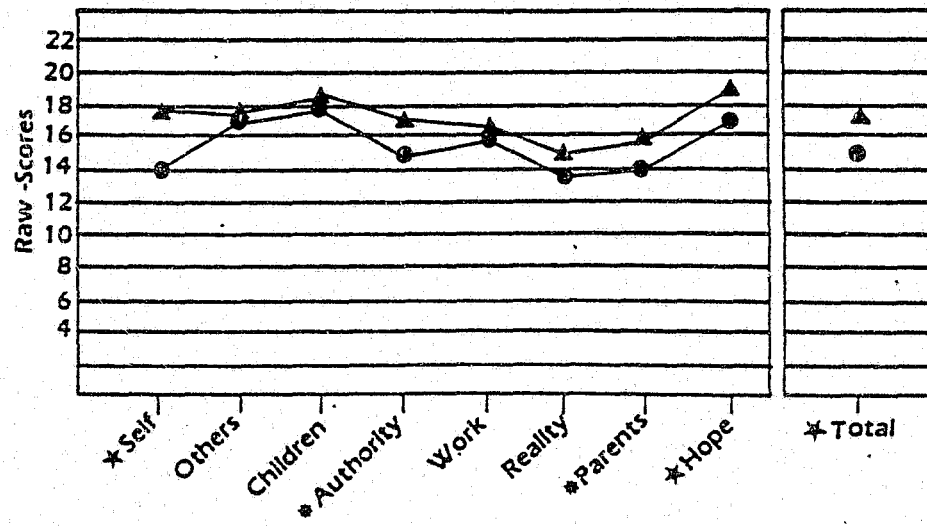


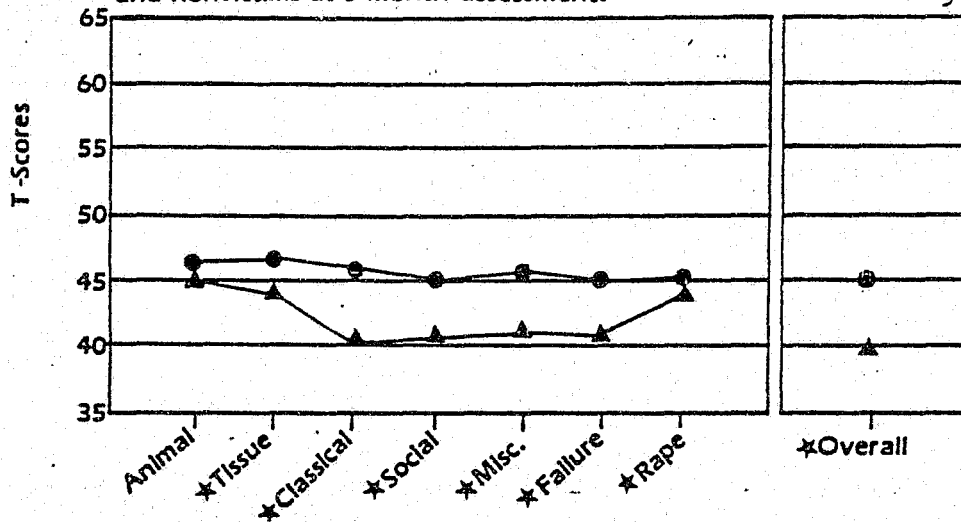
Figure 8

Mean scores on the SRI for victims and nonvictims at 1 month assessment.



Mean scores on the MFS for victims and nonvictims at 3 month assessment.

Figure 9



Mean scores on the SCL-90-R for victims and nonvictims at 3 month assessment.

Figure 10

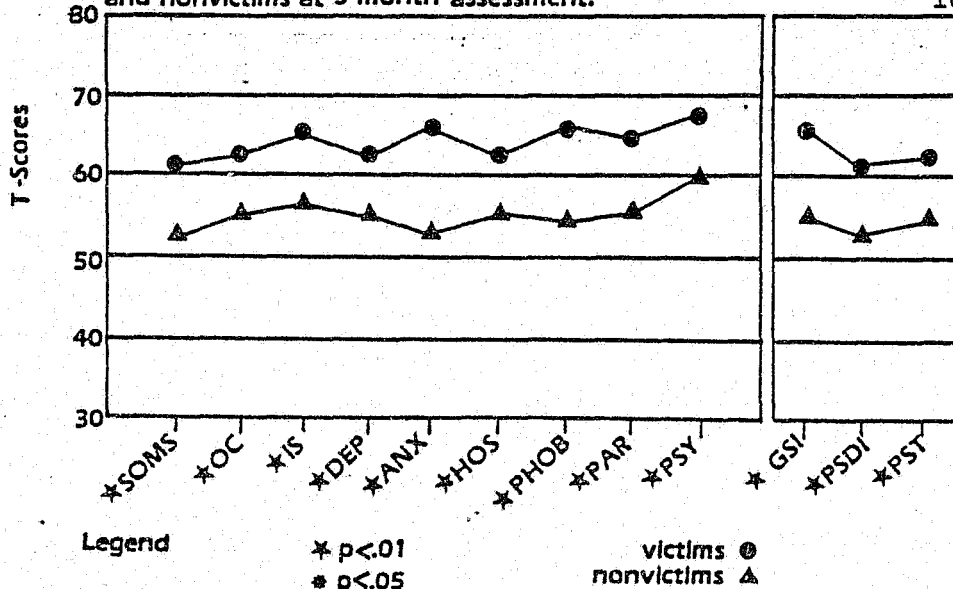


Figure 11

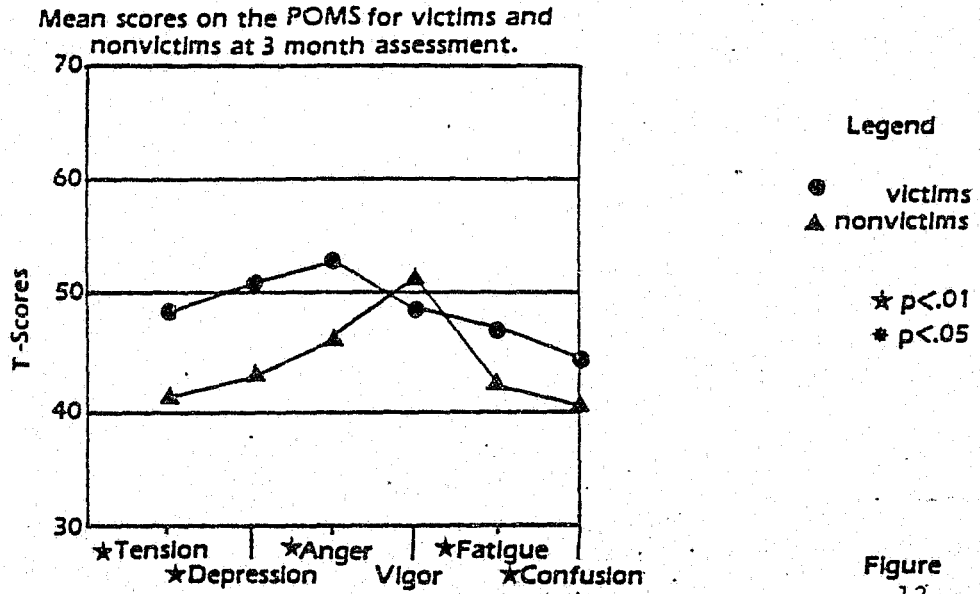
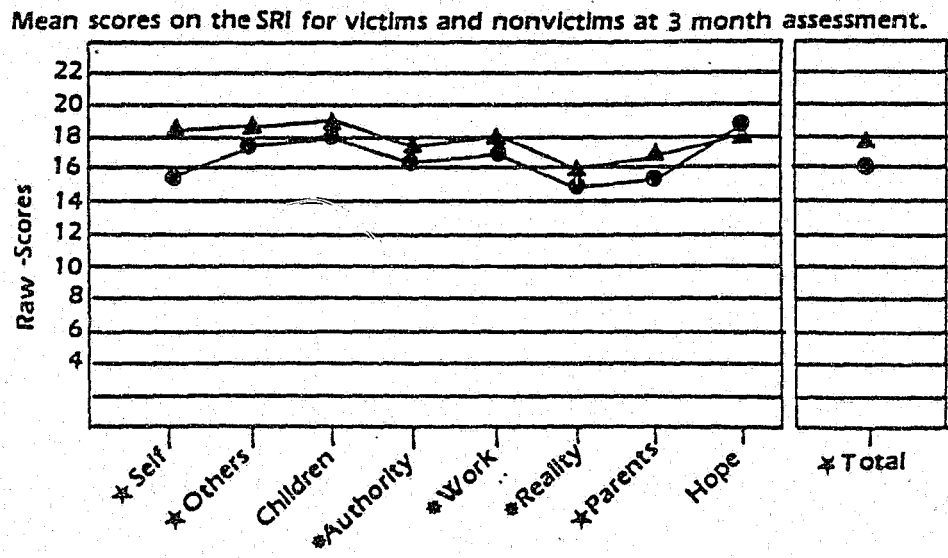
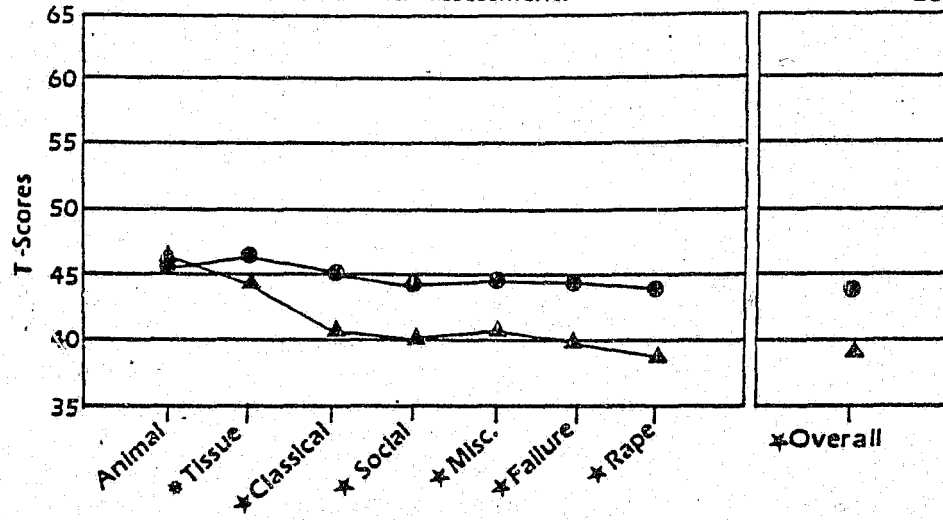


Figure 12



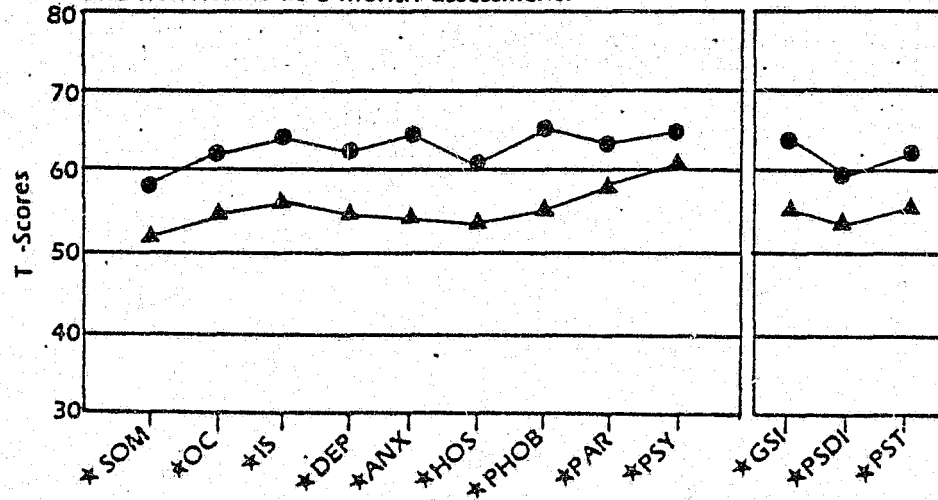
Mean scores on the MFS for victims and nonvictims at 6 month assessment.

Figure 13



Mean scores on the SCL-90-R for victims and nonvictims at 6 month assessment.

Figure 14



Legend

\* p < .01  
 \* p < .05

victims ●  
 nonvictims ▲



Figure 15

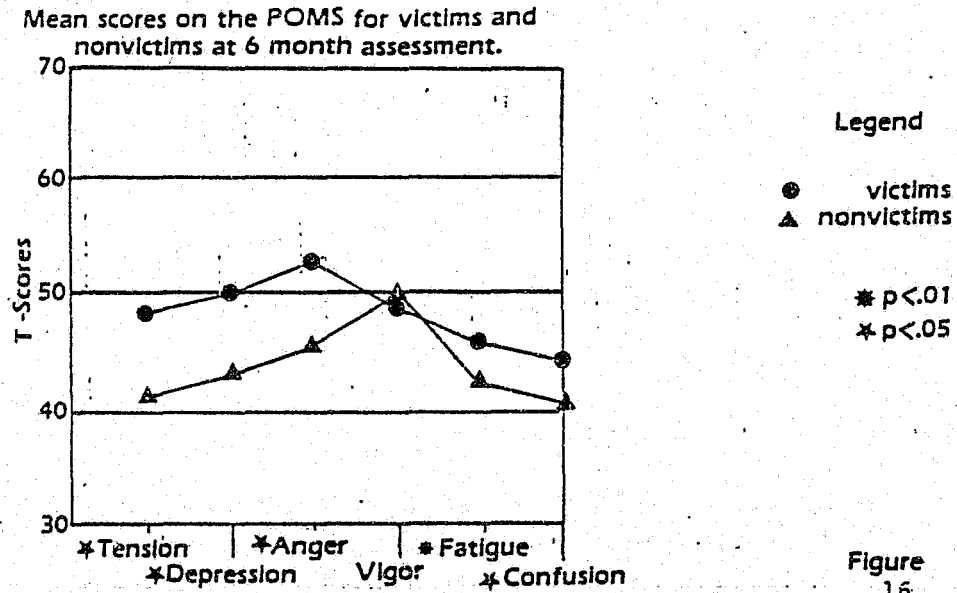
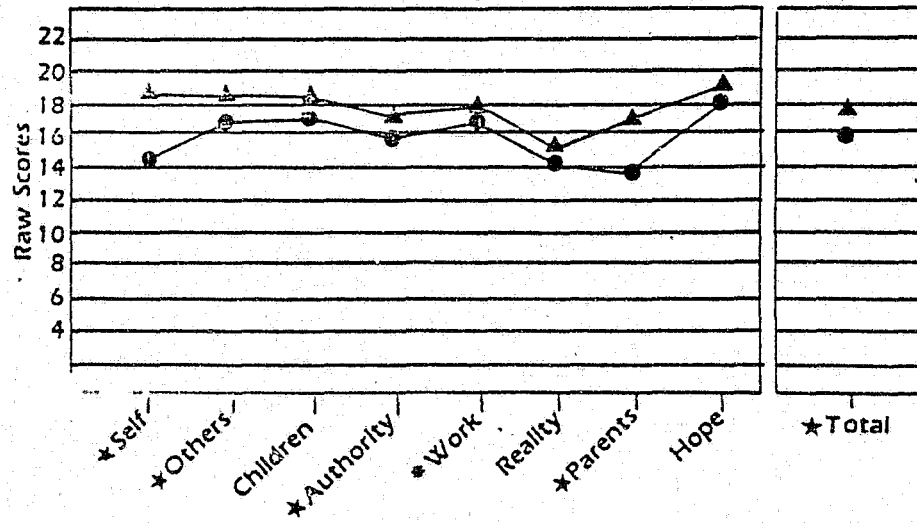


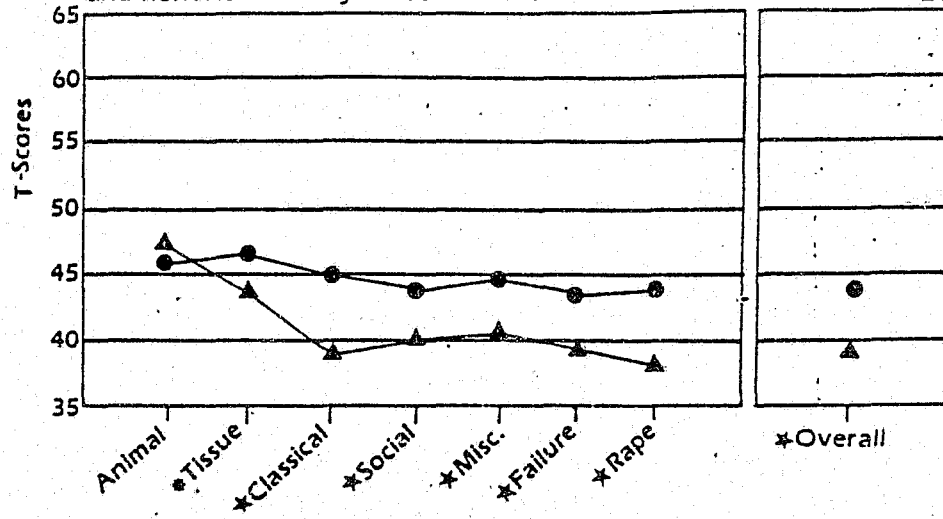
Figure 16

Mean scores on the SRI for victims and nonvictims at 6 month assessment.



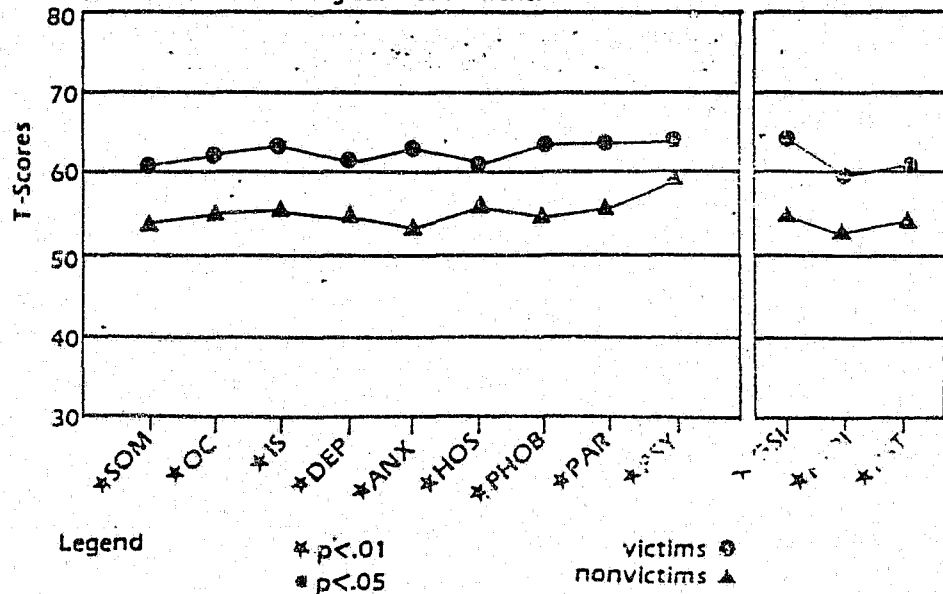
Mean scores on the MFS for victims and nonvictims at 1 year assessment.

Figure 17



Mean scores on the SCL-90-R for victims and nonvictims at 1 year assessment.

Figure 18



Legend

\* p < .01  
 \* p < .05

victims ●  
 nonvictims ▲

Figure 19

Mean scores on the POMS for victims and nonvictims at 1 year assessment.

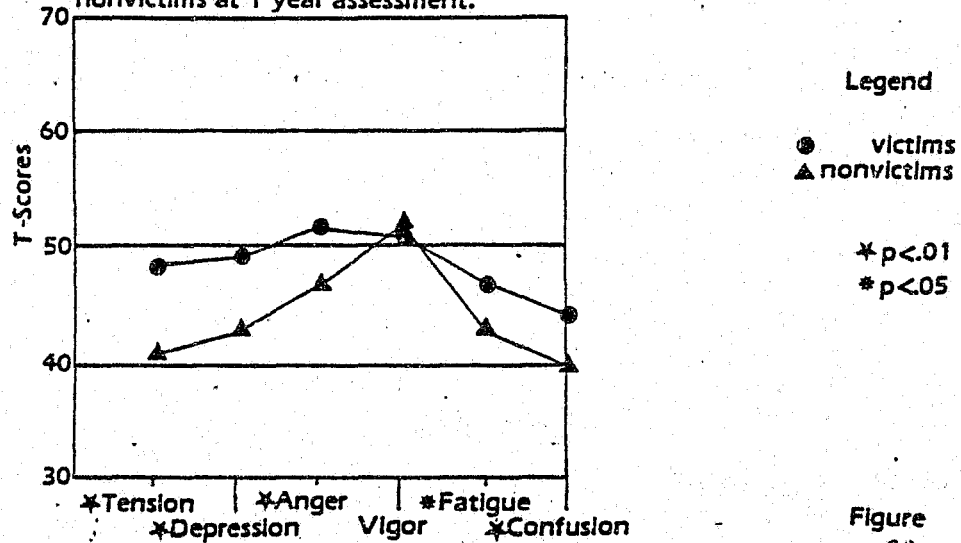
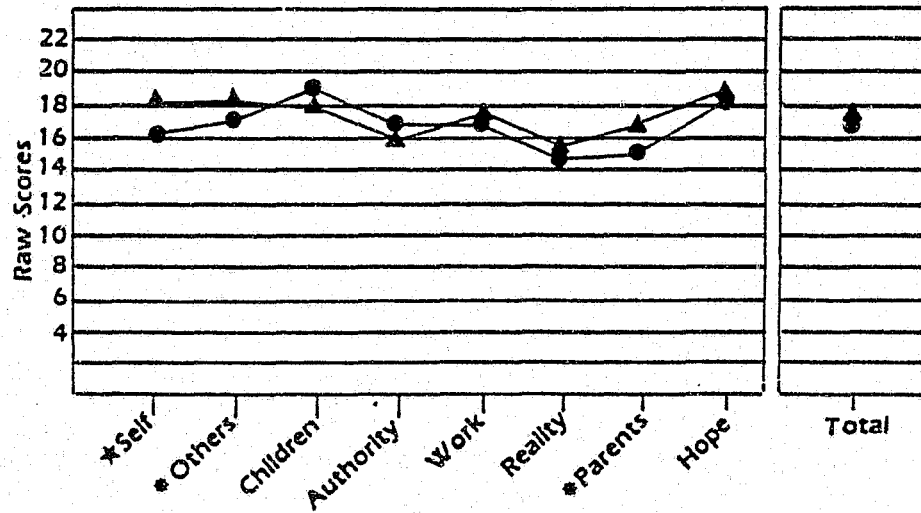


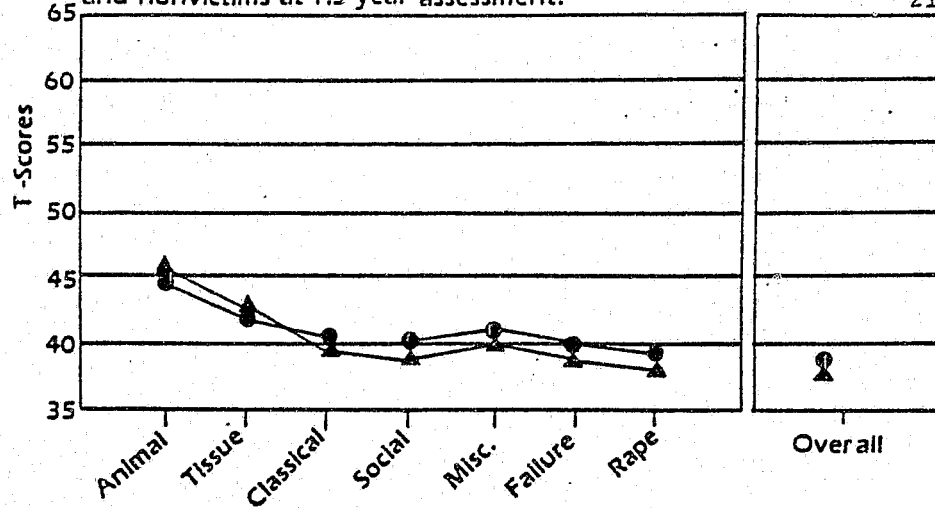
Figure 20

Mean scores on the SRI for victims and nonvictims at 1 year assessment.



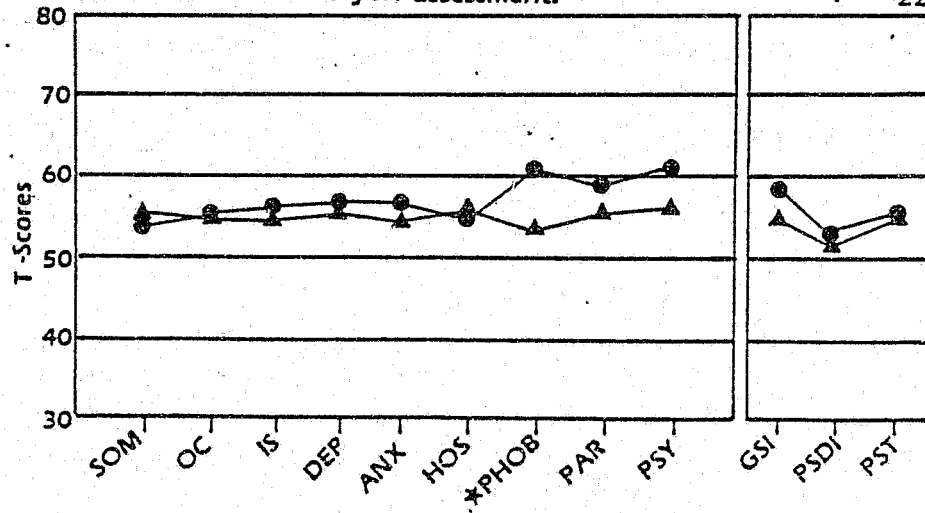
Mean scores on the MFS for victims and nonvictims at 1.5 year assessment.

Figure 21



Mean scores on the SCL-90-R for victims and nonvictims at 1.5 year assessment.

Figure 22



Legend

\* p < .01

# p < .05

victims ●  
nonvictims ▲

Figure 23

Mean scores on the POMS for victims and nonvictims at 1.5 year assessment.

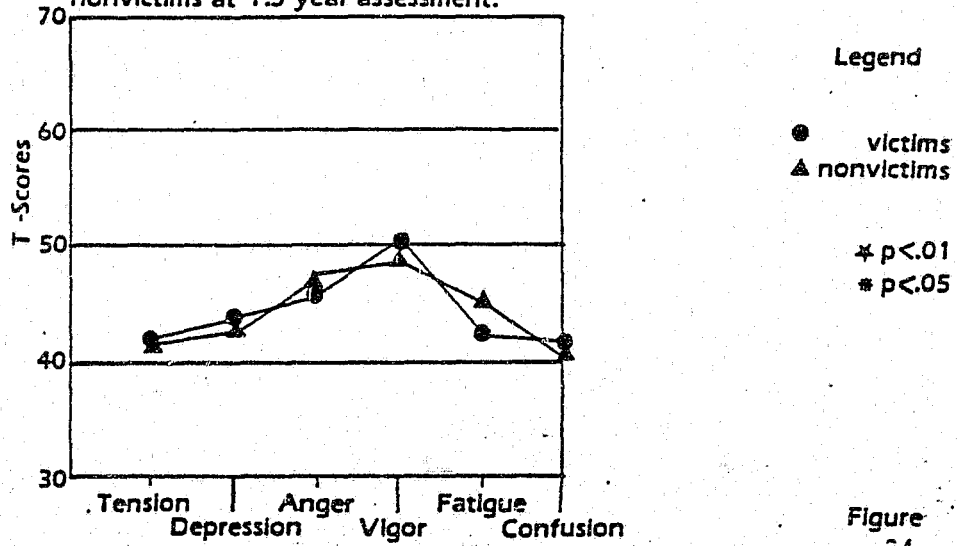
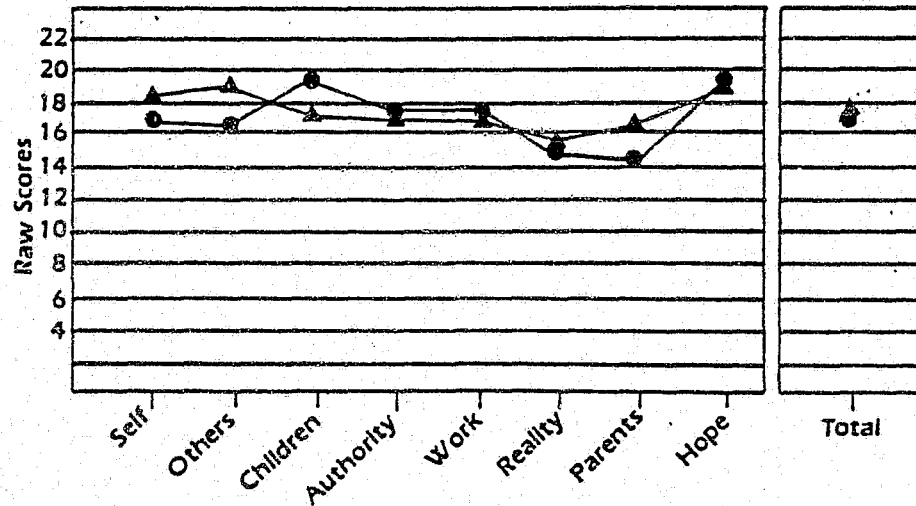


Figure 24

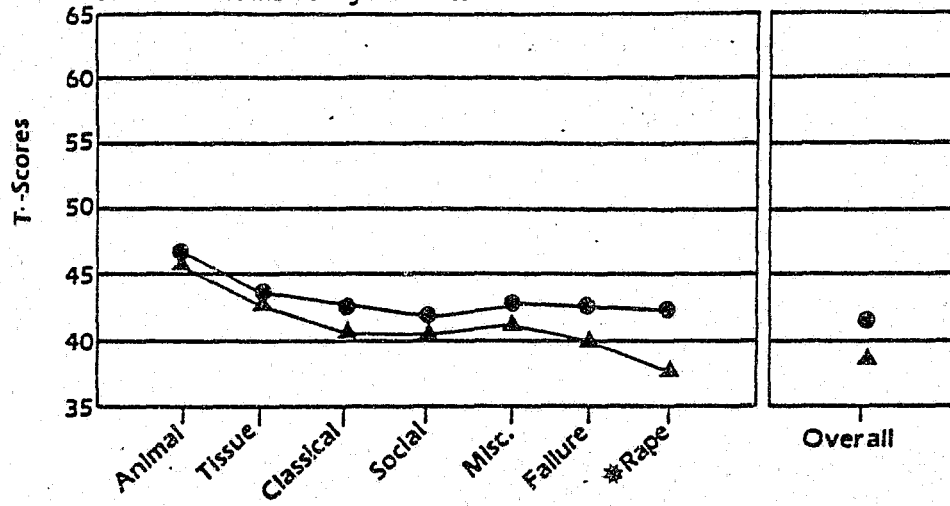
Mean scores on the SRI for victims and nonvictims at

assessment.



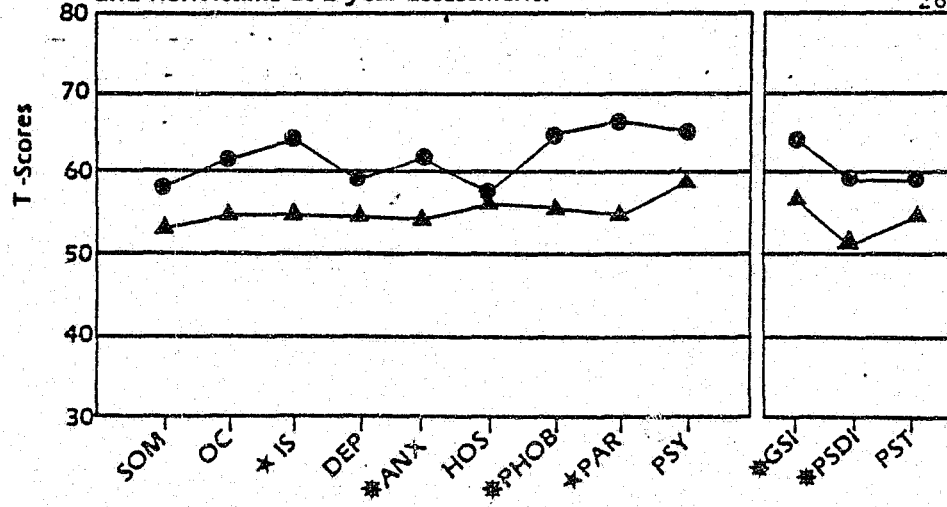
Mean scores on the MFS for victims and nonvictims at 2 year assessment.

Figure 25



Mean scores on the SCL-90-R for victims and nonvictims at 2 year assessment.

Figure 26



Legend

\* p<.01  
\* p<.05

victims ●  
nonvictims ▲

Figure 27

Mean scores on the POMS for victims and nonvictims at 2 year assessment.

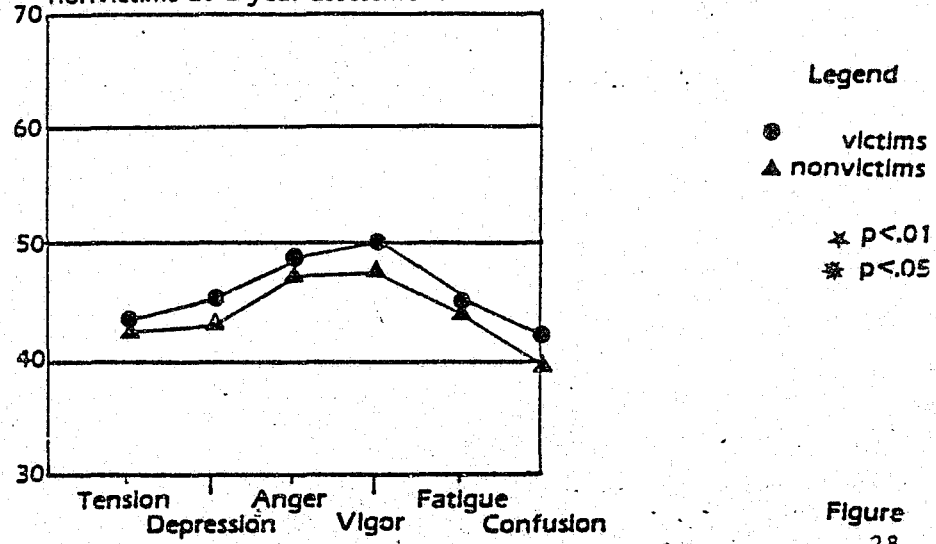
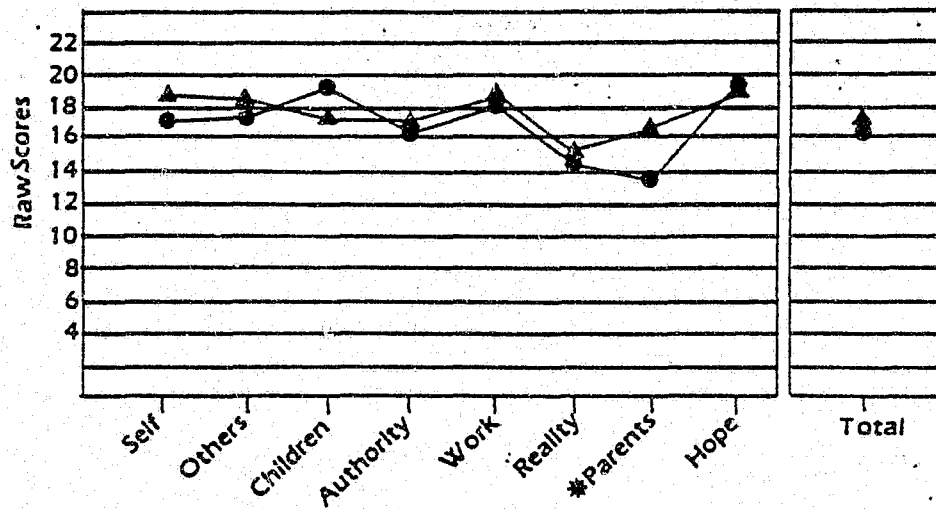


Figure 28

Mean scores on the SRI for victims and nonvictims at 2 year assessment.



T-Scores Based on Victim Norms  
at 6-21 Days Postrape

Figure 29: **MFS Profiles of Victim and Nonvictim Groups at Three Years Postrape**

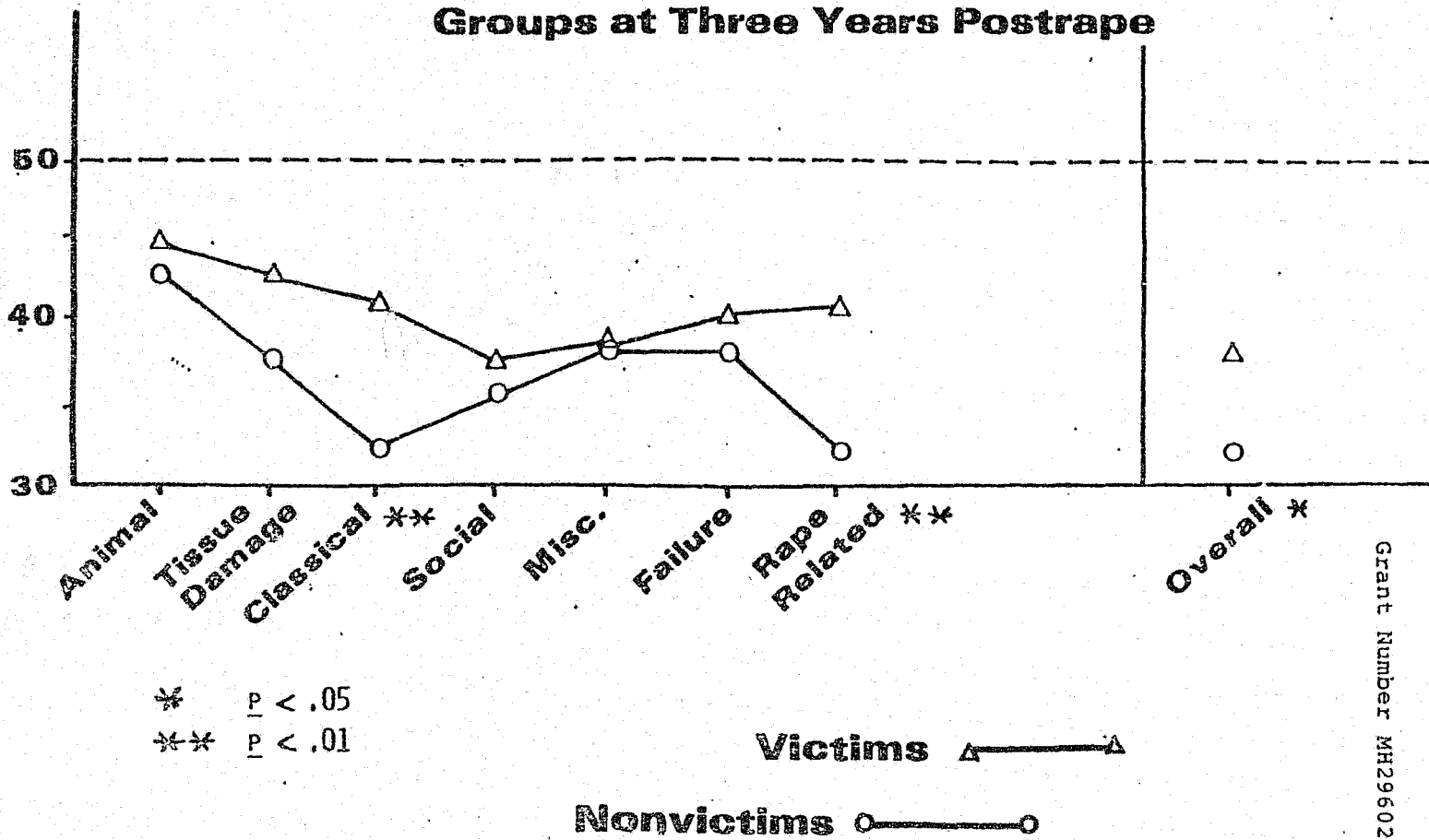
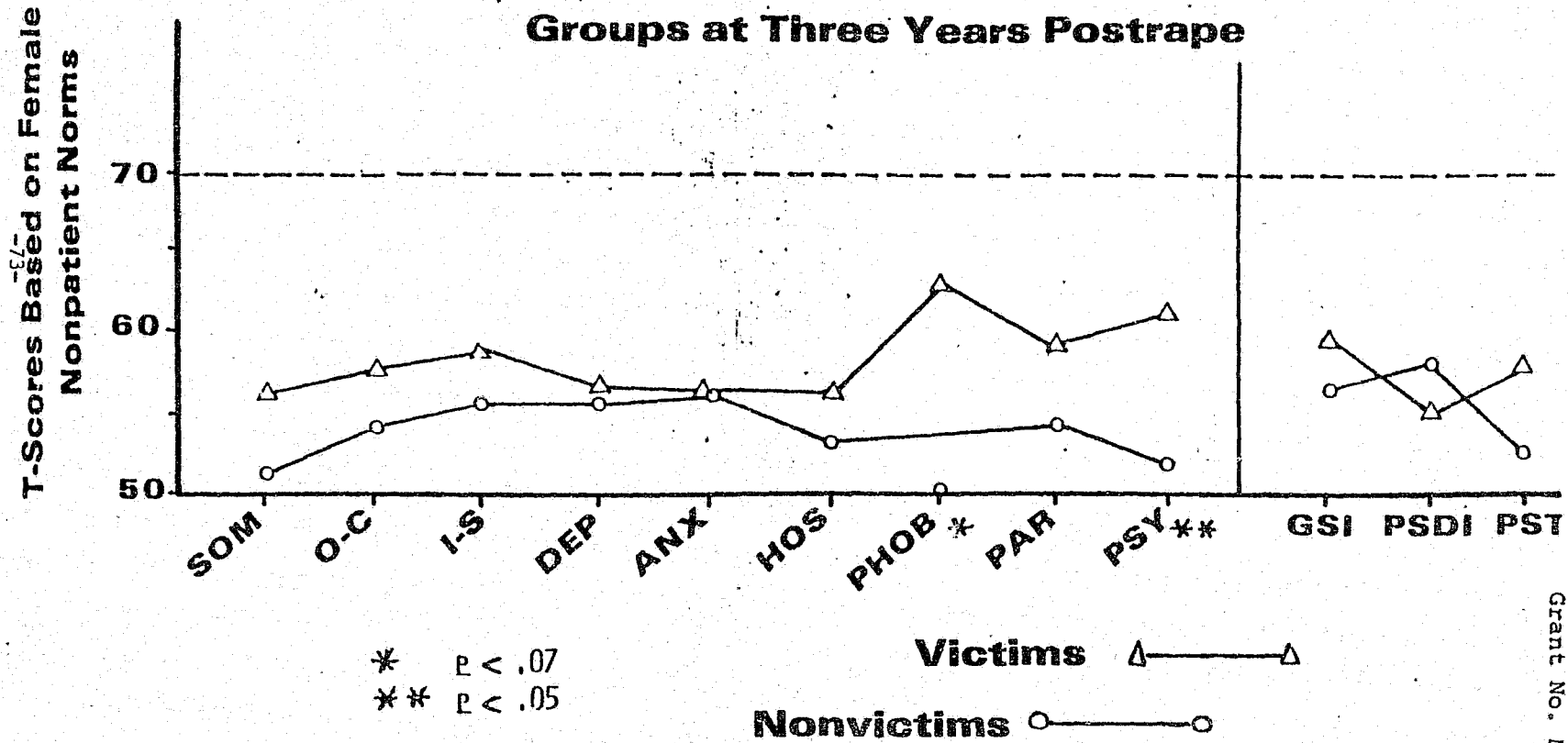




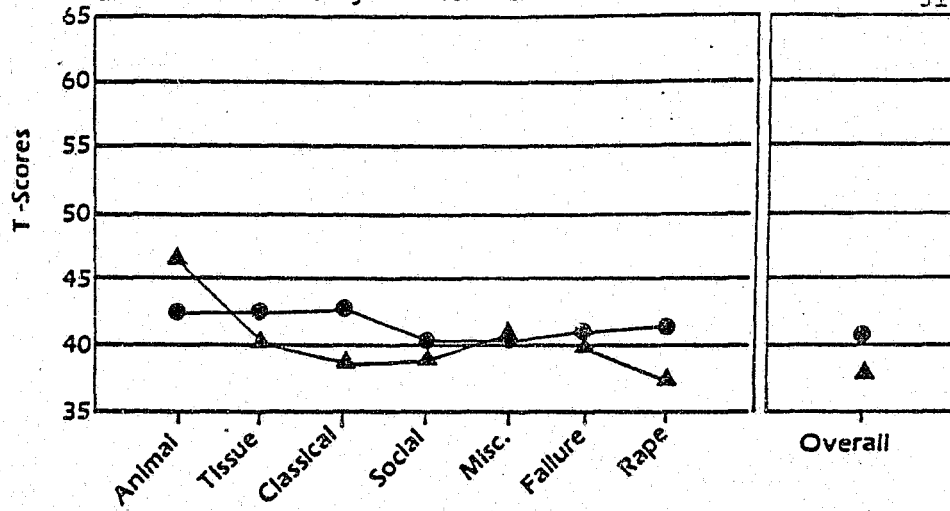
Figure 30

### SCL-90-R Symptom Profiles of Victim and Nonvictim Groups at Three Years Posttrape



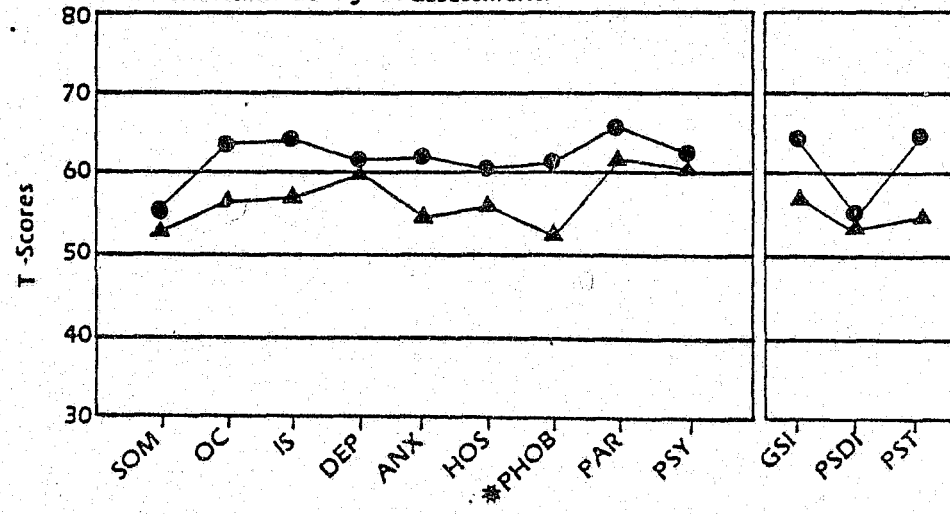
Mean scores on the MFS for victims and nonvictims at 4 year assessment.

Figure 31



Mean scores on the SCL-90-R for victims and nonvictims at 4 year assessment.

Figure 32



Legend

\* p < .01  
 \* p < .05

victims ●  
 nonvictims ▲

Figure 33

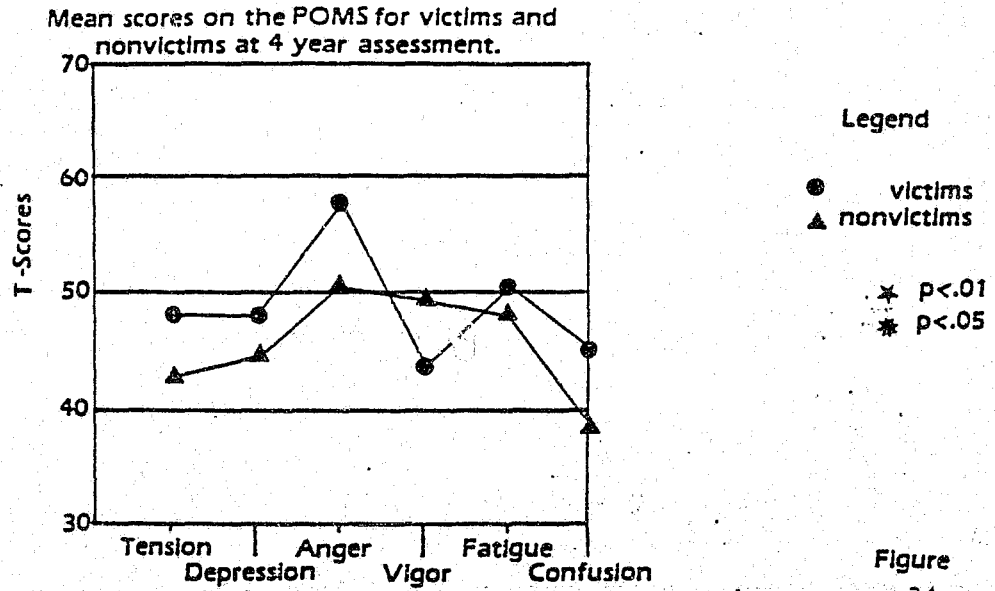


Figure 34

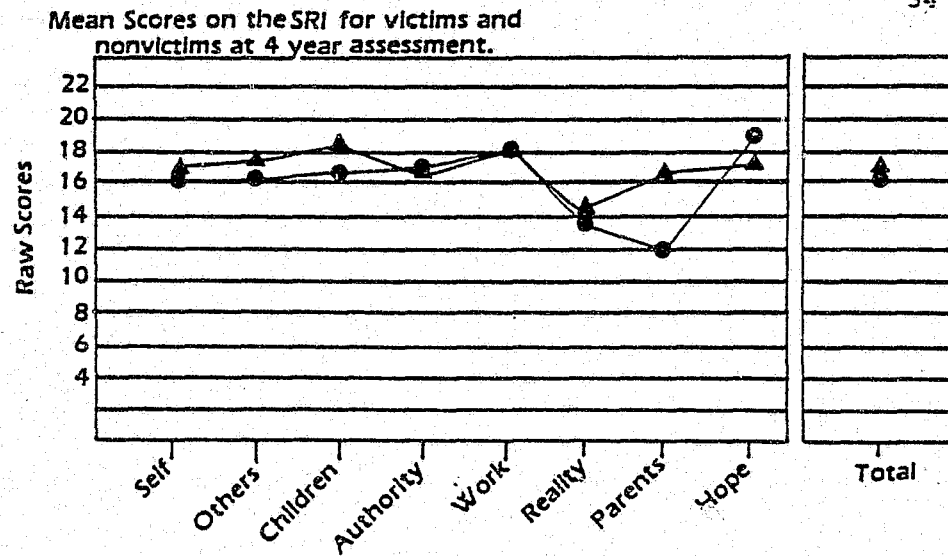
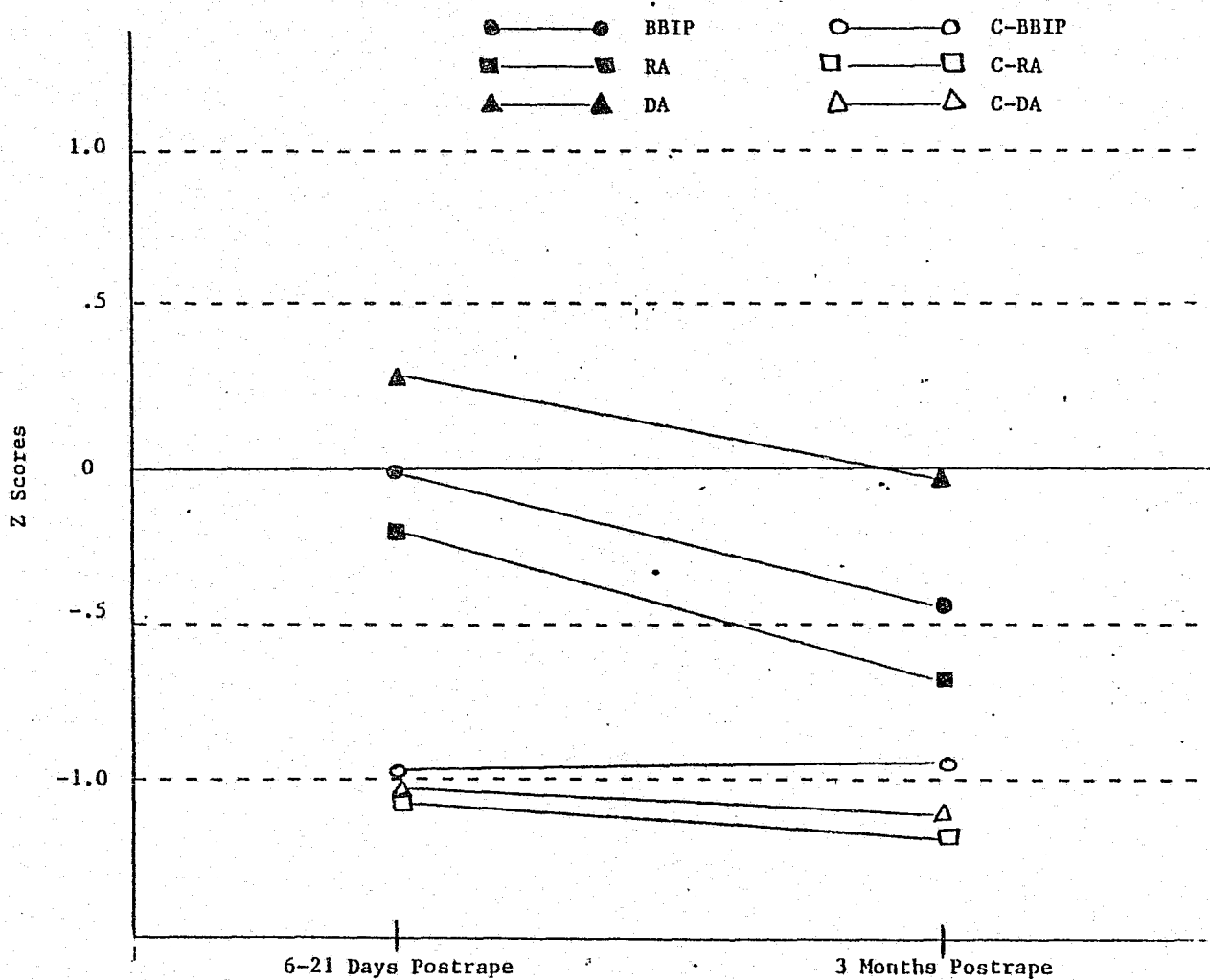


Figure 35

6-21-Day and 3-Month Postrape Distress Index Scores  
of Victim and Nonvictim BBIP, RA, and DA Groups



-76-

Figure 36: Initial assessment mood state profiles of 3-month posttrape victim and nonvictim groups

