

The purpose of the present article is to review the literature on the psychological impact of rape on adult female victims. Typical patterns of recovery, types of symptoms, and variables affecting recovery are all reviewed. Among the problems discussed are fear and anxiety, posttraumatic stress disorder, depression, poor self-esteem, social adjustment issues, and sexual dysfunctions. The moderating variables that are reviewed are preassault variables such as prior psychological functioning and life stressors; within-assault variables such as acquaintanceship status, level of violence, and within-crime victim reactions; and postassault variables such as social support and participation in the criminal justice system.

The Psychological Impact of Rape

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It was my charge to review the impact of rape on psychological functioning. Research on the impact of rape has been important in several respects. Until the impact of the crime was more fully understood and appreciated, rape was a misinterpreted crime that was too often not taken seriously enough by professionals and the significant others in the victims' lives. This misinterpretation of rape as merely unwanted sex, rather than as a life-threatening and traumatic event, affected reporting rates, prosecution, and the development and availability of appropriate forms of treatment for victims. This problem of misinterpretation is still evidenced with acquaintance rape victims.

A thorough understanding of the impact of rape is also important for theory development, for early identification of those victims who are likely to experience particularly difficult reactions or slow recovery, and for the development and assessment of appropriate therapy techniques. Extant research on the psychological effects of rape has already contributed substantial information toward these goals. It is the purpose of this article to describe the most typical pattern of reactions and recovery that has been observed, to delineate the most frequently occurring symptoms found among rape victims, and to review variables that may influence recovery. Finally, recommendations for future research will be made.

PATTERNS OF REACTION AND RECOVERY

As part of the first assessment in a longitudinal study of rape victims' reactions, Veronen, Kilpatrick, and Resick (1979) asked participants to

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describe their emotional and physical reactions during the crime and a few hours later. Ninety-six percent of the victims said they were scared, worried, and were shaking or trembling. Ninety-two percent were terrified and confused. These reactions abated only slightly in the two to three hours following the rape and depression (84%), exhaustion (96%), and restlessness (88%) increased. Burgess and Holmstrom (1974, 1979a) found similar reactions immediately after the assaults in their landmark study of rape conducted at the emergency room of a hospital.

Rothbaum, Foa, Murdock, Riggs, and Walsh (1992) have studied early patterns of reaction by assessing 95 victims of rape or attempted rape weekly for 12 weeks following the crime. They found a consistent pattern with most of the assessment measures they used. At 1 week postcrime, 94% of the subjects met the symptom criteria for posttraumatic stress disorder (PTSD) and were clinically depressed. By 3 months postcrime, 47% still met full criteria for PTSD. The bulk of the improvement occurred within the first month postcrime. Those women who eventually developed chronic PTSD showed little further improvement after the first month on any of the symptom scales. Those women who eventually recovered continued to show gradual improvement through the 3 months of assessment.

Other studies that have assessed women within 2 weeks postassault (Atkeson, Calhoun, Resick, & Ellis, 1982; Calhoun, Atkeson, & Resick, 1982; Feldman-Summers, Gordon, & Meagher, 1979; Kilpatrick, Veronen, & Resick, 1979a; Resick, 1986) have found that the majority of rape victims experience clinically significant fear, depression, other mood states, sexual dysfunctions, and problems with self-esteem and social adjustment.

The longitudinal studies by Calhoun and her associates (Atkeson et al., 1982; Calhoun et al., 1982; Resick, Calhoun, Atkeson, & Ellis, 1981) and more recently by Resick (1988) have found that these reactions tend to continue to be quite strong at 1 month postrape, but begin to improve by 2 to 3 months postrape. Although scores on many symptom scales have returned to normal, many of the scales measuring fear, anxiety, self-esteem, and sexual dysfunctions remain somewhat elevated in rape victims compared to nonvictim comparison groups. One year after the crime, rape victims were still likely to be exhibiting these problems.

In the initial report from their longitudinal study, Kilpatrick et al. (1979a) reported the same pattern of reactions and recovery. However, after increasing their sample size from 35 to 149 rape victims, they found that their sample did not improve to normal levels at 3 months (Kilpatrick & Veronen, 1984). Although there was substantial improvement by the 3-month assessment and no change thereafter on the repeated measures analyses, these women scored as significantly more distressed than nonvictims on 26 out of 28 measures at

3, 6, and 12 months. A dramatic improvement was reported at the 18-month assessment. The 46 rape victims who remained in the study reported significantly greater distress than 69 nonvictims on only one of the 28 measures, phobic anxiety. Apparently, some of the improvement was transitory. At 2 and 3 years postrape, there were differences on several of the fear and anxiety measures between raped and nonraped women.

Studies that have continued to assess rape victims over time (Resick, 1988, for 18 months; Kilpatrick & Veronen, 1983, for 3 years) or have assessed women after an extended period (Burgess & Holmstrom, 1978, after 6 years; Ellis, Atkeson, & Calhoun, 1981, from 1-16 years) have found continued problems with fear or depression. It should be noted at this point, however, that samples in these studies may be biased because of attrition in the longitudinal studies, and initial sample selection bias (e.g., Ellis et al., 1981).

The only studies that have succeeded in obtaining a representative sample of the population to assess the long-term effects of rape are the prevalence study and follow-up assessment study by Kilpatrick and his associates (Kilpatrick, Best, et al., 1985; Kilpatrick et al., 1987). They, too, found significant long-term problems in fear, social adjustment, depression, and sexual disorders in women who had been raped an average of 6 years previously.

An overall pattern has emerged with reasonable consistency in all of these studies. Most rape victims experience a strong acute reaction that lasts for several months. By 3 months postcrime, much of the initial turmoil has decreased and stabilized. Some victims continue to experience chronic problems for an indefinite period of time. These problems fall under the categories of fear/PTSD, depression, loss of self-esteem, social adjustment problems, sexual disorders, and other anxiety disorders (social phobia or obsessive-compulsive disorder). The next section will explore these reactions in more depth.

SYMPTOMS FOLLOWING RAPE

Fear and Anxiety

The most frequently observed symptoms following rape are fear and anxiety. Using the Modified Fear Survey (MFS; Veronen & Kilpatrick, 1980), an instrument specifically designed to assess fear in rape victims, or the Derogatis Symptom Check List-90-Revised (SCL-90-R; Derogatis, 1977), which has a phobic anxiety subscale, several studies have found differences in fear levels between victims and nonvictims. In their longitudinal study,

Kilpatrick and Veronen (1984) found that rape victims had significantly higher scores than nonvictims on seven of the eight MFS subscales and the SCL-90-R phobic anxiety subscale at the 6-to-21-day, 1-month, 3-month, 6-month, and 1-year assessments. As mentioned earlier, fear, as measured by the MFS, decreased at 18 months but reemerged at 2 and 3 years postcrime. Calhoun et al. (1982) reported similar results. Their sample of rape victims exhibited improvement between 2 weeks and 2 months postcrime but continued to score significantly higher than nonvictimized women through 1 year postcrime.

In a longitudinal study comparing rape and robbery victims, Resick (1988) found no differences on the total MFS scores between the two groups for 18 months of assessment, and differences on only one of the subscales, sexual fears, for 6 months following the crime. Rape victims reported significantly more sexual fears than robbery victims. On the Brief Symptom Index (BSI), a shorter version of the SCL-90-R, rape victims reported greater phobic anxiety for 6 months. However, on the Impact of Event Scale (IES; Horowitz, Wilner, & Alvarez, 1979), and the Lifestyle Questionnaire, which was developed for Resick's study to assess behavioral changes and fear/intrusion symptoms following crime, rape victims reported more avoidance and intrusion of thoughts of the event, and more symptoms for 18 months and behavioral changes for 6 months than robbery victims.

It should be noted at this point that Kilpatrick and Veronen (1984) also examined the Impact of Event Scale, but could not compare the scores of rape victims with their nonvictim sample because the scale refers to an event and the nonvictims had no referent trauma for comparison. However, they did find that victims' scores were elevated for 6 months and then declined and stabilized. On their follow-up of the random survey of lifetime victimization, Kilpatrick et al. (1987) had victims of a variety of crimes complete the IES. They found that victims of completed rape exhibited higher levels of intrusion and avoidance than victims of aggravated assault, although both crimes produce significantly higher levels of these two symptoms than do other crimes.

Burnam et al. (1988) conducted a probability survey with 3,132 households and found that 13.2% of the sample had been victims of sexual assault. In comparison with those who did not report sexual assault, the victims reported significantly greater onset of phobias and panic disorder after the assault. These disorders were diagnosed by means of the National Institute of Mental Health Diagnostic Interview Schedule. This sample included men (9.4%) as well as women (16.7%) and childhood as well as adult victimization.

Several studies have examined the development of general anxiety reactions in response to rape. The SCL-90-R (or BSI) Anxiety subscale and the

State-Trait Anxiety Scale (Spielberger, Gorsuch, & Luchene, 1970) have both been used to assess these reactions. Kilpatrick and Veronen (1984) found trait anxiety scores to be higher than state anxiety scores at all sessions. They also found rape victims to score higher than nonvictims at all sessions through 1 year postcrime. On the anxiety scale of the SCL-90-R, victims scored higher than nonvictims through the 2-year assessment but not at 3 years postcrime.

In comparing the reactions of rape and robbery victims, Resick (1988) found that rape victims reported more anxiety on the BSI at all sessions through 18 months postcrime. Kilpatrick et al. (1987) also found that anxiety was a more significant long-term problem in rape victims than other crime victims, although both of these studies found anxiety to be a continuing problem in crime victims.

Posttraumatic Stress Disorder

Because many of the studies on rape were conducted or begun prior to the wide acceptance of the diagnostic category PTSD, or because the studies were more interested in describing symptoms than determining diagnostic categories, PTSD was not studied directly in all but the most recent studies. However, the fear and anxiety reactions that are described in most studies are compatible with a diagnosis of PTSD, although a diagnosis cannot be made without knowing whether a woman exceeds threshold on three criteria: persistent reexperiencing of the trauma, persistently avoiding stimuli or numbing of responsiveness, and increased arousal.

Burgess and Holmstrom (1974) defined such symptoms as traumatophobia in their original study and included all three elements with their description of nightmares, fears and avoidance, feeling of unreality, and physical symptoms. More recently, researchers have conducted structured diagnostic interviews tailored to assess PTSD (Kilpatrick et al., 1987; Rothbaum et al., 1992). As mentioned earlier, Rothbaum et al. (1992) found that at 1 week postcrime 94% of their sample of rape victims met symptom criteria, and at 12 weeks 47% continued to do so. By dividing their sample into two groups, PTSD or non-PTSD, based on their final assessment, Rothbaum et al. (1992) found that those who eventually developed chronic PTSD reported more severe distress initially and showed little improvement after the fourth week, whereas those who eventually recovered continued to improve.

Kilpatrick et al. (1987) found that 3.4% of 204 female victims of crimes, other than rape, sometime during their life, were currently experiencing PTSD. In contrast, 16% of 81 victims of one completed rape currently met

the diagnostic criteria, and 20% of victims of two completed rapes ($n = 10$) had PTSD. Almost 60% of the rape victims met the criteria for having PTSD at sometime in their life.

Most recently "Rape in America: A Report to the Nation" was released by the National Victim Center and the Crime Victim's Research and Treatment Center (Kilpatrick, Edmunds, & Seymour, 1992). This report was released following a longitudinal survey of a large national probability sample of 4,008 adult American women. Of the women surveyed, 507 reported having been raped at least once. Based on this telephone survey, it was found that 31% of all rape victims developed PTSD sometime during their life and 11% still had PTSD at the time of the survey. They estimated that 3.8 million adult American women have had rape-related PTSD and 1.3 million currently have rape-induced PTSD.

Depression

Two groups of researchers have focused primarily on the assessment of depression in rape victims. Frank, Turner, and Duffy (1979) administered the Beck Depression Inventory (BDI; Beck, Ward, Mendelsohn, Mock, & Erbaugh, 1961) to 34 rape victims within 1 month of their assaults. They found that 44% scored in the moderately or severely depressed range. A later study with a larger sample ($n = 90$) resulted in similar findings (Frank & Stewart, 1984). On the BDI, 56% of those subjects fell into the moderately or severely depressed range and 43% of the women were diagnosed as suffering from a major depression based on a semistructured interview. The depression diminished by 3 months postcrime.

Atkeson et al. (1982) examined depressive reactions in rape victims compared to nonvictims over a 1 year period using the BDI and the Hamilton Psychiatric Rating Scale for Depression (HPRS; Hamilton, 1960). The HPRS is a rating scale developed for use by interviewers following a semistructured interview. They found that rape victims' scores on both the BDI and HPRS were significantly different than nonvictims' scores at 2 weeks, 1 month, and 2 months postassault, but not at later assessment periods. On the BDI, at 2 weeks postcrime, 75% of the victims reported from mild to severe symptoms of depression.

Other studies have found similar levels of depression initially (Kilpatrick & Veronen, 1984; Resick, 1988; Rothbaum et al., 1992) using the BDI, the Depression-Dejection scale from the Profile of Mood States Scale (POMS; McNair, Lorr, & Droppleman, 1971) or the Depression subscale from SCL-90-R or BSI. However, Kilpatrick and Veronen (1984) continued to find

differences between victims and nonvictims for 1 year after the crime on both of the depression scales from the SCL-90-R and POMS. Resick (1988) found significant differences on the BDI and the BSI Depression subscale between robbery and rape victims at the 1-, 3-, 6-, and 18-month sessions, but not the 12-month session, on a larger cross-sectional analysis, but found no differences at any session on a longitudinal analysis with a smaller sample.

Studies of long-term effects of rape have also reported problems with depression among rape victims. Ellis et al. (1981), in assessing women 1 to 16 years postrape, found that rape victims were significantly more depressed than a matched comparison group. Forty-five percent of the rape victim sample were moderately or severely depressed as measured by the BDI. On the Pleasant Events Schedule (MacPhillamy & Lewinsohn, 1976), the rape survivors did not differ from the comparison group in their reports of how often they engaged in activities, but victims did report significantly less enjoyment from the activities.

In their clinical follow-up of the randomly surveyed crime victims, Kilpatrick et al. (1987) found their long-term rape victims (mean length of time postrape was 21.9 years) were more likely to be depressed than nonvictims measured by the SCL-90-R and the Mental Health Problem Interview (Robins, Helzer, Croughan, & Ratcliff, 1981). In fact, they found that 8.6% of victims of one rape and 20% of victims of two rapes currently met the diagnosis for major depressive disorder, whereas 45.7% of single-incident victims and 80% of two-incident victims met the lifetime diagnosis of major depressive disorder. Burnam et al. (1988) also found that a greater percentage of people who had been sexually assaulted (17.93%) were likely to experience a major depressive disorder than nonvictims (4.68%) in their household probability sample.

The Rape in America Survey by Kilpatrick et al. (1992) found that of the 507 victims of rape they surveyed, 30% had experienced at least one major depression and 21% were currently depressed at the time of the survey. They contrasted these figures to the finding that only 10% of the women who had never been raped had ever experienced major depression and only 6% were currently depressed.

Finally, the level of suicidal ideation and attempts among rape victims is notable. Although the rates of suicidal behavior are not very high in the first month after victimization (2.9% in Frank et al., 1979; 27% in Frank & Stewart, 1984), Ellis et al. (1981) found that 50% of their long-term sample had considered suicide. Resick, Jordan, Girelli, Hutter, and Marhofer-Dvorak (1988) found that 43% of their sample of 37 women who completed a treatment program had considered suicide after the rape. Seventeen percent made a suicide attempt. Although one might argue that these samples are

biased because they were comprised of treatment-seekers, Kilpatrick, Best, et al. (1985) found in their random survey that 44% of the rape victims had suicidal ideation and that 19% had made a suicide attempt. The Rape in America Survey by Kilpatrick et al. (1992) found that 33% of rape victims versus 8% of nonvictims had ever contemplated suicide, whereas 13% of rape victims versus only 1% of nonvictims had made a suicide attempt.

Self-Esteem

Given that self-blame has been frequently noted in rape victims (Janoff-Bulman, 1979; Libow & Doty, 1979; Meyer & Taylor, 1985), it might be expected that self-esteem would be affected. However, there has been surprisingly little research focusing on self-esteem. Based on Kilpatrick and Veronen's (1984) longitudinal study, Murphy et al. (1988) reported on the self-esteem of 204 rape victims and 173 nonvictims over 2 years. The study used the Self-Report Inventory (SRI; Brown, 1961), which includes eight subscales reflecting self-esteem relative to different arenas such as work, parents, others, and so forth. They found that victims reported significantly lower self-esteem than nonvictims on most of the subscales until the 1-year assessment. At that time, self, others, and parents were still sources of lower esteem for the victims. At 18 months postcrime, only the Self subscale was significant and at 2 years only the Parent subscale was significant.

The longitudinal comparison of rape and robbery victims (Resick, 1988) yielded differences on the Tennessee Self-Concept Scale (TSCS; Fitts, 1965) for 1 year following the crime. Moreover, the TSCS was the only scale used in the study that resulted in differences between women who were raped versus those who were both raped and robbed. Analyses were conducted on three groups: rape victims, robbery victims, and rape-robbery victims. The TSCS consists of an overall self-esteem score and eight subscales that are different from those assessed by the SRI. The three victim groups differed on overall self-esteem at 1, 3, and 6 months postcrime and there were trends ($p = .07$) at the 12- and 18-month assessments.

Post hoc analyses revealed that at 1 and 3 months postassault, rape and robbery victims continued to have greater self-esteem than rape-robbery victims. At 6 months postcrime, robbery victims continued to have greater self-esteem than rape-robbery victims. On the multivariate analyses of variance (MANOVAs) for the subscales, there were differences at all assessment sessions through 1 year. Patterns changed somewhat from session to session, but overall, rape-robbery victims had lower esteem regarding physical self, social self, and identity than either rape victims or robbery victims.

Although there was no comparison group, Resick et al. (1988) found substantial long-term problems with self-esteem in rape victims seeking treatment. They found that at the time they entered therapy, the average TSCS scores of rape victims were one-half to one standard deviation below the population norms for the scale. Schnicke and Resick (1990) examined the relationship between self-blame and self-esteem in treatment-seeking rape victims. They found that attributions of self-blame predicted higher self-criticism scores on the TSCS.

Social Adjustment

In some ways the subscales of the Self-Report Inventory may reflect social adjustment as well as self-esteem, because the scales concern work, authorities, parents, children, and others. The other major instrument that has been used to assess social adjustment is the Social Adjustment Scale (SAS) by Weissman and Paykel (1974). In addition to an overall adjustment score, the scale assesses work, social and leisure, extended family, marital, parental, family unit, and economic functioning.

Resick et al. (1981) examined social adjustment in rape victims and nonvictims for 1 year postcrime. They found that the victims had poorer overall economic and social and leisure adjustment for 2 months after the crime than nonvictims. Work adjustment was impaired for 8 months. Marital, parental, and family unit adjustment was not impaired at all, and extended family adjustment was affected for 1 month. To determine the effects of repeated assessment, three other groups of rape victims were tested once at 2, 4, or 8 months postcrime. The single-tested groups at 4 and 8 months were having significantly more social adjustment problems than the longitudinal sample at the same time periods. Perhaps participation in a longitudinal research project lent credibility to the reactions of rape victims such that significant others provided more social support and fostered social adjustment.

Because work adjustment appeared to be a particular problem following crime, Resick (1988) included the work subscale in the battery comparing rape and robbery victims. She found no differences between the groups at the five sessions included in that study. However, another measure of social functioning, the interpersonal sensitivity scale from the SCL-90-R, was found to be more elevated in rape than robbery victims at 3 and 6 months postcrime. Kilpatrick and Veronen (1984) found that victims differed from nonvictims on interpersonal sensitivity until the 18-month assessment and then again at the 2-year assessment.

Social adjustment, measured with the SAS, was also assessed in two studies of long-term reactions. Ellis et al. (1981) found that rape victims differed from controls in only one area, family adjustment. In their randomly surveyed population sample follow-up, Kilpatrick et al. (1987) found that a history of rape was associated with current social adjustment problems. Completed rape was particularly associated with social and leisure, family unit, and marital adjustment problems. They also found that rape victims were 5.8 times more likely than nonvictims of crime and 4.5 times more likely than nonrape victims to be suffering from social phobia as determined by the Mental Health Problem Interview.

Sexual Functioning

Problems in long-term sexual functioning have been observed by a number of researchers (Becker, Abel, & Skinner, 1979; Becker, Skinner, Abel, & Cichon, 1986; Becker, Skinner, Abel, & Treacy, 1982; Burgess & Holmstrom, 1979b; Ellis, Calhoun, & Atkeson, 1980; Feldman-Summers et al., 1979; Miller, Williams, & Bernstein, 1982). Sexual dysfunctions are among the most long-lasting problems experienced by rape victims. The most immediate reaction is probably avoidance of sex. Ellis et al. (1980) found that of the rape victims who had been sexually active prior to the crime, 29% stopped having sex with their partner completely and 32% had sex less often at the 2-week postcrime assessment. At the 4-week assessment 43% of the sample had not been sexually active. However, by 1 year postcrime, the frequency of sexual activity had returned to normal levels for those women who had sex frequently or somewhat frequently before the crime. Women who had sex infrequently before the crime had not returned to prerape levels at the end of a year. Continued avoidance is apparently easier for those women who do not have a regular partner in their lives.

Burgess and Holmstrom (1979b) found very similar patterns. Seventy-eight percent of their sample of 81 sexual assault victims had been sexually active at the time of the crime. Of those women, 38% gave up sex for at least 6 months and 33% decreased their frequency of sexual activity. At the 4- to 6-year follow-up, 30% still considered themselves not recovered.

Studies comparing the sexual satisfaction of rape victims with nonvictims (or robbery victims) are all consistent in their findings that rape survivors experience less sexual satisfaction (Feldman-Summers et al., 1979; Orlando & Koss, 1983; Resick, 1986) and more sexual dysfunctions (Becker et al., 1982; Becker et al., 1986; Kilpatrick et al., 1987; Resick, 1986) even when the rape was unacknowledged by the victim (Orlando & Koss, 1983).

In probably the largest study of sexual functioning in sexual assault survivors, Becker et al. (1986) determined the frequency and types of sexual dysfunctions in 372 survivors of sexual assault including rape, attempted rape, incest and child molestation, compared to 99 nonvictims. They found that 59% of the sexual assault victims had at least one sexual dysfunction compared to 17% of the comparison sample. Of the sexually dysfunctional sexual assault victim sample, 69% reported that the assault was directly responsible for the development of their sexual problems. An analysis of this subsample of 152 sexual assault victims revealed that the vast majority of them (88%) were suffering from early-response-cycle-inhibiting problems, which include fear of sex, arousal dysfunction, and desire dysfunction. Compared to the dysfunctional nonassaulted women, the sexual assault survivors were more likely to experience fear of sex and arousal dysfunction. Unfortunately, this study did not compare the different types of sexual assault so the differential effect of rape, incest, sexual molestation, or attempted rape on sexual functioning is not yet known.

Other Psychological Reactions to Rape

Although less frequently reported, there are some other psychological symptoms and problems that must be noted. As measured by the SCL-90-R or the diagnostic interview, rape victims are more likely to have obsessive-compulsive symptoms than nonvictims (Kilpatrick & Veronen, 1984; Kilpatrick et al., 1987) or robbery victims (Resick, 1988) for an extended period of time. Kilpatrick and Veronen (1984) found differences between victim and nonvictim comparison samples until 18 months, and Kilpatrick et al. (1987) found a history of rape to be associated with current obsessive-compulsive symptoms in their population sample follow-up. Although Resick (1988) found no differences between rape and robbery victims at 1 month postcrime, rape victims reported more obsessive-compulsive symptoms than robbery victims at 3, 6, and 12 months. Burnam et al. (1988) found more frequent obsessive-compulsive disorder in sexual assault victims than nonvictims.

The Profile of Mood States and the SCL-90-R have several other subscales that have differentiated victims from nonvictims. In addition to depression and anxiety, victims report more anger and hostility (Kilpatrick & Veronen, 1984; Kilpatrick et al., 1987), fatigue (Ellis et al., 1981; Kilpatrick & Veronen, 1984), and confusion (Kilpatrick & Veronen, 1984) than nonvictims for extended periods of time.

Burnam et al. (1988) reported that sexual assault victims were more likely to develop alcohol abuse and dependence than nonvictims, but they also

reported that male victims were more likely to develop such problems than female victims. Age at the time of the assault was also related to the onset of alcohol abuse. Those victims who were age 15 or younger at the time of the assault were more likely to develop an alcohol problem.

The Rape in America Survey by Kilpatrick et al. (1992) also examined alcohol and drug use. They found that compared to nonvictims, rape victims were 3.4 times more likely to have used marijuana (52% versus 16%); 6 times more likely to have used cocaine (15.5% versus 2.5%); 10 times more likely to have used other hard drugs (12% versus 1%); and 5 times more likely to have used prescription drugs nonmedically (15% versus 3%). Compared to rape victims without PTSD, those with PTSD had much higher rates. For example, those with PTSD were 5 times more likely to have two or more major alcohol-related problems and 4 times more likely to have two or more serious drug-related problems.

Finally, the development of more severe psychopathology subsequent to rape should not be overlooked. Although psychosis has not typically been evaluated in rape victims, they frequently score higher on the psychoticism and paranoid ideation subscales from the SCL-90-R (Kilpatrick & Veronen, 1984; Kilpatrick et al., 1987; Resick, 1988) than either nonvictims or victims of other crimes. Elevations could reflect feelings of fear, alienation, or confusion regarding symptoms such as flashbacks, or could reflect more severe thought disorders.

In the population survey of female crime victims, Kilpatrick, Best, et al. (1985) found rape victims more likely to have suffered a "nervous breakdown" than either nonvictims or other crime victims. Because the term "nervous breakdown" was self-defined by respondents, it is not possible to determine what proportion of the 16% reporting breakdowns were describing acute psychotic reactions versus anxiety attacks, depressive reactions, or severe PTSD. Psychosis, as assessed by the clinical interview, did not appear to be associated with rape in the follow-up study (Kilpatrick et al., 1987). Burnam et al. (1988), in their probability survey, found that sexual assault was not related to a later onset of mania or schizophrenia. Nevertheless, clinicians and researchers should be aware that severe reactions could occur in some victims of rape, particularly in those who are susceptible to such disorders prior to the rape.

Conclusions

Overall, a pattern of reactions has emerged in the research that indicates that rape is a life event that causes considerable upheaval in a victim's

psychological functioning for a considerable period of time, perhaps the rest of her life. The research on fear and anxiety has been remarkably consistent; rape victims suffer fear and anxiety reactions, including sexual fears and dysfunctions, that abate somewhat over the first few months postcrime but then continue at an even level for an indefinite period of time.

The findings on depression are not so consistent. Some studies found that depressive symptoms had returned to normal within a few months after the assault. Other studies found that victims continued to experience depressive symptoms for much longer periods of time. And those studies that assessed victims after an extended period of time found very high rates of suicidal ideation among them. It is not clear whether participating in assessment research fairly soon after the crime may have a therapeutic effect or whether there are some differences in the samples of women who report victimization and are willing to participate in research versus those who either do not report their victimization or refuse to participate in research. Nevertheless, it is clear that researchers and clinicians should be aware of this discrepancy in the literature and be sensitive to the importance of depressive symptoms and suicidal ideation and attempts in the aftermath of rape.

Other types of symptoms warrant further research. Self-esteem has been studied all too little, but there is evidence that it may be profoundly affected by sexual assault. Interpersonal functioning is difficult to assess in all its complexities but certainly is affected by rape and needs further investigation. Issues such as loss of trust in others are frequently noted by clinicians but have not been subjected to empirical scrutiny. It is clear that although the research has come a long way in delineating the most typical patterns of reactions and symptoms, there are some areas that need to be examined further.

VARIABLES AFFECTING RECOVERY

Despite the relative consistency of findings in the literature regarding patterns of reaction and recovery, individuals within samples do not all react identically. Some women have relatively mild or short-term reactions whereas others are devastated by rape. A wide range of variables have been examined in an effort to predict those women who will need more assistance in recovering from rape, as well as to obtain more information that may play a role in theory development.

Preassault Variables

Demographic Variables

The role of such demographic variables as age, race, and socioeconomic status (SES) in the extent of reactions and recovery from rape are somewhat equivocal at this time. In both the final analyses from their longitudinal study (Kilpatrick & Veronen, 1984) and their population survey (Kilpatrick, Best, et al., 1985), Kilpatrick and his colleagues found that demographic variables had little effect on victims' responses to crime. Other researchers also found that some demographic variables do not play a role in recovery (Becker et al., 1982; Ruch & Leon, 1983). However, Atkeson et al. (1982) found that greater age and lower SES predicted depression at 12 months postcrime. In a study in Hawaii, Ruch and Chandler (1980) found that Asian victims suffered greater trauma than Caucasian victims and that adult victims expressed greater trauma than child rape (nonincest) victims. Burgess and Holmstrom (1978) also found with their 4- to 6-year follow-up that less economically advantaged rape survivors had more symptoms.

Rather than examining age as a continuous variable, Thornhill and Thornhill (1990a, 1990b) compared three groups: prereproductive, reproductive-aged, and postreproductive women. Using a very limited outcome measure of 13 items they labeled "psychological pain," they found that reproductive-aged women were more traumatized even when the level of force and violence was controlled. These findings need replication because 5 of the 13 variables were concerned with heterosocial and sexual functioning, which by definition, are usually of more concern to reproductive-aged women.

Prior Psychological Functioning and Life Stressors

There is stronger evidence that prior psychological functioning or life stressors play a role in recovery. Although Kilpatrick and Veronen (1984) did not find that psychiatric history predicted distress level at 3 months, several other studies have found such a connection. Ruch and Leon (1983) found preexisting mental health problems one of the most influential variables affecting the level of trauma at intake, which was a maximum of 48 hours after the rapes. Although a history of psychotherapy or hospitalization was not associated with elevations in depression, fear, or anxiety, Frank, Turner, Stewart, Jacob, and West (1981) found that victims with a history of psychotropic medication, alcohol abuse, suicidal ideation or attempts were more distressed in the first month after the rape than victims without such histories.

In another study, Frank and Anderson (1987) found that based on clinical interviews, those victims with a prior diagnosis (using *DSM-III* criteria) were significantly more likely to meet criteria for a psychiatric disorder in the first month after rape than those with no diagnosable disorder in their histories. With regard to longer-term recovery, Atkeson et al. (1982) found that depression, suicidal history, and sexual adjustment prior to the rape significantly predicted depression scores at 4 months postassault. Prior anxiety attacks and obsessive-compulsive behaviors predicted depression at 8 months postcrime. At 12 months postrape, prior anxiety attacks, obsessive-compulsive behaviors, and psychiatric treatment history predicted depression.

Prior victimization and other life stressors have also been examined as possible variables affecting recovery. The research on the effect of prior victimization has been very inconsistent. Ruch and Leon (1983) evaluated rape victims within 48 hours postcrime and then again at 2 weeks postcrime. They found that women with no history of prior victimization showed a decrease in their trauma levels, whereas those with prior victimization exhibited an increase in trauma scores across the 2 weeks. They concluded that women who were multiple-incident victims were especially at risk for delayed responses.

In contrast, Frank, Turner, and Stewart (1980) and Frank and Anderson (1987) found that victims of more than one sexual assault did not differ significantly from single-incident victims on standardized measures of depression, anxiety, or fear from 1 to 4 months postrape. However, the multiple incident victims did report poorer global social adjustment and greater disruption in social functioning in their immediate household. With regard to longer-term reactions, McCahill, Meyer, and Fishman (1979) found that multiple-incident rape victims were not different from single-incident victims at 1 year postrape except that multiple-incident victims reported more intense nightmares and a greater fear of being home alone.

Several studies have examined the effect of prior victimization of any type, not just prior rapes. Participants in Burgess and Holmstrom's (1979a) 4- to 6-year follow-up reported differences in recovery depending on their history of victimization. Eighty-six percent of participants with no prior history of victimization said they felt recovered, but only 53% of victims with such a history felt recovered on follow-up. In assessing treatment-seeking rape victims, Marhoefer-Dvorak, Resick, Hutter, and Girelli (1988) found that single- and multiple-incident rape victims did not differ on any of several standardized measures but those victims with a history of major victimization did differ on assertiveness and somatization. Women who had been victims of a crime that involved the threat or presence of bodily harm prior to the sexual assault reported that they were more assertive but had greater somatic symptoms.

Rather than analyzing prior victimization as a simple presence versus absence categorization, Resick (1988) has studied the extensiveness of prior victimization. Stepwise analyses were conducted to determine how a history of domestic violence, child physical abuse, emotional abuse, incest, observation of violence during childhood, and previous criminal victimization would affect reactions and recovery to a recent rape. Four summary scores were used as the measures of symptomatology: the global severity index (GSI) from the BSI, the total self-esteem score from the Tennessee Self-Concept Scale (TSCSTOT), the total score from the MFS (MFSTOT), and the total from the IES. Subjects' responses were examined at four points in time: 1, 6, 12, and 18 months postcrime.

IES scores were not predicted by these victimization variables at any point in time. History of previous criminal victimization predicted GSI scores at 1 month postcrime, but no other variables were predictive of symptom level at 1 month. At 6 months postcrime, GSI and MFSTOT were predicted by a more extensive history of domestic violence prior to the rape. Self-esteem was influenced by observation of violence in childhood. Fear, as measured by the MFS, was also predicted by a history of child sexual abuse. At 12 months postcrime, physical child abuse, emotional abuse, and prior criminal victimization predicted greater GSI and MFS scores. None of the variables predicted responses at 18 months postcrime. Resick (1988) concluded that although it appeared the victimization factors were related to recovery, there were no obvious and consistent patterns.

With regard to other life stressors, Ruch, Chandler, and Harter (1980) examined the presence of 11 life stressors during the year prior to the rape and found a curvilinear relationship. Women who had experienced major life changes were most traumatized, women with no changes were intermediate and those with minor changes were the least traumatized. Apparently, experience with some life stress may have an inoculating effect but too great a level of stress interferes with the development of coping methods needed to deal with an event as traumatic as rape. Looking at it somewhat differently, Kilpatrick and Veronen (1984) divided rape victims into four groups: low, moderately low, moderately high, and high distress. They found that the two more distressed groups were more likely to have suffered the loss of a spouse in the past year than the low distressed group.

Wirtz and Harrell (1987) examined the relationship of a number of nonvictimization life stress events with MFS scores at 1 and 3 months postcrime. They found that those events that could be construed as life-threatening (death of a friend, major illness) were associated with greater postrape fear, whereas other major, but non-life-threatening events (birth of

a child, divorce) were associated with less fear. In fact, the subjects who reported the latter type of stressor in the year prior to the rape reported less fear than subjects who reported no stressors the previous year. The authors concluded that the element of vulnerability to perceived future harm is the link between past life-threatening events and levels of fear subsequent to rape.

Cognitive Appraisals

The effect of preassault cognitive appraisals on postassault functioning has not been studied a great deal at this point but there is some research available that has demonstrated that a perception of unique invulnerability may exacerbate reactions to traumatic events (Perloff, 1983). Apparently, those people who believe they control their lives and environments make the poorest adjustments to events that are out of their control. Further, two studies have found that rape victims who appraised the situation as "safe" prior to the assault had greater fear and depressive reactions than women who perceived themselves to be in a dangerous situation prior to the assault (Frank & Stewart, 1984; Schepple & Bart, 1983). The role of preassault cognitive appraisals and attributions warrants further study.

Although there are probably other relevant prerape variables that may affect reactions and recovery that have not been studied thus far (e.g., preexisting social network and support or victim's coping style), it can be concluded that prior psychological problems or other major life stressors most probably impinge on the smooth recovery from a current trauma such as a rape. Examining it from a more positive direction, Kilpatrick and Veronen (1984) studied the low-distress group at 3 months postassault to see how they differed from the other rape victims. They concluded that these women were more likely to have higher self-esteem initially and were more likely to have had loving, intimate relationships with men in the year prior to the rape. And as mentioned before, they were also less likely to have experienced major life changes prior to the rape.

Assault Variables

Acquaintanceship Status

There has been a common assumption in the public arena that some rapes are worse than others. Rapes by strangers and those that are more violent (i.e., resulting in injuries) are assumed to be more traumatic for the victim. The available evidence, however, indicates that this may not be the case,

particularly regarding the acquaintanceship status of victims and offenders. Hassell (1981) compared victims of stranger and nonstranger rape and found no differences in reactions or recovery except those who were attacked by acquaintances were more likely to have problems with their self-esteem initially. These differences had disappeared by 3 months postrape. McCahill et al. (1979) found that interviewers rated victims raped by casual acquaintances or relative strangers to be more severely maladjusted than those who were raped by friends, family members, or total strangers.

Although Ellis et al. (1981) and Thornhill and Thornhill (1990c) found that women attacked by strangers had more problems with fear and depression afterward than women attacked by acquaintances, other researchers have not found this to be the case (Girelli, Resick, Marhoefer-Dvorak, & Hutter, 1986; Kilpatrick et al., 1987; Koss, Dinero, & Seibel, 1988; Resick, 1988). Kilpatrick et al. (1987) compared the impact of stranger, marital, and date rapes and found no differences in mental health among the three groups. Koss et al. (1988) found no differences in depression, state anxiety, or sexual satisfaction for victims raped by strangers, nonromantic acquaintances, casual dates, steady dates, or spouses/family members. However, they did find lower ratings of relationship quality among women who were raped by spouses/family members than the other groups of acquaintance rape victims. They also found that acquaintance rape victims were less likely to tell anyone about the incident.

Acquaintanceship with the assailant may affect the victim in other ways. Stewart et al. (1987) compared rape victims who sought out immediate treatment with those who delayed receiving treatment. Women who delayed treatment were more likely to have known their assailants and less likely to have physically defended themselves. Perhaps these women experience more self-blame or perhaps they expect that others will blame them or not believe them. Given that these women are just as likely to experience trauma reactions as those who are raped by strangers, it is unfortunate that they are not seeking help sooner, or not at all.

Level of Violence

Several studies have examined the effect that the brutality of the rape has on the victim's reactions by developing brutality scores or indexes based on several assault variables. Results of these efforts have been mixed. Atkeson et al. (1982) found the amount of rape "trauma" did not predict later reactions. Sales, Baum, and Shore (1984) observed that neither the presence nor extent of violence per se was strongly associated with victim reactions. However,

Cluss, Boughton, Frank, Stewart, and West (1983), Ellis et al. (1981), and Norris and Feldman-Summers (1981) all found a combination of assault variables to be predictive of greater distress on some measures.

Cluss et al. (1983) found that their "threat index" was significantly and positively correlated with self-esteem at an initial assessment but not at the 6- or 12-month follow-up. Norris and Feldman-Summers (1981) found assault variables to be predictive of problems with psychosomatic symptoms but not with sexual satisfaction or frequency, or the level of reclusiveness. Examination of individual assault variables has also yielded mixed results. Girelli et al. (1986) found that none of eight assault variables predicted a range of assessed symptoms in rape victims seeking treatment. Sales et al. (1984) found that threats against the victim's life predicted symptomatology within the first 3 months after the assault but not at the follow-up assessment 6 months later. Four assault variables predicted follow-up symptomatology only: the number of assailants, physical threat, injury requiring medical care, and medical complications. Victims who developed PTSD in the Kilpatrick et al. (1987) follow-up study were more likely to have been seriously injured than those who did not develop PTSD but did not differ as to whether a weapon was present. Resick (1988) found that almost none of six assault variables predicted reactions of rape victims over time. The extent of threats predicted global severity of symptoms at 6 months postcrime and restraint predicted PTSD symptoms, also at 6 months postcrime.

Within-Crime Victim Reactions

Sales et al. (1984) have suggested that "it is possible that the *actual* violence of an attack is less crucial to victim reaction than the *felt threat*" (p. 125). A few studies have examined this possibility. Girelli et al. (1986) found that subjective distress was predictive of later fear reactions whereas other assault variables such as threats, weapons, and injuries were not. Kilpatrick et al. (1987) also found cognitive appraisal of life threat to predict later PTSD. Resick (1988) examined the effect of behavior (active, passive, and aggressive resistance), emotions (anger, anxious, calm), and specific cognitions regarding the perception of imminent death or injury, on reactions and recovery. She found that at 1 month postcrime, none of the variables were predictive of symptoms or self-esteem. However, at the other time intervals, greater active resistance was predictive of less distress and greater anger or anxiety during the assault was predictive of greater distress.

In a more recent study, Resick, Churchill, and Falsetti (1990) reported on the within-assault emotions and cognitive states of rape victims. They found

that confusion/disorientation during the crime was the best predictor of subsequent chronic PTSD symptoms. The single variable accounted for more than 40% of the variance in their PTSD symptom scores.

Postassault Variables

Postassault factors are the least studied variables that may affect recovery. For example, the effect of participating in the criminal justice system on victim recovery has been studied very little, perhaps because so few cases actually reach trial. The effectiveness of the type of counseling that is usually provided has received very little attention as well. Social support has been mentioned frequently as an important variable but has not been researched extensively thus far. Some other variables such as coping methods by the victim, attributions, or the effect of initial reactions have received a little attention.

Initial Reactions

Kilpatrick, Veronen, and Best (1985) examined how initial reactions affect victims' functioning at 3 months postrape. They found that the level of distress that victims experienced within the first few weeks after rape was highly predictive of subsequent distress. Rothbaum et al. (1992) also found that almost 90% of rape victims who developed chronic PTSD could be correctly classified within the first 2 weeks after the crime.

This finding might appear obvious but it is important to consider that PTSD diagnosis is made when reactions are delayed as well as immediate. Most of the longitudinal studies have found that victim reactions stabilize at 3 months and then continue at the same level from 3 months for as long as the studies continued to assess their samples. Kilpatrick, Veronen, and Best (1985) concluded that delayed reactions are probably not a significant problem for most rape victims and that an assessment of initial reactions will predict which victims are most likely to have difficulty recovering from rape. However, it should be noted that this was not a study of child sexual assault. It is possible that there may be delays in symptomatology among child victims because entering a new developmental level may trigger reactions that were not salient before (e.g., problems in sexual functioning).

Participation in the Criminal Justice System

Few studies thus far have examined the effect of participation in the criminal justice system on victim recovery. Cluss et al. (1983) found that at

12 months postrape there were no differences in the level of depression or social adjustment between those who wished to prosecute the crime and those who did not. However, women who wished to prosecute reported greater self-esteem. Further, women who wished to prosecute and were not able to (no arrest, insufficient evidence, etc.) showed better work adjustment at 6 months postcrime and more rapid improvement in self-esteem than those women who were proceeding with prosecution. Perhaps the desire to prosecute reflects a greater externalization of blame for the event.

Resick (1988), as part of her longitudinal study, found 24 rape and robbery victims who completed the criminal justice system process (through trial or a guilty plea). She compared them with 24 subjects who had not participated at all because no suspect was ever apprehended. The only finding was that the criminal justice participants reported greater self-esteem at 6 months postcrime. Given the number of analyses conducted, Resick advised cautious interpretation.

Sales et al. (1984) reported weak and inconsistent findings with their sample of rape victims. However, it appeared that victims who began the process by reporting the case and whose charges held showed fewer symptoms at the initial interview and the 6-month follow-up. There were also indications that further progress toward trial left victims with more symptoms. The authors suggested that extended court proceedings may inflict additional demands on these women and keep them in a victim role.

Although they were not studying the influence of the criminal justice system on victims directly, two studies (Calhoun et al., 1982; Kilpatrick, Veronen, & Resick, 1979b) have found indications that participating in court may be quite stressful. Using the MFS in both studies, the item "testifying in court" emerged as one of the most fear-provoking stimuli reported by victims when compared to nonvictims.

Social Support

Sales et al. (1984) have discussed the difficulty of measuring and interpreting how social support may affect victim reactions and recovery because postassault support is surely confounded by the quality and quantity of prerape relationships and because studies thus far have varied from very specific questions to global assessments of support. There have been no standardized scales used in studies on rape. Further, support may vary depending on the nature of the assault. It may be that more brutal or "stereotypic" rapes elicit more sustained social support. Sales et al. (1984) found a correlation between the violence of an assault and postassault family closeness. With that in mind, Ruch and Hennessy's (1982) finding that, at

intake, 72% of their sample reported that their families were supportive and 87% reported having supportive friends, is encouraging. Unfortunately, the authors did not report whether this perception of support continued over time or whether the support influenced recovery.

Sales et al. (1984) reported that neither the initial reactions of significant others nor the quality of the victim's central relationship to a man at the time of the incident was related to her reaction. They did, however, find that victims reporting greater closeness to family members had fewer symptoms. Ruch and Chandler (1980) also found that victims with supportive families experienced lower levels of trauma fairly soon after the assault. Atkeson et al. (1982) found that social support predicted the level of depression the victims were experiencing at 4 and 8 months posttrauma. Norris and Feldman-Summers (1981) studied long-term reactions and found that the presence of understanding men and women in the victim's life was related to less reclusiveness.

Popiel and Susskind (1985) studied 25 rape victims 3 months postassault and did not find a relationship overall between social support and adjustment (using the SCL-90-R and the IES). However, they did find a relationship between the perception of supportiveness of physicians and adjustment. Generally physicians were viewed as the least supportive and female friends as the most supportive people following rape. West, Frank, Anderson, and Stewart (1987) asked 52 women to rate the supportive or unsupportive reactions they received from their social network in the first 2 to 4 weeks following being raped. They found that those women who had one or more important, unsupportive network members had more symptoms than the women with only neutral or supportive members. Further, Moss, Frank, and Anderson (1987) reported that poor spousal support was associated with more psychological symptoms postcrime, particularly when the lack of support was unexpected.

Resick (1988) examined perceived social support, the extent to which the rape victims talked about the crime, and the network size in predicting reactions over time. She found that the first two variables were predictive only at 1 month postcrime. Those women who perceived less social support and talked about the crime more were more likely to report greater overall distress. Cluss et al. (1983) examined positive and negative social network responses and found them to be unrelated to whether the women wished to prosecute the assailant.

Cognitive Appraisals and Attributions

Postrape cognitive appraisals and attributions can be viewed as reactions to the assault and as attempts to cope with the event and reactions. There is

a growing body of literature that indicates that people have a strong need to search for the meaning of negative events (Silver & Wortman, 1980). Criminal victimization destroys the illusion that we live in a predictable, controllable, meaningful world. In a study of incest victims, Silver, Boon, and Stones (1983) found that those women who were still actively searching for the meaning of the experience were more likely to report recurrent, intrusive, and disruptive ruminations than those who were not. Women who had reported that they were able to make some sense out of their experience reported less psychological distress, better social adjustment, greater self-esteem, and greater resolution of the experience than women who were not able to find any meaning but were still searching.

At this time it is still unclear whether any answer to the question "Why me?" is sufficient to reduce stress, or whether some answers may actually increase the distress that victims experience following rape. Some researchers who have focused on self-blame (Bulman & Wortman, 1977; Lerner, 1980; Wortman, 1976) have proposed that victims are likely to accept responsibility for events in order to maintain a sense of control over their lives and to maintain the belief that the world is just and orderly. But at what cost are such attributions made? Janoff-Bulman (1979) hypothesized that self-blame serves an adaptive function but that behavioral self-blame should be associated with more effective postrape adjustment than characterological self-blame. Meyer and Taylor (1985) and Frazier (1990) did not find this to be the case. Although they, too, found high rates of self-blame in rape victims (50%), they found both characterological and behavioral self-blame were associated with poorer adjustment postrape. Schnicke and Resick (1990) also found that self-blame was associated with greater symptomatology, in particular depression, obsessive-compulsive symptoms, and self-criticism.

McCann, Sakheim, and Abrahamson (1988) have proposed that in response to traumatic events, ones' belief about oneself and the world are disrupted (or prior negative beliefs are confirmed). They proposed examining five areas of beliefs: safety, trust, power/competence, esteem, and intimacy. Resick and Schnicke developed a scale, the Personal Beliefs and Reactions Scale (PBRs), to assess these beliefs as well as self-blame, beliefs about rape, and cognitions that represent efforts to "undo" or not accept the rape (Resick & Schnicke, 1992b; Resick, Schnicke, & Markway, 1991). When the scale was given to 20 rape victims with a range of PTSD symptomatology, they found that intrusive symptoms were associated with more attempts at undoing and more negative beliefs about rape. Avoidance symptoms were significantly predicted by negative trust beliefs. Arousal symptoms were predicted by negative safety beliefs. These cognitions changed significantly following cognitive behavioral therapy.

Conclusions

The study of variables affecting recovery has produced more mixed results than research on symptom patterns. Perhaps this is due to differences in methodology. All but the earliest research on victim reactions has used standardized measures of symptomatology, frequently the same measures, such as the MFS or the SCL-90-R across studies. On the other hand, because there have been no standardized measures of history, assault variables, or postcrime variables for researchers to draw on, every group of researchers developed and used their own idiosyncratic scales. For example, a number of studies were reviewed that attempted to examine the effect of the brutality of the rape on subsequent functioning. Every study developed its own violence index and examined different outcome variables. It is almost impossible to compare these studies and draw conclusions with any confidence. In order to begin to attempt to replicate findings it will be necessary to standardize the methodology that is adopted by researchers in the future.

Nevertheless, some very general conclusions can be attempted. It appears that preassault, assault, and postassault variables may all play a role in victim reactions. Victims' psychological functioning prior to the crime and during the crime are likely to explain some of the variability that is observed in reactions among rape victims. Research on the effect of circumstances of the crime was mixed, but it is possible that the actual amount of violence involved may not be as influential as the victim's appraisal of danger. Initial indications are that social support plays a role in recovery, but more research is needed to investigate this further. It is clear that reactions to sexual assault are multivariate. Not only should researchers continue to search for important variables that influence reactions and recovery, but they should begin to examine the interactions of variables.

DISCUSSION AND RECOMMENDATIONS

As should be apparent by now, reactions to sexual assault are multifaceted. None of the widely held theories of victim reactions are adequate in explaining the array of symptoms observed and the range of variables that may affect reactions and recovery. Over the past decade there have been three major theories of rape reactions: crisis theory (Burgess & Holmstrom, 1974; Sales et al., 1984), behavioral theory (Holmes & St. Lawrence, 1983; Jones & Barlow, 1990; Kilpatrick, Veronen, & Resick, 1982), and an attribution theory of coping (Janoff-Bulman, 1979, 1992; Meyer & Taylor, 1985). In their approach to the problem, they greatly resemble the parable of the blind

men and the elephant. Each interprets the problem from the small part they have access to with their research.

Describing rape reactions as a crisis is axiomatic. However, crisis theory does little to explain why certain symptom patterns are observed and has completely failed to account for the long-term reactions that most typically occur. Research on attributions (e.g., Janoff-Bulman, 1992) demonstrates that cognitive appraisals of blame and postassault attempts at coping may play a role in recovery. However, as a theory, it is too narrow to explain the full range of symptoms or the pattern of improvement in recovery that is most typically observed. These attributions could be considered as intervening variables within a more comprehensive theory of victim reactions. A comprehensive theory of victim reactions is needed that can incorporate all of the disparate findings that have been reviewed in this article without becoming so diluted as to become nonpredictive.

Behavioral theory gives an adequate explanation of the development of fear and anxiety through classical conditioning and operant avoidance, but does little to explain the range of other symptoms observed or to incorporate the variables that affect reactions. Further, if rape reactions were accounted for only by classical and operant conditioning stimulated by the life-threatening nature of the assault, then rape reactions should be no more severe than reactions to robbery or aggravated assault. However, the research indicates that rape victims suffer more severe reactions than victims of other types of crime. These differences must be accounted for by differences in the crimes themselves or in the way that victims or others behave after the crime. Further research is needed to delineate these factors in order to incorporate them into theory.

One behavioral theory that has attempted to account for some of these variables is a theory by Jones and Barlow (1990). They compare PTSD with panic disorder in terms of the development of anxiety through anxious apprehension. This state of anxious apprehension begins with biological vulnerability. On being exposed to a negative life event, the person develops alarm reactions that lead to chronic activation of anxiety and anxious apprehension. Social support and coping skills serve as moderating variables. Although more inclusive, this theory does not explain why rape produces higher rates of PTSD than other life threatening events such as aggravated assault or natural disasters. The model also does not account for the other affective reactions that are observed in rape victims such as depression, humiliation, or guilt.

Over the past few years attention has been directed to information processing theories. A narrow information processing theory of PTSD as an anxiety disorder proposed by both Chemtob, Roitblat, Hamada, Carlson and Twentyman (1988) and Foa, Steketee, and Olasov-Rothbaum (1989) views

PTSD as the result of the development of a fear network. The network consists of stimuli, responses, and meaning elements regarding the traumatic event. This network functions as a program to stimulate avoidance behavior. Resick and Schnicke (1990, 1992a) have proposed that reactions represent more than a fear network. Victims report a wide range of affective reactions to traumatic events, not just fear. They proposed that PTSD results from an inability to integrate the event with prior beliefs and experiences. When new, incompatible events occur, the person either assimilates (alters) the new information to fit prior beliefs, or the beliefs are altered (accommodated) to accept the event. Resick and Schnicke (1992a) have also proposed that some victims may overaccommodate to the event (i.e., "No one can be trusted" or "I am never safe."). PTSD symptoms of intrusion and avoidance represent unsuccessful attempts to accommodate or assimilate the event.

McCann et al. (1988) have proposed a similar theory of trauma reactions that is much broader in scope than the other information processing theories and is developed from Horowitz's theory (1976) on the adaptation of people to stressful events, and the work of Piaget and Beck. They propose that people develop core schemas about themselves, others, and the world in five areas that are likely to be affected by victimization: safety, trust, power/competence, esteem, and intimacy. These schemas affect adaptation to and are affected by life experiences. A traumatic experience such as rape disrupts prior positive beliefs and appears to confirm preexisting negative beliefs. Clearly, with theorists converging on information processing theory from several directions, it will be important to begin conducting research to test these theories.

Thus far, no extant theories on rape-related PTSD have incorporated the emerging findings on the biological changes that are associated with PTSD. Although it is beyond the scope of this article to review the biological correlates of PTSD, there have been a number of notable findings with regard to sympathetic nervous system hyperarousal, and dysfunctions of the hypothalamic-pituitary-adrenocortical axis and the endogenous opioid system (Friedman, 1991; Mason, Griller, Kosten, & Yehuda, 1990; Orr, 1990; Pitman et al., 1990; Yehuda, Southwick, Perry, Mason, & Griller, 1990). Most of the research on these biological changes has been conducted with combat veterans. Research on rape victims is almost nonexistent and needs to be conducted. Comprehensive theories of victim reactions, and PTSD in particular, will need to account for the role of these biological dysfunctions in the development and maintenance of symptoms.

Research on victim reactions must also attend to methodological differences among studies that could account for the differences in findings. For example, when variables are categorized and subjected to analyses of vari-

ance (ANOVAs), more information may be lost than when they are treated as continuous variables and analyzed by means of regression analyses. However, with regression analyses, the magnitude of the relationship must be examined so that weak findings are not given more importance than they deserve. Multiple dependent measures have been treated differently from study to study. Some studies have analyzed data by means of multiple ANOVAs or correlations, which may lead to problems with experimentwise error. Few studies have taken this into account. Multivariate analysis procedures have been used in some studies but unfortunately they require a large sample size that is sometimes difficult to obtain with as sensitive a problem as rape. In some cases the lack of findings may reflect small sample sizes rather than no differences between groups or variables.

Despite the possible discrepancies in findings due to methodological differences, it is possible to make some public policy recommendations. First of all, it is quite probable that although professionals and the public have become aware that rape is traumatic, the extent to which it disrupts victims' lives and the length of time that it takes to recover have been underestimated. More public education and professional training are needed.

Increased public education could also help in several other respects. Women still frequently blame themselves for rape and reporting rates remain low. Public education could help remove the stigma from reporting the crime. Women who tell others about what has happened are more likely to receive support and have greater access to counseling and therapy should they need it. Public education could also help remove the stigma about receiving counseling. Many people still believe that one has to be "crazy" to need therapy and that talking about one's problems is not likely to be helpful. A greater understanding of the impact of rape and of the benefits of therapy could prevent victims from feeling isolated or despairing of the future.

Finally, there is a need for more long-term care for victims of rape. Most rape crisis centers and victim assistance agencies have been established to counsel victims in the immediate aftermath of the crime or to help them through criminal prosecution. Victims who continue to experience symptoms beyond these time periods may feel that they are on their own or that they are having a uniquely bad reaction. It is important that agencies who work with victims provide access to long-term care and conduct outreach efforts directly with victims or through the media. Women who do not report the crime to the police should not be made to feel that they are not eligible for services. Further, it is possible that some reactions develop after a delay because of changes in the victim's life or developmental level. For example, sex therapy for an adolescent rape victim may not be appropriate until she is

older and/or has developed a relationship. Victims should be made aware that they may receive services whenever they are needed and that recovery may be an ongoing process that may occur in stages.

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