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Predictors of PTSD Symptom Severity and Social Reactions in Sexual Assault Victims

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Abstract

Demographics, assault variables, and postassault responses were analyzed as correlates of PTSD symptom severity in a sample of 323 sexual assault victims. Regression analyses indicated that less education, greater perceived life threat, and receipt of more negative social reactions upon disclosing assault were each related to greater PTSD symptom severity. Ethnic minority victims reported more negative social reactions from others. Victims of more severe sexual victimization reported fewer positive, but more negative reactions from others. Greater extent of disclosure of the assault was related to more positive and fewer negative social reactions. Telling more persons about the assault was related to more negative and positive reactions. Implications of these results for developing contextual theoretical models of rape-related PTSD are discussed.

Keywords

posttraumatic stress; social reactions; sexual assault; disclosure

Posttraumatic stress disorder (PTSD) is a common consequence of rape experiences with one-third of female rape victims identified in community samples experiencing PTSD at some time after the assault (Kilpatrick, Edmunds, & Seymour, 1992). In longitudinal research assessing rape victims immediately after assault, PTSD characterized 94% of victims within 2 weeks postassault and 47% of victims within 3 months postassault (Rothbaum, Foa, Riggs, Murdock, & Walsh, 1992). A number of studies have examined correlates of the PTSD diagnosis or PTSD symptom severity in sexual assault victims to identify those survivors most likely to develop the disorder after the assault. A study of representatively sampled sexual assault victims by Frazier et al. (1997) showed that over half of women (58%) who nominated sexual assault as their worst traumatic event had PTSD in their lifetime. Multivariate analyses showed that young, White women who perceived the assault to be life-threatening, were more upset at the time of the assault, and those who blamed themselves and others for the assault had more PTSD symptoms. These results suggest that demographic background, traumatic event characteristics, and postassault victim responses all may be predictive of PTSD.

Rape appears to be more likely than other traumatic events to result in PTSD at least in part because specific traumatic characteristics (e.g., perceived life threat) are more common for rape than for other traumatic events (Frazier et al., 1997). However, even when event characteristics are controlled, having a rape history predicts unique variance in PTSD risk,

implying that something about rape itself, or postassault responses to rape, contributes to PTSD in addition to these event characteristics (Frazier et al., 1997; Kilpatrick, Saunders, Amick-McMullan, & Best, 1989). Perhaps the personally intrusive nature of rape is what makes it uniquely traumatic. Resnick, Kilpatrick, Dansky, Saunders, and Best (1993) studied a national sample of women and found that perceived life threat and physical injury were related to more PTSD, a diagnosis more common in rape victims than in victims of other traumatic life events. Kilpatrick et al. (1989) reported that not only were individual factors of completed rape, physical injury, and life threat related to PTSD in female crime victims, but that these factors interacted synergistically in predicting PTSD risk. Epstein, Saunders, and Kilpatrick (1997) studied a national sample of women and found that perceived life threat and physical injury discriminated PTSD status in childhood rape victims. Testifying in court and deviant types of rape also were related to PTSD in that study, but not when severity of the assault (e.g., injury) was statistically controlled. In a probability sample of men and women in Winnipeg, Stein, Walker, and Forde (2000) reported that life threat and physical injury predicted PTSD in the entire sample. Women were at greater risk of PTSD following exposure to serious trauma, which included sexual assault, but this greater risk was not attributable to their reports of greater life threat and physical injury compared with men.

Several other nonprobability studies have appeared regarding various correlates of PTSD sequelae. Bownes, O'Gorman, and Sayers (1991) found that rape victims with PTSD were more likely to have been attacked by strangers, subjected to force or weapons, and physically injured than were victims without PTSD. Bolstad and Zinbarg (1997) found that women with histories of child sexual abuse on multiple occasions reported less perceived control, which was related to more PTSD symptoms after an incident of adult sexual assault involving force. Valentiner, Riggs, Foa, and Gershuny (1996) found that rape victims at 2 weeks postassault who relied more on wishful thinking as a coping strategy had more severe PTSD symptoms than did other victims. Positive distancing (e.g., cognitive distancing, optimism, and acceptance coping responses) was related to less PTSD symptom severity, controlling for assault type (i.e., sexual or nonsexual assault), initial PTSD symptom severity, and other coping strategies. Cascardi, Riggs, Hearst-Ikeda, and Foa (1996) reported that women raped in locations rated as safe and women attacked by dangerous assailants had more PTSD even when assault brutality was controlled. Layman, Gidycz, and Lynn's study of college women showed that acknowledged rape victims experienced more forceful assaults, resisted more, demonstrated clearer refusal to the attacker, and reported more PTSD symptoms (Layman et al., 1996). In a convenience sample of 102 community-residing rape survivors (Campbell et al., 1999), neither victim demographics nor rape characteristics were associated with posttraumatic stress symptoms, but victims of known attackers who received few community services and experienced high secondary victimization postassault had more symptoms.

Although the studies just reviewed have analyzed correlates of PTSD sequelae, few focused solely on adult female rape victims. Furthermore, none focused on characteristics of the recovery environment (e.g., support system responses), using a validated instrument, which also may be consequential for recovery (Ullman, 1999). Theoretically, reactions from other people to disclosure of a stigmatized experience like sexual assault should be important in affecting the survivor's appraisal of the experience and how she responds to it. The meaning of rape, like all life experiences, is socially constructed by cultural definitions that change over time (Lamb, 1999). Reactions from others may either reinforce and compound the culture's victim-blaming attitudes toward rape victims (e.g., rape myths) or contradict this ideology by believing and supporting victims, and defining rape as a violent crime. Symonds (1980) has argued that "secondary victimization," which refers to the blame, disbelief, and stigmatizing responses that others make to victims, is commonly experienced by rape

victims. Although little research has focused on the survivor's recovery environment in relation to PTSD, several studies have shown that negative social reactions are related to more psychological symptoms and poorer self-rated recovery in sexual assault victims (Campbell et al., 1999; Davis, Brickman, & Baker, 1991; McAuslan & Abbey, 1998; Ullman, 1996a). Furthermore, some data suggest that social reactions may affect victim coping and subsequent recovery from sexual assault (Ullman, 1996a).

The Present Study

The present study examined demographics, event characteristics, postassault social reactions from various sources, and PTSD in a diverse sample of female sexual assault victims. We first examined several hypotheses regarding the correlates of social reactions and then analyzed how social reactions may influence PTSD symptom severity. Certain victim characteristics, such as victim race and assault circumstances may be related to the social reactions victims receive when disclosing their assaults to others. Most studies of the correlates of social judgments of rape victims are experimental vignette studies. More research is needed on correlates of the actual reactions of support providers to real rape victims. It was hypothesized that younger, unmarried, ethnic minority victims with less education and income would report more negative social reactions from others upon disclosing their assaults (Ullman, 1999; Pollard, 1992; Ward, 1995), but the same number of positive social reactions from others. These hypotheses were based on the premise that women belonging to vulnerable social statuses would be more likely to be treated poorly after sexual assault, because of society's stereotypes that these women are more deserving of their victimization (Campbell, 1998). However, these women may be equally likely to be able to solicit positive forms of support as other women by turning to close friends who they can count on for validation. Victims of stranger assaults, who perceived their lives were in danger during the assault and were physically injured, were expected to receive more positive and negative social reactions from others. These hypotheses were based on the expectation that these stereotypic assaults would be more likely to be disclosed to a broader range of informal and formal support providers (Golding, Siegel, Sorenson, Burnam, & Stein, 1989). Victims who reported more negative reactions and fewer positive reactions from others when disclosing assault were also expected to have poorer current social support networks.

Young, less educated, ethnic minority victims were expected to report greater PTSD symptom severity, given some evidence of more PTSD symptoms associated with vulnerable sociodemographic groups (Ullman & Siegel, 1994). Stranger assailants, greater perception of life threat during the assault, and physical injury from the assault were expected to be related to greater PTSD symptom severity, based on past research (Frazier et al., 1997; Kilpatrick et al., 1989). Finally, negative social reactions were expected to be related to greater PTSD symptom severity, partly because of their relationship to other PTSD-inducing assault characteristics (e.g., stranger assaults, life threat), and partly because of their own harmful direct effects on survivors' symptoms. Positive social reactions were expected to be unrelated to PTSD symptoms, based on past research showing little significance of supportive responses on symptomatology (Ullman, 1999).

Method

Participants

Survey data was collected from a media-recruited sample of 323 adult sexual assault victims. Victims were recruited from three sample sources: community residents ($n = 202$), college students ($n = 98$), and mental health agency victims ($n = 23$). Flyers and announcements requested participation of women aged 18 or older who had been threatened

or forced to have sexual intercourse or other sexual experiences since age 14. Women volunteers who called about the study completed a brief anonymous mail survey about their experience and were paid \$10. The student sample was recruited by placing advertisements in the student newspaper at an urban public university and posting signs on bulletin boards around the campus such as the Office of Student Affairs and Women's Center. The service-seeking sample was recruited by contacting Chicago area rape crisis centers and victim support agencies who were invited to participate in the study and asked to post signs or refer interested clients to the study. The number of sexual assault victims we were able to recruit from agencies was particularly small because we experienced a great deal of resistance. In some cases, representatives from rape crisis centers were understandably concerned about protecting victims from any additional distress. However, in many cases agencies were simply not responsive, and they offered no reasons for their lack of cooperation. We are grateful to those agencies who assisted us in recruiting sexual assault survivors. Many women who completed the survey were happy to be able to express themselves and perceived the survey as a medium through which they had been given a voice. To our knowledge, we have not received any negative responses to the survey. The third sample was community resident volunteers who respond to newspaper advertisements and signs posted in bookstores, YWCA's, and community organizations. The overall response rate, assessed as the percentage of women who were sent surveys after calling about the study who actually later returned completed surveys, was 86%. Response rates for each subsample were 86% community, 92% student, and 72% mental health agency. Although special disproportionate efforts were devoted to increasing the number of agency victims, this population proved difficult to recruit.

Measures

Basic background information was collected in the survey including age at the time of the survey (in years), race (White, Black, Hispanic, Asian or Pacific Islander, American Indian or Alaskan Native, Other), household income (ordinal categories ranging from \$10,000 or less to \$50,000 or more), education (1 = *less than 12th grade*, 2 = *high school graduate*, 3 = *some college*, 4 = *college graduate or beyond*), current employment (no or yes), currently in school (no or yes), marital status (single, married, divorced/separated, widowed, or cohabitating), and parental status (no children or children) in the survey.

Assault characteristics—A modified version of the Sexual Experiences Survey (SES; Koss & Oros, 1982) was used to identify completed rape and attempted rape victims as well as women experiencing unwanted sexual contact and sexual coercion. The questions assessed *sexual victimization from age 14 on*. Although both lifetime prevalence and 1-year prevalence of sexual victimization are assessed in the SES, only lifetime prevalence was assessed in this study. In the SES, rape was defined by questions assessing vaginal, oral, or anal intercourse against consent by force or threat of force or when the victim was intoxicated (e.g., Has a man made you have sex by using force or threatening to harm you? When we use the word “sex” we mean a man putting his penis in your vagina even if he didn't ejaculate (come)). The word rape was not used in the screening questions. Attempted rape was defined as the same experiences just described except that the items were worded the “man tried to make you have sex” but “that intercourse did not occur.” Sexual coercion was coded if no completed or attempted rape items were endorsed, but respondents reported sexual intercourse subsequent to use of menacing verbal pressure or misuse of authority. No threats of force or actual physical force were used. Sexual contact was coded if none of the previous higher levels of sexual victimization occurred and women reported experiencing fondling or kissing that did not involve attempted penetration subsequent to verbal pressure, misuse of authority, threats of harm, or actual physical force. The SES has reported internal consistency reliability of .69 and test-retest reliability at 1 week apart of 93% (Koss &

Gidycz, 1985). Highest severity of sexual victimization was coded continuously according to the guidelines by Koss, Gidycz, and Wisniewski (1987), for example, sexual contact, sexual coercion, attempted rape, completed rape. Respondents were asked questions about assault characteristics, social support, social reactions, and psychological symptoms with respect to the most serious or best-remembered sexual assault if they had multiple experiences as reported on the SES.

Questions about details of the assault included age at the time of the incident (in years), relationship to the perpetrator (stranger, nonromantic acquaintance, casual or first date, romantic acquaintance, husband, relative), physical injury during the assault (no or yes), and perception of life threat during the assault (no or yes).

Current social support measures—All respondents were asked questions about characteristics of their current social support network including measures of social contact and social resources from the Social Activities Questionnaire of the Rand Health Insurance Experiment (Donald & Ware, 1984). Social contact items included the number of close friends you feel you can confide in (coded continuously as number of confidants), and one question about how well you are getting along with people these days (not as well as usual, same as usual, better than usual). Social resources were assessed with items about the frequency of social contact with informal and formal social network members in the past month (mean of responses to five Likert items about frequency of contact with friends, relatives, and religious service attendance with ordinal responses from 1 = *every day* to 7 = *less than 5 times a year*). Finally, received support was assessed with a modified version of Barrera, Sandler, and Ramsey's Inventory of Socially Supportive Behaviors (ISSB; Barrera et al., 1981), a measure of the number of helpful acts people did for you in the past month (summed scale of no = 0 or yes = 1 responses to 25 items measuring emotional support, tangible aid, = and information support).

Assault-specific social support measures—Timing of disclosure of the assault (5 ordinal categories ranging from 1 = *immediately after the assault* to 5 = *more than 1 year after the assault*), and extent of assault disclosure (5 ordinal categories ranging from 1 = mentioned it in passing, made some vague reference to it to 5 = *said what happened and talked about it in detail*) were assessed.

Social support in response to disclosure of assault was assessed by determining the number of support providers told about the assault. Respondents were asked whether they had ever talked with several sources (no or yes) about the assault (friend/relative, mental health professional, clergy, police, rape crisis center, others) and whether each of these sources was helpful. Continuous variables of number of support providers told and helpfulness of support providers told were formed. Finally, satisfaction with support received from support providers was assessed with four questions asking how satisfied respondents were overall with support received from four sources: (romantic partner, family members, friends, professional support providers). Responses were made on 5-point Likert scales with response options ranging from 0 (*not at all satisfied*) to 5 (*completely satisfied*). The average level of satisfaction with support across support provider types was computed from these items.

Social reactions to assault disclosure—The Social Reactions Questionnaire (SRQ; Ullman, 2000) was administered to victims disclosing their assaults to others. They were asked about how often they received 48 different reactions from other persons told about the assault. No time frame was specified, so that respondents could report on all reactions they received since the assault. The response scale for each item was a 5-point Likert scale ranging from 0 (*never*) to 4 (*always*), which respondents used to indicate how frequently

they received each reaction from others to whom they disclosed the assault. On the basis of results from a pilot study using an earlier version of this measure with 155 sexual assault victims (Ullman, 1996b), the revised SRQ measure administered in this study had eight hypothesized types of social reactions each assessed with six items (see Ullman, 2000, for factor analysis results on the SRQ using this dataset). Of the eight types of social reactions hypothesized, three were positive and five were negative. The three positive social reactions assessed were (1) tangible aid/information support (e.g., help or information from others), (2) emotional support (e.g., expressions of love, caring, and esteem from others) (House, 1981; Turner, 1983), and (3) validation/belief (e.g., being nonjudgmental of the victim's experience), repeatedly cited as helpful to victims in the literature. The average number of positive social reactions across these domains was analyzed here.

The five aspects of negative social reactions assessed were: (1) taking control of the victim's decisions, (2) victim blame, (3) treating the victim differently (e.g., stigmatizing responses), (4) distraction (e.g., telling the victim to move on with her life), and (5) egocentric behavior (e.g., responses where the support provider focused on his or her own needs instead of the victim's). In this study, the average number of negative social reactions reported across these domains was analyzed. A recent study of the psychometric characteristics of the SRQ (Ullman, 2000), using the same sample studied here showed good test-retest reliability (Pearson r ranged from .68 to .77), construct validity as shown by factor analysis, convergent validity with expected correlations of positive and negative social reactions with other social support and psychological symptom measures, and concurrent validity, assessed by correlating SRQ subscales with corresponding social reactions coded from open-ended data from questions about helpful and unhelpful responses to sexual assault disclosure (Ullman, 2000).

Posttraumatic stress disorder—Part 3 of the Posttraumatic Stress Diagnostic Scale (PDS) was used to assess PTSD symptom severity (Foa, 1995). The PDS is a 17-item brief self-report instrument used to provide a reliable diagnosis of PTSD based on the *DSM-IV* criteria and quantification of the severity of PTSD symptoms according to recommendations provided by Foa. This scale was selected because it has been validated with sexual assault victims unlike other available measures (Foa, Cashman, Jaycox, & Perry, 1997). In this study, the symptom severity score (ranging from 0 to 51) was obtained by summing the response weights to individual items corresponding to Criteria B, C, and D symptoms. The instructions were modified to refer to the sexual assault experience described by respondents on the survey. Respondents were asked to rate how often each symptom has bothered them in the past month for the specific event with responses rated on a 4-point scale ranging from 0 (*not at all*) to 3 (*almost always*).

Data Analysis Strategy

This study analyzed data from three samples of sexual assault victims: college students, community volunteers, and mental health agency clients ($N = 323$). Initially, analyses were calculated including an independent variable of sample source (community, student, mental health agency), but because this variable was not significant in any analyses, it was dropped from the final regressions presented here. Furthermore, regressions performed separately within each of the three samples did not show different results, so results are presented for all three samples of assaults together. Because 87% of women disclosed assault to others, analyses of social reactions received from others were only possible on this subsample of victims. First, correlates of PTSD symptom severity were examined including victim demographic characteristics, assault variables, and postassault experiences in separate regression models. These preliminary regressions were run to identify the most parsimonious set of predictors from each of the three conceptual domains. In this way,

superfluous variables are eliminated and a preliminary model of the correlates of PTSD symptom severity could be examined in this convenience sample (Tabachnick & Fidell, 1989), which of course must be validated in future research.

Second, simultaneous multivariate regression models were tested with significant factors from the three domains of predictors (demographics, assault variables, post-assault variables) to predict PTSD symptom severity. Third, the contribution of demographics and assault-related variables to the average number of negative social reactions and the average number of positive social reactions reported by victims was evaluated. Finally, an exploratory path model was tested linking significant background and assault characteristics, negative social reactions, and PTSD symptom severity. Correlations of predictor variables in the regressions are provided in Table 1.

Results

Women were an average of 30 years of age ($SD = 10.40$) at the time of the survey, had some college education (50.2%) or a college degree, additional graduate education, or both (32.7%). Two-thirds of victims were currently single (63.2%) and one-third had children (29.0%). Forty-two percent of women were currently in school and 68.8% were employed. Approximately half of women were White (52.2%), approximately one-fourth Black (26.1%) and the rest were of other ethnicities (6.0% Hispanic, 5.7% Asian, 10.1% mixed race). Median household income was between 20,000 and 30,000 dollars.

Most women reported completed rape (85.9%) on the Sexual Experiences Survey. The remaining women experienced attempted rape (8.4%) or less severe sexual victimization (e.g., sexual coercion 4.4%, sexual contact 1.3%). One-third of victims were physically injured (33.3%). Most assaults were committed by acquaintances or romantic partners (75.6%). For this study's analyses, victim-offender relationship was coded dichotomously as either stranger or known offender. Victims were an average of 20 years of age ($SD = 6.71$) at the time of their assaults. Assaults occurred an average of 9.36 years ago ($SD = 8.99$). Eighty-seven percent of victims disclosed their assaults to others with one-third telling someone immediately after the attack (30.3%), one-third days or weeks afterwards (32.5%), and one-third a year or more postassault (37.2%).

Regression Analyses Predicting PTSD Symptom Severity

In the first of three initial regression analyses (results not shown), only education was significantly related to less PTSD symptom severity of the demographic variables entered (age, race, marital and parental status, income, educational level and employment status, and whether one was currently in school). In a second regression analysis, the following assault predictors were in the equation: age at assault, physical injury, sexual victimization severity, victim-offender relationship, perceived life threat. Greater physical injury to victims was related to more PTSD symptom severity as was the victim's perception of greater life threat at the time of the assault. Age at the time of assault, severity of sexual victimization suffered in the incident, and the victim-offender relationship were not significantly related to PTSD symptom severity.

In a third regression, assault disclosure variables (timing and extent of disclosure), general social support variables (number of confidants, how well one is getting along with others, frequency of social contact, received support), and postassault support (support satisfaction, negative and positive reactions) variables were entered as predictors of PTSD symptom severity. Neither measures of current support nor measures of assault-specific support were related to current PTSD symptom severity. However, negative social reactions received upon disclosure were strongly related to greater PTSD symptom severity.

The significant predictors from these three initial regressions were entered simultaneously into a composite regression model predicting PTSD symptom severity, $F(4, 234) = 18.57, p < .0001$. In this analysis, both more negative social reactions overall and greater perceived life threat at the time of assault were related to increased PTSD symptom severity (see Table 2). A higher educational level was also related to less PTSD symptom severity. Physical injury from the assault was no longer a significant predictor of PTSD symptom severity.

Because negative social reactions were related to PTSD symptom severity, another regression was run with the five specific negative social reaction subscales predicting PTSD symptom severity to determine which reactions contributed most to symptoms, $F(5, 235) = 12.42, p < .0001$ (see Table 3). This analysis showed that being treated differently or receiving stigmatizing responses from others most strongly predicted PTSD symptom severity. Distraction also predicted greater PTSD symptom severity in this analysis. It should be noted that bivariate correlations of specific negative social reactions were each significantly related to PTSD symptom severity: blame $r(250) = .18, p < .01$, distract $r(255) = .37, p < .001$, treat differently $r(254) = .43, p < .001$, egocentric $r(245) = .27, p < .001$, control $r(254) = .31, p < .001$.

Two regression analyses were run to examine demographic and assault-related predictors of the average number of positive social reactions and negative social reactions to victims disclosing their assaults to others (see Table 4). Results of these analyses showed that lower sexual victimization severity, a greater extent of victim disclosure (e.g., discussing the assault experience at greater length and in greater depth with others), and telling more persons about the assault were each related to receiving more positive social reactions from others, $F(11, 207) = 3.07, p < .001$. Ethnic minority victims, greater sexual victimization severity, less extent of disclosure, and telling more persons about the assault were related to receiving more negative social reactions from others, $F(11; 210) = 6.05, p < .0001$.

Path Analysis

To examine how significant background characteristics, assault variables, and negative social reactions interrelated to affect PTSD symptom severity, a path model was calculated with significant predictors identified from preliminary correlational and regression analyses and based on theoretical considerations (see Fig. 1). Because race of the victim (e.g., ethnic minority status) was associated with more negative social reactions, this variable was a contextual dichotomous variable (White, ethnic minority) in the initial model, in which background characteristics and assault characteristics were considered factors that may be associated with more negative social reactions (the intervening variable), which was expected to be related to greater PTSD symptom severity based on past research (Davis et al., 1991; Ullman, 1996a). Number of support sources told, although related to both more positive and more negative reactions, was not included in the path model because it was not theoretically important in predicting PTSD symptom severity. Education was also included in the model as it was the only demographic variable significantly related to PTSD symptom severity. Perceived life threat was also a contextual variable expected to be directly related to more negative social reactions and PTSD symptom severity. Extent of disclosure was included and expected to be related to less PTSD symptom severity, as a marginal trend indicated in the composite regression model. Finally, negative social reactions was the only intervening variable expected to be related to greater PTSD symptom severity, because this variable was the only significant predictor of PTSD in the initial regression.

Exploratory Analyses of Race Differences

Because ethnic minority race was related to receiving more negative social reactions, some exploratory analyses were performed to pinpoint the exact nature and possible sources of

these differences in this sample. Race was significantly related to negative social reactions, $F(4, 250) = 2.81, p < .05$, with post hoc Tukey tests showing more negative social reactions for Hispanics ($M = 1.43$) than for Whites ($M = .95$). No differences in positive social reactions were found between the five race groups. Follow-up ANOVAs on specific types of negative social reactions showed only one difference: Hispanics reported having received more egocentric reactions than did Whites, $F(4, 256) = 2.89, p < .05$. No differences were found in negative social reactions between Black=women and women of other ethnicities. Emotional support differed marginally by race, $F(4, 262) = 2.14, p = .08$, with a post hoc test showing more emotional support for Asians ($M = 2.69$) than for mixed race victims ($M = 1.81$).

Several chi-square analyses were calculated with race (White, Black, Hispanic, Asian, mixed race) as a five level independent variable and several dependent variables (perceived life threat, physical injury, rape outcome, and victim–offender relationship) to determine whether ethnic minority victims experienced different types of assaults than did Whites, which may explain the differences in negative social reactions. Chi-square analyses showed differences in perceived life threat (marginally significant), $\chi^2(N = 4, 312) = 8.63, p < .10$; physical injury, $\chi^2(N = 4, 313) = 9.50, p < .05$; and rape outcome, $\chi^2(N = 4, 315) = 21.94, p < .05$ by race, but no differences in victim–offender relationship. Perception that one's life was in danger at the time of the assault was greatest among Blacks (47.5%), followed by mixed race victims (40.6%), Hispanics (38.9%), Whites (38.8%), and Asians (11.8%). More physical injury was reported by mixed race victims (56.3%), Hispanics (42.1%), followed by Whites (30.9%), Asians (29.4%), and Blacks (27.5%). Over 88% of White, Black, and mixed race groups reported completed rape compared with 73.7% of Hispanics and 55.6% of Asians. However, these results should be interpreted cautiously because of the small subgroups of ethnic minorities in this study.

Finally, although there were no race differences in PTSD symptom severity overall, it is possible that the effects of assault characteristics on PTSD symptoms varied according to race. Therefore, four two-way ANOVAs were conducted to see if life threat, physical injury, victim–offender relationship, or rape outcome interacted with victim race (White, ethnic minority) in predicting PTSD symptom severity. Only one significant interaction was observed. Whites reporting perceived life threat had greater PTSD symptom severity than did Whites without life threat ($M = 23.95$ vs. $M = 15.26$), whereas ethnic minority victims had similar levels of PTSD symptoms regardless of their perceptions of life threat during the assault, $F(1, 287) = 4.00, p < .05$. In addition to this interaction, perceived life threat also showed a significant main effect in predicting PTSD symptom severity, with greater PTSD symptom severity in life-threatening assaults ($M = 22.66$ vs. $M = 16.70$ in assaults without life threat), $F(1, 287) = 18.00, p < .001$. Injury and victim–offender relationship showed only significant main effects on PTSD symptom severity with more PTSD symptoms associated with injury ($M = 22.58$) than with noninjury ($M = 17.41$), $F(1, 288) = 12.05, p = .001$, and more PTSD symptoms for stranger assaults ($M = 23.25$) than for=known offender assaults ($M = 18.22$), $F(1, 284) = 7.59, p < .01$.

Discussion

This study examined correlates of PTSD symptom severity and both negative and positive social reactions received by female sexual assault victims disclosing their assaults to a range of informal and formal support providers. This is the first study to show that a range of negative social reactions including victim blame, treating the victim differently, distraction, egocentric reactions, and controlling responses are related to greater PTSD symptom severity, using a reliable and valid instrument, the Social Reactions Questionnaire (see Ullman, 2000, for psychometric data). Specifically, being treated differently (e.g.,

stigmatizing responses) was most predictive of PTSD symptom severity in a multivariate analysis. Being treated differently or stigmatized by others after rape may cause victims to feel as though the incident somehow permanently transformed them. Consequently, if rape victims internalize the idea that they are different or less worthy persons because of their assaults, they may develop greater PTSD symptoms. Stigmatizing responses from others may contribute to violation of positive assumptions about the self among victims that Janoff-Bulman (1992) argues are disrupted by traumatic events. Responses of distraction such as telling survivors to get on with their lives or to stop talking about the assault were also related to more PTSD symptom severity. It is possible that when sexual assault survivors are discouraged from talking about their experiences, they lack an appropriate outlet for expression, and hence, internalize their feelings that are manifested in greater PTSD symptoms. However, this explanation is speculative and further research is needed to understand why specific types of negative reactions predict PTSD symptom severity. In addition, because of the retrospective design, we cannot rule out the possibility that victims who are more symptomatic elicit more negative reactions from others.

Furthermore, less educated victims and those who perceived their lives were in danger at the time of the assault also reported more PTSD symptom severity, consistent with past work (Bownes et al., 1991; Kilpatrick et al., 1989; Ullman & Siegel, 1994). Neither physical injury due to attack nor victim-offender relationship were significant predictors of PTSD symptom severity in this study in contrast to some past research on rape victims (Bownes et al., 1991; Kilpatrick et al., 1989). This may be due to the largely known offender assaults (83%) in this sample and a less powerful single-item, dichotomous measure of physical injury. These results support and extend past work showing the importance of perceived life threat in the etiology of PTSD symptomatology (Frazier et al., 1997; Kilpatrick et al., 1989; Resnick et al., 1993).

Examination of correlates of positive and negative social reactions showed that greater extent of disclosure, telling more persons, and less severe sexual victimization severity were related to receiving more positive reactions from others. This supports research showing that seeking support and talking about the trauma more extensively with others may be therapeutic for sexual assault victims (Pennebaker, Kiecolt-Glaser, & Glaser, 1988). It is of concern, however, that more severe sexual victimization was related to fewer positive reactions, which was also found in a past study of social reactions to rape victims (Ullman, 1996b). It is possible that because these samples were predominantly known assailant cases it was harder for support providers to either believe or give emotional support (or do both of these) to women disclosing attempted or completed rapes (or both). If this is the case, it is worrisome as these women are at higher risk for psychological problems including PTSD (Kilpatrick et al., 1989). The finding that ethnic minority victims received more negative reactions is also of concern, but perhaps to be expected based on research showing more traditional attitudes toward rape and greater attributions of responsibility to victims in Black and Hispanic men than in White men (Bourque, 1989; Williams & Holmes, 1981). Ethnic minority women also may be likely to face disbelief, blame, and stigmatizing responses from those to whom they disclose, given the racist attitudes shown toward these women by the dominant society (Wyatt, 1992). In a triethnic study of victims seen at a rape crisis center, Lefley, Scott, Llabre, and Hicks (1993) found that psychological distress was greatest in Hispanics, followed by Blacks, and finally Whites. Blacks also perceived more censure from their communities in that study. Research comparing racial groups is needed to improve understanding of recovery from sexual assault in all women.

Exploratory analyses conducted to better understand these race differences showed that Hispanics and mixed race victims, but not Black and Asian women, reported more negative social reactions, specifically more stigmatization and egocentric reactions. These results

must be considered quite tentative given the small numbers of women in each race/ethnic group in this study. Such reactions may be more prominent in Hispanic cultures because of their devout Catholic origins. Stigmatization responses may in part be caused by traditional beliefs that women must remain chaste until after marriage. If a woman is raped she is no longer perceived as virginal, and therefore is more likely to be stigmatized and treated differently. George, Winfield, and Blazer (1992) found that sexual assault prevalence was lower among Hispanics than among Whites, and they attributed these results in part to greater religious devotion expressed by Hispanics. More egocentric responses among Hispanics may also be due to specific cultural norms. In her qualitative study of ethnic differences in violence against women, Sorenson (1996) observed that the Hispanic men she interviewed emphasized the importance of their masculinity and sexual prowess. Egocentric responses to rape victims may in part be the result of these well-established norms of male dominance in Hispanic cultures, but more empirical research is needed to identify the sources of social reactions to rape victims in different ethnic groups and to replicate these findings with larger subgroups of each race for reliable comparisons.

There were also some race differences in assault characteristics in this study, which may reflect real differences in actual risk for different kinds of assaults by race or may reflect race differences in disclosure of different types of assaults. Specifically, Hispanic women and mixed race women experienced more injury and more life-threatening assaults. However, only 19 Hispanic women and 18 Asian women were in the sample, so these results must be viewed very cautiously. These results suggest, however, that more study of race differences in sexual assault aftermath is needed as well as more representative samples of ethnic minorities. If Hispanics do experience more negative reactions as these data suggest, this might explain the finding of less sexual assault disclosure generally by Hispanic women (Sorenson & Siegel, 1992). These authors suggested that Hispanic women victims engage in greater avoidance and also experience more feelings of shame. They may accurately perceive they will receive more negative reactions and decide therefore not to disclose their assaults, a finding supported by recent focus groups with immigrant Mexican American women sexual assault survivors (Ramos-Lira, Koss, & Russo, 1999). The fact that ethnic minority victims (except for Asians) also reported more perceived life threat and injury (Hispanics and mixed race victims only) suggests that assault circumstances may differ by race, as some have argued (Wyatt, 1992). Although PTSD symptom severity did not differ by race, perceived life threat predicted more PTSD symptoms for Whites only, whereas symptoms were similar for ethnic minorities regardless of perceived life threat. Possibly, the correlates of PTSD symptoms differ by race. Asians were most similar to Whites in terms of social reactions, with means suggesting the fewest negative reactions and the most positive reactions for this group. Although these results are preliminary, they do suggest that more research is needed on representative samples of rape victims allowing large enough subgroups to study different racial groups separately to fully understand their postassault sequelae.

With regard to correlates of social reactions, greater sexual victimization severity, less extent of disclosure, and telling more persons about the assault were related to receiving more negative social reactions, again suggesting that more severe assaults that are talked about less in depth elicit negative reactions from support providers. The fact that perceived life threat was related to more negative social reactions is worrisome, and may be due to support providers' own fears being activated by hearing disclosures of life-threatening assaults.

Finally, the exploratory path model showed that the effect of negative social reactions on greater PTSD symptom severity held up controlling for race, perceived life threat, education, and extent of disclosure. Less perceived life threat and ethnic minority race were related to

more negative social reactions, and perceived life threat predicted more PTSD symptoms directly as expected. As in the preliminary regressions, more highly educated women and those disclosing assault to a greater extent (e.g., more in detail) also reported less PTSD symptom severity. This suggests that education may be a resource protecting women from PTSD symptoms and concurs with past work (Ullman & Siegel, 1994). That disclosing to a greater extent was related to less PTSD symptoms suggests support for the therapeutic value of emotional disclosure in responding to traumatic events (Pennebaker et al., 1988). It should be noted that parallel path models with positive social reactions as the intervening variable showed no significant effects. Unlike some past work (Frazier et al., 1997), race was unrelated to the PTSD outcome in this study. This preliminary model must be validated in a larger, representative sample of sexual assault victims.

Limitations of this study include the retrospective design that precludes drawing causal inferences regarding the relationship between social reactions and PTSD symptom severity. Victims' recollections of their assaults and the aftermath may be susceptible to biases of memory and interpretation. Future work using prospective designs and other sources of information such as interview methods and support provider accounts of reactions they made to victims may help to address such problems. Although the three sources of victims sampled (college students, community members, agency clients) are from distinct subpopulations of the sexual assault victim population, it is unknown whether these findings are generalizable to more representatively sampled victims. In addition, use of a volunteer sample is a limitation that may have led to underestimation of the severity of PTSD symptoms in this study, because women who came forward to participate are likely to have been better able to cope. Another limitation is the lack of a clinical interview assessment of PTSD, because self-report measures may not always provide an accurate representation of PTSD symptomatology.

Although there are many other correlates of PTSD symptom severity and this study did not test a comprehensive model, it is the first study to demonstrate that negative social reactions, assessed by the SRQ, such as stigmatizing responses, are related to more PTSD symptom severity and that these reactions are associated with victim characteristics such as victim race and other PTSD risk factors (e.g., the degree to which the assault was perceived to be life-threatening). Because data from this study were drawn from survey data collected primarily to evaluate the psychometric characteristics of a measure of social reactions to rape victims (Ullman, 2000), many theoretically important variables related to PTSD were not available such as victim attributions of blame and postassault coping strategies. Clearly, comprehensive theoretical models identifying the correlates of PTSD symptom severity must include demographic variables, assault-related variables, and postassault experiences. A previous study of a convenience sample of sexual assault victims showed that avoidance coping mediated the negative effects of negative social reactions on psychological symptoms (Ullman, 1996a), which suggests empirical support for contextual models of sexual assault recovery. Recent literature reviews on the impact of rape have argued for contextual theoretical models of recovery incorporating support system responses as well as race and cultural factors affecting adjustment (Neville & Heppner, 1999; Ullman, 1999). Theoretical models need to be tested in representatively sampled sexual assault victims to identify pathways leading to greater or less PTSD symptomatology that include the social network responses in which victim coping, attributions, and postrape sequelae develop.

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Fig. 1.

Path model of the relations of background, assault, and social reactions variables in relation to PTSD severity. Standardized beta weights, standard errors (in parentheses), and significance levels are presented for each path in the model. (+ $p < .10$. * $p < .05$. ** $p < .01$. *** $p < .001$.)

Table 1

Correlations Among Predictor Variables

	1	2	3	4	5	6	7	8	9	10	11
1. Race											
2. Education	-.15**										
3. Marital	-.02	-.03									
4. Age	-.08	.00	-.05								
5. Known	.05	-.07	.02	-.12*							
6. Danger	.02	-.06	-.03	.07	-.34***						
7. Injury	.05	.02	.01	.05	-.23***	.32***					
8. Rape	-.10	-.00	-.04	.15*	-.14*	.17**	.16**				
9. Timing	-.05	-.04	-.01	-.28***	.24***	-.17**	-.13*	-.09			
10. Extent	.02	-.11	-.03	.05	-.08	.03	.09	.05	-.17**		
11. Support	.01	.00	-.03	.22***	-.24***	.29***	.28***	.09	-.34***	.15**	
12. Negative	.13*	-.03	.01	.06	-.14*	.24***	.19**	.16*	-.20**	-.20**	.40***

Note. Race: 1 = White, 2=ethnic minority; Education: 1 = less than 12th grade, 2=high school graduate, 3=some college, 4=college graduate or beyond; Marital: 1 = unmarried, 2 = married, Age (age at time of assault in years); Known: 1 = stranger, 2 = known; Danger (perceived life threat): 1=no, 2=yes; Injury: 1=no, 2=yes; Rape: severity of sexual victimization; Timing (of disclosure): 1=immediately to 5 = 1 or more years post-assault; Extent (of disclosure): 1 = mentioned it in passing to 5 = talked about it in detail; Support: number of support providers told about the assault ranging from 0 to 6; Negative (social reaction): average number of negative social reactions.

* $p < .05$.

** $p < .01$.

*** $p < .001$. (All tests were 2 tailed.)

Table 2

Predictors of PTSD Symptom Severity in Sexual Assault Victims

Predictor	B	SE B	β
Educational level	-3.10	.84	-.21**
Physical injury	1.43	1.54	.06
Perceived life threat	4.13	1.47	.17*
Negative social reactions	6.54	1.12	.34**

Note. Adjusted $R^2 = .23$.

*
 $p < .01$.

**
 $p < .001$.

Table 3

Prediction of PTSD Symptom Severity from Social Reaction Subscales

Predictor	<i>B</i>	<i>SE B</i>	β
Egocentric	-.86	1.45	-.05
Treat differently	4.81	1.25	.34**
Blame	-.99	.94	-.07
Control	9.59	1.29	.07
Distract	2.48	1.08	.18*

Note. Adjusted $R^2 = .19$.

* $p < .05$.

** $p < .001$.

Table 4

Predictors of Average Number of Positive and Negative Social Reactions to Victims

Predictor	Positive Reactions			Negative Reactions		
	<i>B</i>	<i>SE B</i>	β	<i>B</i>	<i>SE B</i>	β
Victim race (minority)	-.11	.11	-.07	.24	.08	.19***
Marital status	.08	.12	.04	.04	.09	.03
Educational level	-.01	.07	-.01	-.05	.05	-.06
Age at assault	.00	.01	.01	-.00	.01	-.02
Known assailant	.04	.15	.02	-.10	.11	-.06
Physical injury	-.04	.12	-.02	.06	.09	.04
Sexual victimization severity	-.16	.10	-.11*	.13	.07	.12*
Perceived life threat	.11	.12	.07	.05	.09	.04
Timing of disclosure	-.01	.04	-.02	.03	.03	-.08
Extent of disclosure	.12	.04	.21***	-.06	.03	-.15**
Number of persons told	.12	.04	.24***	.13	.03	.34****

Note. Adjusted $R^2 = .10$ (positive reactions); Adjusted $R^2 = .20$ (negative reactions).

*
 $p < .10$.

**
 $p < .05$.

 $p < .01$.

 $p < .0001$.