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Psychological Consequences Associated With Positive and Negative Responses to Disclosure of Sexual Assault Among College Women: A Prospective Study

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Abstract

A prospective design was utilized to explore the impact of social reactions to sexual assault disclosure among college women who experienced sexual victimization over a 4-month academic quarter. Women completed baseline, 4- and 7-month assessments of symptomatology, beliefs about why sexual assault occurs, victimization, and social reactions to sexual assault disclosure. Accounting for symptomatology or beliefs reported prior to the assault, positive social reactions were not associated with victims' subsequent symptomatology or beliefs. However, accounting for symptomatology or beliefs reported prior to the assault, higher negative social reactions were associated with victims' post-assault reports of hostility, fear, and beliefs about why sexual assault occurs.

Keywords

disclosure; sexual assault; social reactions

Sexual assault is a serious public health problem that occurs across the life span on a continuum of severity (Basile, Chen, Black, & Saltzman, 2007), with far-reaching consequences to victims (Yuan, Koss, & Stone, 2006) and society (Krug, Dahlberg, Mercy, Zwi, & Lozano, 2002). The psychological consequences associated with sexual assault are wide-ranging, including symptoms of post-traumatic stress disorder (PTSD; Brown, Testa, & Messman-Moore, 2009; Najdowski & Ullman, 2009) and substance use (Kaysen, Neighbors, Martell, Fossos, & Larimer, 2006; Ullman, Filipas, Townsend, & Starzynski, 2006). Sexual assault is especially prevalent on college campuses (Humphrey & White, 2000). Over a relatively short 10-week academic quarter, between 11% to 28% of college women report some form of unwanted sexual experience, ranging from unwanted sexual contact to rape (Gidycz, Orchowski, King, & Rich, 2008; Rich, Gidycz, Warkentin, Loh, & Weiland, 2005; Turchik, Probst, Chau, Nigoff, & Gidycz, 2007).

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Despite the prevalence of campus-based sexual assault, college women rarely report experiences of sexual victimization to the police (Fisher, Daigle, Cullen, & Turner, 2003) or to the campus authorities (Sloan, Fisher, & Cullen, 1997). Instead, women who experience sexual assault are likely to discuss the experience with an acquaintance (Filipas & Ullman, 2001; Orchowski, Meyer, & Gidycz, 2009; Starzynski, Ullman, Filipas, & Townsend, 2005). According to Orchowski and Gidycz (2012), whereas 8% of college women with a history of adolescent sexual victimization discuss the experience with a formal support provider, 86% of women discuss the experience with a female peer. Whereas it may seem encouraging when college women “break the silence” surrounding sexual victimization by discussing the experience with their peers, the usefulness of the disclosure is often contingent on the social reaction provided (Ullman, 1999).

Studies conducted in the United States suggest that most women who disclose experiences of sexual trauma receive both positive and negative social reactions to disclosure of sexual assault (Ahrens, Cabral, & Abeling, 2009; Ahrens, Campbell, Ternier-Thames, Wasco, & Sefl, 2007; Campbell, Ahrens, Sefl, Wasco, & Barnes, 2001; Golding, Siegel, Sorenson, Burnam, & Stein, 1989; Orchowski & Gidycz, 2012; Ullman & Filipas, 2001). Whereas responses to disclosure of sexual victimization can serve to validate the survivor’s experience and provide a context within which to work through emotions related to the assault (Peri, 2004), women also report that they are responded to in a manner that leads to feelings of hurt, shame, or rejection (Campbell et al., 2001; Campbell & Raja, 1999). Even well-intentioned questions (e.g., “Were you drinking?”) can unintentionally suggest that the victim was responsible for the assault (Ahrens, 2006). Positive responses to sexual assault disclosure include reactions that provide tangible support or resources to the victim, such as advice or information, as well as reactions that demonstrate empathy or kindness, such as listening and believing the survivor (Ahrens et al., 2007; Davis, Birckman, & Baker, 1991; Ullman, 1996a). Consistent with Ullman (2000), we use the term “positive social reactions” in the present study to refer to social reactions to disclosure of sexual assault that convey emotional support or tangible aid, and the term “negative social reactions” to refer to responses from support providers who blame or shame the victim, distract the victim, display so much anger that the victim is unable to attend to her own needs, or attempt to control the victim’s decisions.

Both positive and negative social reactions can play an important role in how women conceptualize and respond to experiences of sexual assault. As suggested by Campbell, Dworkin, and Cabral (2009), “With each disclosure and interaction with the social world, victims are given explicit and implicit messages about how they are to make sense of this crime and apportion blame” (p. 227). Whereas studies examining the consequences of sexual assault disclosure are primarily retrospective in nature (Campbell et al., 2009), numerous cross-sectional studies suggest that social support is helpful following sexual victimization (Fowler & Hill, 2004; Ruch & Chandler, 1983; Sales, Baum, & Shore, 1984). However, evidence regarding the role of positive social reactions in resiliency following sexual victimization is mixed. Several studies suggest that positive social reactions are positively related to adjustment (Ahrens et al., 2007; Borja, Callahan, & Long, 2006; Campbell et al., 2001; Ullman, 1996a; Ullman & Siegel, 1995), whereas other studies report

a minimal or non-significant relationship (Andrews, Brewin, & Rose, 2003; Campbell et al., 2001; Davis et al., 1991; Ullman, 1996a, Zoellner, Foa, & Brigidi, 1999).

The deleterious effects of negative social reactions on post-assault adjustment appear to be more robust than the supportive effects of positive social reactions (Borja et al., 2006; Campbell et al., 2001). Because women often disclose victimization to family and friends, negative responses from these support providers may be unanticipated, and therefore potentially more distressing (Campbell et al., 2009). In fact, negative social reactions are associated with higher levels of anxiety, depression, PTSD, and problem drinking (Borja et al., 2006; Campbell et al., 2001; Davis et al., 1991; Moss, Frank, & Anderson, 1990; Ullman, 1996a, 1996b, 1996c; Ullman & Filipas, 2001; Ullman, Filipas, Townsend, & Starzynski, 2007; Ullman, Starzynski, Long, Mason, & Long, 2008). Furthermore, women who receive negative social reactions are less likely to disclose the experience to others in the future (Ahrens et al., 2007).

Whereas a range of research has examined the relationship between social reactions to disclosure and adjustment, these studies are primarily retrospective in nature. As such, the directionality of the relationship between social reactions and subsequent adjustment among sexual assault victims is unclear. In fact, a literature review revealed only two prospective studies of social reactions to disclosure of trauma and adjustment (Andrews et al., 2003; Zoellner et al., 1999). Problematically, these studies focused on treatment-seeking victims of violent crimes and included only a small number of women who experienced sexual victimization. The present study therefore sought to advance the literature by utilizing a prospective design to examine the relationship between social reactions to disclosure of sexual victimization and subsequent adjustment. The present study also sought to advance the literature by sampling college women. Notably, the majority of studies that assess the role of social support in adjustment following sexual victimization have also focused on treatment-seeking victims of sexual assault (e.g., Davis et al., 1991; Kimmerling & Calhoun, 1994; Moss et al., 1990; Popiel & Susskind, 1985; Ruch & Chandler, 1983) and as a result, may not generalize to college women, who rarely seek support from a formal support figure (Orchowski & Gidycz, 2012).

The primary aim of the study was to investigate the relationships between social reactions to sexual assault disclosure and measures of psychological symptomatology. A sample of freshmen women was surveyed at the baseline and followed over the course of a year. We sought to examine, among the subset of women who experienced sexual assault over a 4-month academic quarter, whether positive and negative social reactions to sexual assault disclosure influenced victims' subsequent reports of psychological symptomatology, after accounting for their psychological symptomatology prior to the assault. Women living in primarily freshmen residence halls completed assessments of psychological distress at the start of an academic quarter and returned at the end of the quarter, approximately 4 months later, to complete measures indicating experiences of sexual victimization over the interim. Women returned at the end of an academic year, approximately 7 months following the initial survey, to again complete assessments of psychological distress again.

The following hypotheses were generated: Among women who experienced and disclosed sexual assault during a 4-month academic quarter, negative social reactions would be associated with increased levels of subsequent psychological symptomatology (Hypothesis 1), and positive social reactions would be associated with lower levels of subsequent psychological symptomatology (Hypothesis 2). The following hypotheses were generated to explore multivariate associations between social reactions and subsequent adjustment, accounting for psychological characteristics prior to the assault: Among women who experienced and disclosed sexual assault during a 4-month academic quarter, negative social reactions would be associated with higher levels of subsequent symptomatology, after accounting for psychological symptoms at the baseline (Hypothesis 3), and positive social reactions would be associated with lower levels of subsequent symptomatology, after accounting for psychological symptoms at baseline (Hypothesis 4).

Whereas research examining social reactions and adjustment has focused on women's personal attributions of blame for their own assault experiences (Ullman, 1996a), the present data set also permitted an examination of how social reactions to sexual assault disclosure influenced women's general beliefs about why sexual assault occurs. The following hypotheses were proposed to explore univariate relationships between social reactions to disclosure and the belief that sexual assault occurs as a result of the perpetrator, the victim's behavior, the victim's character, societal factors, or chance: Among women who experienced and disclosed sexual assault during a 4-month academic quarter, negative social reactions would be associated with higher subsequent endorsement of the belief that sexual assault occurs because of the victim's behavior and character, and lower subsequent endorsement of the belief that sexual assault occurs due to the perpetrator's behavior, society, and chance (Hypothesis 5), whereas positive social reactions would be associated with decreased subsequent endorsement of the belief that sexual assault occurs because of the victim's behavior and character, and increased subsequent endorsement of the belief that sexual assault occurs due to the perpetrator's behavior, society, and chance (Hypothesis 6). The following hypotheses were next proposed to examine multivariate relationships between social reactions and women's subsequent beliefs about why sexual assault occurs, controlling for these beliefs prior to the assault: Among women who experienced and disclosed sexual assault during a 4-month academic quarter, negative social reactions would be associated with increased endorsement of the belief that sexual assault occurs because of the victim's behavior and character, and lower subsequent endorsement of the belief that sexual assault occurs due to the perpetrator's behavior, society, and chance, accounting for levels of these beliefs prior to the assault (Hypothesis 7). It was also hypothesized that among women who experienced and disclosed sexual assault during a 4-month academic quarter, positive social reactions would be associated with decreased subsequent endorsement of the belief that sexual assault occurs because of the victim's behavior and character, and increased subsequent endorsement of the belief that sexual assault occurs due to the perpetrator's behavior, society, and chance (Hypothesis 8).

Method

Participants

Participants consisted of 374 undergraduate women living in first year residence halls at a medium-sized Midwestern University. The majority of participants were 18 or 19 years old ($n = 367$, 98.1%), and identified as non-married ($n = 369$, 98.7%) and heterosexual ($n = 367$, 98.7%). Ninety-four percent of the participants self-identified as Caucasian ($n = 353$), 2.9% as African American ($n = 11$), 0.3% as Asian American ($n = 1$), 0.3% as American Indian or Alaska Native ($n = 1$), 0.8% as Native Hawaiian or Pacific Islander ($n = 3$), and 1.3% listed “other” as their race ($n = 5$). More than 25% of participants reported that they did not know their annual family income ($n = 86$), 18.4% reported annual family incomes that were US \$50,000 or less ($n = 69$), 32.3% reported an annual family income that ranged from US \$50,000 to US\$100,000 ($n = 121$), and 26% reported their annual family income to be above US\$100,000 ($n = 88$).

Measures

Demographics questionnaire—This is a brief questionnaire used to collect relevant personal information regarding basic participant characteristics such as age, marital status, family income, and race.

Sexual victimization—The Sexual Experiences Survey (SES; Koss & Oros, 1982) assessed unwanted sexual experiences from the baseline assessment to the 4-month follow-up. Participants completed a series of 10 sexually explicit and behaviorally specific questions that assess past sexual behavior along a variety of dimensions. Classification of sexual victimization included three levels, referring to the most severe experience reported. In regard to the most severe assault experience, women reported whether they disclosed the assault and who they told about the experience. Gyls and McNamara (1996) and Koss and Gidycz (1985) reported that the SES demonstrates good reliability and validity. Cronbach’s alpha for the scale among women victimized over the 4-month follow-up was .73.

Psychological symptomatology—The Hopkins Symptom Checklist-90 (SCL-90; Derogatis, Lipman, & Covi, 1973) assessed psychosocial symptomatology at baseline and over the follow-up. The SCL-90 is a 90-item self-report measure designed to assess current levels of global adjustment. Participants respond to items on a 5-point scale ranging from “not at all” to “extremely.” The SCL-90 includes a range of subscales assessing psychological symptomatology, including somatization, obsessive-compulsive behavior, interpersonal sensitivity, depression, anxiety, hostility, phobic anxiety, paranoia, and psychoticism. An index is also calculated to measure overall levels of post-traumatic stress symptomatology (Neal et al., 1994). Holi (2003) documents that the SCL-90 has adequate reliability and validity. Cronbach’s alpha for the subscales utilized in the current study ranged from .74 to .98 at baseline and ranged from .74 to .98 at the 7-month follow-up.

Beliefs about why sexual victimization occurs—At baseline and at the 7-month follow-up, an adapted version of the Rape Attribution Questionnaire (Frazier, 2002) assessed women’s beliefs about why sexual assault occurs. The original version of this

questionnaire pertains only to victims of sexual assault and assesses attributions of blame for personal assault experiences. However, for the purpose of the current study, an adapted version was utilized (Orchowski et al., 2009) that allows all participants to complete the questionnaire regardless of experiences of sexual victimization. The adapted questionnaire begins with the following prompt: “How often have you thought: An unwanted sexual experience would occur because.” Participants respond to items along a 5-point continuum, ranging from “never” to “very often.” Higher scores indicate higher levels of blame. Five subscales are calculated to assess various beliefs about why sexual victimization occurs, including because of society, chance, the victim’s behavior, the victim’s character, or because of the perpetrator. The internal consistency reliability of the subscales ranges from .80 to .90 (Orchowski et al., 2009). Cronbach’s alpha for the subscales at baseline ranged from .80 to .88 and from .78 to .89 at the 7-month follow-up.

Social reactions to sexual assault disclosure—The Social Reactions Questionnaire (Ullman, 2000) assessed assault-specific reactions to disclosure of sexual victimization. Women who experienced sexual victimization over the 4-month follow-up completed the scale concerning the most severe victimization experience occurring over the interim. The scale includes 48 items in two subscales relating to negative and positive social reactions. Items on the negative social reactions subscale include reactions that control the victim’s decisions, blame the victim for the assault, treat the victim differently, distract the victim (i.e., not allow the woman to discuss the experience), and egocentric responses (i.e., responses whereby the support figure addresses their own needs as opposed to the victim’s needs). Items on the positive social reactions subscale include responses that provide emotional support to the victim and responses that provide information or tangible aid to the victim. Ullman (2000) reported that the reliability and validity for the scale are high. Cronbach’s alpha for the negative and positive social reaction subscales were .96 and .95, respectively.

Procedure

Data were garnered from a larger study examining the effectiveness of sexual assault prevention programming for college students living in primarily freshmen residence halls (Gidycz, Orchowski, & Berkowitz, 2011; Gidycz, Orchowski, Probst, et al., 2015). The present study utilized only the responses from women randomly assigned to the control group. No participants were eliminated from the study due to missing or incomplete data. Women completed assessments at baseline, 4-month follow-up, and 7-month follow-up sessions. Of the 374 women who participated in the baseline assessment, 79.4% participated in both the 4-month and 7-month follow-up ($n = 297$). Women received US\$20 at each assessment for completing questionnaires. A trained female graduate student researcher administered the questionnaires to groups of women in private locations within the residence hall. At baseline and at the 4-month follow-up, participants reported on their history of sexual victimization, allowing for a prospective examination of experiences of sexual victimization over the follow-up, while accounting for prior victimization history. At baseline and at the 7-month follow-up, women reported on beliefs about why sexual assault occurs and psychological symptomatology, allowing for an assessment of participants’ attitudes prior to and following assault experiences over the 4-month interim.

Data Preparation and Analysis

Data were analyzed using the SPSS statistical package (SPSS, 2006). The measure of negative social reactions to sexual assault disclosure demonstrated a large positive skew, with values ranging from 0 to 71 ($M = 19.04$, $SD = 22.23$). Similarly, the measure of positive social reactions to sexual assault disclosure also demonstrated a large positive skew, with values ranging from 0 to 55 ($M = 20.35$, $SD = 20.36$). Therefore, variables assessing negative and positive social reactions to sexual assault disclosure were normalized via a square root transformation. All analyses utilized these transformed variables. All correlations and partial correlations between social reactions to disclosure and measures of psychological symptomatology are presented in Table 1. All correlations and partial correlations between social reactions to disclosure and women's beliefs about why sexual assault occurs are presented in Table 2. Study analyses focused on the subset of women who experienced sexual victimization, and disclosed the experience during the 4-month follow-up. Power for the two-predictor multiple regression analyses conducted in the current study estimating a large effect size ($R^2 = .37$) was calculated to be .84.

Results

Adolescent Sexual Victimization and Disclosure

At baseline, 35.8% ($n = 134$) of women reported unwanted sexual experiences since the age of 14. More specifically, 15% reported unwanted sexual contact ($n = 56$), 2.9% reported sexual coercion ($n = 11$), 9.6% reported attempted rape ($n = 36$), and 8.3% reported completed rape ($n = 31$). According to the report of the victim, 97% of assaults were perpetrated by someone known to the victim ($n = 130$). At the time of the assault, 63% of the assaults involved substance use by the perpetrator ($n = 65$), and 55% of the assaults involved substance use by the victim ($n = 57$). Approximately 75% of women ($n = 100$) discussed the assault with someone, most commonly a female friend (85%; $n = 86$).

Victimization Over the 4-Month Follow-Up

Of the 297 women who returned for both follow-up assessments, 15% ($N = 45$) experienced some form of sexual victimization over the 4-month follow-up. More specifically, 82.2% reported unwanted sexual contact, sexual coercion, or attempted rape ($n = 37$), and 17.8% reported completed rape ($n = 8$). Eighty-three percent of the assaults were perpetrated by someone known to the victim ($n = 20$), and 17% were perpetrated by someone that the victim reported they had "just met" ($n = 4$). According to the victims' reports, 83% of perpetrators ($n = 20$) and 83% of victims ($n = 20$) were consuming alcohol and/or drugs at the time of the assault. Approximately 71% of women who were victimized reported a prior history of adolescent sexual victimization ($n = 32$).

Of the women who experienced some form of sexual victimization over the followup, 53.3% ($n = 24$) told someone about the assault. The majority of women disclosed to a female and/or male peer (91.7%, $n = 22$), and 8.3% disclosed to both a peer and a family member ($n = 2$). Approximately 33% of women confided in only one support provider ($n = 8$). No women disclosed to a formal provider, such as the police, the counseling center or a member of the clergy. Whereas 54.2% ($n = 13$) of women told someone the day after the assault occurred,

the length of time before women disclosed the victimization experienced ranged from immediately after the assault (20.8%, $n = 5$), within a week from the assault (8.3%, $n = 2$), 2 weeks following the assault (4.2%, $n = 1$), to approximately 90 days after the assault (4.2%, $n = 1$).

Social Reactions to Disclosure and Psychological Symptomatology

Univariate associations—Among women who experienced and disclosed sexual assault over a 4-month academic quarter, a series of seven bivariate correlations assessed the association between the level of positive social reactions to disclosure and their self-report of psychological symptomatology at the 7-month follow-up. Measures of symptomatology included the following indexes: (a) PTSD index; (b) interpersonal sensitivity index; (c) depression index; (d) anxiety index; (e) hostility index; (f) phobic anxiety index; and (g) paranoia index. A second series of seven bivariate correlations among women who experienced and disclosed sexual assault over a 4-month academic quarter assessed the association between the level of negative social reactions to disclosure and their self-report of psychological symptomatology at the 7-month follow-up. Data indicated that the extent of positive social reactions to disclosure was not associated with victims' reports of any forms of psychological symptomatology at the 7-month follow-up. Rather, the extent of negative social reactions to disclosure was associated with higher levels of subsequent interpersonal sensitivity, hostility, paranoia, and phobic anxiety at the 7-month follow-up: $r(24) = .46, p < .05$; $r(24) = .44, p < .05$; $r(24) = .52, p < .01$; $r(24) = .43, p < .05$.

Multivariate associations—Among women who experienced and disclosed sexual assault over a 4-month academic quarter, a series of multivariate linear regressions produced partial correlations to assess the hypothesis that social reactions to disclosure would demonstrate unique associations to psychological symptomatology at the 7-month follow-up, after accounting for levels of psychological symptomatology prior to the assault (i.e., at baseline). Given that measures of positive social reactions to assault disclosure did not demonstrate any univariate associations with subsequent adjustment among victims, analyses only examined the relationship between negative social reactions and subsequent adjustment. For each analysis, the subscale indicating each form of psychological symptomatology at the 7-month follow-up served as the dependent variable. Independent variables included the extent of negative social reactions to disclosure and baseline levels of each measure of symptomatology. Analyses examined only those measures of symptomatology that demonstrated a significant univariate association with negative social reactions to disclosure. A separate analysis was conducted to examine the relationship between negative social reactions to disclosure and the following dependent variables at the 7-month follow-up: interpersonal sensitivity, hostility, paranoia, and phobic anxiety.

The first regression model accounted for a significant amount of variance in victims' reports of hostility at the 7-month follow-up, $F(2, 21) = 4.40, p < .05, R^2 = .30$. Accounting for levels of hostility prior to the assault, negative social reactions demonstrated a unique positive association with levels of subsequent hostility, $t(23) = 2.89, p < .01$. The second regression model accounted for a significant amount of variance in victims' reports of paranoia at the 7-month follow-up, $F(2, 21) = 4.13, p < .05, R^2 = .30$. Accounting for levels

of paranoia prior to the assault, negative social reactions were positively related to subsequent paranoia, $t(21) = 2.84, p < .01$. Analyses of interpersonal sensitivity and phobic anxiety suggested that the full models did not account for a significant amount of variance in these outcomes.

Social Reactions to Disclosure and Beliefs About Why Sexual Assault Occurs

Univariate associations—Among women who experienced and disclosed sexual assault over a 4-month academic quarter, a series of five bivariate correlations examined the univariate relationship between negative social reactions to disclosure and victims' endorsement of beliefs about why sexual assault occurs at the 7-month follow-up. Higher levels of negative social reactions to disclosure over the 4-month follow-up were associated with higher subsequent endorsement of the belief that sexual assault occurs because of the perpetrator, the victim's behavior, the victim's character, chance, and society, $r(24) = .59, p < .01$; $r(24) = .61, p < .01$; $r(24) = .50, p < .05$; $r(24) = .50, p < .05$; $r(24) = .56, p < .01$. Among women who experienced and disclosed sexual assault over a 4-month academic quarter, a second series of five bivariate correlations examined the univariate relationships between positive social reactions to disclosure and victims' endorsement of beliefs about why sexual assault occurs at the 7-month follow-up. Higher levels of positive social reactions were associated with higher subsequent endorsement of the belief that sexual assault occurs due to the perpetrator, $r(24) = .52, p < .01$, and because of society, $r(24) = .46, p < .05$.

Multivariate associations—Among women who experienced and disclosed sexual assault over a 4-month academic quarter, a series of multivariate linear regressions produced partial correlations to assess the relationship between social reactions to disclosure and victims' endorsement of beliefs about why sexual assault occurs at the 7-month follow-up, accounting for beliefs prior to the assault. For each analysis, the subscale indicating each belief about why sexual assault occurs at the 7-month follow-up (i.e., due to the perpetrator, the victim's behavior, the victim's character, chance, and society) served as the dependent variable. Independent variables included the extent of social reactions to disclosure and victims' endorsement of the belief prior to the assault. Analyses examined only those measures that demonstrated a significant univariate association with social reactions. As such, five separate analyses were conducted to examine the relationship between negative social reactions and victims' endorsement of the belief at the 7-month follow-up that sexual assault occurs due to the perpetrator, the victim's behavior, the victim's character, society, and chance, and two separate analyses were conducted to examine the relationship between positive social reactions and victims' endorsement of the belief at the 7-month follow-up that sexual assault occurs due to the perpetrator and due to society.

The analyses first examined the relationship between negative social reactions and victims' subsequent beliefs about why sexual assault occurs. The first regression model accounted for a significant amount of variance in victims' subsequent endorsement of the belief that sexual assault occurs due to the perpetrator, $F(2, 21) = 8.79, p < .01, R^2 = .46$. Accounting for endorsement of this belief prior to the assault, negative social reactions were positively associated with victims' subsequent endorsement of the belief that sexual assault occurs due

to the perpetrator, $t(23) = 2.65, p < .05$. The second regression model accounted for a significant amount of variance in victims' endorsement of the belief that sexual assault occurs as a result of the victim's behavior, $F(2, 21) = 6.92, p < .01, R^2 = .40$. Accounting for endorsement of this belief prior to the assault, negative social reactions were positively associated with subsequent endorsement of the belief that sexual assault occurs as a result of the victim's behavior, $t(23) = 2.47, p < .05$. The third regression model accounted for a significant amount of variance in victims' endorsement of the belief that sexual assault occurs as a result of the victim's character, $F(2, 21) = 3.56, p < .05, R^2 = .25$. Accounting for endorsement of the belief prior to the assault, negative social reactions were positively associated with subsequent endorsement of the belief that sexual assault occurs as a result of the victim's character, $t(21) = 2.29, p < .05$. The fourth regression model accounted for a significant amount of variance in victims' endorsement of the belief that sexual assault occurs as a result of society, $F(2, 21) = 5.87, p < .01, R^2 = .36$. Accounting for endorsement of the belief prior to the assault, negative social reactions were positively associated with subsequent endorsement of the belief that sexual assault occurs as a result of society, $t(23) = 2.68, p < .05$. Finally, the fifth model accounted for a significant proportion of the variance in victims' endorsement of the belief that sexual assault occurs due to chance, $F(2, 21) = 5.23, p < .05, R^2 = .33$. Accounting for endorsement of the belief prior to the assault, negative social reactions were positively associated with subsequent endorsement of the belief that sexual assault occurs due to chance, $t(23) = 2.70, p < .05$.

Analyses next examined the relationship between positive social reactions and women's subsequent beliefs about why sexual assault occurs, accounting for endorsement of these beliefs prior to the assault. Analyses examining victims' endorsement of the belief that sexual assault occurs due to the perpetrator suggested that whereas the full model accounted for a significant amount of variance, $F(2, 21) = 5.61, p < .05, R^2 = .35$; positive social reactions were not uniquely associated with victims' subsequent endorsement of the belief that sexual assault occurs due to the perpetrator. Similarly, whereas analyses examining victims' endorsement of the belief that sexual assault occurs due to society suggested that whereas the full model accounted for a significant amount of variance, $F(2, 21) = 3.67, p < .05, R^2 = .26$, positive social reactions were not uniquely associated with victims' subsequent endorsement of this belief.

Discussion

The present study advances science by utilizing a prospective methodology to examine associations between social reactions to sexual assault disclosure and subsequent psychological symptomatology in a sample of college women who experienced sexual victimization over a 4-month academic quarter. Because research of sexual assault disclosure and adjustment has focused almost exclusively on community-residing women, this study also extends the literature by utilizing a sample of freshmen college women. Research specifically focusing on college women is important, given that rates of campus-based assault have remained high and stable despite an array of outreach and prevention campaigns (Krebs, Lindquist, Warner, Fisher, & Martin, 2009; Rozee & Koss, 2001). Research also suggests that rates of sexual assault are particularly high among freshmen women. Given that retrospective research examining social reactions to sexual assault

disclosure often asks women to describe experiences of sexual victimization that occurred several years prior to the survey administration, the current study is unique in its examination of relatively recent experiences of sexual assault.

Among women who experienced sexual assault during an academic quarter, several univariate relationships between social reactions to sexual assault disclosure and measures of psychological symptomatology at the end of the academic year were revealed. Higher levels of negative social reactions to disclosure of sexual victimization over the 4-month follow-up were associated with higher levels of interpersonal sensitivity (i.e., feelings of inadequacy, self-deprecation, or uneasiness), hostility, phobic anxiety (i.e., specific fears), and paranoia (Hypothesis 1). Given that the vast majority of women in the current study who experienced victimization over the follow-up also reported a prior history of assault, and are therefore more likely to display a range of psychological symptoms (Yuan et al., 2006), these findings are more appropriately interpreted after accounting for women's report of symptomatology prior to the assault. Multivariate analyses indicated that negative social reactions were associated with increased paranoia (i.e., suspiciousness toward others and fear of losing personal autonomy) and hostility (i.e., rage, anger, and frustration) at the 7-month follow-up, accounting for levels of symptomatology prior to the assault (Hypothesis 3). Given the relatively small sample size and the lack of other prospective studies with which to compare these findings, it is important to interpret these data with some caution. However, one possible explanation of these findings is that support providers who attempt to control the decisions of a survivor limit their autonomy or restrict a survivor's independence, may foster paranoia among survivors of sexual assault. It is also reasonable that negative social reactions would lead to increases in feelings of resentment or uneasiness among survivors, especially if a support provider implies that the sexual trauma did not really happen, or if it did, it was insignificant or their fault (Burkhart & Fromuth, 1996).

As women in the current study disclosed experiences of sexual victimization over the interim to a formal support provider, such as the police or the college counseling center staff, it is important to note that the current analyses reflect the relationship between *informal support providers'* social reactions to disclosure of sexual victimization and adjustment at the 7-month follow-up. Furthermore, the 7-month outcomes reflect women's *acute response* to sexual victimization occurring during the 3 months after the 4-month follow-up, as opposed to the long-term mental and physical consequences of assault. Studies that utilize more frequent assessments of women's adjustment over longer periods of time, such as bi-weekly or ecological momentary assessments, are needed to model the short- and long-term trajectory of recovery following assault, and how reactions to disclosure may influence the course of women's recovery over time. For example, it is possible that a relationship between negative social reactions and post-assault outcomes changes over time, especially if negative social reactions from support providers lead to subsequent deterioration of the survivors' network of social support (Ruch & Chandler, 1983; Sales et al., 1984).

Contrary to the proposal that positive social reactions among women who experienced sexual assault during the 4-month academic quarter would be associated with lower levels of psychological symptomatology at the 7-month follow-up (Hypotheses 2 and 4), positive

social reactions to disclosure were not associated with any measure of subsequent psychological symptomatology. Notably, several other studies report a minimal or non-significant relationship between positive social reactions to disclosure and the aftereffects of sexual assault (Andrews et al., 2003; Campbell et al., 2001; Davis et al., 1991; Ullman, 1996a, Zoellner et al., 1999). Such data do not suggest that providers' responses to disclosure of sexual victimization are irrelevant; early psychological intervention following experiences of trauma can benefit individuals who are at risk of experiencing psychological distress (National Institute of Mental Health, 2002). Given that sexual victimization is associated with a range of health consequences (Thompson et al., 2003), it is nonetheless important that providers respond in a way that meets victims' needs.

The present study also examined relationships between social reactions to disclosure of sexual assault and victims' subsequent beliefs about why sexual assault occurs. It is important to note that women's *general perceptions* of why sexual assault occurs may or may not be associated with one's assault-specific attributions of blame for why an assault occurred. Nonetheless, these data provide relevant insight into how victims of sexual assault later conceptualize sexual victimization. Whereas univariate analyses suggested that positive social reactions were associated with increased subsequent endorsement of the belief that sexual assault occurs due to the perpetrator and due to society (Hypothesis 6), multivariate analysis did not support unique associations between positive social reactions to sexual assault and women's reports of why sexual assault occurs (Hypothesis 8). Furthermore, univariate analyses suggested that negative social reactions were associated with increased subsequent endorsement of the belief that sexual assault occurs due to the perpetrator, the victim's behavior, the victim's character, society, and chance (Hypothesis 5). After accounting for the baseline levels of these constructs, the extent of negative responses to sexual assault disclosure among women victimized over the follow-up were associated with higher levels of the belief that the character and behavior of a victim are reasons why sexual assault might occur (Hypothesis 7). It is reasonable that negative social responses from friends, such as implying that one "should have known better" may increase the likelihood that an individual blames the victim of an assault for the experience (e.g., Burkhart & Fromuth, 1996). Ullman (1996a) documented a positive association between negative social reactions to disclosure and women's personal belief that their character was to blame for their assault experience. It is possible that negative responses to disclosure also influence women's general beliefs about why violence is perpetrated against women.

It is less clear why negative social reactions to sexual assault disclosure also demonstrated a positive relationship to the belief that the perpetrator, society, or chance were reasons why sexual victimization occurs. While speculative, it is possible that some types of social reactions to disclosure that are classified as "negative" (e.g., seeking revenge against the perpetrator) may also increase the likelihood that women hold perpetrators of sexual assault and society more accountable for violence against women. Given that the present study did not assess women's attribution of blame for their personal assault experience, it is unclear if such responses are associated with women's sense that these factors are reasons why their own assault experience occurred. Future studies that include measures of women's general

beliefs about why sexual assault occurs, as well as measures of attributions of blame for their own assault, may help to tease out differences between these constructs.

The present study has several broad implications for research and practice. First, a reasonably large proportion (47%) of women who experienced sexual victimization over the follow-up period did not tell anyone about the experience. Whereas it is likely that a small percentage of the women who did not disclose during the course of the 4-month follow-up will discuss the experience with someone in the future, these data nonetheless highlight the importance of continued outreach to “break the silence” surrounding sexual victimization and create an environment in which survivors feel comfortable seeking support (Campbell & Wasco, 2005). Second, virtually all women who disclosed sexual victimization confided in a peer; a small portion of women (8.3%) told both a peer and a family member, and no women disclosed to a formal support provider. Whereas these data are consistent with studies of college women (Orchowski et al., 2009) and women residing in the community (Starzynski et al., 2005), revealing a higher likelihood of sexual assault disclosure to informal providers compared with formal providers, it is unclear whether the informal providers with whom college women are discussing sexual assault experiences are prepared to respond appropriately. Family and friends often report difficulties coping with the emotional distress associated with supporting a survivor of sexual assault (Ahrens & Campbell, 2000). It is also unclear if college students possess adequate *knowledge* of the campus resources that can benefit survivors (Ruback, Menard, Outlaw, & Shaffer, 1999).

Given that all colleges and universities that receive federal funding are required to implement some form of sexual assault prevention (National Association of Student Personnel Administrators, 1994), it seems only sensible that colleges and universities who provide sexual assault prevention programming should also be required to educate potential providers on how to prevent the *secondary victimization* of survivors as well. Existing sexual assault risk-reduction programs for women (e.g., Orchowski, Gidycz, & Raffle, 2008) and prevention programs for men (e.g., Gidycz, Orchowski, & Berkowitz, 2011) can model strategies for effective responses to disclosure. Active practice of responding to sexual assault disclosure within sexual assault prevention programming may also minimize the likelihood students provide responses to disclosure—such as questioning the victim or pressing for details—that potentially harm the survivor. Practitioners on college campuses may also consider how best to adapt existing theoretically and empirically guided recommendations for college counselors on how to support a survivor of sexual assault (e.g., Krees, Trippany, & Nolan, 2003) to meet the needs of college students. Residential advisors, who frequently provide support to college students living in campus dormitories (Coulter, Offutt, & Mascher, 2003; Mathis & Lecci, 1999), may also benefit from training in how to respond effectively to disclosure of violence.

Whereas these data provide the first prospective examination of the consequences of social reactions to sexual assault disclosure among sexual assault victims, accounting for levels of adjustment and beliefs prior to the assault, there are several ways that this research can be extended. Future prospective studies of the consequences of negative and positive social reactions to disclosure of sexual victimization among larger samples of victims are strongly warranted. In addition, 15% of women who were included in the study experienced sexual

victimization over the 4-month academic quarter, which was slightly lower than the rate of sexual victimization (18%-31%) documented in other longitudinal investigations of campus-based sexual assault (Gidycz, Coble, Latham, & Layman, 1993; Gidycz, Hanson, & Layman, 1995; Gidycz et al., 2001; Orchowski et al., 2008). Given that women completed the study assessments in the context of their residence hall, it is possible that some women felt uncomfortable reporting on personal assault experiences in this setting. Furthermore, although the study sample was consistent with the demographics of the university, women in this study primarily identified as Caucasian and reported a relatively high annual family income. Given that general patterns of disclosure and help seeking vary as a function of cultural factors (Lewis et al., 2005; Smith & Cook, 2008; Washington, 2001), future research may examine patterns of social reactions to disclosure among ethnically diverse and financially disadvantaged populations. It should also be noted that the present study did not account for how many support providers the victim disclosed to. Starzynski et al. (2005) document that women who report high levels of distress following an assault are more likely to disclose experiences of sexual victimization, and therefore may have more opportunities to receive unhelpful responses from support providers. Future research should assess how many support providers a victim confides in. In addition, because the participants in this sample were in their first year of college, it is unclear if these results are applicable to all college women, who may be more familiar with campus support services and may have different support networks compared with first-year students. Participants were also not asked whether they had been the recipient of disclosure of sexual victimization in the past. It is possible that such an experience might influence women's subsequent decisions about whether and/or to whom to disclose personal experiences of sexual assault. These are important areas of inquiry for future research.

In sum, as rates of sexual victimization on college campuses have yet to decline (Roze & Koss, 2001), it is essential that researchers, advocates, and campus administrators take steps to ensure that survivors of sexual victimization can easily access services that support their recovery. Although responsibility for ending violence against women rests with perpetrators of sexual assault, all members of campus communities can take responsibility for ending the perpetration of subsequent violence experienced by survivors when they disclose sexual victimization. The current research suggests that even after accounting for women's psychological characteristics prior to an assault, negative social reactions to disclosure of sexual victimization can increase fear and hostility among victims during their acute stage of recovery. Understanding the factors that influence women's likelihood to disclose sexual assault, the ways in which providers are likely to respond, and the influence of positive and negative social reactions on adjustment following sexual victimization are vital steps for ensuring that survivors of sexual assault do not experience further victimization in the aftermath of their assault.

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Table 1

Correlations Between Positive and Negative Social Reactions Over the 4-Month Follow-Up and Psychological Symptomatology at the 7-Month Follow-Up.

	PTSD index	Interpersonal sensitivity index	Depression index	Anxiety index	Hostility index	Phobic anxiety index	Paranoia index
Negative social reaction ^a	.37	.46*	.30	.23	.44*	.43*	.52**
Partial correlation ^b	—	.41	—	—	.53	.43*	.53*
R^2	—	.21	—	—	.30*	.19	.28*
Positive social reaction ^c	.08	.17	.06	.02	.18	.20	.25
Partial correlation ^d	—	—	—	—	—	—	—
R^2	—	—	—	—	—	—	—

^aCorrelation between extent of negative social reactions to disclosure over the 4-month follow-up and measure of symptomatology.

^bPartial correlation between negative social reactions and symptomatology, controlling for levels of symptomatology prior to the assault.

^cCorrelation between extent of positive social reactions to disclosure over the 4-month follow-up and symptomatology.

^dPartial correlation between positive social reactions and symptomatology, controlling for levels of symptomatology prior to the assault.

* $p < .05$.

** $p < .01$.

Table 2

Social Reactions at the 4-Month Follow-Up and Beliefs About Why Sexual Victimization Occurs at the 7-Month Follow-Up.

	Blaming the perpetrator	Blaming society	Blaming chance	Blaming the victim's behavior	Blaming the victim's character
Negative social reaction ^a	.59**	.56**	.54**	.61**	.54**
Partial correlation ^b	.50*	.50*	.51*	.47*	.45*
<i>R</i> ²	.46**	.36**	.33*	.40**	.25*
Positive social reaction ^c	.52**	.46*	.40	.38	.23
Partial correlation ^d	.32	.37	—	—	—
<i>R</i> ²	.35	.26	—	—	—

^aCorrelation between extent of negative social reactions to disclosure over the 4-month follow-up and reasons why sexual assault occurs.

^bPartial correlation between negative social reactions and women's belief about why sexual assault occurs, controlling for levels of the belief prior to the assault.

^cCorrelation between extent of positive social reactions to disclosure over the 4-month follow-up and reasons why sexual assault occurs.

^dPartial correlation between positive social reactions and women's belief about why sexual assault occurs, controlling for levels of the belief prior to the assault.

* $p < .05$.

** $p < .01$.