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To Tell or Not to Tell: The Impact of Disclosure on Sexual Assault Survivors' Recovery

Courtney E. Ahrens, PhD
California State University at Long Beach

Janna Stansell, MPH
Health and Medicine Policy Research Group, Chicago

Amy Jennings, MA
California State University at Long Beach

There is a growing body of research examining the disclosure of sexual assault. But the focus on time to first disclosure does not capture the whole picture. Survivors also differ in how long they continue to disclose, to whom they disclose, and the types of reactions received during disclosure. To provide a more comprehensive view of disclosure, this study sought to identify patterns of disclosure among a sample of 103 female sexual assault survivors recruited from the community. This study also sought to identify characteristics of each disclosure pattern, differences in how each disclosure pattern tends to unfold (e.g., who is told and how they react), and differences in how these disclosure patterns are related to physical and mental health outcomes. Results revealed four distinct disclosure patterns: nondisclosers, slow starters, crisis disclosers, and ongoing disclosers. Assault characteristics and rape acknowledgment distinguished nondisclosers and slow starters from the other two disclosure groups. Slow starters were also less likely to disclose to police and medical personnel and received negative reactions less frequently while nondisclosers experienced more symptoms of depression and posttraumatic stress than other groups. Implications of these findings for future research and practice are discussed.

Keywords: sexual assault; disclosure; depression; PTSD; physical health

Two-thirds to three-quarters of adult sexual assault survivors eventually disclose the assault (Ahrens, Campbell, Ternier-Thames, Wasco, & Sefl, 2007; Banyard et al., 2007; Fisher, Daigle, Cullen, & Turner, 2003; Ullman & Filipas, 2001a), but less than half disclose within the first 3 days and up to 1/3 wait over a year before disclosing (McAuslan, 1998; Neville & Pugh, 1997; Ullman, 1996b; Ullman & Filipas, 2001a; Washington, 2001). Less studied are survivors who disclose immediately but stop disclosing after receiving negative reactions (Ahrens, 2006). Such variations in disclosure patterns have received little attention in the literature. The current study seeks to fill this gap by examining antecedents, characteristics, and outcomes of different disclosure patterns.

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FACTORS RELATED TO THE DISCLOSURE OF SEXUAL ASSAULT

Previous research has identified a number of factors related to the disclosure of sexual assault. Such factors, including assault characteristics, past assault experiences, and rape acknowledgment, have been associated with both the likelihood and timing of disclosure.

Assault Characteristics

Survivors who experience assaults that conform to "classic rape" scenarios (e.g., involving strangers, weapons, and severe injuries) are more likely to disclose (Bachman, 1993, 1998; Campbell, Wasco, Ahrens, & Barnes, 2001; Fisher et al., 2003; Koss, Dinero, Seibel, & Cox, 1988; Ullman, 2003; Ullman & Filipas, 2001a) and less likely to delay disclosure (Smith et al., 2000; Stewart et al., 1987; Sudderth, 1998) than survivors whose assaults do not meet these assumptions. These results suggest that stereotypical assumptions about what constitutes sexual assault may affect the likelihood and timing of disclosure.

Past Assaults

Survivors' assault histories may also affect the likelihood and timing of disclosure. Survivors who have been assaulted in the past are less likely to disclose (Smith et al., 2000) and more likely to delay disclosure of a subsequent assault (Ullman, 1996b). Among child victims, rates of nondisclosure exceed 25% and rates of delayed disclosure hover around 50% (Jonzon & Lindblad, 2004; Kogan, 2004; Smith et al., 2000; Ullman, 2007; Wyatt, Loeb, Solis, Carmona, & Romero, 1999), making it likely that survivors who have experienced previous assaults may have high rates of nondisclosure or delayed disclosure.

Defining the Event as Rape

Whether or not survivors define the event as rape may also affect disclosure. Anywhere from one-third to three-quarters of survivors whose assaults meet the legal definition of rape do not define the incident as such (Fisher et al., 2003), and survivors who define the event as rape are more likely to disclose than those who do not define the event as rape (Botta & Pingree, 1997; Koss et al., 1988; Layman, Gidycz, & Lynn, 1996). Typically, stereotypical assaults that involve more force and physical harm are more likely to be acknowledged as rape (Bondurant, 2001; Botta & Pingree, 1997; Fisher et al., 2003; Kahn, 2004; Kahn, Jackson, Kully, Badger, & Halvorsen, 2003; Kahn, Mathie, & Torgler, 1994).

CHARACTERISTICS OF SEXUAL ASSAULT SURVIVORS' DISCLOSURES

Survivors who do choose to disclose may have vastly different experiences with disclosure. Differences in when and how often survivors disclose may affect their choice of support providers and may be related to the type of social reactions they receive.

Choice of Disclosure Recipient

Most studies find that disclosure to informal support providers such as friends, family, and romantic partners is more common than disclosure to formal support providers such as police, medical personnel, and counselors (Ahrens, Wasco et al., 2001; Filipas & Ullman, 2001; Fisher et al., 2003; George, Winfield, & Blazer, 1992; Golding, Siegel, Sorenson, Burnam, & Stein, 1989; Ullman, 1996b). Lower rates of disclosure to formal support providers may be

partially affected by the timing of disclosure. Survivors who disclose the assault within 72 hr have a broader range of options, such as evidence collection, emergency medical care, and apprehension of the perpetrator. As a result, survivors who disclose earlier are more likely to report to the police and receive medical care (Ullman, 1996b; Ullman & Filipas, 2001a).

Social Reactions

Disclosure choices may also affect the types of social reactions survivors receive. Most sexual assault survivors receive both positive social reactions (e.g., listening, comforting, emotional support, tangible aid) and negative social reactions (e.g., blame, doubt, control, withdrawal; Campbell, Ahrens, Sefl, Wasco, & Barnes, 2001; Filipas & Ullman, 2001; Golding et al., 1989; Ullman, 1996a, 2003). But, child sexual abuse survivors who delay disclosure typically receive more negative reactions than survivors who immediately disclose (Ullman, 2003) and survivors who receive negative reactions may stop disclosing altogether (Ahrens, 2006), suggesting that social reactions may affect disclosure in different ways.

HEALTH IMPACT OF SEXUAL ASSAULT DISCLOSURE

Different disclosure patterns may also affect survivors differently. A growing body of research suggests that disclosing distressing events is related to improved emotional, work, school, mental, physical, and immune system functioning (Greenberg & Stone, 1992; Greenberg, Wortman, & Stone, 1996; Mann & Delon, 1995; Pennebaker, 1995, 1997, 1999). Nondisclosure, on the other hand, is associated with worse psychological and physical health, possibly resulting from the tendency to ruminate (Borkovec, Roemer, & Kinyon, 1995; Rime, 1995) and the effort required to "consciously restrain, hold back, or in some way exert effort to *not* think, feel, or behave" (Pennebaker, 1989, p. 231). Yet, research conducted specifically with sexual assault survivors is more equivocal. The handful of studies that have examined written disclosure among adult rape survivors (Brown & Heimberg, 2001) and survivors of child sexual abuse (Batten, Follette, Rasmussen Hall, & Palm, 2002; Freyd, Klest, & Allard, 2005; Gidron, Peri, Connolly, & Shalev, 1996) have not found the same health benefits typically associated with disclosure. Similarly, child sexual assault survivors who verbally disclose are not better off than those who do not disclose (Ruggiero et al., 2004; Sinclair & Gold, 1997; Testa, Miller, Downs, & Panek, 1992) and some studies even suggest that disclosure is related to more psychological symptoms (Ullman, 2007). Among survivors raped as adults, verbal disclosure has been associated with positive psychological and health outcomes in some studies (Burgess & Holmstrom, 1979; Burt & Katz, 1988; Cohen & Roth, 1987) and negative or neutral outcomes in others (McAuslan, 1998; Norris & Feldman-Summers, 1981; Siegel, Golding, Stein, Burnam, & Sorenson, 1990).

These contradictory findings may be partially explained by differences in disclosure patterns. Survivors who delay disclosure have higher psychological symptoms than either survivors who disclose immediately or survivors who never disclosed (Cohen & Roth, 1987; Ruggiero et al., 2004; Ullman, 2007). These contradictory findings may also be explained by differences in social reactions received upon disclosure. Receiving negative social reactions is related to more psychological and physical health symptoms (Borja, Callahan, & Long, 2006; Campbell, Ahrens, et al., 2001; Davis, Brickman, & Baker, 1991; Ullman, 1996a, 2003; Ullman & Filipas, 2001b; Ullman & Siegel, 1995) while receiving positive social reactions has little effect on psychological and physical health outcomes (for reviews, see Ullman, 1999, 2003). This suggests that negative reactions may have more of an impact on health than disclosure per se.

CURRENT STUDY

Previous research has tended to treat disclosure as a dichotomous phenomenon, examining differences between disclosers and nondisclosers or between immediate and delayed disclosers. But, few studies have looked at what happens after that first disclosure to determine whether other disclosure patterns exist. The current study sought to fill this gap in the literature by identifying a variety of disclosure patterns, based both on if and when survivors start disclosing and if and when they stop disclosing. Based on previous research, we hypothesized the existence of four distinct disclosure patterns: (1) survivors who had not previously disclosed (McAuslan, 1998; Washington, 2001); (2) survivors who delayed disclosure (Smith et al., 2000; Ullman, 1996b; Ullman & Filipas, 2001a); (3) survivors who disclosed immediately but then stopped disclosing (Ahrens, 2006); and (4) survivors who continued to disclose over time (Neville & Pugh, 1997; Starzynski, Ullman, Filipas, & Townsend, 2005; Ullman, 1999). This study then sought to identify characteristics of each disclosure pattern, differences in how each disclosure pattern tends to unfold (e.g., who is told and how they react), and differences in how these disclosure patterns are related to physical and mental health outcomes.

Based on previous literature, we hypothesized that survivors of nonstereotypical assaults (e.g., known perpetrator, no weapon, no injuries; Bachman, 1993, 1998; Campbell, Wasco, et al., 2001; Fisher et al., 2003; Smith et al., 2000; Ullman, 2003; Ullman & Filipas, 2001a), who did not initially define the assault as rape (Botta & Pingree, 1997; Fisher et al., 2003; Koss et al., 1988; Layman et al., 1996), or who experienced past assaults (Smith et al., 2000; Ullman, 1996b) would be more likely to have never disclosed or to have delayed disclosure. We also hypothesized that survivors who delayed disclosure would have disclosed to fewer police or medical personnel (Ullman, 1996b; Ullman & Brecklin, 2002; Ullman & Filipas, 2001a) and would receive negative social reactions with more frequency (Ahrens & Campbell, 2000; Dunn, Vail-Smith, & Knight, 1999; Ullman, 2003). Finally, we hypothesized that nondisclosers would report higher levels of depression, posttraumatic stress, and physical health symptoms (Pennebaker, 1997, 1999; Rime, 1995), even after controlling for the effects of negative social reactions on health (Ullman, 1999, 2003).

METHOD

Participants and Procedure

To examine these hypotheses, a total of 103 female sexual assault survivors from a large west-coast city participated in interviews about disclosure and recovery. Following a modified form of adaptive sampling (Campbell, Sefl, Wasco, & Ahrens, 2004) that involved systematic sampling from locations frequented by women during their daily lives (e.g., churches, laundromats, coffee shops), we used flyers, brochures, and presentations to invite female sexual assault survivors to participate in a private, confidential interview even if they had never reported the assault or spoken about it before. We tracked these recruitment efforts on a ZIP code map to ensure breadth of coverage. We then used a phone screening procedure to identify participants who met study criteria. Consistent with most research on this topic (e.g., Testa, VanZile-Tamsen, Livingston, & Koss, 2004), we removed respondents who were currently under 18 ($n = 0$), whose most recent assault occurred before age 14 ($n = 8$), who had not had a sexual experience that occurred without their consent ($n = 8$), or who had been diagnosed with schizophrenia ($n = 2$). We then

interviewed qualified participants at a location of the survivor's choosing. The majority of the interviews occurred in a private interview room at the university ($n = 64$); the remaining interviews occurred in other private locations such as counseling rooms located in other organizations ($n = 18$) or public locations such as fast food restaurants and cafes ($n = 20$). Interviewers consisted of 13 undergraduate and master's level research assistants, many of whom were trained rape crisis advocates, who underwent an additional 4 days of training on sexual assault, interviewing skills, and project procedures. Training involved both lectures and hands-on practice conducting the interviews. The principal investigator also periodically reviewed taped interviews as a form of quality control. Each interview lasted an average of 2.64 hr ($SD = 50.45$ min), and participants received $30 and an extensive list of referrals for their time.

In comparison to Census Bureau data, the current study included more African American participants (37%) and fewer Asian (7%), Latina (11%), and White (38%) participants than the general population of the city (15%, 12%, 36%, and 45%, respectively). The higher rates of participation by African American women may have resulted from intensive efforts to recruit traditionally overlooked populations; the lower rates of participation by Asian and Latina women likely resulted from the exclusive use of English in recruitment materials and measures. On average, participants were in their mid-30s ($M = 37.55$, $SD = 10.65$, Range = 18–66), received at least a high school education (80.2%), and were slightly more likely to be unemployed (55.9%). Most participants had children (76.7%) but were not currently in a romantic relationship (56.3%). Over 56% of the survivors had been sexually assaulted in both childhood and adulthood. The majority of most recent assaults qualified as rape (64%); the remainder qualified as sexual coercion (15%), unwanted sexual contact (14%), and attempted rape (7%). Most survivors knew their assailant (71.9%), but few assaults involved a weapon (31.1%) or major injuries (10.7%).

Measures

The interview consisted of the following quantitative and qualitative measures. All qualitative data were transcribed verbatim while quantitative data were entered into SPSS.

Assault Experiences. We asked participants to briefly describe each physical and sexual assault they had experienced in their lifetime. We then created a *past assaults* variable reflecting the number of past assaults described by survivors. Scores ranged from 0 to 12 with higher scores reflecting more past assaults. We then asked survivors to describe their most recent sexual assault in detail, including their relationship to the perpetrator, the use of weapons, the presence of injuries, and use of alcohol and drugs. These responses were used to form a *nonstereotypical assault index* that summed the number of nonstereotypical assault characteristics in each assault. Scores ranged from 0 to 5 with higher scores reflecting a greater number of nonstereotypical characteristics. We also asked survivors whether they considered the assault to have been rape at the time and created a *did not consider it rape* variable to indicate whether survivors considered the assault to have been rape at the time (coded as "1" if the survivor did not consider it to have been rape at the time or "0" if the survivor did consider it to have been rape at the time).

Disclosure History. To assess disclosure history, we asked survivors to focus on the most recent assault and identify each person they told and how long after the assault they told each person. This information was recorded on a disclosure timeline during the interview. These timelines were used to identify varying patterns of disclosure (see Results section for a detailed description of the qualitative methodology used to identify these patterns). These timelines also provided information on the average *number of police or medical providers told*.

Social Reactions. We used Ullman's (2000) Social Reactions Questionnaire to measure the number and types of social reactions received from each support provider. We administered this scale in written form. It contains 46 items divided into seven subscales, including (1) *emotional support/belief* (e.g., told you it was not your fault); (2) *tangible aid* (e.g., helped you get medical care); (3) *blame* (e.g., told you that you were to blame; (4) *took control* (e.g., tried to take control of what you did/decisions you made); (5) *egocentric reactions* (e.g., expressed so much anger at the perpetrator that you had to calm him/her down); (6) *distraction* (e.g., distracted you with other things); and (7) *treat differently* (e.g., pulled away from you). In the original version of this scale, participants indicated how often they received each reaction on a 5-point Likert-type scale ranging from 0 (*never*) to 4 (*always*). These ratings were then averaged to form a negative social reactions score ($M = 1.00$, $SD = 0.67$) and a positive social reactions score ($M = 1.94$, $SD = 0.85$) with internal consistency measures ranging from .77 to .93 and test-retest reliability ranges from .64 to .80 (Ullman, 2000). In the current study, this scale was repeated for each person told, yielding an average negative social reactions score of .58 ($SD = 0.52$) and an average positive social reactions score of 3.75 ($SD = 1.65$). The overall alpha across administrations was .88 with subscale alphas ranging from .73 to .95.

Depression. We used the Center for Epidemiologic Studies Depression Scale (CES-D) developed by Radloff (1977) to measure symptoms of depression. We administered this scale in written form. Following standardized procedures, participants were asked how often they experienced 20 different symptoms in the past week (e.g., I felt that everything I did was an effort) on a 4-point Likert-type scale ranging from 0 (*rarely or none of the time*) to 3 (*most or all of the time*). Survivors were not instructed to think about a specific event when responding to these items. Reliability estimates for this scale are strong with an alpha coefficient of .85 for the general population (Radloff, 1977). Average symptom levels have been reported to range from 7.94 ($SD = 7.53$) to 9.25 ($SD = 8.58$) in the general population and 24.42 ($SD = 13.51$) in a patient population (Radloff, 1977). In the current study, the alpha level was .91. Symptom ratings were summed to form a depression score for each participant ($M = 24.84$, $SD = 10.34$).

Posttraumatic Stress. We used the Posttraumatic Diagnostic Scale developed by Foa, Cashman, Jaycox, and Perry (1997) to measure symptoms of posttraumatic stress. This scale was administered in written form and contains 17 symptoms based on the diagnostic criteria listed in the *DSM-IV* (e.g., being jumpy or easily startled). Following standardized instructions, participants indicated how often they experienced each symptom over the past month using a 4-point scale ranging from 0 (*not at all or only one time*) to 3 (*5 or more times a week*). We did not instruct survivors to think about a specific event when responding to these questions. Reliability estimates reported for this scale are strong with an overall alpha of .92 (Foa et al., 1997). Average symptom levels have been reported to range from 12.54 ($SD = 10.54$) among individuals who do not have a PTSD diagnosis to 33.59 ($SD = 9.96$) among individuals diagnosed with PTSD (Foa et al., 1997). In the current study, symptom ratings were summed to form a single PTS symptom score for each participant ($M = 19.21$, $SD = 12.46$); the alpha coefficient for the overall PDS Scale was .92.

Physical Health. We used a modified version of the Cohen-Hoberman Inventory of Physical Symptoms (CHIPS) to assess physical health. The main modifications were done by Eby, Campbell, Sullivan, and Davidson (1995) who included symptoms common among survivors of intimate violence. We administered this scale in written form. Thirty-five symptoms (e.g., back pain, headaches, ulcers) were assessed on a 6-point scale ranging from 0 (*never*) to 5 (*more than 4 times a week*). We did not instruct survivors to think about a specific event when responding to these questions. Previous research with rape survivors suggests this modified scale has excellent reliability ($\alpha = .94$, Campbell et al., 2004;

α = .93, Campbell, Greeson, Bybee, & Raja, 2008). Previous research also suggests that over half of all domestic violence (Eby et al., 1995) and rape survivors (Campbell, Sefl, & Ahrens, 2003) experience most symptoms. Survivors in the current study exhibited similar numbers of symptoms although their ratings of the frequency with which they experienced these symptoms (M = 1.31, SD = 0.88) were somewhat lower than has been previously reported among sexual assault survivors (M = 2.39, SD = 1.04; Campbell et al., 2004). Consistent with the scoring techniques used by the scale's original developers (Cohen & Hoberman, 1983), the current study summed survivor ratings to form a single physical health score (M = 45.64, SD = 30.31). This scoring technique yielded an alpha of .93.

RESULTS

Patterns of Disclosure

Qualitative data about survivors' disclosure experiences were used to construct disclosure timelines for each survivor. Each timeline started with the most recent assault as the anchor. The remaining points represented each subsequent disclosure, separated by the number of days between the assault and disclosure. These timelines were created by the interviewers and confirmed by survivors during the interview. Using a constant comparison method involving the continuous comparison of new data to emergent categories (Glaser, 1998), we systematically compared timelines to one another, placing similar timelines together. Comparison criteria emerged over time as we sought to account for all instances in our data, resulting in an iterative series of classifications that ultimately led to four separate groups differentiated by timing of disclosure and periods of silence. The final set of classifications was agreed upon by all authors.

The emergent disclosure patterns mapped quite well to our hypothesized disclosure patterns. The first pattern, labeled *nondisclosers,* included 20 survivors who had never disclosed the assault. The second pattern, labeled *slow starters*, included 26 survivors who waited at least 2 weeks before disclosing. Their average time to first disclosure was 3.58 years (SD = 5.03) and they told an average of 4.00 people (SD = 2.86). The third pattern, labeled *crisis disclosers*, included 25 survivors whose first disclosure occurred within 2 days and last disclosure occurred within the 1st week of the assault. Their average time to disclosure was .84 days (SD = 0.55) and they told an average of 2.96 people (SD = 1.90). The final pattern, labeled *on-going disclosers*, included 32 survivors whose first disclosed within the 1st week and then continued disclosing into the present time. Their average time to disclosure was 1.34 days (SD = 1.98) and they told an average of 5.84 people (SD = 3.47). Additional descriptive information about each group is provided in Table 1.

Factors Related to Different Disclosure Patterns

A discriminant function analysis was used to determine whether assault characteristics, number of past assaults, and considering the assault to have been rape could discriminate between the different disclosure patterns. Results suggested that the first function significantly added to our ability to correctly classify groups, Λ = .80, $\chi^2(df = 9) = 21.62$, p = .01 and most clearly discriminated between the four disclosure patterns. Examination of the canonical discriminant function and the pooled within-group correlations suggested that the nonstereotypical assault characteristics index was the strongest contributor to this function (r = .87). Not considering the assault to have been rape had a moderate impact (r = .58) while experiencing previous assaults was less influential (r = .39). As can be seen

TABLE 1. Descriptive Characteristics of Survivors in Each Disclosure Pattern

	Nondisclosers ($N = 20$)		Slow Starters ($N = 26$)		Crisis Disclosers ($N = 25$)		Ongoing Disclosers ($N = 32$)	
	M or %	*SD*	*M* or %	*SD*	*M* or %	*SD*	*M* or %	*SD*
Average days to 1st disclosure	0.0	0.0	1,305.40	1,837.53	0.84	0.55	1.34	1.98
Average days between 1st and last disclosure	0.0	0.0	1860.77	2,354.04	1.24	2.11	1,263.37	2,182.83
Average years since last assault	8.28	8.61	9.36	8.57	9.51	9.17	8.25	7.87
Average age—current	35.05	7.44	38.23	11.35	38.56	11.07	36.94	11.88
Average age at most recent assault	27.90	7.97	29.35	9.33	28.68	11.49	29.06	8.73
% women of color	65.0	—	50.0	—	64.0	—	66.0	—
% of assaults that qualified as rape	65.0	—	46.0	—	64.0	—	78.0	—
% assaulted by known perpetrator	85.0	—	89.0	—	64.0	—	56.0	—
% assaulted with a weapon	35.0	—	27.0	—	28.0	—	34.0	—
% incurred injuries	60.0	—	65.0	—	52.0	—	50.0	—
% using alcohol/drugs at assault	55.0	—	50.0	—	44.0	—	47.0	—
% considered it rape at the time	50.0	—	69.0	—	80.0	—	81.0	—
Average no. of previous assaults	2.95	2.95	2.81	2.02	1.68	1.82	2.44	1.70
Average age at first assault	9.70	6.67	10.54	7.53	14.96	10.51	10.71	8.52
Average no. of people told	0.0	0.0	3.81	2.53	2.88	1.83	5.63	3.24
Average no. of police/medical told	0.0	0.0	0.19	0.57	0.60	0.87	0.84	0.95
Mean frequency of negative reactions	0.0	0.0	0.54	0.32	0.85	0.58	0.75	0.40
Mean frequency of positive reactions	0.0	0.0	2.17	0.80	2.06	0.97	2.14	0.74
Summed frequency of PTS symptom ratings	21.90	12.00	18.04	12.31	20.64	12.02	17.38	13.31
Summed frequency of depression ratings	24.75	11.26	19.85	12.25	24.60	14.54	23.97	13.97
Summed frequency of physical health ratings	42.15	27.21	48.96	29.06	46.88	32.77	44.16	32.20

in Table 2, this function most clearly discriminates between *nondisclosers* and the rest of the groups with *nondisclosers* exhibiting more nonstereotypical assault characteristics and being less likely to consider the assault to have been rape.

Characteristics of Each Disclosure Pattern

A multiple analysis of variance (MANOVA) was used to determine whether survivors who disclosed differed in the number of police or medical providers told or the number of positive and negative reactions received. Results suggested a significant effect at the multivariate level, $\Lambda = .84$, $F(6, 156) = 2.46$, $p = .03$, $\acute{\eta}^2 = .09$. Tests of between-subjects effects reveal that this effect was driven primarily by negative social reactions, $F(2, 80) = 3.28$, $p = .04$, $\acute{\eta}^2 = .08$ and the number of police or medical personnel told, $F(2, 80) = 4.52$, $p = .01$, $\acute{\eta}^2 = .10$. Post hoc analyses suggest that slow starters received negative social reactions less frequently ($M = .54$, $SD = .32$) than crisis disclosers ($M = .85$, $SD = .58$). Slow starters also disclosed to significantly fewer police or medical personnel ($M = .19$, $SD = .57$) than ongoing disclosers ($M = .84$, $SD = .95$). There were no significant differences in the frequency with which each group received positive social reactions.

Physical and Mental Health Outcomes Associated With Each Pattern

A multivariate path model was used to test the relationship between disclosure pattern and levels of depression, posttraumatic stress, and physical health symptoms. Contrast coefficients were used to facilitate comparisons between the four disclosure patterns (Keppel & Wickens, 2004). The difference between *nondisclosers* and the remaining three groups was examined first. The second set of contrasts then compared *slow starters* to the remaining two disclosure groups. The final set of contrasts compared *crisis disclosers* to *on-going disclosers*. Due to the known effects of negative reactions, past assaults, and time since the assault on health (Gilboa-Schechtman & Foa, 2001; Koss & Figueredo, 2004; Resick, 1993; Ullman, 1999), these variables were included as control variables. Covariances between independent variables and error terms were also included. To avoid a fully saturated model, the covariance estimate between time since the most recent assault and the number of past assaults was removed.

TABLE 2. The Relationship Between Assault Characteristics and Disclosure Patterns

Disclosure Pattern	Discriminant Function at Group Mean	Nonstereotypical Assault Index		Did Not Initially Define as Rape		Previous Assaults Experience	
		M	*SD*	*M*	*SD*	*M*	*SD*
Nondisclosers	0.802	3.15	1.18	0.50	0.51	2.95	2.95
Slow starters	0.181	2.46	1.21	0.31	0.47	2.81	2.02
Crisis disclosers	–0.390	1.96	1.24	0.20	0.41	1.68	1.82
Ongoing disclosers	–0.344	1.88	1.21	0.19	0.40	2.44	1.70

Testing of the model proceeded in three phases. In the first phase, EQS 6.1 was used to test a nested, control model. All variables were converted to z-scores to ensure comparability across measures. All assumptions of structural equation modeling were tested and met (Ullman, 2007). The nested, control model included all of the variables and covariances in the full model but only tested the path relationships between our three control variables (time since the assault, past assaults, and negative social reactions) and the measures of mental and physical health. Results suggested that this nested, control model was not a good fit to the data, $\chi^2(10, N = 103) = 20.38$, $p = .03$, CFI = .94. In the second phase, the full model, including paths between each independent and dependent variable, was tested. Results suggested that the full model fit the data well, $\chi^2(1, N = 103) = 3.30$, $p = .06$, CFI = .99, and was statistically better than the nested model, $\chi^2_{\text{difference test}}$ $(9, N = 103) = 17.08$, $p < .05$. This suggests that information about the disclosure pattern to which survivors belonged significantly added to the model's predictive ability, over and above the effects of our control variables.

In the third phase, we then used the unstandardized path coefficients from the full model to interpret the results. As can be seen in Figure 1, there were several significant predictors of each health measure. Among our control variables, time since the assault was

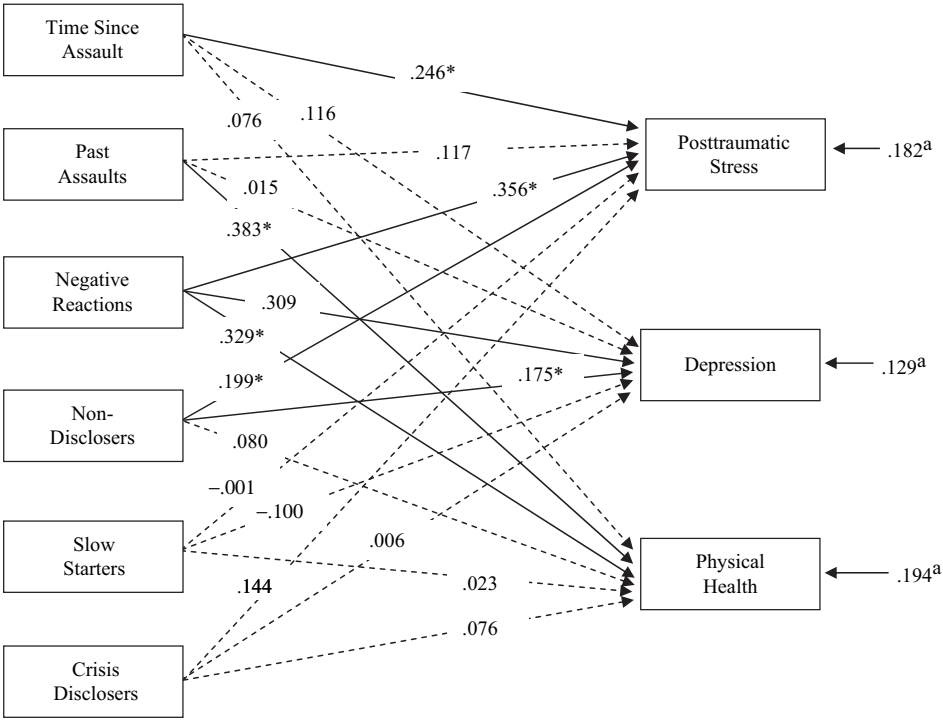

Figure 1. Path model depicting relationship between disclosure pattern and health.

Note. Significant pathways depicted by a solid line; nonsignificant pathways depicted by a dashed line. Covariances between independent variables and residuals reported in separate tables for ease of interpretation (see Tables 3 & 4).

[a]R^2 reported instead of residuals for ease of interpretation.

*$p < .05$.

TABLE 3. Correlations Among Independent Variables in the Path Model

Measure	1	2	3	4	5	6
Time since assault	—	—	.095	–.029	.064	.033
Past assaults		—	–.206	.113	.161	–.103
Negative reactions			—	–.512	–.261	.030
Nondisclosers				—	.034	.043
Slow starters					—	.060
Crisis disclosers						—

associated with fewer symptoms of posttraumatic stress, more past assaults were associated with more physical health symptoms, and more negative social reactions were associated with increased posttraumatic stress, depression, and physical health symptoms. Among our predictor variables, the contrast examining the difference between nondisclosers and disclosers was significantly related to both posttraumatic stress and depression. As expected, nondisclosers evidenced more symptoms of posttraumatic stress and depression. The contrasts examining differences between our other disclosure groups and health outcomes were nonsignificant. Overall, our predictors accounted for 18% of the variance in posttraumatic stress, 13% of the variance in depression, and 19% of the variance in physical health symptoms.

DISCUSSION

The primary goal of this study was to identify patterns of disclosure among survivors of sexual assault. Rather than treating disclosure as a dichotomous yes/no phenomenon, this study sought to expand current conceptualizations by identifying unique disclosure patterns among a sample of 103 survivors. Consistent with our hypotheses, this study identified four distinct disclosure patterns: (1) survivors who had not previously disclosed (*nondisclosers*); (2) survivors who delayed disclosure (*slow starters*); (3) survivors who disclosed immediately but then stopped disclosing (*crisis disclosers*); and (4) survivors who continued to disclose over time (*on-going disclosers)*. We then sought to identify antecedents, characteristics, and outcomes of each of these disclosure patterns.

Specifically, we hypothesized that survivors of nonstereotypical assaults, who did not initially define the assault as rape, or who experienced past assaults would be more likely to have never disclosed or to have delayed disclosure. Consistent with these hypotheses,

TABLE 4. Correlations Among Residuals in the Path Model

Measure	1	2	3
Posttraumatic stress	—	.681	.503
Depression		—	.502
Physical health			—

results suggested that *nondisclosers* experienced more nonstereotypical assaults and were more likely to not initially consider the assault to have been rape than the other groups. This is consistent with past research on the effect of assault characteristics (Bachman, 1993, 1998; Campbell, Ahrens, et al., 2001; Fisher et al., 2003; Koss et al., 1988; McAuslan, 1998; Ullman, 2003; Ullman & Filipas, 2001a) and rape acknowledgement (Botta & Pingree, 1997; Layman et al., 1996; Koss et al., 1988) on disclosure. Contrary to our hypotheses, the number of past assaults did not significantly differentiate the groups. This is in contrast to previous research, which suggests that child sexual assault survivors are less likely to disclose a subsequent assault (Smith et al., 2000). This discrepancy may have arisen for a variety of reasons, including differences in the nature of past assaults, the nature of past disclosures, and levels of distress, all of which might lead to subgroups of survivors who are affected by previous assault and disclosure experiences in different ways.

We also hypothesized that survivors who delayed disclosure would be less likely to disclose to police or medical personnel and would receive negative social reactions with more frequency. Consistent with our hypotheses, *slow starters* disclosed to significantly fewer police or medical personnel than *on-going disclosers*. Contrary to our hypotheses, survivors who delayed disclosure (*slow starters*) received negative reactions with *less* frequency than survivors who disclosed immediately but then stopped disclosing (*crisis disclosers*). This contradicts past research that found that child sexual abuse survivors who delay disclosure receive more negative reactions than those who immediately disclose (Ullman, 2003). One possible explanation of this discrepancy is that survivors who delay disclosure may be more selective in choosing disclosure recipients who are less likely to react negatively (Petronio, Flores, & Hecht, 1997). It is also possible that survivors who delay disclosure are less likely to be in crisis and more likely to minimize their experiences (Dunham & Senn, 2000), thereby reducing the demand on the support provider and reducing the likelihood of negative reactions. Or perhaps survivors who receive negative reactions may stop disclosing altogether (Ahrens, 2006), suggesting that crisis disclosers may have stopped disclosing *because* they received more negative reactions. Future research is clearly needed to understand the differential impact that timing and extent of disclosure have on support providers' reactions.

Finally, we hypothesized that nondisclosers would report higher levels of depression, posttraumatic stress, and physical health symptoms, even after controlling for negative social reactions, time since the assault, and past assaults. Consistent with these hypotheses, *nondisclosers* experienced more symptoms of depression and posttraumatic stress than the other disclosure groups. This is consistent with research suggesting that nondisclosure is associated with poorer psychological health while disclosure is associated with more positive psychological health, both among survivors of sexual assault (Burgess & Holmstrom, 1979; Burt & Katz, 1988; Cohen & Roth, 1987) and survivors of traumatic events more generally (Borkovec et al., 1995; Pennebaker, 1989, 1999; Rime, 1995). Unfortunately, these findings did not extend to physical health outcomes, which were unaffected by disclosure pattern. This finding contradicts research that has found improved physical health and immune system functioning following disclosure of traumatic events (Greenberg & Stone, 1992; Greenberg et al., 1996; Mann & Delon, 1995; Pennebaker, 1995, 1997, 1999) but is consistent with research suggesting that sexual assault survivors who disclose are not better off than those who do not disclose (Ruggiero et al., 2004; Sinclair & Gold, 1997; Testa et al., 1992). One possible explanation for these inconsistencies is that societal scripts that hold survivors responsible for the assault may counteract the positive benefits typically associated with disclosure. According to Pennebaker (1989), the sustained mental energy needed to suppress thoughts about the

trauma can depress survivors' immunological functioning and physical health. Freeing up this mental energy through disclosure can improve physical health functioning, but only if disclosures involve the use of many positive emotion words, moderate amounts of negative emotion words, and an increase in causal and insight words (Pennebaker, 1999), outcomes that may be very difficult for sexual assault survivors to achieve when surrounded by high levels of blame. Indeed, in the current study, survivors who received more negative reactions endorsed more depression, posttraumatic stress, and physical health symptoms, suggesting that negative social reactions may negate the positive effects of disclosure for some survivors. Additionally, the impact of disclosure on health may be mediated by a variety of other factors, such as prior psychological functioning, attributions, coping mechanisms, and desire to disclose. Future research is clearly needed to examine these and other possible mediators of the disclosure-health relationship among survivors of sexual assault.

Understanding factors that affect physical and mental health functioning among sexual assault survivors is particularly important given the relatively high levels of symptoms experienced by survivors. In the current study, survivors endorsed levels of depression that are more comparable to patient populations than the general population (Radloff, 1977), levels of posttraumatic stress that exceed those reported by the general population (Foa et al., 1997), and physical health symptom levels comparable to those reported in samples of domestic violence (Eby et al., 1995) and rape survivors (Campbell et al., 2003). Such high physical and mental health symptom levels point to the importance of continued research and interventions aimed at helping sexual assault survivors overcome the trauma they have experienced.

In the meantime, the current study has several limitations. First, although steps were taken to ensure that our sample was representative of the ZIP codes from which participants were drawn, recruitment relied on voluntary participation by acknowledged survivors. Such survivors may be quite different from those who either do not identify as sexual assault survivors or who do not choose to participate in a study. Similarly, the fact that some survivors chose to have the interview conducted in a public location and others were motivated by monetary incentives may have affected the nature and extent of survivors' disclosures. While preliminary analyses did not reveal any differences between such survivors on any study-related variables, these methodological choices may have nonetheless affected the extent of disclosure in unknown ways. Additionally, while the overall sample size of 103 is fairly typical of community-based, interview studies of sexual assault survivors (e.g., Bletzer & Koss, 2004; Campbell et al., 2004), this relatively low sample size limits the complexity of the analyses. Further research with larger, more representative samples is clearly needed to both replicate and extend current findings.

Future research is also needed to determine whether survivors of different types of sexual assaults have different experiences with disclosure. In the current study, we collapsed across categories of sexual assault rather than trying to examine differences between them. But, it is likely that differences in disclosure do exist. Future research is therefore needed to determine whether disclosure and nondisclosure affect survivors differently, depending on the type of sexual assault they experienced. Future research is also needed to understand how and why survivors move from one disclosure pattern to another over time. In the current study, we assessed survivors' disclosure status prior to participating in the study. But, by participating in the current study, *nondisclosers* have automatically moved into the *slow-starter* category and *crisis-disclosers* have moved into a fifth, heretofore unidentified disclosure pattern that could be called *interrupted disclosers*, representing survivors who immediately disclose then stop disclosing for a long period before resuming

disclosure. Understanding why survivors choose different disclosure patterns at different times is clearly needed. Similarly, additional research is needed to understand how and why survivors fall into different disclosure patterns when disclosing different assaults. Such a line of research should not only attempt to identify predictors of different disclosure patterns but should also pay attention to how the disclosure of one assault affects the disclosure of subsequent assaults (Ahrens, 2006).

Despite these limitations, the results from the current study have important practical implications. The fact that both nondisclosure and negative social reactions were related to more symptoms of depression and posttraumatic stress places many survivors in a conundrum. If a survivor expects negative reactions, is she better off staying silent or disclosing? The current study suggests that either choice will have a detrimental effect on mental health, highlighting the importance of increased training for both informal and formal support providers about how to react positively and avoid negative reactions, the need for more community outreach to make survivors aware of supportive sources of support, and the need for advocacy for sexual assault survivors struggling with the decision of how and to whom to disclose. Such training should include information about different disclosure patterns so that both survivors and support providers are aware of differences in disclosure experiences. Incorporating these types of community outreach efforts into existing rape crisis services, campus prevention programming, and in-service training for professionals may go a long way toward alleviating unnecessary distress and may help survivors locate supportive sources of support who can best facilitate their recovery.

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Correspondence regarding this article should be directed to Courtney E. Ahrens, PhD, California State University at Long Beach. E-mail: cahrens@csulb.edu