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A Short Measure of Social Reactions to Sexual Assault: The Social Reactions Questionnaire-Shortened

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Abstract

Social reactions to disclosures of sexual assault have significant effects on women's postassault recovery. However, being the most widely used measure of these reactions, the 48-item Social Reactions Questionnaire (SRQ; Ullman, 2000) is too long for some research and evaluation efforts. Thus, we developed a 16-item short version, the Social Reactions Questionnaire-Shortened (SRQ-S). Three preexisting college and community samples of women survivors (N s 1,012; 1,084; and 344) were used to determine which SRQ items were most related to psychological symptoms and could form reliable subscales. The brief version was then administered in a college and community sample of 447 women survivors. Confirmatory factor analyses (CFAs) and supporting psychometrics showed the SRQ-S reliably measures three general scales of the SRQ (Turning Against, Unsupportive Acknowledgment, Positive Reactions) as well as eight 2-item subscales (e.g., Blame). The SRQ-S provides researchers and interventionists with a brief alternative measure to the original SRQ.

Keywords

rape; social support; psychological symptoms; brief measure

In the United States, women face sexual assault at very high rates, with representative community samples of women showing rates around 18% and female college students showing lifetime rates of 34% (Black et al., 2011; Krebs et al., 2016). Most survivors of sexual assault disclose their assault to others, partially in an attempt to get support (Ullman, 2010). The reactions they receive from others can have profound consequences for their recovery process (Ullman, 2010). These reactions have been connected with survivors' coping, self-blame, hostility, fear, and various other psychological and physical health

outcomes (e.g., depression, problem drinking; Borja, Callahan, & Long, 2006; Littleton, 2010; Matthews, 2011; Orchowski & Gidycz, 2015; Peter-Hagene & Ullman, 2014; Relyea & Ullman, 2015; Ullman & Najdowski, 2011; Ullman & Siegel, 1995; Ullman, Starzynski, Long, Mason, & Long, 2008; Ullman, Townsend, Filipas, & Starzynski, 2007). Because social reactions have been connected to many postassault adjustment factors, they have emerged as important constructs in the study of recovery from sexual assault.

Based on qualitative and quantitative studies indicating that survivors often receive negative and positive social reactions that affect them, the Social Reactions Questionnaire (SRQ) was created to attempt to examine the impact of such reactions empirically (Ullman, 2000). Created almost 20 years ago, the SRQ remains the only validated measure of reactions to sexual assault disclosure. The original SRQ was developed from an earlier checklist of positive and negative reactions (Ullman, 1996) and was later revised through pilot testing and a full-scale psychometric National Institute of Mental Health–funded validation study (Ullman, 2000). A principal components analysis with varimax rotation originally indicated the SRQ has seven subscales: positive reactions (Emotional Support, Tangible Aid) and negative reactions (Blame, Treating the Survivor Differently, Controlling the Survivor, Distracting the Survivor, and Egocentric Reactions) which could also be combined into positive and negative general scales, all of which showed adequate reliability, convergent validity, test–retest reliability, and concurrent reliability (Ullman, 2000). Yet, recent research supported two changes to this factor structure: first, dividing negative reactions into those survivors almost always see as harmful (Turning Against Reactions) and those survivors may find helpful or harmful (Unsupportive Acknowledgment Reactions; Ahrens, Cabral, & Abeling, 2009; Campbell, Ahrens, Sefl, Wasco, & Barnes, 2001; Relyea & Ullman, 2015). Second, studies support splitting the Control subscale into taking Control and Infantilizing, with Infantilizing predicting greater negative outcomes than taking control (Littleton & Breitkopf, 2006; Peter-Hagene & Ullman, 2014; Relyea & Ullman, 2015). Furthermore, the original SRQ assumed a bifactor structure (two general factors with seven specific factors); however, this was not originally tested in Ullman (2000). In Relyea and Ullman (2015), we confirmed that a bifactor model with two general factors did provide a reasonable fit to the SRQ. Yet, after dividing the negative reactions scale in two as the literature suggested, a bifactor model with three primary scales fit better than one with two. Also, the two types of negative reactions showed discriminant validity. Based on these analyses, the SRQ contains three primary scales (Turning Against, Unsupportive Acknowledgment, and Positive Reactions) onto which eight subscales load. The Turning Against scale includes Stigmatize, Infantilize, and Blame; Unsupportive Acknowledgment includes Distract, Control, and Egocentric; and Positive Reactions include Emotional Support and Tangible Aid. These reactions differentially predict recovery from sexual assault. Turning against reactions and unsupportive acknowledgment have both been related to symptoms of posttraumatic stress disorder (PTSD) and maladaptive coping (Relyea & Ullman, 2015; Ullman & Peter-Hagene, 2016). Yet, turning against reactions were more related to greater characterological self-blame, less sexual refusal assertiveness, less frequent social contact, and lower perceived support, whereas unsupportive acknowledgment reactions were more related to more depression and individual coping (Relyea & Ullman, 2015).

Positive reactions are associated with positive interpersonal coping, individual coping, frequency of social support, and perceived social support (see Littleton, 2010; Littleton & Bretkopf, 2006; Orchowski, Untied, & Gidycz, 2013; Relyea & Ullman, 2015; Ullman et al., 2007). The original framework of positive and negative reactions has therefore been refined to distinguish between different types of negative reactions.

Social reactions are important in understanding recovery of sexual assault survivors, and the SRQ measure has enjoyed widespread use. Researchers have frequently asked the first author (SU), as author of the initial SRQ, for a short version because the original measure has 48 items, and not all scholars can use the entire scale, especially those whose research is not exclusively focused on reactions. Recently, the requests for a shorter instrument have grown as colleges are trying to assess peers' social reactions as part of lengthy climate surveys for interpersonal violence (Administrator Research Campus Climate Consortium, 2015). Also, interventionists have recently increased efforts to develop and assess the outcomes of programs that train students to support survivors (Edwards & Ullman, 2016; in press). So, the aim of this study is to develop a short version of the SRQ that will be easier to administer than the original measure but still assesses the construct in a reliable and valid manner. In addition, we want to make sure that the revised brief measure still relate to the postassault adjustment factors that are commonly studied.

THE PRESENT STUDY

Because of the importance of assessing social reactions that survivors receive and the demand from researchers for a version shorter than the 48-item version, this article evaluates a short version, the SRQ-S, for use in research, assessment, and intervention. In the first study, we used multiple criteria discussed in the following text to select items from the full 48-item SRQ that will have good convergent validity, construct validity, and internal consistency reliability as shortened scales. In study two, we piloted the SRQ-S to ensure the brief measure maintains the factor structure of the original SRQ.

STUDY 1

Background—To develop the SRQ-S, we needed to consider that one difficulty with shortening reactions scales is that the longer scales might contain a greater diversity of reactions. For example, the Distract subscale includes various types of distraction (e.g., telling survivors to move on, ignore the assault, or stop talking about the assault). Thus, not all aspects of each subscale of the original SRQ could be captured in a brief measure, yet the major dimensions of the scale could still be assessed with a shorter version needed by researchers unable to use the full SRQ measure. Therefore, our goal for the SRQ-S was to create a 16-item scale (2 items for each of eight subscales) that captured both the primary scales (Turning Against, Unsupportive Acknowledgment, and Positive Reactions) as well as 2-item subscales for Blame, Stigmatize, Infantilize, Control, Distract, Egocentric, Emotional Support, and Tangible Aid originally from the longer 48-item SRQ (Peter-Hagene & Ullman, 2014; Relyea & Ullman, 2015; Ullman, 2000).

Data Analysis Plan—We used five steps to select items from the original SRQ to use for the SRQ-S. In the first step, we chose items with the highest convergent validity from

each scale (e.g., Blame) by examining correlations between scale items and outcomes (e.g., self-blame) that prior studies have shown to be associated with that scale. Because prior studies have found that social reactions to sexual assault are associated with several behavioral and psychological factors (e.g., PTSD symptoms; for a review, see Ullman, 2010), we were most concerned with choosing items that maintained the ability to assess such associations and would therefore capture reactions that were potentially impactful to survivors. Thus, we calculated which items from each scale had the highest average correlation across known associated variables. For instance, the Turning Against Scale, which consists of items that measure more overtly hostile social reactions such as blame, has been associated with depression, PTSD symptoms, characterological self-blame, and maladaptive coping (Relyea & Ullman, 2015; Ullman & Peter-Hagene, 2016). We therefore averaged each scale item's correlations across these four constructs. So, the item "Told you that you could have done more to prevent this experience from occurring" had correlations with those respective variables of .22, .15, .19, and .25 and thus had an average correlation of .20. Also based on Relyea and Ullman (2015), for the Unsupportive Acknowledgment items, which are not overtly hostile yet still fail to give the victim support, we averaged correlations with depression, PTSD, maladaptive coping, and individual coping. Finally, for positive reaction items, we averaged interpersonal and individual coping for the Tangible Aid subscale items and averaged these same coping strategies along with frequency of social support and perceived social support for the Emotional Support subscale items (Littleton, 2010; Littleton & Bretkopf, 2006; Orchowski et al., 2013; Relyea & Ullman, 2015; Ullman et al., 2007).

Based on past research, we hypothesized that (a) the items most representative of the Turning Against Scale would be associated with PTSD, maladaptive coping, depression, and characterological self-blame (see Relyea & Ullman, 2015); (b) Unsupportive Acknowledgment items would be associated with depression, PTSD, maladaptive coping, and individual coping (Relyea & Ullman, 2015); and (c) positive reaction items would be related to interpersonal and individual coping with the Emotional Support subscale items additionally showing associations with the frequency of social support and perceived social support (Littleton, 2010; Littleton & Bretkopf, 2006; Orchowski et al., 2013; Relyea & Ullman, 2015; Ullman et al., 2007).

In Step 2, we examined construct validity by ensuring the items selected from the first step had high factor loadings as in prior factor analytic studies of the SRQ where they ranged from .62 to .80 (Relyea & Ullman, 2015; Ullman, 2000).

In Step 3, we assessed whether the items we selected had reasonable internal consistency reliability (alpha) in multiple college and noncollege community samples of women survivors of sexual assault. We chose to look in each of these populations because most studies of sexual assault occur in these two settings and because social reactions in these populations could vary by context and age. Also, survivors in college and community samples may differ on how they react to the wording of items. Because precise estimates of alpha for 2 to 6-item scales (as are found on the SRQ-S) require large sample sizes (Bonett, 2002), we only looked at time points in our samples that had more than 100 people. When potential items were similar in terms of their theoretical importance, reliability, and

zero-order correlations, we would judge the items for discriminant validity by regressing associated variables (e.g., PTSD) on scale items to see which items explained the most variance. If a scale alpha is low in any sample, we examined the reliability using alternative scale items and selected the items that worked best across the samples and represented the core construct of that reaction scale.

In Step 4, we broadened our test of internal consistency by examining whether the items maintained internal consistency across survivors of different races/ethnicities and survivors with different kinds of assault experiences that prior studies have shown could affect social reactions (i.e., survivors assaulted by strangers vs. people survivors know; alcohol-involved assaults vs. no alcohol).

For both Steps 3 and 4, we hoped to find short scales with good reliability (greater than .70), yet expected that alphas may be low in some samples given the nature of the SRQ and the limitations of alpha. First, the SRQ is based on frequency of receipt or nonreceipt of specific social reaction, from various formal and informal support sources told, who can vary between victims in both number and type. So reactions may or may not occur in response to all disclosures to different support sources making the construct different from other psychological and behavioral scales where ratings may be about the individual and equally applicable in all cases (e.g., attitudes, behavioral intention scales). Second, although alpha is the current standard for internal consistency reliability, alpha heavily depends on the number of items. The alpha coefficient can greatly underestimate reliability for scales that are small (especially 2-item scales), heterogeneous (such as different aspects of reactions), or non-normal (Eisinga, Grotenhuis, & Pelzer, 2013; Revelle & Zinbarg, 2009). Alpha also varies naturally between samples. Furthermore, SRQ items record survivors' perceptions of how others reacted to them. Thus, items lie in the interaction between survivors' perceptions (which, like other belief measures, may be internally consistent to individuals) and reactions that happen to survivors (which, like indexes of life events, are external to survivors and not assumed to have any internal consistency). Also, social reactions may be more complex than unidimensional and may be non-normally distributed when assessing frequency of less common reactions. Whereas the length of the original SRQ scales could protect for these potential losses of reliability, we had several reasons to believe that in some samples the new 2-item subscales would yield low alphas. Therefore, our goal was to pick items that yield the best alphas across samples. For the three general factors that have more than two items, we followed the convention of a good alpha as .70. Yet, as alpha is underestimated for short, 2-item scales that are heterogeneous, we used less conservative criteria of .60 for the 2-item subscales.

Finally, in Step 5, we compared the SRQ and SRQ-S to ensure the new shortened scales are still useful for researchers. Shortened scales should retain the ability of their original versions to capture the constructs under study and relate them to key outcomes. One risk of brief versions of measures is that shorter scales have less variance than longer scales, potentially attenuating correlations with related variables. Therefore, we compared the zero-order correlations that the original and shortened SRQ scales had with the known associated variables listed earlier (e.g., PTSD). Because the short scales would consist of the items selected in Step 1 based on the strength of their correlations with these outcomes, we

hypothesized that the shorter scales would correlate as strongly or close to as strongly with the associated outcomes as their original longer counterparts.

METHOD

Participants

Participants for this study came from three longitudinal datasets of women sexual assault survivors who had disclosed sexual assault and received social reactions assessed with the SRQ. It was important to use multiple datasets to test internal consistency reliability across multiple samples. The first dataset (Dataset A) came from our study of a large community sample of volunteer women ($N = 1,012$) aged 18 years and older from the Chicago metropolitan area who had told someone about an adult sexual assault experienced and who completed all three waves of a yearly mailed paper survey, ages ranging from 18 to 78 years old ($M = 37.88$, $SD = 12.72$). Participants were recruited through print and online advertisements. The final sample was ethnically diverse (47% Black or African American, 35% White, 2% Asian, 6% Multiracial, and 10% Other; 13% were of Hispanic origin, assessed separately). The study response rate to the initial mailed survey was 85%. Of the 1,863 women at Wave 1, follow-up rates were 72% for Wave 2 and 56% for Wave 3. The second dataset (Dataset B) came from another mail survey we conducted with a large community sample ($N = 1,084$) from the Chicago metropolitan area, ages 18–71 years old ($M = 32.47$, $SD = 10.96$), that was also diverse (46% Black or African American, 37% White, 6% Hispanic/Latina, 3% Asian, 7% Multiracial, and 1% Other). Participants were recruited through print and online advertisements. The third and final sample (Dataset C) was secondary data from researchers in New Hampshire who conducted an online survey of 344 college women sexual assault survivors from three Southeastern universities recruited through psychology subject pools. Women were ages 18–54 years old ($M = 21.63$, $SD = 5.56$) who were primarily White (75% White; 9% Hispanic, Mexican, or Latina; 6% Black or African American; 6% Asian; 2% Multiethnic; and 2% Other) and were undergraduate students (99%).

To test Steps 1, 4, and 5, we used Dataset A because it contained detailed information on assault characteristics that allowed us to examine differences in internal consistency and the detailed information on postassault sequelae (e.g., PTSD and self-blame) that enabled us to examine convergent validity. To test Step 2, we looked at prior published studies of SRQ factor loadings. To test Step 3 regarding internal consistency across multiple college and community samples, we used Datasets A, B, and C. Dataset C was a preexisting college sample. We split Datasets A and B into community and college subsamples. Community was defined as participants who were older than the age of 25 years and reported not being in school, whereas college was defined as participants between 18 and 25 years old who reported both being in school and having already attained a high school degree or general education development (GED). We chose this age range and college sample to simulate the populations that colleges are likely to target for undergraduate campus climate surveys on interpersonal violence. We did not examine those who were younger than 25 years and not in school because we did not have a large enough sample to meet our threshold for 100 per group.

All measures described in the following text, other than the SRQ, come from Dataset A: Wave 1 of a large community sample of volunteer women ($N = 1,012$). The SRQ was used in Datasets A, B, and C. For all correlation and regression analyses, predictors from Wave 1 of the community sample were used.

Measures

Assault Characteristics.—We coded victim–offender relationship as stranger or known, alcohol versus no-alcohol-involved assaults, and victim race (White/Black/other races/ethnicities).

Social Reactions.—The SRQ has 48 items and asks survivors how often they received each of the 48 reactions when they told other people about their unwanted sexual experiences. Items are answered on a 5-point Likert scale from 0 (*never*) to 4 (*always*). Previous studies have confirmed the reliability and validity of this measure in multiple samples (Ullman, 2000). The measure has three general scales (Positive Reactions, Unsupportive Acknowledgment, Turning Against; Relyea & Ullman, 2015) and eight subscales (Blame, Stigmatize, Control, Infantilize, Distract, Egocentric, Emotional Support, and Tangible Aid; Peter-Hagene & Ullman, 2014; Ullman, 2000). Composite scales were calculated using the averaged items, with higher scores indicating greater endorsement of each construct (e.g., higher scores on positive reactions indicate receiving more positive reactions). Across all samples, Time 1 surveys asked about any reactions since the victimization. In the two Chicago-area (community and college) samples, follow-up surveys asked about reactions in the past year. We also provided some optional variations for scoring or wording in the “Results” section.

Frequency of Social Contact.—We used a measure of social integration assessed with five questions from the RAND Health Insurance Experiment (Donald & Ware, 1984) that ask about how often a person comes into contact with social network members. Questions included the frequency of getting together with friends or relatives, having friends at your home, visiting your friends’ homes, attending religious services, and communicating with your friends or relatives by using a telephone or electronic communication (chatting online, Skyping). Responses were measured on a Likert-type scale from 1 (*less than 5 times during the past 12 months*) to 7 (*every day*) and averaged ($M = 3.74$, $SD = 1.20$, $\alpha = .71$).

Perceived Social Support.—We used the Social Support Questionnaire (Short Form; Sarason, Sarason, Shearin, & Pierce, 1987). Participants were asked to answer 1 (*yes*) or 0 (*no*) to whether they experienced any of the six different items regarding their perception that someone is there for them (e.g., “Is there someone you can really count on to be dependable when you need help?”). Items are summed for a possible range of 0–6, wherein higher scores indicate greater perceived social support ($M = 5.31$, $SD = 1.42$, $\alpha = .84$).

Depressive Symptoms.—We used a 7-item version of the Center of Epidemiological Studies–Depression (CES-D-7) scale modified by Mirowsky and Ross (1990). Participants were asked to rate their symptoms over the past 12 months using a 5-point Likert scale from 0 (*never*) to 5 (*always*). Items are averaged ($M = 1.97$, $SD = .75$, $\alpha = .86$).

Posttraumatic Stress Symptoms.—We used the Posttraumatic Stress Diagnostic Scale (PDS; Foa, 1995), a standardized 17-item instrument based on *Diagnostic and Statistical Manual of Mental Disorders* (4th ed.; *DSM-IV*) criteria. On a scale ranging from 0 (*not at all*) to 3 (*almost always*), women rated how often each symptom (i.e., reexperiencing/intrusion, avoidance/numbing, hyperarousal) bothered them in relation to the sexual assault during the past 12 months. If women had more than one assault, PTSD symptoms were assessed with respect to the most serious assault. The PDS has acceptable test–retest reliability for a PTSD diagnosis in assault survivors over 2 weeks ($k = .74$; Foa, Cashman, Jaycox, & Perry, 1997). The items were summed to assess the extent of posttraumatic symptomatology ($M = 20.92$, $SD = 13.02$, $\alpha = .93$).

Characterological Self-Blame.—We used the Rape Attribution Questionnaire (Frazier, 2003), a valid and reliable self-report measure of sexual assault survivors' attributions about why the assault occurred. A 5-item scale assessed characterological self-blame (e.g., "I am a careless person"). Participants rated how often during the past year they thought they were assaulted for reasons described by each item using a 5-point scale, ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). Frazier (2003) has reported subscale alpha coefficients ranging from .77 to .89 and test–retest reliability coefficients ranging from .68 to .80 in samples of women sexual assault survivors. In our sample, the measure had acceptable reliability for self-blame ($M = 2.56$, $SD = .98$, $\alpha = .77$).

Coping Strategies.—Methods used over the past 12 months to cope with the sexual assault were assessed with the 28-item Brief COPE (Carver, 1997). The measure contains 28 items on a Likert scale from 1 (*I didn't do this at all*) to 4 (*I did this a lot*). These items are broken into 14 types of coping strategies (e.g., substance abuse coping) composed of two items each. In factor analyses we reported elsewhere using the same sample (Relyea & Ullman, 2015), we found three factors: maladaptive coping such as denial or substance abuse (8 items; $M = 16.05$, $SD = 5.75$, $\alpha = .81$), positive individual coping such as planning or positive reframing (12 items; $M = 29.45$, $SD = 7.79$, $\alpha = .83$), and positive interpersonal coping such as seeking emotional support or advice (4 items; $M = 9.20$, $SD = 3.78$, $\alpha = .88$). All scales were created averaging items, with higher scores indicating higher use of that specific form of coping (e.g., greater maladaptive coping).

RESULTS

Step 1: Convergent Validity

We first ran correlations to determine which items from each of the eight subscales had the strongest relationships with known associated variables. The items with the highest average correlations for each subscale had weak to moderate associations with psychological, coping, and social support factors (.20–.31 for the Turning Against items, .16–.31 for Unsupportive Acknowledgment items, and .21–.34 for Positive Reactions items; correlations available upon request).

Step 2: Construct Validity

In two SRQ factor analysis studies, the items selected from Step 1 had some of the highest factor loadings on both the subscales and primary scales (Relyea & Ullman, 2015; Ullman, 2000). Therefore, the items had significant associations with others factors and appeared to have good construct validity on both the primary scales and subscales.

Step 3: Internal Consistency in College and Community Samples

Alpha was good for most scales both at single time points and over time when assessed in longitudinal samples (Table 1). As expected given that alpha is strongly affected by the number of items, the three longer general scales had higher alphas than any of their 2-item subscales. In all samples, alphas were adequate except for the Distract and Control subscales within the third college sample (.51 and .50, respectively). The recently revised Control scale only has two items (Peter-Hagene & Ullman, 2014); thus, no revisions could be made. However, we decided to retain these Control items because the items had an adequate alpha in all other samples, and the scale has been found useful in at least one prior study (Peter-Hagene & Ullman, 2014). The Distract scale of the SRQ, however, had potential alternative items because the scale contains multiple aspects of distraction including silencing the survivor, telling them to move on, and trying to make survivors not think about their experiences. As stated earlier, alpha will be underestimated in scales that are not unidimensional; so, a low alpha in a single sample was not surprising. Yet, to find a 2-item scale with the best construct validity and empirical importance, we compared alternate versions.

We examined three versions of the Distract scale using items from the initial analyses earlier that had significant correlations with related variables: A moving-on version (shown in Table 1), a silencing version (two items reflecting discouraging survivors from talking about their experience), and an ignoring version (telling survivors not to think or talk about their experience). The two silencing items were similarly worded and thus had high alphas in all samples. The other two versions had adequate alphas in all samples other than the third college sample. Despite a good alpha, only assessing for silencing reactions loses several aspects of distraction. On the other hand, a silencing scale may be useful if such reactions are related to survivors' outcomes or chances of disclosing. Thus, in the large longitudinal community sample mentioned earlier ($N = 1,012$), we ran three linear regressions and one logistic regression to compare how well the three Distract scale versions from Wave 1 predicted survivors' outcomes at Wave 2: PTSD symptoms, maladaptive coping, number of people told, and chances of disclosing. In all analyses, we controlled for the Wave 1 values of the outcomes, Turning Against Reactions and Positive Reactions. Results showed the moving-on version predicted all four outcomes ($b = .08, p = .05$; $b = .10, p = .01$; $b = .15, p = .05$; $OR = .85, p = .01$), whereas the other two versions had little to no associations with outcomes (ignoring: $b = .07, p = .01$; $b = .07, ns$; $b = .11, ns$; $OR = .91, ns$; silencing: $b = .02, ns$; $b = .01, ns$; $b = .14, p = .05$; $OR = 1.03, ns$). Therefore, we retained the moving-on version for construct validity and ability to predict key outcomes.

Step 4: Internal Consistency Across Race and Assault Characteristics

We next examined whether internal consistency was adequate across survivors of different races (White, Black, other races) and different assault experiences (stranger vs. known assailant, alcohol vs. nonalcohol involved assaults). All scales and subscales other than the Control and Egocentric subscales showed adequate reliability across all survivor groups (.60–.93). Yet, the Control subscale showed poor reliability for survivors who were Black (.59) or who had strangers as assailants (.56). Furthermore, the Egocentric subscale showed poor reliability for survivors who were White (.57) and women of other races (.45).

Step 5: Information Loss

Lastly, once items were chosen, we compared the SRQ-S scales with the original longer SRQ scales to determine how much information would be lost using the shorter scales. To do so, we compared the zero-order correlations between the associated variables mentioned in the first step (e.g., depression) and both the SRQ and SRQ-S scales across three waves of data (Table 2; full correlations available upon request). We originally intended to see if the correlations were significantly different using a significance test such as Hotelling's *t* test or Steiger's *Z* test. However, the raw score difference between correlations were on average .01 between shorter and longer scales, obviating the need for statistical tests as any possible significant differences would not be meaningfully different. Therefore, the shorter scales are as useful as their longer original versions for statistical and predictive analyses.

For many reasons stated earlier, we expected we may find low alphas in some samples with 2-item reaction scales. Yet, researchers may be wondering if a low alpha on a 2-item test means that the scale will not be useful. To assess if the subscales were still useful in samples with low alphas, we ran correlations in both waves of our third college sample between PTSD symptoms and the scales that had low alphas (Distract, Control). We then compared those to the correlations between PTSD symptoms and the same scales (with good alphas) in our large (*N* 5 1,012) community sample. In our large community sample with good alphas, the average correlations with PTSD symptoms across three waves were .29 and .26 for the Distract and Control scales, respectively. In the college sample with lower alphas, the same scales had average correlations with PTSD symptoms of .21 and .24. Because these numbers are quite similar, even scales with lower alphas still appear useful for understanding the relationships between social reactions and other constructs. That said, researchers may still wish to use the larger primary scales (Turning Against, Unsupportive Acknowledgment, Positive Reactions) rather than subscales if they wish to ensure having a larger alpha (see Appendix for measure as it should be administered).

SUMMARY OF STUDY 1—Analyses run across several college and community samples showed that the items in SRQ-S show good internal consistency and that the new shortened versions of scales predict important recovery outcomes similarly to the full-length version of the SRQ. Therefore, the new measure appears to adequately capture the constructs assessed in the full SRQ measure (Ullman, 2000) at one third of the original length. However, in these samples, participants received the full 48-item SRQ. Therefore, a second study was necessary to confirm if the brief version administered on a new sample retained internal consistency and factor structure of the original SRQ.

STUDY 2—In Study 2, we administered SRQ-S to a college and community sample to ensure it maintains the factor structure of the full SRQ and has internal consistency reliability.

METHODS

Participants

The data consisted of 447 women who disclosed physical or sexual violence they experienced since the age of 18 years. The initial 99 (22%) participants were recruited through a psychology subject pool at a northeastern university who received course credit. Because of difficulties acquiring a large sample through the subject pool, we acquired an additional 348 (78%) from Amazon's Mechanical Turk (MTurk) who received \$0.10 for screening and \$2.50 for completing the rest of the survey.

A screening confirmed participants were female, older than 18 years, and experienced violence since the age of 18 years. Out of the 1,819 who participated in the screening, 554 experienced violence, and 447 reported disclosing their violence experiences. These 447 were used for analyses. Within the 348 from MTurk, 13% were 18–23 years old, 32% were 24–30 years old, 20% were 31–37 years old, 19% were 38–49 years old, and 17% were 50 years or older. The MTurk volunteers were predominantly White (78% White, 8% Black or African American, 5% Asian, 5% multiethnic, 3% Hispanic or Latino, and 1% another race/ethnicity). The MTurk sample was also well educated, with 12% having a graduate degree, 46% had an associates or bachelor's degree, 41% had a high school degree or higher, and 1% having less than a high school degree. We did not ask the MTurk sample whether or not they were in school at the time. The 99 student volunteers were much younger: 97% were 18–23 years old and 3% were 24–30 years old, and almost all were White (94% White, 2% Black or African American, 1% Asian, 0% Hispanic or Latino, 3% multiethnic, and 1% another race/ethnicity). Half the students (52%) were freshman, 33% were sophomores, 13% juniors, 1% were seniors, and 1% wrote in other. For samples sizes, we have combined these groups in all analyses because both are volunteer samples that are not meant to be representative of a specific population. Out of these 447 used for the analyses, 31% were 18–23 years old, 26% were 24–30 years old, 15% were 31–37 years old, 15% were 38–49 years old, and 13% were 50 years or older. This subsample was predominantly White (82% White, 7% Black or African American, 4% Asian, 4% multiethnic, 2% Hispanic or Latino, and 1% another race/ethnicity). The subset was also well educated with 12% having a graduate degree, 46% had an associated or bachelor's degree, 41% had a high school degree or higher, and 1% having less than a high school degree. Twenty-three percent were in college at the time.

Measures

Social Reactions.—The newly created SRQ-S had 16 items rated on a 5-point Likert scale from 0 (*never*) to 4 (*always*). Participants were asked to fill out the SRQ-S twice to indicate the social reactions they received when first disclosing and last disclosing their most serious violence experience. The SRQ-S contains three general scales (Turning Against,

Unsupportive Acknowledgment, and Positive Reactions) with eight subscales (Blame, Stigmatize, Infantilize, Control, Distract, Egocentric, Emotional Support, and Tangible Aid).

Victimization.—Sexual assault victimization was assessed with the Sexual Assault Victimization Questionnaire (adapted from Ward, Chapman, Cohn, White, & Williams, 1991). Participants were asked two questions on whether they since the age of 18 years had ever experienced unwanted sexual contact or unwanted sexual intercourse with each term defined prior to the question (83% reported unwanted sexual contact; 55% unwanted intercourse). Participants then answered five questions from the Partner Victimization Scale (adapted from Hamby, 2013) on whether any “boyfriend, girlfriend, husband, or wife” including exes had since the age of 18 years threatened to hurt them, pushed/ grabbed/shook them, hit them, beat them up, or made them do unwanted sexual things (72% reported some form of partner violence; intimate partner violence [IPV]). Similar to past studies, the large majority of women (82%) who reported IPV also reported some kind of unwanted sexual contact or intercourse. Participants then selected which form of violence they felt was the most serious (59% picked a form of sexual violence, and 41% chose some part of IPV) and answered questions about disclosure based on the most serious victimization they reported.

Analyses Plan

We first ran a CFA on those who reported disclosing sexual violence to determine whether the SRQ-S retained the theorized factor structure. All analyses were done using the lavaan package in R. The CFA was set to three general factors that were allowed to correlate: Turning Against (6 items), Unsupportive Acknowledgment (6 items), and Positive Reactions (4 items) with eight 2-item specific factors (Blame, Stigmatize, Infantilize, Control, Distract, Egocentric, Emotional Support, and Tangible Aid). Each of the 2-item scales was constrained to have equal loadings on the specific factors to identify the model. Because the SRQ measures reactions from others rather than within-person traits, we followed Relyea and Ullman’s (2015) suggestion to use the less conservative model specification cutoffs of .90 for Tucker-Lewis index (TLI) and comparative fit index (CFI) and .08 or less for root mean square error of approximation (RMSEA) to indicate adequate fit. To confirm this model was reliable, the CFA was run twice, once for the SRQ-S filled out for the first person disclosed to and then again the last person disclosed to.

Next, we compared these models to two sets of alternative models: (a) a model with only two general factors (positive and negative reactions) to assess whether analyses of the SRQ-S would replicate Relyea and Ullman’s (2015) finding on the SRQ that separating the negative reactions into Turning Against and Unsupportive Acknowledgment provided a better fit to data and (b) the hypothesized model on the sample of those who disclosed either sexual or physical violence. Many researchers are now using the SRQ to assess for reactions to multiple types of interpersonal violence in addition to sexual assault, but no studies have assessed whether the SRQ factor structure is similar for reactions to other kinds of violence. All these models were run twice, first on the first person told and then on the last person told. We used Cheung and Rensvold’s (2002) criteria of a difference in CFI of .01 or more to compare models for invariance. Finally, to examine internal consistency reliability, we ran

Cronbach's alpha on two sets of data (first told and last told) with those who disclosed only sexual violence.

RESULTS

The CFA indicated the hypothesized SRQ-S factor structure (three general factors with eight specific factors) was adequate both for social reactions sexual assault survivors received when first disclosing ($\chi^2 [93] = 194.32, p = .001, TLI = .92, CFI = .94, RMSEA = .07$) and most recently disclosing ($\chi^2 [93] = 170.37, p = .001, TLI = .94, CFI = .95, RMSEA = .07$). In both cases, the alternative models with only two general factors (positive and negative reactions) and eight specific factors fit much worse according to both the fit values (first told $\chi^2 = 275.55 [95], p = .001, TLI = .87, CFI = .89, RMSEA = .09$; last told $\chi^2 = 204.26 [95], p = .001, TLI = .92, CFI = .93, RMSEA = .08$) and significant chi-square differences tests ($\chi^2 = 81.23 [2], p = .001$; $\chi^2 = 33.88 [2], p = .001$, respectively). The hypothesized factor structure also was adequate for those reporting reactions to disclosing either sexual or physical violence (first told: $\chi^2 = 238.22 (93), p = .001, TLI = .93, CFI = .95, RMSEA = .06$; last told: $\chi^2 = 225.66, p = .001 (93), TLI = .93, CFI = .95, RMSEA = .07$). Alpha for all scales and subscales of the SRQ-S was adequate (see Table 1) for those individuals whom sexual assault survivors first told and last told.

SUMMARY OF STUDY 2

Results indicate the hypothesized factor structure of SRQ-S with three general factors and eight specific factors was supported in two separate SRQ-S's participants filled out. Furthermore, in support of Relyea and Ullman (2015), the model fit better than one that combined turning against reactions and unsupportive acknowledgment into one factor of negative reactions. Finally, the factor structure seems reliable when assessing reactions to physical as well as sexual violence, supporting continued use of the scale to assess reactions to multiple kinds of violence.

DISCUSSION

Social reactions to sexual assault disclosures are predictive of survivors' recovery across a broad range of mental and physical health outcomes (Borja et al., 2006; Littleton, 2010; Matthews, 2011; Orchowski & Gidycz, 2015; Peter-Hagene & Ullman, 2014; Relyea & Ullman, 2015; Ullman & Najdowski, 2011; Ullman & Siegel, 1995; Ullman et al., 2008; Ullman et al., 2007). Many studies have used the SRQ (Ullman, 2000). Despite this, researchers have requested a shorter version of this widely used measure of how support sources respond to disclosures of assault. To make this measure available to a broader range of researchers, this study presents a brief 16-item measure of social reactions to sexual assault survivors, the SRQ-S.

These results show that researchers wishing to use the SRQ who cannot accommodate the full 48-item measure may find this shortened version useful in studies of sexual assault survivors that include ethnic diversity. It is important to note that the short measure included updates to the original SRQ learned from recent studies. First, per Relyea and Ullman (2015), we split negative reactions into Turning Against and Unsupportive

Acknowledgment primary scales. Turning against items, which are almost exclusively negative, may be particularly related to psychological distress, whereas unsupportive acknowledgment reactions, which include a mix of positive and negative reactions, may be more related to adaptive and maladaptive coping. Second, per Littleton and Bretkopf (2006) and Peter-Hagene and Ullman (2014), we separated the Control subscale into controlling items (which fall under Unsupportive Acknowledgment) and Infantilize items (which fall under Turning Against) as two unique aspects of Control. Although both are negative, Infantilize, similar to other Turning Against items, appears particularly harmful for women's psychological recovery outcomes. Both appear to be unique reactions important to assess in understanding responses survivors receive from others. Finally, positive support was divided into Emotional Support and Tangible Aid because prior analyses from the authors on the SRQ have not supported continuing to divide positive support into a third scale of information support. Thus, we decided to retain the two subscales in the short measure to capture the most important and frequent forms of positive social reactions to survivors' disclosures.

Although this study finds reasonable reliability estimates for the scales and subscales, we recommend that all researchers examine reliability in their own studies. Unlike many psychological constructs that are internal to individuals and should show consistent internal reliability, the SRQ-S records survivors' reports of what others (or multiple others) said when survivors disclosed assault. Also, social reactions to sexual assault can vary widely depending on several factors (context, assault characteristics, relationship of the support provider and survivor, culture, etc). We sampled here both within multiple geographical areas (Chicago, the northeast, and multiple southeastern universities) and multiple age groups and populations and did not find that any sample had problems with reliability. Yet, depending on the sample, some reactions may be uncommon and therefore hurt reliability. Although researchers can still report the frequency of those who endorse such an item, we would advise against using such items when creating scale means.

In all of our samples, reliabilities were adequate; however, Unsupportive Acknowledgment and the associated subscales had lower alphas than Turning Against or Positive Reactions. To some extent, this was expected because survivors may view unsupportive acknowledgment reactions as either positive or negative, and the frequency of such reactions correlate with both positive and turning against reactions (Relyea & Ullman, 2015). Yet, tests across subsamples of survivors revealed the Egocentric scale and Control scale were only adequate for certain groups of survivors and varied by racial groups and type of assailant (stranger vs. known). This is difficult to interpret because no studies have examined reliability for different groups of survivors. Also, the subgroups had lower sample sizes, which may affect alpha. These were the highest alphas achieved using the items from the original SRQ. However, future research should explore whether there are alternative items that might improve the reliability of these scales, particularly across different populations of survivors, while maintaining the constructs.

Limitations

One caution of our findings is that some of our smaller samples showed lower alphas; however, smaller samples commonly produce lower, less stable, alphas in general. Some caution is needed in using the SRQ-S in smaller samples because some reactions may be rarer and each individual's score may affect the overall statistics to a greater extent than in larger samples. Another limitation of using shortened 2-item subscales is that they tend to be weaker psychometrically. Still, many widely used short scales, such as the 2-item subscales of Carver's (1997) Brief COPE, have been useful in research and more widely used than their longer original formats, making this a reasonable tradeoff for researchers wishing to assess these constructs. The SRQ-S measure presented here and the original SRQ have been validated for female survivors of sexual assault so we do not have information on whether the SRQ could work equally with male survivors of sexual assault. Researchers who used the scale for men should make sure to assess the scales for reliability.

In addition to how the SRQ was measured in these samples, researchers have also found the following variations useful. The time frame of receiving social reactions has varied between studies, ranging from a few weeks to having ever received a reaction (e.g., Littleton, 2010; Orchowski & Gidycz, 2015; Relyea & Ullman, 2015; Ullman, 2000; Ullman et al., 2007). Some have also found it useful to know the percentage of people who received each kind of reaction. To get percentages, individual items can be dichotomized as received (those answering 1–4) versus not received (those answering 0). It is important to note that unlike many self-report measures that indicate what the person filling out the form does or believes, these items indicate what others said to survivors. In some samples, certain items may be infrequently mentioned. Survivors may also be averaging the frequency of receiving a response across multiple people. Both can potentially lower alpha or variance in a particular sample. In such instances, we recommend either not using infrequently mentioned items or only using the item for larger aggregate scales (Turning Against, Unsupportive Acknowledgment, Positive Reactions) instead of the shorter subscales. Some studies have found it useful to ask who said each statement (e.g., romantic partner, friend, family member, rape crisis center staff). Other studies have found it useful to ask the survivor's perception of how healing or hurtful each item was (e.g., Ahrens et al., 2009) because the effect of social reactions may depend not just on the specific reaction but also how survivors interpret it, the context in which it was given, who said/made the response, and their relationship to the support recipient (Ullman, 2010).

Given that the SRQ is also being adapted for use in samples of survivors of child sexual abuse, domestic violence, and reactions to other victimized populations (Sullivan, Schroeder, Dudley, & Dixon, 2010; Ullman & Filipas, 2005), it seems vital to provide a shorter version that may allow more researchers to quickly assess for reactions that may affect survivors. This is particularly true in the wake of increased attention to campus sexual assault from federally mandated climate surveys currently being developed to assess the experiences of college survivors and campus climates around sexual assault (United States Government, 2014). That said, researchers focusing on studying reactions may wish to use the original 48-item SRQ to capture the wider diversity of reactions that survivors can receive. In conclusion, the SRQ-S is a good alternative to the full SRQ for researchers and

interventionists looking for a brief measure of social reactions to sexual assault survivors. It appears to work well in both college and community samples and should provide a way for more researchers to include this important construct in studies of sexual assault recovery, treatment, and prevention/intervention.

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APPENDIX

SRQ-S Measure

How Other People Responded . . .

The following is a list of reactions that other people sometime have when responding to a person with this experience. Please indicate how often you experienced each of the listed responses from other people.

0	1	2	3	4
Never	Rarely	Sometimes	Frequently	Always

1. Told you that you were irresponsible or not cautious enough
2. Reassured you that you are a good person
3. Treated you differently in some way than before you told them that made you uncomfortable
4. Told you to go on with your life
5. Comforted you by telling you it would be all right or by holding you
6. Tried to take control of what you did/decisions you made
7. Has been so upset that they needed reassurance from you
8. Made decisions or did things for you
9. Told you that you could have done more to prevent this experience from occurring
10. Provided information and discussed options
11. Told you to stop thinking about it
12. Expressed so much anger at the perpetrator that you had to calm them down
13. Avoided talking to you or spending time with you
14. Treated you as if you were a child or somehow incompetent
15. Helped you get information of any kind about coping with the experience
16. Made you feel like you didn't know how to take care of yourself

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TABLE 1.
Internal Consistency Reliability of Social Reactions Questionnaire-Shortened Scales and Subscales

	Com 1 N 581 T1, T2, T3	Col 1 N 134 T1-T3	Com 2 N 407,167 T1, T2	Col 2 N 125 T1	Col 3 N 289 T1	SRQ-S ^a N 228,190 First,last
Turning Against (the following 6 items)	.87, .88, .89	.82, .89, .84	.83, .90	.86	.84	.89, .91
1. Stigmatize Treated you differently in some way than before you told them that made you uncomfortable	.77, .77, .77	.73, .80, .81	.69, .80	.72	.79	.75, .75
Avoided talking to you or spending time with you						
2. Infantilize Treated you as if you were a child or somehow incompetent	.79, .81, .82	.79, .84, .75	.78, .81	.83	.77	.88, .89
Made you feel like you didn't know how to take care of yourself						
3. Blame Told you that you were irresponsible or not cautious enough	.81, .78, .78	.72, .86, .83	.72, .79	.82	.78	.77, .88
Told you that you could have done more to prevent this experience from occurring						
Unsupportive Acknowledgment (the following 6 items)	.76, .80, .84	.71, .79, .76	.74, .81	.71	.64	.71, .77
4. Distract Told you to go on with your life Told you to stop thinking about it	.71, .70, .78	.68, .73, .78	.61, .72	.61	.51	.67, .75

TABLE 2.

Comparing Average Correlations Across Associated Variables for Three Waves of Data

	Original SRQ	SRQ-S	Raw Difference
TA	.31	.30	.01
Stigmatize	.29	.25	.03
Infantilize	.30	.29	.01
Blame	.26	.26	.00
UA	.32	.30	.02
Distract	.31	.27	.04
Control	—	.22	—
Egocentric	.21	.19	.02
PR	.31	.31	.01
Emotional Support	.30	.30	.01
Tangible Aid	.38	.38	.00

Note. SRQ 5 Social Reactions Questionnaire; SRQ-S 5 Social Reaction QuestionnaireShortened; TA 5 Turning Against; UA 5 Unsupportive Acknowledgment; PR 5 Positive Reactions. Original Control subscale not shown as original had items from Infantilize and the revised scale has the same two items. TA scales correlated with posttraumatic stress disorder (PTSD), maladaptive coping, characterological self-blame, and depression; UA scales correlated with PTSD, maladaptive coping, adaptive individual coping, and depression; PR (and Emotional Support) correlated with adaptive individual coping and adaptive interpersonal coping, frequency of social support and perceptions of social support; Tangible Aid correlated with individual coping and adaptive interpersonal coping.