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How to Score the Sexual Experiences Survey? A Comparison of Nine Methods

Kelly Cue Davis, Ph.D.[1], **Amanda K. Gilmore, M.S.**[2], **Cynthia A. Stappenbeck, Ph.D.**[3], **Michael J. Balsan**[1], **William H. George, Ph.D.**[2], and **Jeanette Norris, Ph.D.**[4]

[1]School of Social Work, University of Washington

[2]Department of Psychology, University of Washington

[3]Department of Psychiatry and Behavioral Sciences, University of Washington

[4]Alcohol and Drug Abuse Institute, University of Washington

Abstract

Objective—Although assessments of sexual assault victimization and perpetration have greatly improved, current scoring methods do not fully utilize the wealth of information they provide. The present studies assessed new methods for scoring sexual assault severity using the Sexual Experiences Survey (SES; Koss et al., 2007).

Method—In two studies of female (n = 436) and male (n = 313) non-problem drinkers who had engaged in unprotected sex within the past year, we compared three severity ranking schemes as well as three scoring methods per severity scheme for a total of nine scoring methods. New severity ranking schemes considered tactic types separately, varied combinations of assault outcomes, and accounted for multiple types and frequencies of assaults. Measures assessing convergent validity were also administered.

Results—Seventy-eight percent (n = 340) of the women reported victimization, and 58% (n = 180) of the men reported perpetration. All severity scoring methods were strongly associated with convergent measures.

Conclusions—Each scoring method is viable; however especially among samples with greater victimization/perpetration rates, there can be advantages to incorporating multiple types and frequencies of assault experiences into SES scores. Recent refinements of the SES necessitate commensurate improvements in its scoring methods in order to significantly advance the field of sexual assault assessment.

Keywords

sexual assault severity; victimization; perpetration; psychometrics; sexual aggression

Despite increased prevention efforts, sexual assault rates in the U.S. continue to present a significant and widespread public health problem, particularly among young heterosexual

Correspondence concerning this paper should be sent to Dr. Kelly Davis, University of Washington, School of Social Work, Box 354900, Seattle, Washington 98105. E-mail may be sent to kcue@u.washington.edu.

men and women. Studies indicate that in some adult populations, approximately 75% of women report sexual victimization and up to 69% of men report sexual aggression perpetration since age 14, including nonconsensual sexual contact and attempted/completed rape (Abbey, Parkhill, & Koss, 2005). According to a large-scale nationwide study, approximately 1.3 million women are raped each year (Black et al., 2011). The nature of sexual assault events may vary widely, and consequently, may require prevention efforts that more precisely target different types of incidents. Researchers have thus endeavored to refine and expand sexual assault assessments in order to provide more accurate and precise information about the rates and consequences of various types of sexual assaults. Although questionnaire-based assessments of sexual victimization and perpetration have improved over the past decade (e.g., Abbey et al., 2005; Koss et al., 2007), the ways in which these measures are scored (i.e., categorizing individuals according to their most severe assault experience) do not reflect these improvements. The present study aimed to develop new methods of scoring sexual victimization and perpetration measures in order to enable researchers to use these measures to their fullest potential.

Sexual Assault Assessment

Questionnaire development

Although several measures have been used to assess sexual assault (see Cook, Gidycz, Koss, & Murphy, 2011), the most widely used measure of sexual assault events is the Sexual Experiences Survey (SES), originally developed and then revised by Koss and colleagues (Koss & Oros, 1982; Koss, Gidycz, & Wisniewski, 1987; Koss et al., 2007). In an effort to improve the accuracy of reporting rates, the original SES pioneered the use of behaviorally-specific descriptions of sexually assaultive acts and tactics, rather than relying on potentially stigmatizing labels such as “rape,” to assess both victimization and perpetration experiences (Koss, 1993). Research indicates that this use of behaviorally-specific assessments results in reporting rates 4 to 11 times higher than those obtained in surveys using less behaviorally-specific items (Fisher, 2009).

Since the original publication of the SES, there have been several efforts to improve it (e.g., Abbey et al., 2005). Most recently, Koss and colleagues (the SES collaboration; Koss et al., 2007) developed both short and long revised perpetrator and victim versions of the original SES that retained its strengths but also addressed its deficiencies. Improvements to this revised version included: definitions and language clarifications, gender neutrality, greater distinctions between types of unwanted sexual events, improved assessments of alcohol-involved assaults, reference period clarifications, and assessment of event frequency. Although psychometric information for the revised measure was not presented, the SES collaboration suggested that future research focus on gathering such data in order to inform further refinements in the assessment of sexual assault.

Scoring methods

Despite these advances in sexual assault assessment, a number of issues still remain. Cook et al. (2011) enumerated several challenges that continue to hinder the field’s ability to accurately detect sexual assault events, such as the lack of standard definitions and the need

for greater method validity. Although these concerns are well-noted and continued developments in measure refinements and psychometrics are warranted, researchers currently conducting work in this area must rely upon existing measures until improved versions are available. Thus, it is critical that scientists utilize these extant measures to their full potential. However, although the measures themselves provide a wealth of information regarding sexual assault tactics, outcomes, and frequency, the methods previously put forth for *scoring* these measures do not reflect their comprehensiveness.

Prior research has utilized a number of different methods for scoring the SES. Scoring strategies for earlier versions of the measure included non-redundant categorization by assault type severity (e.g., Koss et al., 1987), frequency of assault events (e.g., Malamuth, Sockloskie, Koss, & Tanaka, 1991), Rasch model analysis (e.g., Ullman, Karabatsos, & Koss, 1999a,b), and non-redundant categorization of rape severity by tactic (Brown, Testa, & Messman-Moore, 2009). Many of these different scoring schemes required modification of the earlier versions of the SES in order to obtain necessary information (e.g., the addition of frequency assessments).

In the Revised SES, Koss et al. (2007; 2008) suggest three options for scoring. First, one may establish the frequency of each type of sexual assault outcome for each sexual assault tactic by calculating a percentage of individuals who reported each outcome for each tactic at the individual item level. Second, one may create redundant scores in which percentages are computed for non-victimization (or perpetration), sexual contact through any tactic, attempted rape through coercion, completed rape through coercion, attempted rape through incapacitation or force, and completed rape through incapacitation or force. These percentages are redundant in that if a participant experienced/perpetrated both sexual contact and coercion, he or she would be counted in both categories. Third, mutually exclusive or non-redundant scores may be computed such that an individual's sexual assault experience(s) are coded only by the category of his or her most severe type of outcome, and then category percentages are computed.

The non-redundant scoring system reflects a continuum of "objective severity" of assault experiences ranging from least serious (no victimization/perpetration) to most serious (completed rape; Testa, VanZile-Tamsen, Livingston, & Koss, 2004, p. 264). However, when comparing this continuum of objective severity to women's subjective trauma ratings, only modest support for a linear relationship was found, suggesting that this scoring method results in only an "imperfect approximation of subjective severity" (Testa et al., 2004, p. 264). Incorporating other characteristics, such as tactic type or assault frequency, into a more comprehensive scoring method could improve this approximation of subjective severity. Although the Revised SES measure gathers such information, current scoring schemes do not fully utilize this data.

First, tactic types are often combined when categorizing respondents. For example, participants may be grouped into the completed rape category if they experienced nonconsensual sex through either incapacitation, threats of physical harm, or actual physical force. Recent research suggests, however, that rape victims experience sequelae that differ in severity based on the type of tactic used (Brown et al., 2009). Additionally, perpetrators who

use the victim's alcohol incapacitation as a tactic may differ in important ways from perpetrators who use forceful tactics (Abbey, 2011). Such findings suggest that scoring schemes that enable discrimination between different tactic types are warranted.

In addition, the non-redundant categorical scoring system does not consider the frequency of victimization/perpetration. The rates of both repeat perpetration and victimization are alarmingly high, and frequency of victimization is associated with important negative health consequences (Jozkowski & Sanders, 2012; Lisak & Miller, 2002). Given these findings, sexual assault frequency should be examined as a potential component of SES scoring schemes. However, as noted by Koss et al. (2007), scoring based solely on frequency erroneously equates less severe acts with more severe ones; thus, assessments of assault frequency should occur concomitantly with consideration of act severity.

Current Study

The present project aimed to address these deficiencies in the scoring of sexual assault measures by examining the usefulness of several alternative scoring options. Data are presented from two separate studies that recruited young women and men from the community for research regarding the effects of alcohol on sexual decision-making. Participants were not recruited based on their sexual assault perpetration or victimization background; however, participants reported relatively high rates of sexual assault experiences consistent with other reports of sexual assault among samples of non-problem drinkers with elevated sexual risk indices (e.g., Schacht et al., 2010). First, we devised three severity ranking schemes of sexual assault victimization (women) or perpetration (men) history based on different combinations of outcomes and tactics. Second, we then applied three different scoring methods to each of these severity ranking schemes, resulting in nine possible scoring options. Finally, we examined 1) the descriptive statistics for each scoring option as well as 2) their convergent validity with other measures relevant to sexual assault victimization or perpetration.

Study 1: Scoring Women's Sexual Assault Victimization

Study 1 assessed women's sexual assault victimization experiences in a larger study involving an alcohol administration experiment which included reading and responding to a sexually explicit scenario. Participants completed sexual victimization history questionnaires and sexual assault severity scores were calculated. Convergent validity was then assessed using measures of relationship abuse, relationship violence, and psychological distress.

Study 1 Method

Participants and procedures—Participants included 436 women aged 21–30 from a large urban community sample. They were recruited in several ways: 1) online community websites such as Craigslist and local web-based bulletin boards; 2) print advertisements in local free weekly newspapers; and 3) flyers posted in venues frequented by young adults (e.g., coffee shops, bars, salons). Participants were screened on the phone for eligibility prior to coming to the lab. Women were eligible to participate if they were interested in sexual activity with men, had an episode of heavy episodic drinking (4 or more drinks within two

hours) on at least one occasion in the past year, engaged in at least one instance of unprotected sex in the past year, and endorsed an HIV/STI risk factor. Additionally, women were ineligible if they were problem-drinkers (as defined by a score of 5 or more on the Brief Michigan Alcoholism Screening Test [B-MAST]; Pokorny, Miller, & Kaplan, 1972) or had any medical contraindications to alcohol consumption (NIAAA, 2005).

The majority of the sample self-identified as Caucasian (72.2%), whereas 6.4% self-identified as African American/Black, 5.3% as Asian/Pacific Islander, 6.7% as Hispanic/Latina, 0.9% as Native American, and 12.6% as Multiracial or other. Most participants were employed (58.6%), had some college education or higher (81.3%), reported a yearly income of $40,999 or below (73.7%), and were not currently students (65.6%). On average, women drank 14.0 drinks per week (*SD* = 8.0). Participants reported first consensual intercourse at age 16.8 years (*SD* = 2.3) and the average number of lifetime vaginal sex partners was 14.8 (*SD* = 11.5; capped at 50). A total of 140 participants (33%) reported a history of childhood sexual abuse.

Measures

Sexual victimization: Koss et al.'s (2007) Revised Sexual Experience Survey assessed women's experiences with sexual victimization since age 14. Behaviorally specific language was used to describe the unwanted sexual experience outcomes and tactics. Types of unwanted sexual behavior assessed included sexual contact (e.g., fondling) and attempted or completed penetration (oral, vaginal, or anal). The tactics included two forms of verbal coercion including (1) telling lies, verbal threats, making promises known to be untrue, or using verbal pressure and (2) showing displeasure, criticizing, or getting angry; incapacitation (i.e., taking advantage when the participant was "too drunk or out of it" to stop what was happening); and two forms of physical force including (1) threatening physical force and (2) use of physical force. Participants were asked how often each sexual experience was obtained by each tactic with response options ranging from 0 (*never*) to 3 (*three or more times*).

Relationship abuse: The Women's Experience with Battering questionnaire (Smith, Earp, & DeVillis, 1995) assessed women's lifetime histories of relationship abuse. Participants reported their level of agreement with each of 10 items that described a specific act or behavior as it applied to any of their current or past relationships. Items included "I felt owned and controlled by my partner" and "I felt like my partner kept me prisoner". Items were scored on scales from 1 (*disagree strongly*) to 6 (*agree strongly*). The items were summed with higher scores reflecting greater relationship abuse, and had good internal reliability, $\alpha = .95$.

Relationship violence: A lifetime history of relationship violence was assessed using the Relationship Violence questionnaire (Whitmire, Harlow, Quina, & Morokoff, 1999). This 10 item questionnaire assessed the typical responses of the participants and their partners during arguments (ranging from "giving in" to "getting violent"), as well as how often the participants' partners had committed physical violence or threatened violence on scales from 1 (*never*) to 5 (*very often*). The items had good internal reliability, $\alpha = .86$.

Psychological distress: Psychological distress was assessed with subscales from the Brief Symptom Inventory (BSI; Asner-Self, Schreiber, & Marotta, 2006) and the Trauma Symptom Inventory (TSI; Briere, Elliott, Harris, & Cotman, 1995). Three subscales from the BSI were administered to assess the extent to which women experienced symptoms of Somatization (e.g., faintness or dizziness, nausea), Depression (e.g., feeling blue, feeling hopeless about the future), and Anxiety (e.g., feeling tense or keyed up, feeling fearful) in the past 7 days. Women responded to these 18 items using 5-point scales ranging from 1 (*not at all*) to 5 (*extremely*). Responses were averaged within each subscale with higher scores reflecting greater symptom endorsement. The Somatization, Depression, and Anxiety subscales had adequate or good internal reliability (’s were .73, .91, and .82, respectively). Additionally, the Intrusive Experiences subscale from the TSI was administered to assess the extent to which women had intrusive experiences such as nightmares or sudden disturbing memories in the past 6 months. This subscale was comprised of 8 items responded to on 3-point scales from 1 (*never*) to 3 (*often*). Items were averaged, and the subscale had good reliability (α = .85).

Development of New Severity Ranking Schemes and Scoring Methods—Before scoring, standard procedures (Koss et al., 2007; 2008) were followed by recoding the two forms of verbal coercion tactics into one overall verbal coercion category. Threats of physical force and actual use of physical force were also recoded into one overall physical force category, and all types of attempted or completed penetrative acts (i.e., oral, vaginal, anal) were combined into overall categories of attempted rape or completed rape. In all scoring methods, participants who reported no sexual assault history were scored as ‘0’.

After recoding these items, we developed three different sexual assault severity ranking schemes (see Table 1). We first used the ‘conventional’ severity ranking scheme as suggested by Koss et al. (2007; 2008, see Table 1). The conventional severity ranking scheme combines all tactics for sexual contact, but for attempted and completed rape, verbal coercion is examined separately from incapacitation and force. We then created two new severity schemes. In the ‘combined outcomes separated tactics’ severity ranking scheme, we considered the three tactics separately. Per scoring methods used by many researchers (e.g., Buddie & Testa, 2005), we combined attempted and complete rape, but considered sexual contact separately (see Table 1). In the ‘separated outcomes and tactics’ severity ranking scheme, attempted and completed rape were considered separately for each tactic (see Table 1).

Once our three severity ranking schemes were devised, we utilized three different scoring methods for each of them (see Table 2). We first used the ‘highest severity rank’ method in which participants were given a score based solely on their most severe experience, ignoring all less severe outcomes (the original scoring procedure; Koss et al., 2007; 2008). This method does not fully capture less severe assault outcomes. Thus, we developed a ‘sum of ranks’ score in which participants were given a severity score that summed the severity ranks of all the different sexual assault outcomes they reported (see Table 2). Although this scoring method incorporates less severe forms of sexual assault events into the overall severity score, it does not account for the frequency of these events. We thus created a ‘sum of frequency of ranks’ score in which the severity rank of each outcome was multiplied by

the number of times the participant reported experiencing that type of outcome and then summed for an overall score. As an example, if a woman has a sexual assault history that consists of experiencing completed rape by force two times, attempted rape by verbal coercion two times, and sexual contact by incapacitation 3 times, she would receive a score ranging from 5 – 32 depending on the scoring method used (see Table 2 for an illustration of calculations).

Study 1 Results

Seventy eight percent of the sample (n = 340) reported a history of sexual victimization. Of those, 81% (n = 277) reported multiple assault experiences. Specifically, 58% of those with a history of sexual victimization (n = 197) reported sexual contact by coercion an average of 2.3 times (SD = 0.8); 67% (n = 228) reported sexual contact by incapacitation (M = 2.9 times; SD = 0.8); and 36% (n = 78) reported sexual contact by threats of force or force (M = 1.6 times; SD = 0.8). For attempted rape, 55% (n = 188) reported attempted rape by coercion (M = 2.5 times; SD = 0.8); 56% (n = 189) reported attempted rape by incapacitation (M = 2.5 times; SD = 0.8); and 18% (n = 61) reported attempted rape by threats of force or force (M = 1.8 times; SD = 0.9). For completed rape, 46% (n = 155) reported completed rape by coercion (M = 2.3 times; SD = 0.9); 61% (n = 206) reported completed rape by incapacitation (M = 2.0 times; SD = 0.9); and 25% (n = 85) reported completed rape by threats of force or force (M = 1.7; SD = 0.8).

Descriptive statistics for and correlations among the nine scoring options for these victims of sexual assault are presented in Table 3. Not surprisingly, the larger the range of the scale, the more variability there was in the data. Regardless of the specific way in which the SES was scored, women's sexual assault victimization history was related to their experiences of relationship abuse, relationship violence, and psychological distress (see Table 4). Correlations between the different sexual assault scoring methods and each associated variable were compared using the computational procedure outlined by Meng, Rosenthal, and Rubin (1992). Specifically, within each convergent validity measure, we compared the correlation for the sexual assault score obtained using the conventional severity ranking scheme and highest severity rank scoring method to all of the other scoring methods (significant differences indicated in Table 4). There was a tendency for the scoring methods that resulted in greater ranges by accounting for multiple types of assaults or the frequency with which each assault type was experienced to be more strongly associated with women's reports of relationship abuse and violence than was the conventional scoring method. The sexual assault scoring methods were not differentially associated with anxiety, PTSD intrusive symptoms, somatization, or depression.

Study 1 Summary

Correlations with convergent measures indicated that all of the scoring methods are valid ways to examine the data. However, this highly victimized sample reported a wide range of sexual assault experiences, suggesting that the conventional scoring method for the SES may not adequately account for the large variability in women's experiences. Use of the conventional severity rankings and scoring method would have resulted in approximately two-thirds of the sample (all completed rape victims) being given the same highest rank

score. Because those who had experienced a completed rape had a wide range and frequency of sexual assault experiences, severity ranking schemes and scoring methods that offer more precision in accounting for this variability may be more appropriate to use with highly victimized samples such as this one.

Study 2: Scoring Men's Sexual Assault Perpetration

Study 2 assessed men's sexual assault perpetration experiences in a broader study that involved an alcohol administration experiment which included reading and responding to a sexually explicit scenario. Participants completed sexual assault perpetration questionnaires and sexual assault severity scores were calculated. Convergent validity was assessed using measures of relationship violence, rape myth attitudes, hostility towards women, impulsivity, and sexual sensation seeking.

Study 2 Method

Participants and procedures—Participants included 313 men aged 21–30 from a large urban community sample. They were recruited using the same methods as Study 1 and were screened on the phone prior to coming into the lab to participate. Men were eligible if they were interested in sexual activity with women, had vaginal or anal intercourse without a condom at least once in the past year, and were moderate drinkers. Men were ineligible if they had a history of negative reactions to drinking, were problem drinkers (as defined by a score of 5 or more on the B-MAST; Pokorny et al., 1972), or had any medical contraindications to alcohol consumption (NIAAA, 2005).

The majority of the sample self-identified as Caucasian (67.4%), whereas 7.8% self-identified as African American/Black, 8.1% as Asian/Pacific Islander, 6.5% as Hispanic/Latino, 1% as Native American, and 15.8% as Multiracial or other. The majority of men had at least some college education or higher (82.1%), were not students (65.0%), and reported a yearly income of $40,999 or below (71.6%). Approximately half (49.7%) were employed. On average, the men in our sample drank 14.6 drinks per week (*SD* = 8.6). The average age of first consensual sexual intercourse was 16.7 years (*SD* = 2.5), and the average number of lifetime vaginal sex partners was 16.0 (*SD* = 18.5; capped at 100).

Measures

Sexual assault perpetration: A modified version of the Sexual Experiences Survey (Abbey et al., 2005) was used to assess prior perpetration of sexual aggression and/or coercion that occurred since the age of 14. Perpetration of unwanted sexual contact (fondling, kissing), attempted intercourse, completed intercourse, and other penetrative or oral sex were assessed for each of 5 different tactics: (1) overwhelming the woman with continual arguments or pressure; (2) telling her lies; (3) making her feel guilty or getting angry; (4) taking advantage of the woman when she was passed out or too intoxicated to consent; and (5) using or threatening to use physical force. Participants indicated the number of times that they did each of these combinations ranging from 0 (*never*) to 5 (*5 or more times*). To be consistent with the version of the SES administered to women in Study 1, we capped frequency at 3 for scoring purposes. As with the female data, for each outcome we combined

responses to the three tactics reflecting verbal coercion (i.e., overwhelming with arguments or pressure, telling lies, and making her feel guilty or getting angry), and we also combined the various types of penetration (e.g., oral, vaginal, anal). The SES was then scored using the same methods described above in Study 1.

Relationship violence: The Dating and Peer Relationship Violence Scale (Swahn, Simon, Arias, & Bossarte, 2008) is a 17-item questionnaire that was used to assess the perpetration of violence and aggression within relationships. The questionnaire asked participants to indicate the frequency with which they had ever done any of the listed acts as the initial aggressor (i.e., not in self-defense and not in play) in the past 12 months on 6-point scales (1 = *once*; 2 = *twice*; 3 = *3–5 times*; 4 = *6–10 times*; 5 = *11–20 times*; 6 = *more than 20 times*). This questionnaire included Physical Aggression (e.g., kicked, scratched) and Psychological Aggression (e.g., insulted them in front of others, put down their looks) subscales. Standard scoring procedures were followed (e.g., Straus, Hamby, Boney-McCoy, & Sugarman, 1996) such that items were summed using the midpoints of each response option (with 25 used for 'more than 20 times') to create an overall frequency for the Psychological and Physical Relationship Violence subscales, both of which had adequate reliability ('s were .67 and .75, respectively).

Rape myth attitudes: Rape myth attitudes were measured using the 19-item Rape Myth Scale (Lonsway & Fitzgerald, 1995) which assessed false beliefs and attitudes about rape used to justify sexual aggression towards women (e.g., "If a woman is raped, often it's because she didn't say 'no' clearly enough"). Scores reflect an average of responses to the 19 items, with each ranging from 1 (*strongly disagree*) to 7 (*strongly agree*). Higher scores were indicative of greater rape myth acceptance. This questionnaire had good reliability (α = .89).

Hostility toward women: Hostility towards women was assessed using the Hostility toward Women Scale (Lonsway & Fitzgerald, 1995) which included items such as "I think that most women would lie just to get ahead." Scores reflect an average of the 10 items ranging from 1 (*strongly disagree*) to 7 (*strongly agree*), with higher scores indicative of greater hostility. This questionnaire had good reliability (α = .85).

Impulsivity: Impulsivity was measured with the Impulsiveness subscale from the Eysenck Personality Scale (Eysenck, Pearson, Easting, & Allsopp, 1985). Participants responded *yes* or *no* to each of 18 items (e.g., "Do you often do things on the spur of the moment?"). The responses were summed such that greater impulsiveness was associated with a higher score. The Impulsiveness subscale had good reliability (α = .80) in our sample.

Sexual sensation seeking: The Sexual Sensation Seeking subscale of the Sensation Seeking Questionnaire (Kalichman & Rompa, 1995) was administered. Participants responded to the 11 items (e.g., "I like wild 'uninhibited' sexual encounters.") using 4-point scales ranging from 1 (*not at all like me*) to 4 (*very much like me*). Items were averaged with higher scores indicating greater sexual sensation seeking (α = .79).

Study 2 Results

Fifty eight percent (n = 180) of the men reported sexual assault perpetration. Of those with a history of perpetration, 71% reported perpetrating multiple perpetration experiences. Specifically, 80% (n = 144) reported sexual contact by coercion (M = 2.3 times, SD = 0.9); 29% (n = 52) reported sexual contact by incapacitation (M = 1.4 times, SD = 0.7); and one participant reported perpetrating sexual contact using threats of force or physical force one time. For attempted rape, 53% (n = 96) reported attempted rape by coercion (M = 2.2 times, SD = 0.8); 8% (n = 14) reported attempted rape by incapacitation (M = 1.1 times, SD = 0.5); and one participant reported perpetrating attempted rape by using threats of force or physical force one time. For completed rape, 58% (n = 105) reported completed rape by coercion (M = 2.3 times, SD = 0.9); 13% (n = 24) reported completed rape by incapacitation (M = 1.7 times, SD = 0.9); and no participants reported perpetrating completed rape through threat or use of physical force.

For those who perpetrated sexual assault, descriptive statistics for and correlations among the nine scoring options are presented in Table 5. As with victimization, the larger the range of the scale, the more variability there was in the data. Men's sexual assault perpetration history was related to their use of psychological and physical relationship violence, rape myth attitudes, hostility towards women, impulsivity, and sexual sensation seeking (see Table 6). Correlations between the sexual assault scores within each convergent validity variable were compared as described in Study 1. However, none of the scoring methods differed significantly from the conventional scoring method for any of these constructs.

Study 2 Summary

As observed with the women's experiences of victimization, the sample reported a fairly wide range of sexual assault perpetration experiences, although the rates of men's reported perpetration were not as high as they were for women's reported victimization. Additionally, correlations with convergent measures indicated that each scoring method has merit. Given the relatively high rates of repeat perpetration, scoring methods that account for event frequency may provide a more comprehensive reflection of the perpetration severity of this sample.

Discussion

Previous research has utilized a variety of methods for scoring the Sexual Experiences Survey (e.g., Brown et al., 2009; Koss et al., 1987; Koss et al., 2008; Malamuth et al., 1991; Ullman et al., 1999a,b). In the present study, we examined three sexual assault severity ranking schemes coupled with three scoring methods that resulted in nine different options for scoring sexual assault severity. We applied these nine scoring options to two different versions of the SES that assessed women's experiences with victimization and men's experiences with perpetration (Abbey et al., 2005; Koss et al., 2007). Findings indicated that all scoring methods demonstrated convergent validity with sexual assault-related constructs. For each of the scoring options, women with greater sexual victimization severity also experienced greater relationship violence and psychological distress. Men with greater perpetration severity were also higher in relationship violence perpetration as well as

personality and attitudinal constructs associated with sexual aggression. For our sample of women, associations with relationship abuse and violence tended to be stronger for the severity scoring options that considered a broader range of outcomes and frequencies. However, these associations did not differ for our sample of men, suggesting that all severity scoring options were similarly associated with indices previously associated with perpetration.

Because all of the scoring options demonstrated convergent validity, it is difficult to recommend one as "the gold standard." In some samples with lower victimization/perpetration rates or greater variability with regards to the most severe assault experienced, more simplistic scoring options may be sufficient. However, in our study of women's victimization, over two-thirds experienced completed rape, many of them experiencing it multiple times through different tactics. If we applied the 'Highest Rank' scoring method using the conventional severity ranking scheme as recommended (Koss et al., 2007; 2008), this coding would not allow us to examine the possible variations *within* this group. By using a severity scoring method that accounts for multiple victimizations through multiple tactics, we improve our ability to examine more nuanced associations for these sexual assault victims. For example, we may be able to ascertain clinically relevant differences between those who experienced incapacitated rapes versus physically forced rapes, which could have important intervention implications. Similarly, almost 75% of perpetrators reported multiple assaults; thus, the use of a scoring method that considers assault frequency may provide useful information for examining risk factors for repeat perpetration or for targeting selected prevention efforts toward the worst offenders.

Investigators may also base their choice of scoring method on their research questions and hypotheses. For example, researchers interested in women's sexual assault resistance may be particularly interested in distinguishing between attempted and completed rape events; thus, the 'separated outcomes and tactics' severity ranking scheme might be the most appropriate. Alternatively, investigators whose primary hypotheses involve differences in perpetrator tactics may find the 'combined outcomes and separated tactics' severity ranking scheme sufficient, particularly in samples with lower assault rates. In addition, the use of a continuous variable (such as the ones created using the 'sum of frequency of ranks' scoring approach) allows for more analytical flexibility compared to the more traditional 'highest severity rank' scoring approach, which produces an ordinal scale that can be problematic for certain analyses. Notably, investigators should take care to consider the distribution associated with each scoring method given the responses of their specific sample. Even in our samples with a majority of participants endorsing victimization/perpetration, most distributions did not meet the assumptions for normality and suggest that transformations or non-parametric analyses should be considered for some analyses. Overall, the new scoring methods allow investigators to be flexible in their severity scoring approach, tailoring their choice to the method that best represents their study sample, hypotheses, and planned analyses.

The different scoring methods by and large do not differ in the strength of their associations with the convergent measures examined in our study. However, it is worth noting that for women, when compared to the conventional scoring method, the scoring methods that

incorporated assault frequency were more highly correlated with measures of relationship violence and abuse. Perhaps women who reported multiple sexual assaults experienced at least some of these assaults within the context of an abusive relationship. Further refinements in the SES, such as assessments of perpetrator-victim relationship type, could inform this speculation. Moreover, this pattern of results may also indicate that conceptually, experiences of repeated sexual victimization may function similarly to frequent instances of relationship abuse and violence. Future research could capitalize on this finding, as well as on recent research trends investigating co-occurring forms of violence (Hamby, McDonald, & Grych, 2014), by exploring the ways in which repeated, even chronic, polyvictimization affects some women's lives.

Further, the lack of differential associations among psychological distress measures between the conventional scoring approach and others suggests that for women, there are other important risk and resilience factors that should be considered beyond the frequency and severity of sexual assault experiences. One that has garnered strong support recently is the ability to effectively regulate one's emotions (Tull, Barrett, McMillan, & Roemer, 2007). Future research should continue to examine the influence of emotion regulation skills and other related factors in the link between victimization experiences and subsequent mental health symptoms.

Among the perpetrators of sexual assault, all severity scoring methods were equally associated with convergent validity measures. Notably, the use of force or threats thereof was rarely reported by the perpetrators in this sample - a common finding when using community samples (Abbey & Jacques-Tiura, 2011). Studies that include a large number of perpetrators who report the use of force may find that scoring methods which distinguish among the three primary perpetrator tactics have higher convergent validity associations compared to the conventional scoring method. It may also be the case that tactic choice and assault frequency are somewhat dependent on factors not assessed in this study, such as situational variables like alcohol consumption. Indeed, research has indicated that perpetrators who used victim intoxication as a tactic reported having consumed significantly more alcohol during the event than did perpetrators who relied on verbal coercion (Abbey & Jacques-Tiura, 2011). Quantity of perpetrator alcohol consumption has also been linked to increasing use of force or aggression during an assault (Abbey, Clinton-Sherrod, McAuslan, Zawacki, & Buck, 2003). Furthermore, other research has found that personality variables not included in this study (e.g., agreeableness, conscientiousness) differentiated perpetrators who used force or victim impairment from those who relied upon verbal coercion as a tactic (Voller & Long, 2010). Future research should explore how other situational and personality variables are associated with the scoring options presented here.

Limitations

The samples used in these studies were comprised of young women and men who reported relatively high rates of victimization (both childhood and adolescent/adult) and perpetration. Thus, associations among the nine scoring options and the convergent measures may differ for samples who report different assault rates or types. Moreover, we cannot disentangle the effects of childhood sexual abuse, adolescent/adult sexual assault, and current/lifetime

intimate partner violence on respondents' mental health. Participants were not recruited based on their victimization/perpetration histories. It is therefore unknown how these victimization scoring methods would apply to women responding to recruitment methods targeting victimization history or to women seeking psychological treatment for sexual victimization and associated sequelae. Likewise, it is unknown how these perpetration scoring methods would apply to adjudicated perpetrators. Additionally, the samples used in our study were required to meet very specific eligibility criteria regarding age, alcohol consumption, and sexual risk behavior. Because of these criteria, and because the final samples were predominantly Caucasian, future research should validate these scoring options with other, more diverse samples.

Some of the measures used to demonstrate convergent validity referenced different time periods. We used different, but highly similar, measures of sexual assault experiences for victimization and perpetration. Additionally, these new scoring options do not remedy any limitations associated with the measures themselves, such as self-reported perpetration's association with social desirability or the inability to distinguish whether endorsed outcomes or tactics occurred during multiple events (e.g., a woman was vaginally raped in one incident and orally raped in a different incident) or during a single event (e.g., a woman was both vaginally and orally raped by the same perpetrator during one incident). That noted, the intention of the proposed scoring options is to provide improved estimates of sexual assault *severity* rather than estimates of event prevalence. Because an incident that contains multiple forms of victimization/perpetration may indeed be considered more severe than an incident with a single form, this particular limitation is of less concern. Also, if a participant experienced a particular event more than three times, the measures do not allow for actual frequencies to be calculated given that sexual assault occurrences are capped at 3. However, accounting for frequencies in any way is an improvement over the conventional scoring method. Additionally, because the SES does not assess other incident characteristics likely important to assault severity (e.g., victim-offender relationship, weapon presence, number of offenders), the present scoring options cannot incorporate these variables. Future research should investigate the merit of including such characteristics into sexual assault assessments.

Research Implications

Any quantitative measure of sexual assault severity is, by its nature, reductionistic and cannot fully represent the variation and nuances involved in sexual assault incidents. However, when studying more highly victimized or aggressive samples, estimates of severity that capture greater specificity regarding their experiences will enable investigators to pose more specific research questions and to test these questions through more sophisticated statistical techniques than is currently the case. In this study, we developed and assessed novel severity ranking schemes and scoring methods in order to augment conventional scoring procedures with new scoring options that facilitate more precise representation of the wealth of information gathered through sexual assault assessment instruments. As these instruments continue to be refined and enhanced over time, so too should their scoring systems, thereby enabling researchers to capitalize fully on these important advances in the assessment of sexual assault.

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References

Abbey A. Alcohol's role in sexual violence perpetration: Theoretical explanations, existing evidence and future directions. Drug and Alcohol Review. 2011; 30:481–489. [PubMed: 21896070]

Abbey A, Clinton-Sherrod AM, McAuslan P, Zawacki T, Buck PO. The relationship between the quantity of alcohol consumed and the severity of sexual assault committed by college men. Journal of Interpersonal Violence. 2003; 18:813–833. [PubMed: 14675511]

Abbey A, Jacques-Tirua AJ. Sexual assault perpetrators' tactics: Associations with their personal characteristics and aspects of the incident. Journal of Interpersonal Violence. 2011; 26:2866–2889. [PubMed: 21156685]

Abbey A, Parkhill MR, Koss MP. The effects of frame of reference on responses to questions about sexual assault victimization and perpetration. Psychology of Women Quarterly. 2005; 29:364–373.

Asner-Self KK, Schreiber JB, Marotta SA. A cross-cultural analysis of the Brief Symptom Inventory-18. Cultural Diversity and Ethnic Minority Psychology. 2006; 12:367–375. [PubMed: 16719583]

Black, MC.; Basile, KC.; Breiding, MJ.; Smith, SG.; Walters, ML.; Merrick, MT.; Chen, J.; Stevens, MR. The National Intimate Partner and Sexual Violence Survey (NISVS): 2010 Summary Report. Atlanta, GA: National Center for Injury Prevention and Control, Centers for Disease Control and Prevention; 2011.

Briere J, Elliot DM, Harris K, Cotman A. Trauma Symptom Inventory: Psychometrics and association with childhood and adult victimization in clinical samples. Journal of Interpersonal Violence. 1995; 10:387–401.

Brown AL, Testa M, Messman-Moore TL. Psychological consequences of sexual victimization resulting from force, incapacitation, or verbal coercion. Violence Against Women. 2009; 15:898–919. [PubMed: 19502576]

Buddy AM, Testa M. Rates and predictors of sexual aggression among students and nonstudents. Journal of Interpersonal Violence. 2005; 20:713–724. [PubMed: 15851538]

Cook SL, Gidycz CA, Koss MP, Murphy M. Emerging issues in the measurement of rape victimization. Violence against Women. 2011; 17:201–218. [PubMed: 21307030]

Eysenck SB, Pearson PR, Easting G, Allsopp JF. Age norms for impulsiveness, venturesomeness and empathy in adults. Personality and Individual Differences. 1985; 6:613–619.

Fisher BS. The effects of survey question wording on rape estimates: Evidence from a quasi-experimental design. Violence against Women. 2009; 15:133–147. [PubMed: 19126832]

Hamby S, McDonald R, Grych J. Trends in violence research: An update through 2013. Psychology of Violence. 2014; 4:1–7.

Jozkowski KN, Sanders SA. Health and sexual outcomes of women who have experienced forced or coercive sex. Women & Health. 2012; 52:101–118. [PubMed: 22458288]

Kalichman SC, Rompa D. Sexual sensation seeking and sexual compulsivity scales: Reliability, validity, and predicting HIV risk behavior. Journal of Personality Assessment. 1995; 65:586–601. [PubMed: 8609589]

Koss MP. Detecting the scope of rape: A review of prevalence research methods. Journal of Interpersonal Violence. 1993; 8(2):198–222.

Koss MP, Abbey A, Campbell R, Cook S, Norris J, Testa M, White J. Revising the SES: A collaborative process to improve assessment of sexual aggression and victimization. Psychology of Women Quarterly. 2007; 31(4):357–370.

Koss MP, Abbey A, Campbell R, Cook S, Norris J, Testa M, White J. Erratum: Revising the SES: A collaborative process to improve assessment of sexual aggression and victimization. Psychology of Women Quarterly. 2008; 32:493.

Koss MP, Gidycz CA, Wisniewski N. The scope of rape: incidence and prevalence of sexual aggression and victimization in a national sample of higher education students. Journal of Consulting and Clinical Psychology. 1987; 55(2):162. [PubMed: 3494755]

Koss MP, Oros CJ. Sexual Experiences Survey: a research instrument investigating sexual aggression and victimization. Journal of Consulting and Clinical Psychology. 1982; 50(3):455. [PubMed: 7096751]

Lisak D, Miller PM. Repeat rape and multiple offending among undetected rapists. Violence and Victims. 2002; 17:73–84. [PubMed: 11991158]

Lonsway KA, Fitzgerald LF. Attitudinal antecedents of rape myth acceptance: A theoretical and empirical reexamination. Journal of Personality and Social Psychology. 1995; 68:704–711.

Malamuth NM, Sockloskie RJ, Koss MP, Tanaka JS. Characteristics of aggressors against women: Testing a model using a national sample of college students. Journal of Consulting and Clinical Psychology. 1991; 59:670–681. [PubMed: 1955602]

Meng X-L, Rosenthal R, Rubin DB. Comparing correlated correlation a coefficients. Psychological Bulletin. 1992; 111:172–175.

National Institute on Alcohol Abuse and Alcoholism. Recommended Council Guidelines on Ethyl Alcohol Administration in Human Experimentation. Rockville, MD: Department of Health and Human Services; 2005.

Pokorny AD, Miller BA, Kaplan HB. The brief MAST: A shortened version of the Michigan Alcoholism Screening Test. American Journal of Psychiatry. 1972; 129:342–345. [PubMed: 5053717]

Schacht RL, George WH, Davis KC, Heiman JR, Norris J, Stoner SA, Kajumulo KF. Sexual abuse history, alcohol intoxication, and women's sexual risk behavior. Archives of Sexual Behavior. 2010; 39:898–906. [PubMed: 19728070]

Smith PH, Earp JA, DeVellis R. Measuring battering: Development of the Women's Experience with Battering (WEB) Scale. Women's Health: Research on Gender, Behavior, and Policy. 1995; 1:273–288.

Straus MA, Hamby SL, Boney-McCoy S, Sugarman DB. The Revised Conflict Tactics Scale (CTS2). Journal of Family Issues. 1996; 17:283–316.

Swahn MH, Simon TR, Arias I, Bossarte RM. Measuring sex differences in violence victimization and perpetration within date and same-sex peer relationships. Journal of Interpersonal Violence. 2008; 23:1120–1138. [PubMed: 18319366]

Testa M, VanZile-Tamsen C, Livingston JA, Koss MP. Assessing women's experiences of sexual aggression using the Sexual Experiences Survey: Evidence for validity and implications for research. Psychology of Women Quarterly. 2004; 28(3):256–265.

Tull MT, Barrett HM, McMillan ES, Roemer L. A preliminary investigation of the relationship between emotion regulation difficulties and posttraumatic stress symptoms. Behavior Therapy. 2007; 38:303–313. [PubMed: 17697854]

Ullman SE, Karabatsos G, Koss MP. Alcohol and sexual aggression in a national sample of college men. Psychology of Women Quarterly. 1999a; 23:673–689.

Ullman SE, Karabatsos G, Koss MP. Alcohol and sexual assault in a national sample of college women. Journal of Interpersonal Violence. 1999a; 14:603–625.

Voller EK, Long PJ. Sexual assault and rape perpetration by college men: The role of the big five personality traits. Journal of Interpersonal Violence. 2010; 25:457–480. [PubMed: 19443734]

Whitmire, LE.; Harlow, LL.; Quina, K.; Morokoff, PJ. Childhood Trauma and HIV: Women at Risk. Philadelphia: Brunner/Mazel; 1999.

Table 1

Severity Ranking Scheme Descriptions

Severity Rank	Outcomes and Tactics
	Conventional severity ranking scheme
5	Completed rape by intoxication or physical force
4	Attempted rape by intoxication or physical force
3	Completed rape by verbal coercion
2	Attempted rape by verbal coercion
1	Sexual contact by verbal coercion, intoxication, or physical force
0	No history of sexual assault
	Combined outcomes and separated tactics severity ranking scheme
6	Attempted or completed rape by physical force
5	Attempted or completed rape by intoxication
4	Attempted or completed rape by verbal coercion
3	Sexual contact by physical force
2	Sexual contact by intoxication
1	Sexual contact by verbal coercion
0	No history of sexual assault
	Separated outcomes and tactics severity ranking scheme
9	Completed rape by physical force
8	Completed rape by intoxication
7	Completed rape by verbal coercion
6	Attempted rape by physical force
5	Attempted rape by intoxication
4	Attempted rape by verbal coercion
3	Sexual contact by physical force
2	Sexual contact by intoxication
1	Sexual contact by verbal coercion
0	No history of sexual assault

Table 2

Scoring Methods and Scoring Illustrations

Outcome and tactics	Severity Ranking Schemes			Example Self-Report
	Conventional Method	Combined Outcomes Separated Tactics	Separated Outcomes and Tactics	
Completed rape by force	5	6	9	2 times
Completed rape by incapacitation	5	5	8	0
Completed rape by verbal coercion	3	4	7	0
Attempted rape by force	4	6	6	0
Attempted rape by incapacitation	4	5	5	0
Attempted rape by verbal coercion	2	4	4	2 times
Sexual contact by force	1	3	3	0
Sexual contact by incapacitation	1	2	2	3 times
Sexual contact by verbal coercion	1	1	1	0
Scoring Illustrations Using the Example Self-Report				
Scoring methods				
Highest severity rank	**5**	**6**	**9**	
Sum of ranks	5 + 2 + 1 = **8**	6 + 4 + 2 = **12**	9 + 4 + 2 = **15**	
Sum of frequency of ranks	(5*2) + (2*2) + (1*3) = **17**	(6*2) + (4*2) + (2*3) = **26**	(9*2) + (4*2) + (2*3) = **32**	

Table 3

Descriptive Statistics for and Correlations among each of the Sexual Assault Severity Scales for Victims (n = 340) of Sexual Assault

Scoring methods	1.	2.	3.	4.	5.	6.	7.	8.	9.
Conventional severity ranking scheme									
1. Highest severity rank	-								
2. Sum of ranks	.52	-							
3. Sum of frequency of ranks	.53	.91	-						
Combined outcomes separated tactics severity ranking scheme									
4. Highest severity rank	.53	.43	.51	-					
5. Sum of ranks	.54	.72	.78	.80	-				
6. Sum of frequency of ranks	.55	.81	.90	.68	.91	-			
Separated outcomes and tactics severity ranking scheme									
7. Highest severity rank	.82	.52	.57	.77	.69	.64	-		
8. Sum of ranks	.67	.86	.87	.69	.91	.92	.76	-	
9. Sum of frequency of ranks	.62	.86	.94	.62	.85	.96	.68	.94	-
Mean (SD)	4.7 (0.6)	10.5 (4.0)	24.1 (13.5)	5.4 (0.6)	12.4 (4.9)	27.1 (15.1)	7.8 (1.2)	21.5 (10.7)	44.4 (30.2)
Median	5.0	11.0	24.0	5.0	12.0	27.0	8.0	20.0	40.0
Observed maximum	5	15	45	6	21	63	9	45	135
Possible maximum	5	15	45	6	21	63	9	45	135

Note. Only participants with a history of sexual assault victimization were included. Correlations were conducted using Spearman's Rank Order Correlation and all correlations were significant at $p < .001$.

Table 4

Convergent Validity of Sexual Assault Severity Scales for Women: Correlations

Scoring methods	Relationship Abuse	Relationship Violence	Somatization	Depression	Anxiety	PTSD Intrusive Experiences
Conventional severity ranking scheme						
Highest severity rank	.29***	.31***	.21***	.13**	.14**	.24***
Sum of ranks	.30***	.34***	.25***	.16**	.18***	.29***
Sum of frequency of ranks	.34***	.39***1	.25***	.17***	.21***	.31***
Combined outcomes separated tactics severity ranking scheme						
Highest severity rank	.35***	.34***	.20**	.14**	.15**	.28***
Sum of ranks	.37***1	.38***	.21***	.15**	.17***	.30***
Sum of frequency of ranks	.37***1	.40***1	.23***	.15**	.19***	.30***
Separated outcomes and tactics severity ranking scheme						
Highest severity rank	.34***	.35***	.21***	.13**	.15**	.27***
Sum of ranks	.35***	.37***	.25***	.16**	.19***	.29***
Sum of frequency of ranks	.37***1	.39***1	.25***	.16**	.21***	.30***
	M = 18.4 *SD* = 12.0	*M* = 1.4 *SD* = 0.5	*M* = 1.3 *SD* = 0.4	*M* = 1.9 *SD* = 0.8	*M* = 1.6 *SD* = 0.6	*M* = 1.6 *SD* = 0.5

Note. *M* = mean; *SD* = standard deviation. Correlations were conducted using Spearman's Rank Order Correlation.

** $p < .01$.

*** $p < .001$.

1 Comparisons of correlation differences significant at $p < .05$.

Table 5

Descriptive Statistics for and Correlations among each of the Sexual Assault Severity Scales for Perpetrators (n = 180) of Sexual Assault

Scoring methods	**1.**	**2.**	**3.**	**4.**	**5.**	**6.**	**7.**	**8.**	**9.**
Conventional severity ranking scheme									
1. Highest severity rank	-								
2. Sum of ranks	.93	-							
3. Sum of frequency of ranks	.78	.88	-						
Combined outcomes separated tactics severity ranking scheme									
4. Highest severity rank	.92	.86	.72	-					
5. Sum of ranks	.82	.85	.75	.89	-				
6. Sum of frequency of ranks	.75	.84	.93	.77	.84	-			
Separated outcomes and tactics severity ranking scheme									
7. Highest severity rank	.94	.89	.78	.84	.75	.74	-		
8. Sum of ranks	.90	.98	.89	.83	.84	.86	.90	-	
9. Sum of frequency of ranks	.77	.86	.99	.71	.73	.92	.80	.88	-
Mean (SD)	2.8 (1.3)	4.7 (3.2)	9.8 (7.6)	3.6 (1.3)	5.4 (3.2)	11.5 (7.9)	5.5 (2.5)	9.1 (6.2)	18.8 (15.2)
Median	3.0	4.0	9.0	4.0	5.0	12.0	7.0	8.0	15.5
Observed maximum	5	15	33	6	15	36	8	27	66
Possible maximum	5	15	45	6	21	63	9	45	135

Note. Only participants with a history of sexual assault perpetration were included. Correlations were conducted using Spearman's Rank Order Correlation and all were significant at $p < .001$.

Table 6

Convergent Validity of Sexual Assault Severity Scales for Men: Correlations

Scale	Psychological Relationship Violence	Physical Relationship Violence	Rape Myth Attitudes	Hostility Toward Women	Impulsivity	Sexual Sensation Seeking
Conventional severity ranking scheme						
Highest severity rank	.31***	.22***	.29***	.20***	.17**	.21***
Sum of ranks	.31***	.21***	.29***	.20***	.18**	.22***
Sum of frequency of ranks	.33***	.20***	.29***	.21***	.21***	.26***
Combined outcomes separated tactics severity ranking scheme						
Highest severity rank	.31***	.23***	.29***	.20***	.17**	.21***
Sum of ranks	.32***	.24***	.30***	.20***	.19**	.22***
Sum of frequency of ranks	.34***	.22***	.30***	.19**	.21***	.26***
Separated outcomes and tactics severity ranking scheme						
Highest severity rank	.30***	.21***	.29***	.19**	.16**	.21***
Sum of ranks	.31***	.23***	.30***	.19**	.17**	.22***
Sum of frequency of ranks	.34***	.21***	.29***	.20***	.20***	.26***
	M = 4.4 *SD* = 10.0	*M* = 0.7 *SD* = 3.8	*M* = 1.8 *SD* = 0.8	*M* = 2.9 *SD* = 1.1	*M* = 7.3 *SD* = 4.1	*M* = 3.0 *SD* = 0.5

Note. M = mean; SD = standard deviation. Correlations were conducted using Spearman's Rank Order Correlation.

** $p < .01$.

*** $p < .001$.