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## Development and Validation of the Sexual Contingent Self-Worth Scale

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*Sexual contingent self-worth (CSW) refers to self-worth that is dependent on maintaining a sexual relationship, and has not been studied previously. This novel construct may have implications for sexual, relationship, and psychological well-being, because it could affect the cognitions, affect, and behaviors of individuals in sexual relationships. The purpose of this study was to develop the Sexual Contingent Self-Worth Scale and examine its reliability and validity in community samples. Two separate online studies (N = 329 and N = 282) included men and women who were in committed, sexually active relationships. The Sexual CSW Scale was adapted from a validated measure of relationship CSW. In Study 1, participants completed the Sexual CSW Scale, whereas in Study 2, participants also responded to standardized measures of related constructs. In addition, participants completed the Sexual CSW Scale again two weeks later in Study 2. Factor analysis yielded two subscales: (a) sexual CSW dependent on positive sexual events in the relationship and (b) sexual CSW dependent on negative sexual events. Results indicated good construct validity, incremental validity, internal consistency, and test-retest reliability for the Sexual CSW Scale. This research contributes to the fields of both CSW and sexuality by introducing a novel domain of CSW.*

### Introduction

The sexual relationship is important for the well-being of a romantic relationship, as well as for the overall psychological health of an individual. Specifically, greater sexual satisfaction and functioning have been associated with greater relationship satisfaction, love, commitment, and relationship stability (Byers, 2005; Sprecher, 2002), whereas experiencing a sexual dysfunction has been linked to increased anxiety, depression, and a poorer quality of life (Althof, 2002; Desrochers, Bergeron, Landry, & Jodoin, 2008). Previous research has also shown that poorer sexual functioning is related to increased negative emotions toward oneself and decreased self-esteem in relation to one's sexuality (Desrochers et al., 2008; Gates & Galask, 2001; O'Leary et al., 2006). Thus, the sexual relationship significantly impacts an individual's sense of self.

Self-esteem is based on an individual's judgment of the self as either positive or negative. Similarly, self-worth is the belief in one's own intrinsic value. Thus, self-esteem and self-worth both refer to evaluations of the self, and these terms are often used interchangeably in the literature (e.g., Knee, Canevello, Bush, & Cook, 2008). Research has suggested that the *pursuit* of self-esteem is more important for predicting potential consequences than whether self-esteem itself is high or low (Crocker & Park, 2004). Contingent self-worth (CSW) is the pursuit of self-esteem via a particular domain in one's life, such as others' approval (Crocker & Wolfe, 2001). Greater CSW may have positive and negative consequences for well-being based on one's perceived success or failure in these domains. For example, greater relationship CSW, defined as self-worth that is dependent on maintaining a romantic relationship (Knee et al., 2008), has been linked to intrapersonal and interpersonal outcomes (Park & Crocker, 2005). Individuals with greater relationship CSW experience favorable outcomes (e.g., increased happiness and decreased anxiety) when positive events occur in their relationship (Knee et al., 2008). However,

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when an individual has greater relationship CSW, the relationship becomes an instrument for validating self-worth (Park & Crocker, 2005), which can lead to more stress and conflict in the relationship (Crocker, 2002) and reduced self-esteem (Knee et al., 2008). Further, higher relationship CSW has been linked to more or less sexual satisfaction, depending on whether sexual motives were based on a desire to pursue intimacy or to avoid partner disapproval, respectively (Sanchez, Moss-Racusin, Phelan, & Crocker, 2011). The pursuit of self-worth via the sexual relationship, specifically, has not been previously examined.

### Sexual Contingent Self-worth

The sexual relationship may be a domain of CSW that is particularly relevant, given that the sexual relationship is a core component to sustaining intimate relationships. Christopher and Sprecher (2000) proposed that individuals attempt to maintain their relationship through their sexual relationship. In fact, greater sexual satisfaction has been associated with several components of marital well-being (Byers, 2005; Henderson-King & Veroff, 1994). Previous research has also found that individuals sometimes agree to unwanted sexual activity to maintain their romantic relationships and to promote intimacy (O'Sullivan & Gaines, 1998; Shotland & Hunter, 1995). Although sexual relationships often occur within the context of romantic relationships, the sexual relationship is distinct from the general intimate relationship (Byers, 2005; Diamond, 2004; Smith & Pukall, 2011). For example, sexual desire and romantic love are associated with different subjective experiences (e.g., wanting to engage in sexual activity versus emotional feelings of attachment) and neurobiological substrates (Diamond, 2004). Indeed, there is evidence that in people with sexual dysfunction relationship satisfaction may remain within norms while sexual satisfaction is significantly lower than in individuals without dysfunction (Smith & Pukall, 2011). Thus, the sexual relationship may be another important and distinct domain of CSW.

Sexual CSW, or the pursuit of self-worth via the sexual relationship, has not been previously defined, nor is there a validated scale to measure it. Although sexual CSW is a novel construct, prior research supports a connection between sexual self-esteem and sexual outcomes. Researchers have found that both women and men report lower sexual self-esteem when they suffer from sexual difficulties (Gates & Galask, 2001; O'Leary et al., 2006). Further, lower sexual self-esteem has been linked to feelings of worthlessness and undesirability as a sexual partner (Hassouneh-Phillips & McNeff, 2005). These findings provide evidence that the sexual relationship may be a source of important information for individuals evaluating their self-worth.

The objective of this study was to develop a measure of sexual CSW and to assess the validity and reliability of the Sexual Contingent Self-Worth Scale. A well-validated

measure of relationship CSW, the Relationship Contingent Self-Esteem Scale (Knee et al., 2008), was adapted for the sexual context to develop the Sexual CSW Scale. In Study 1 we conducted an exploratory factor analysis (EFA). In Study 2 we conducted a confirmatory factor analysis (CFA) using a separate sample and then examined the validity and reliability of the measure.

## Study 1

### Objectives and Hypotheses

The objective of Study 1 was to develop a measure of sexual CSW and explore its factor structure. Because sexual CSW is a novel construct, we had no hypotheses regarding the factor structure of the scale. We hypothesized that the Sexual CSW Scale would have good internal consistency.

### Method

**Participants.** A total of 372 American participants were recruited using Amazon Mechanical Turk (MTurk), an online recruitment Web site. MTurk is an excellent recruitment tool because of the diversity of participants, the quality of responses, and the amount of data that can be collected in a short period of time (Buhrmester, Kwang, & Gosling, 2011). To be eligible for the study, participants had to be English-speaking adults between the ages of 18 and 45 who had been in a committed relationship with the same person for at least three months, and had engaged in sexual activity (defined as nongenital caressing, kissing, manual/oral stimulation, and/or vaginal/anal intercourse) with that partner at least once in the past four weeks. We aimed to examine sexual CSW in adult, committed sexual relationships because sexuality may differ in adolescent and/or casual sexual relationships (Furman, Brown, & Feiring, 1999; Regan, Levin, Sprecher, Christopher, & Gate, 2000). The age limit of 45 years old was selected because previous research has indicated that sexual functioning begins to decline in middle age (Araujo, Johannes, Feldman, Derby, & McKinlay, 2000; Dennerstein, Dudley, & Burger, 2001). We wanted to ensure that all participants were in a sexually active relationship so that they would have the opportunity to base their self-worth on this domain of their lives.

Of those who replied to the online recruitment, 30 were ineligible (three because they exceeded the age limit, three because they had not engaged in sexual activity, and 24 who were either single or in a casual dating relationship). We included one attention check asking participants to select a certain response, which was embedded into the Sexual CSW Scale. In line with recommendations for conducting online research (Gosling & Mason, 2015), 13 participants were excluded from the sample because they did not pass the attention check. Those participants who did not pass the attention checks were more likely to be male,  $\chi^2 [2] = 8.03$ ,  $p < 0.05$ ,  $\phi = 0.15$ ,  $p = 0.02$ , and reported lower Sexual

CSW Scale total scores,  $t = -4.52$ ,  $df = 340$ ,  $p < 0.001$ , 95% CI =  $-12.17$  to  $-4.79$ ,  $d = 1.28$ ,  $r = 0.54$ . However, these group differences may not be valid, given these participants appeared to be responding at random. The final sample size was 329.

**Measures.**

*Sociodemographics.* Participants completed questions about their age, gender, level of education, culture, relationship status, relationship length, as well as the gender of their partner.

*Sexual contingent self-worth.* The Sexual Contingent Self-Worth Scale was used to assess level of sexual CSW. We developed this scale by adapting all of the items from the Relationship Contingent Self-Esteem Scale (Knee et al., 2008) to a sexual context. We adhered to the International Test Commission’s guidelines for adapting psychometric scales (Hambleton, Merenda, & Spielberger, 2004). An expert in the field of sexual health and additional junior scholars confirmed that all of the items of the Sexual CSW Scale were appropriate for a sexual context. The original scale contained 11 items that are rated from 1 (*Not at all like me*) to 5 (*Very much like me*). Higher scores indicate greater sexual CSW.

**Procedure.** An advertisement was posted on the MTurk site containing information about the study and a link to the online survey. The advertisement told potential participants that they would be completing a study that was validating a new measure of sexual health and relationship factors. Those who were interested in participating clicked on the link, which directed them to a secure online survey program (Qualtrics Research Suite), where they provided consent. Participants were told that they could withdraw at any time before submitting the survey. Participants who met the eligibility criteria received the study measures described. Consistent with MTurk standards, participants were compensated \$0.25 for completing the survey.

**Results**

**Participant Characteristics.** Descriptive statistics for the sample are shown in Table 1. Of those in the final sample ( $N = 329$ ), 45% identified as male and 55% identified as female, and one person chose not to specify gender. The mean age for participants was 30.19 ( $SD = 7.05$ ). The majority of participants were White (75%), in a mixed-gender relationship (92%), and were married or cohabiting (72%). The average length of these relationships was five years and 10 months ( $SD = 5$  years, 4 months).

**Structure of the Sexual CSW Scale.** A principal axis factor (PAF) analysis with an oblique rotation was conducted on the sample of 329 participants. An oblique rotation was selected because all of the items on the Sexual CSW Scale were significantly correlated with one another.

**Table 1.** Study 1 Descriptive Statistics and Correlations With Sexual CSW Scale

Characteristic or Measure	M (Range) or N	SD or %
Age (years; $n = 329$ )	30.19 (18–45)	7.05
Gender ( $n = 329$ )		
Male	147	44.68%
Female	181	55.02%
Not specified	1	0.30%
Current partner’s gender ( $n = 327$ )		
Mixed gender	301	92.05%
Same gender	26	7.95%
Education level (years; $n = 326$ )	15.31 (6–30)	2.63
Culture ( $n = 329$ ) <sup>a</sup>		
White American	248	75.38%
Asian	21	6.38%
Black American	29	8.81%
European	4	0.01%
Latin American/South American	15	0.05%
Caribbean	4	0.01%
Multicultural	4	0.01%
Relationship status ( $n = 329$ )		
In a committed relationship; not cohabiting	93	28.27%
In a committed relationship; cohabiting	115	34.95%
Married	121	36.78%
Relationship length (months; $n = 329$ )	70.10 (3–300)	63.95
Sexual Contingent Self-Worth ( $n = 329$ )		
Total	37.09 (10–50)	8.30
Positive sexual events subscale	20.07 (5–25)	4.39
Negative sexual events subscale	17.02 (5–25)	4.91

Note.  $M$  = mean of sample;  $N$  = total number of observations;  $SD$  = standard deviation; % = percentage of sample. Means for the Sexual CSW Scale are based on the version following PAF (i.e., Item 3 was removed).

<sup>a</sup> The cultures reported are those that participants selected; however, the following options were also provided: First Nations, African, Australian/Oceanian, and Middle Eastern.

The sample was deemed adequate for factor analysis because the Kaiser-Meyer-Olkin measure was greater than 0.80 and Bartlett’s test of sphericity was significant (Bartlett, 1954; Kaiser, 1974). The factors were extracted based on a parallel analysis, which compared observed eigenvalues to critical mean eigenvalues and 95th percentile eigenvalues, as well as an examination of the scree plot. Both methods of extracting factors suggested the presence of a two-factor solution. The factor loadings along with the Sexual CSW Scale items are displayed in Table 2. The first factor, labeled positive sexual events, had an eigenvalue of 5.84 and accounted for 53.07% of the total variance. The second factor, labeled negative sexual events, emerged with an eigenvalue of 1.53, accounting for 13.88% of the total variance. Item 3 had factor loadings smaller than 0.5 for both factors and was removed from the scale, while none of the remaining items cross-loaded (greater than 0.32) on the two factors (Tabachnick & Fidell, 2007). In each of the identified factors, five items had factor loadings that were greater than 0.5, and the item content was differentiated according to the factor labels. Therefore, we were able to derive two distinct subscales: (a) the items on the positive sexual events subscale are focused on the degree to which

**Table 2.** *Items on the Sexual Contingent Self-Worth Scale and Study 1 Exploratory Factor Analysis Loadings*

Items	Factor 1: Positive Sexual Events	Factor 2: Negative Sexual Events	<i>M</i>	<i>SD</i>
I feel better about myself when it seems like my partner and I are sexually connected. (Item 2)	0.98	-0.11	4.33	0.93
I feel better about myself when it seems like my partner and I are getting along sexually. (Item 1)	0.96	-0.07	4.30	0.95
When my sexual relationship is going well, I feel better about myself overall. (Item 5)	0.80	0.10	4.13	1.03
I feel better about myself when I feel that my partner and I have a good sexual relationship. (Item 10)	0.80	0.08	4.21	1.00
My feelings of self-worth are based on how well things are going in my sexual relationship. (Item 4) <sup>+</sup>	0.50	0.26	3.10	1.32
My self-worth is unaffected when things go wrong in my sexual relationship. (Item 7)[r]	-0.05	0.83	3.42	1.24
When my sexual relationship is going bad, my feelings of self-worth remain unaffected. (Item 9)[r]	-0.07	0.82	3.31	1.20
If my sexual relationship were to end tomorrow, I would not let it affect how I feel about myself. (Item 6)[r]	-0.04	0.72	3.46	1.32
When my partner and I fight about a sexual issue, I feel bad about myself in general. (Item 8)	-0.02	0.65	3.24	1.27
When my partner criticizes me or seems disappointed in me for something about our sexual relationship, it makes me feel really bad. (Item 11) <sup>+</sup>	0.09	0.56	3.59	1.27
An important measure of my self-worth is how successful my sex life is with my partner. (Item 3) <sup>+</sup>	0.34	0.47	3.37	1.27

Note. Items are rated on a scale of 1 (*Not at all like me*) to 5 (*Very much like me*); [r] = reverse-scored item; <sup>+</sup>Items that are not included in the final measure from Study 2.

self-worth is improved based on positive events in the sexual relationship (e.g., “When my sexual relationship is going well, I feel better about myself overall”), and (b) the negative sexual events subscale measures the degree to which an individual’s self-worth is decreased by negative sexual events (e.g., “When my partner and I fight about a

sexual issue, I feel bad about myself in general”). The two subscales were moderately correlated,  $r = 0.59$ ,  $p < .001$ .

**Reliability: Internal Consistency.** The internal consistency was good for the Sexual CSW Scale total ( $\alpha = 0.89$ ), the negative sexual events subscale ( $\alpha = 0.84$ ), and the positive sexual events subscale ( $\alpha = 0.89$ ).

## Summary

The results showed that the Sexual CSW Scale was composed of two distinct factors with five items each: self-worth focused on positive events in the sexual relationship (i.e., positive sexual events subscale) and self-worth focused on negative sexual events (i.e., negative sexual events subscale). There was also evidence supporting the use of a total score, which combines these two subscales. We found good internal consistency for the Sexual CSW Scale total and subscales.

## Study 2

### Objectives

The objective of Study 2 was to confirm the factor structure of the Sexual CSW Scale using CFA in a separate sample and to examine the validity and reliability of the measure. The Relationship Contingent Self-Esteem Scale has been associated with several interpersonal and intrapersonal variables (Knee et al., 2008). It was expected that sexual CSW would be associated with comparable measures that are specific to the context of the sexual relationship.

### Associations With Sexual CSW

**Domains of Contingent Self-Worth.** Individuals who base the assessment of their self-worth on a particular domain in their lives tend to have self-worth contingent on other domains as well (Crocker & Wolfe, 2001; Knee et al., 2008). We anticipated that individuals with higher sexual CSW would also base their self-worth on other domains of CSW that require validation from external sources. As noted, relationship variables are often associated with sexual variables, supporting the expected correlation between sexual CSW and relationship CSW (Byers, 2005; Christopher & Sprecher, 2000). In addition, sexual outcomes (e.g., less frequent sexual desire and lower arousal) have been linked to both negative evaluations of physical attributes and the tendency to seek approval from romantic partners (Cash, Maikkula, & Yamamiya, 2004; Furnham, Badmin, & Sneade, 2002; Olivardia, Pope, Borowiecki, & Cohane, 2004; O’Sullivan & Gaines, 1998). Thus, individuals with higher sexual CSW may be more likely to evaluate their self-worth based on perceptions of their own appearance and others’ approval.



**Self-Evaluation.** Theoretically, individuals with higher sexual CSW engage in self-evaluation based on their perceived success or failure in maintaining a sexual relationship. Similarly, self-consciousness is based on a heightened awareness of one's own thoughts and feelings, as well as others' perceptions of the self (Fenigstein, Scheier, & Buss, 1975), and is associated with greater relationship CSW (Knee et al., 2008). We expected that those with greater sexual CSW would have greater sexual self-consciousness, which is self-awareness of one's own sexuality and sexual functioning (van Lankveld, van den Hout, & Schouten, 2004).

**Sexual Approach Styles.** We expected that sexual CSW would be associated with particular sexual approach styles (i.e., how an individual approaches and/or perceives the sexual relationship; Snell, 1992). Specifically, we expected that greater sexual CSW would be related to a dependent/possessive sexual approach style given that individuals with this style are preoccupied with the sexual relationship and seek validation from external sources (Snell, 1992). We also expected higher sexual CSW to be associated with a selfless sexual approach style (i.e., individuals neglecting their own needs in an attempt to please their sexual partners; Snell, 1992) because individuals with higher CSW tend to become so determined to be successful in the contingent domain that they sacrifice their own needs (Crocker & Park, 2004). Thus, those with greater sexual CSW may ignore their own needs to satisfy the needs of their sexual partners, demonstrating a selfless sexual approach style.

**Sexual Problems.** When individuals perceive failures in a contingent domain, these failures are viewed as direct attacks on self-esteem and subsequently lead to more negative interpersonal and health outcomes (Crocker & Park, 2004). Thus, individuals with perceived difficulties in a contingent domain may become particularly focused on improving that domain to compensate for their shortcomings. In the context of sexual CSW, individuals with sexual problems may become overly focused on their sexual functioning. Alternatively, those who have higher CSW in a particular domain may be more likely to perceive failures in the contingent domain. For example, greater body weight CSW has been associated with higher subjective ratings of being overweight (Clabaugh, Karpinski, & Griffin, 2008). In the context of sexual problems, men experiencing a sexual dysfunction tend to underestimate the quality of their erections on a subjective measure of arousal in comparison to non-sexually dysfunctional men (Barlow, 1986), suggesting that they may be more likely to perceive failures in the domain of sexuality. Thus, individuals with greater sexual CSW may be more likely to perceive and experience sexual problems. Evidence that those who report sexual problems also endorse higher levels of sexual CSW than those without

sexual problems would support the construct validity of the Sexual CSW Scale through the known-groups technique.

We expected that the Sexual CSW Scale would be composed of two distinct (although correlated) factors: positive sexual events and negative sexual events. It was expected that the Sexual CSW Scale would be related to similar constructs (i.e., other domains of CSW, sexual self-consciousness, and dependent/possessive and selfless sexual approach styles), providing support for good convergent validity. Further, we expected that sexual CSW would be associated with related constructs over and above relationship CSW, demonstrating incremental validity. We hypothesized a lack of association between sexual CSW and unrelated variables (e.g., demographics), which would demonstrate divergent validity. We also hypothesized that those with sexual problems would report higher levels of sexual CSW than those without sexual problems, which would further support the construct validity of the scale by providing evidence for known-groups validity. We expected that scores on the Sexual CSW Scale would remain consistent over a two-week time frame, demonstrating test-retest reliability. Finally, we hypothesized that the Sexual CSW Scale would have good internal consistency.

## Method

**Participants.** We recruited 334 participants using MTurk. Participants were required to meet the same eligibility criteria as described in Study 1. Of those who replied to the online recruitment, 12 were ineligible (two because they exceeded the age limit, two because they had not engaged in sexual activity, and eight who were either single or in a casual dating relationship). We included two attention checks, which were questions embedded into the questionnaires, and asked participants to select a certain response. Only two participants did not pass the attention checks; their data were removed. As a result of the small number of participants who appeared to be responding at random, we were unable to make comparisons between those who did and did not pass attention checks. Participants were instructed to close their browser if they wished to withdraw from the study. Data were removed for those who withdrew before completing the survey ( $n = 38$  participants). This resulted in a final sample size of 282. In all, 62% ( $n = 175$ ) of the participants completed the second phase of the study aimed at determining test-retest reliability.

## Measures.

**Sociodemographics.** The same sociodemographic questions were used as in Study 1.

**Sexual contingent self-worth.** The Sexual CSW Scale that was developed in Study 1 was used to assess level of sexual CSW. The scale contained 10 items that are rated from 1 (*Not at all like me*) to 5 (*Very much like me*). Higher scores indicate greater sexual CSW. Items can be found in Table 2.

*Relationship contingent self-worth.* Relationship CSW was assessed using the Relationship Contingent Self-Esteem Scale (RCSES; Knee et al., 2008). It consists of 11 items rated from 1 (*Not at all like me*) to 5 (*Very much like me*). Higher scores reflect greater relationship CSW. The RCSES has shown good convergent and discriminant validity, internal consistency, and test-retest reliability (Knee et al., 2008). The Cronbach's alpha for the current study was 0.93.

*Other domains of contingent self-worth.* The Contingencies of Self-Worth Scale (CSWS; Crocker, Luhtanen, Cooper, & Bouvrette, 2003) measures six domains of CSW: family support (gaining love and support from one's family), competition (performing better than others in competition), appearance (feeling physically attractive), god's love (perception of having god's love), academic competence (performing well in academics), virtue (following one's own morals), and approval from others (perceived acceptance from others). The CSWS consists of 35 items rated from 1 (*Strongly disagree*) to 7 (*Strongly agree*). A separate score is determined for each of the subscales. Higher scores on a particular subscale indicate greater CSW in that domain. Previous research has found good test-retest reliability, construct validity, and internal consistency for each of the subscales (Crocker et al., 2003). For the current sample, the Cronbach's alpha for each of the subscales ranged from 0.85 to 0.97.

*Self-evaluation.* The Sexual Self-Consciousness Scale (SSCS; van Lankveld, Geijen, & Sykora, 2008) measures the thoughts and concerns an individual has regarding his or her role in a sexual context, as well as worries regarding others' evaluations of him or her in sexual situations. The scale includes two subscales and contains 12 items, which are rated from 0 (*Strongly disagree*) to 4 (*Strongly agree*). The sexual embarrassment subscale measures how uncomfortable individuals are with how they present themselves in a sexual situation. The sexual self-focus subscale measures hyperawareness of one's own sexual thoughts, feelings, and actions. Higher scores reflect higher sexual self-consciousness. The SSCS has good internal consistency and construct validity, as well as satisfactory test-retest reliability (van Lankveld et al., 2008). In the present study, Cronbach's alpha was 0.85 for the embarrassment subscale and 0.69 for the self-focus subscale.

*Sexual approach styles.* The Multidimensional Sexual Approach Questionnaire (MSAQ; Snell, 1992) measures how individuals approach their sexual relationships. We selected six subscales from this questionnaire (passionate, game playing, dependent/possessive, practical, companionate, and selfless/altruistic) that are relevant to the current study goals. Participants rated 42 items from -2 (*Strongly agree with the statement*) to 2 (*Strongly disagree with the statement*). Higher scores on a given subscale reflect using that particular sexual approach style to a greater degree. The MSAQ has demonstrated good convergent validity and high

internal reliability (Snell, 1992). Cronbach's alpha for the subscales ranged from 0.67 to 0.89.

*Sexual problems.* To assess whether participants suffered from sexual problems, the Sexual Functioning Questionnaire (SFQ; Renaud & Byers, 2001) was used. The SFQ lists nine common sexual problems (inability to relax during intercourse, a lack of interest, feeling turned off, problems with arousal, problems with maintaining excitement, prolonged and/or quick climax, inability to climax, and pain during intercourse); participants are asked to rate the frequency of these problems from 0 (*Never*) to 4 (*Always*). Participants are also asked to select which concern is the most upsetting and to rate their level of distress about that sexual concern from 1 (*No distress*) to 4 (*A great deal of distress*). We created a dichotomous variable to indicate whether or not a participant was experiencing a sexual problem. Participants who reported experiencing at least one sexual problem *Sometimes*, *Often*, or *Always* and who indicated that they were distressed by it were considered to have a sexual problem.

**Procedure.** The same advertisement as in Study 1 was posted to the MTurk site, along with a link to the online survey. The link directed participants to the secure online survey where they provided their consent to participate. Participants who met the eligibility criteria received all of the study measures described previously. Consistent with MTurk standards, participants were compensated \$1.00 for completing the survey. Participants were informed that this was a two-phase study and were asked to enter their e-mail addresses in the first survey if they consented to being contacted for the second phase. Those who consented were e-mailed the second survey, which contained the Sexual CSW Scale, two weeks after completing the initial survey. Participants were asked to complete the second survey within one week of receiving it, and were sent e-mail reminders two days and six days after the initial e-mail. Following the final questionnaire, they read a written debriefing and received an additional compensation of \$0.25.

## Results

**Participant Characteristics.** Descriptive statistics for the sample are shown in Table 3. Of those in the final sample ( $N = 282$ ), 149 identified as male and 133 identified as female. The mean age for participants was 30.72 ( $SD = 6.74$ ). Consistent with Study 1, the majority of participants were White (77%), in a mixed-gender relationship (95%), and were married or cohabiting (71%). On average, participants reported being in their relationship for six years ( $SD = 5$  years, 8 months). Participants who completed both phases of the study ( $n = 175$ ) did not differ from those who completed only the first phase ( $n = 107$ ) with respect to any sociodemographics or the Sexual CSW total or subscales scores (all  $p > .05$ ).

**Table 3.** Study 2 Sociodemographic Information and Correlations With the Sexual CSW Scale

Characteristic or Measure	M (Range) or N	SD or %	r
Age (years; n = 282)	30.72 (18–45)	6.74	0.08
Gender (n = 282)			–0.06
Male	149	52.84%	
Female	133	47.16%	
Current partner’s gender (n = 282)			–0.09
Mixed gender	269	95.39%	
Same gender	13	4.61%	
Education level (years; n = 282)	15.46 (11–25)	2.30	–0.10
Culture (n = 282) <sup>a</sup>			–0.04
White American	217	76.95%	
Asian	20	7.09%	
Black American	17	6.03%	
European	8	0.03%	
Latin American/South American	8	0.03%	
Caribbean	2	0.01%	
African	1	0.004%	
Multicultural	6	0.02%	
Relationship status (n = 282)			
In a committed relationship; not cohabiting	83	29.43%	
In a committed relationship; cohabiting	91	32.27%	
Married	108	38.30%	
Relationship length (months; n = 282)	72.17 (3–300)	68.48	0.04

Note. M = mean of sample; N = total number of observations; SD = standard deviation; % = percentage of sample; r = correlation coefficient for association with Sexual CSW Scale. \*p < .05; \*\*p < .01; \*\*\*p < .001.

<sup>a</sup> The cultures reported are those that participants selected; however, the following options were also provided: First Nations, Australian/Oceanian, and Middle Eastern.

**Structure of the Sexual CSW Scale.** CFA using AMOS V.22 (Arbuckle, 2006) was conducted to verify the factor structure of the Sexual CSW Scale that emerged from the PAF in Study 1. Analyses were based on the covariance matrix. (The complete covariance matrix is available from the author upon request.) The maximum likelihood (ML) estimation method was used following the recommendations of Tabachnick and Fidell (2007). In addition, the data for the overall scale were normally distributed, with skewness of –0.63 and kurtosis of 0.32 (SE = 0.29). Model fit was evaluated using multiple fit indices: chi-square ( $\chi^2$ ), normed fit index (NFI), comparative fit index (CFI), and root mean square error of approximation (RMSEA). Good fit was indicated by a nonsignificant  $\chi^2$ ; NFI and CFI values above 0.95; and an RMSEA value below 0.10 (Kline, 2005).

Model 1 was based on the two-factor solution found in the EFA in Study 1 (see Table 2). Overall, Model 1 had poor fit,  $\chi^2$  (34) = 213.25,  $p < .001$ , NFI = 0.89, CFI = 0.91, RMSEA = 0.14. Examination of modification indices suggested including error covariances between

items 8 and 11 and items 4 and 5. Inclusion of these pathways still resulted in poor model fit,  $\chi^2$  (32) = 134.10,  $p < .001$ , NFI = 0.93, CFI = 0.95, RMSEA = 0.11. There were no more significant modification indices that would suggest the addition of pathways to improve model fit. Examination of the residuals and parameter weights suggested the removal of two items: 4 (“My feelings of self-worth are based on how well things are going in my sexual relationship”) and 11 (“When my partner criticizes me or seems disappointed in me for something about our sexual relationship, it makes me feel really bad”). Model fit improved but was not ideal,  $\chi^2$  (19) = 81.43,  $p < .001$ , NFI = 0.95, CFI = 0.96, RMSEA = 0.11. Examination of significant modification indices suggested the addition of an error covariance pathway between Item 2 (“I feel better about myself when it seems like my partner and I are sexually connected”) and Item 5 (“When my sexual relationship is going well, I feel better about myself overall”). The shared variance between these two items may be a result of semantic similarities (i.e., “feel better about myself”).

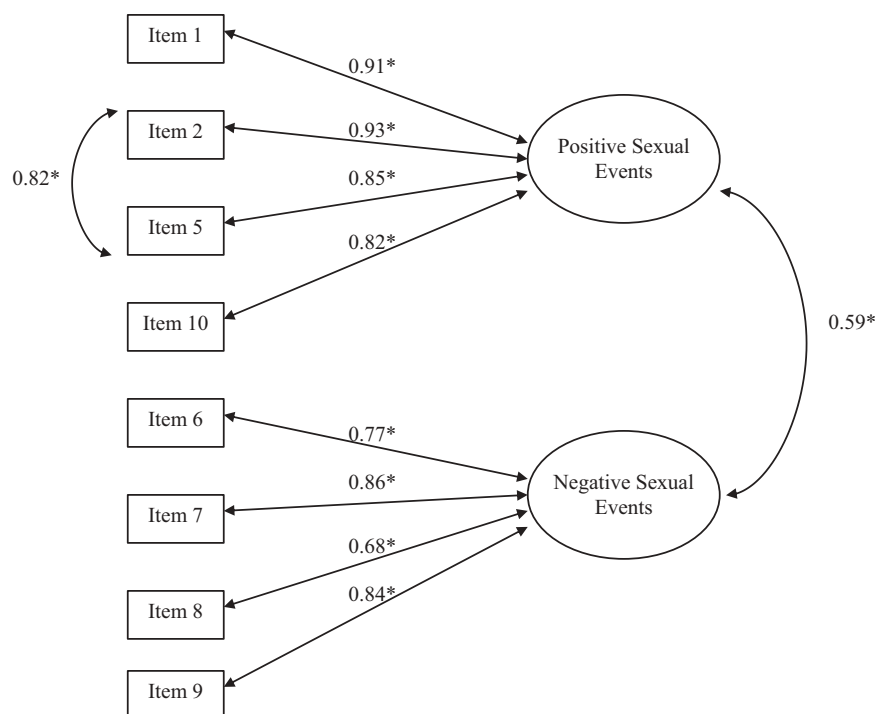
The modified model (i.e., after removing items 4 and 11, and including a pathway between the error variance for items 2 and 5) had good fit,  $\chi^2$  (18) = 63.34,  $p < .001$ , NFI = 0.96, CFI = 0.97, RMSEA = 0.09. Good fit was suggested by all of the fit indices, with the exception of  $\chi^2$ . However, this is common for  $\chi^2$  when conducting CFA, because  $\chi^2$  is sensitive to large sample sizes, which are required for CFA (Byrne, 1994). Figure 1 reports the factor loadings of the updated Sexual CSW Scale. In addition, the two subscales (i.e., positive sexual events and negative sexual events) were moderately correlated with each other, indicating that they are part of the same construct but distinct. The means for the updated Sexual CSW Scale are shown in Table 4.

To examine possible gender differences in factor loadings, the model was estimated with all loadings, constrained to be equal for male and female participants. The constrained model demonstrated equally good fit as the unconstrained model,  $\chi^2 \Delta(6) = 4.55$ ,  $p = .60$ ,  $CFI\Delta = .001$ . In addition, results of an independent sample *t* test showed no significant difference between men ( $M = 29.43$ ,  $SD = 6.62$ ,  $n = 149$ ) and women ( $M = 28.89$ ,  $SD = 7.53$ ,  $n = 133$ ) on levels of sexual CSW,  $t = 6.48$ ,  $df = 280$ ,  $p = 0.52$ , 95% CI = –1.12 to 2.22). We also found no gender differences for the positive sexual events subscale,  $t = 1.28$ ,  $df = 280$ ,  $p = 0.20$ , 95% CI = –0.31 to 1.46, or for the negative sexual events subscale,  $t = -0.05$ ,  $df = 280$ ,  $p = 0.96$ , 95% CI = –1.02 to 0.97.

**Construct Validity.**

*Convergent validity.* Convergent validity was determined by associations with conceptually related constructs resulting in correlation coefficients greater than 0.30 and less than 0.60 (i.e., a moderate association; Cohen, 1988). The





**Figure 1.** Factor loadings for Study 2 confirmatory factor analysis. Final model:  $\chi^2(19) = 67.17, p < .001$ , NFI = 0.96, RMSEA = 0.09, CFI = 0.97; \* $p < .05$ .

Pearson  $r$  correlation coefficients for this analysis are displayed in Table 4. The Sexual CSW Scale was strongly positively correlated with relationship CSW. Greater sexual CSW was moderately correlated with higher levels of CSW in other domains, including family support, competition, appearance, approval from others, and academic competence. Similarly, sexual CSW was moderately positively associated with the self-focus aspect of sexual self-consciousness; however, the correlation with the sexual embarrassment subscale was lower than 0.3. Finally, greater sexual CSW was moderately and positively correlated with dependent and selfless sexual approach styles. The findings were consistent for both the positive and negative sexual events subscales. These associations provide support for the convergent validity of the Sexual CSW Scale.

**Discriminant validity.** Examining correlations lower than 0.3 and eta-squared lower than 0.05 (i.e., small effect sizes; Cohen, 1988) between sexual CSW and unrelated constructs was used to assess discriminant validity (refer to Tables 3 and 4 for correlation coefficients). The correlations between sexual CSW and passionate, game-playing, companionate, and practical sexual approach styles were well below 0.3. In addition, there were no significant associations between sexual CSW and demographic variables (i.e., age, gender, current partner's gender, education, and culture) or relationship length. Likewise, the effect of relationship status on level of sexual CSW was very small,  $F(2, 279) = 4.04, p < 0.05, \eta^2 = 0.03$ , providing further support for the discriminant validity of the Sexual CSW Scale.

**Known-groups validity.** To further assess the construct validity of the Sexual CSW Scale, we used the known-groups technique to determine whether groups expected to differ in level of sexual CSW (i.e., those reporting sexual problems versus not reporting problems) were in fact significantly different. Results of an independent sample  $t$  test showed that those with sexual problems ( $M = 29.79, SD = 6.47, n = 179$ ) reported greater sexual CSW than those without sexual problems ( $M = 28.11, SD = 7.89, n = 103, t = -1.94, df = 280, p < 0.05, 95\% CI = -3.39$  to  $0.02$ ), providing support for the known-groups validity of the Sexual CSW Scale. The results were the same for both the positive and negative sexual events subscales.

**Incremental Validity.** Multiple regression analyses were used to examine whether sexual CSW predicted related outcomes over and above relationship CSW, which would confirm that sexual CSW was indeed distinct from relationship CSW. Thus, three regression analyses were conducted with sexual self-focus, dependent sexual approach style, and selfless sexual approach style as outcomes. Greater relationship CSW and sexual CSW accounted for 10% of the variance in the self-focus aspect of sexual self-consciousness,  $F(2, 279) = 15.90, p < 0.001$ . Consistent with the hypotheses, sexual CSW was an independent predictor of self-focus sexual self-consciousness ( $\beta = 0.30, p = 0.001$ ), whereas relationship CSW was not ( $\beta = 0.03, p = 0.72$ ). Similarly, greater relationship CSW and sexual CSW accounted for 37% and 20% of the variance in dependent,  $F(2, 279) = 80.82, p < 0.001$ , and selfless,  $F(2, 279) = 35.04, p < 0.001$ , sexual approach styles. Both sexual CSW ( $\beta = 0.27, p < 0.001$ ) and relationship CSW

**Table 4.** Study 2 Descriptive Statistics and Correlations With Sexual CSW Scale

Measure	<i>M</i> (Range) or <i>N</i>	<i>SD</i>	<i>r</i>
Sexual Contingent Self-Worth:			
Time 1 ( <i>n</i> = 282)			
Total	29.18 (8–40)	7.06	
Positive sexual events subscale	16.15 (4–20)	3.77	
Negative sexual events subscale	13.02 (4–20)	4.23	
Sexual Contingent Self-Worth:			
Time 2 ( <i>n</i> = 175)			
Total	30.28 (8–40)	6.11	
Positive sexual events subscale	16.70 (4–20)	3.24	
Negative sexual events subscale	13.58 (4–20)	3.77	
Relationship Contingent Self-Worth ( <i>n</i> = 282)	42.05 (11–55)	9.04	0.77***
Other Contingent Self-Worth Scale ( <i>n</i> = 282)			
Family support	21.13 (4.20–29.40)	4.66	0.48***
Competition	21.36 (7.20–29.40)	4.70	0.39***
Appearance	21.33 (4.20–29.40)	4.45	0.48***
God's love	14.06 (4.20–29.40)	8.77	–0.03
Academic competence	20.67 (4.20–29.40)	5.18	0.35***
Virtue	21.25 (4.20–29.40)	4.41	0.26***
Approval from others	16.04 (4.20–29.40)	5.69	0.41***
Sexual self-consciousness ( <i>n</i> = 282)			
Embarrassment subscale	8.59 (0–24)	5.92	0.13*
Self-focus subscale	13.54 (0–24)	4.60	0.32***
Sexual approach styles ( <i>n</i> = 282)			
Passionate/romantic subscale	4.85 (–14–14)	6.82	0.16*
Game-playing subscale	–5.23 (–14–14)	5.10	–0.14
Companionate/friendship subscale	1.64 (–14–14)	6.81	0.06
Practical/logical subscale	–3.44 (–14–13)	6.26	0.09*
Dependent/possessive subscale	–0.47 (–13–14)	5.59	0.58***
Altruistic/selfless subscale	4.94 (–12–14)	5.58	0.38***

Note. *M* = mean of sample; *N* = total number of observations; *SD* = standard deviation; *r* = correlation coefficient for association with Sexual CSW Scale (final version). \**p* < .05; \*\**p* < .01; \*\*\**p* < .001; †Value is less than 0.05.

( $\beta = 0.37$ ,  $p < 0.001$ ) were independent predictors of a dependent sexual approach style. However, only relationship CSW was an independent predictor of a selfless sexual approach style ( $\beta = 0.37$ ,  $p < 0.001$ ), whereas sexual CSW was not ( $\beta = 0.10$ ,  $p = 0.24$ ).

### Reliability.

**Test-retest reliability.** Test-retest reliability was examined using the intraclass correlation coefficient (ICC) over an interval of two weeks. In support of our hypothesis, the Sexual CSW Scale had good test-retest reliability for the total score (ICC = 0.78, 95% CI = 0.72 to 0.84), positive sexual events subscale (ICC = 0.73, 95% CI = 0.65 to 0.79), and negative sexual events subscale (ICC = 0.71, 95% CI =

0.63 to 0.78). These results provide evidence of test-retest reliability for both the Sexual CSW Scale total and subscale scores.

**Internal consistency.** The total score for the Sexual CSW Scale showed good to excellent internal consistency for both the first phase of the study ( $\alpha = 0.90$ ) and two weeks later ( $\alpha = 0.89$ ). Similarly, internal consistency was excellent for the positive sexual events subscale at Time 1 ( $\alpha = 0.92$ ) and Time 2 ( $\alpha = 0.94$ ). Finally, results showed that the negative sexual events subscale had good internal consistency at Time 1 ( $\alpha = 0.86$ ) and Time 2 ( $\alpha = 0.84$ ).

### Summary

Consistent with Study 1 results, we found that the Sexual CSW Scale was composed of two distinct factors: positive sexual events and negative sexual events. Again, we found evidence supporting the use of a total score. Inconsistent with our expectations, the results of the CFA suggested the removal of two items from the Sexual CSW Scale (one from the positive sexual events subscale and one from the negative sexual events subscale). We used this final scale for the subsequent analyses. The findings of the current study indicated good construct validity for the Sexual CSW Scale as demonstrated by tests of convergent, discriminant, and known-groups validity. Further, there was some support for the incremental validity of the Sexual CSW Scale (i.e., sexual CSW predicted related outcomes over and above relationship CSW). All of the analyses were repeated with the positive and negative sexual events subscales and the findings were the same as for the total sexual CSW score. The total scale and the subscales had good test-retest reliability over a period of two weeks. At each of the time points, the total scale and subscales showed good to excellent internal consistency.

### General Discussion

The purpose of this study was to examine the reliability and validity of a novel measure of sexual contingent self-worth, which is the pursuit of self-esteem via the sexual relationship. Using two separate samples, we determined that the measure was composed of two distinct but related factors, which we called positive sexual events and negative sexual events. We found support for the construct validity (convergent, discriminant, and known-groups validity), incremental validity, test-retest reliability, and internal consistency of the Sexual CSW Scale total and subscale scores.

Consistent with the Relationship Contingent Self-Esteem Scale (Knee et al., 2008), from which the measure of sexual CSW was adapted, we expected that the Sexual CSW Scale items would load onto a single factor. However, we found that the Sexual CSW Scale was composed of two distinct

factors reflecting unique elements of sexual CSW: positive sexual events and negative sexual events. The sexual relationship is a specific component of the overall romantic relationship. Because general relationship events (e.g., expressing intimate emotions to your partner) may occur more frequently than sexual relationship events (e.g., engaging in sexual activity), sexual relationship events may be more salient. Thus, it is possible that individuals might be more likely to notice positive and negative sexual events, whereas they might have an overall impression of the romantic relationship that is not focused on particular negative or positive events.

The two-factor solution suggests the possible use of two subscales of sexual CSW, depending on one's research question (e.g., positive versus negative consequences). Individuals with higher scores on the positive sexual events subscale may base their evaluations of self-worth on positive events in the sexual relationship. They might be more likely to experience boosts to their self-esteem as a result of favorable circumstances in their sexual relationships (e.g., positive feedback from their partners after sexual activity). Alternatively, individuals with higher scores on the negative sexual events subscale may base their self-worth more heavily on negative sexual events, such as being criticized by one's sexual partner. They might be more likely to experience declines in their self-esteem when they perceive problems in their sexual relationship. It is important to note that these subscales were not mutually exclusive and, in fact, were moderately positively correlated. Thus, individuals may form their evaluations of self-esteem based on both positive and negative events in their sexual relationships.

We found this two-factor solution in both the exploratory and confirmatory factor analyses, yet it is possible that the factors may be a result of the positive and negative valence of the items. The results for convergent and discriminant validity were the same for each of the subscales. However, it was expected that these variables would be related to basing self-worth on the sexual relationship regardless of whether there was an emphasis on positive or negative events in the relationship. Future studies should examine whether the positive and negative subscales predict different outcomes, to confirm that basing self-worth on negative events versus positive events in the sexual relationship is indeed distinct.

As expected, sexual CSW (total and subscales) was significantly associated with related constructs (i.e., other domains of CSW, sexual self-consciousness self-focus, and dependent and selfless sexual approach styles) and was not associated with unrelated constructs (i.e., other sexual approach styles and sociodemographic variables), which provided support for the convergent and discriminant validity of the scale. Although the large majority of the results were consistent with our hypotheses as outlined in the objectives, there were some unanticipated findings.

Sexual CSW was more highly correlated with relationship CSW than expected. We expected the constructs to be related, because the Sexual CSW Scale was adapted from a measure of relationship CSW, and a sexual relationship typically

occurs within the context of a romantic relationship (Christopher & Sprecher, 2000). We found support for the incremental validity of the Sexual CSW Scale, such that sexual CSW was associated with related outcomes over and above the contribution of relationship CSW to these outcomes. In particular, sexual CSW was an independent predictor of sexual self-consciousness self-focus and a dependent sexual approach style, whereas relationship CSW was not. These findings suggest that sexual CSW is a novel construct that is distinguishable from relationship CSW. This is consistent with research showing that the sexual relationship is distinct from the general romantic relationship (Byers, 2005; Diamond, 2004; Smith & Pukall, 2011). However, it should be noted that, unexpectedly, only relationship CSW was an independent predictor of a selfless sexual approach style. A selfless sexual approach style is when individuals are willing to ignore their own needs to satisfy their partners' needs. Individuals with high CSW have a tendency to sacrifice their own needs to improve the contingent domain (Crocker & Park, 2004); however, we found this tendency to be related to higher relationship CSW rather than sexual CSW. Perhaps giving up your own sexual needs for your partner is more about preserving or improving the overall intimate relationship rather than the sexual relationship specifically. This is consistent with previous research finding that individuals in romantic relationships sometimes agree to unwanted sexual activity to improve the overall relationship (O'Sullivan & Gaines, 1998; Shotland & Hunter, 1995).

As previously mentioned, we found evidence for the convergent validity of the Sexual CSW Scale (i.e., sexual CSW was correlated with other CSW domains, dependent sexual approach styles, and sexual self-focus). Although sexual CSW was associated with the self-focus aspect of sexual self-consciousness, it was not related to the embarrassment aspect as was predicted. Sexual self-focus is defined as being hyperaware of one's own sexual thoughts, feelings, and actions, whereas sexual embarrassment involves discomfort about being sexually vulnerable in front of another person (van Lankveld et al., 2008). Although individuals with greater sexual CSW may be more attentive to their emotions within the context of the sexual relationship, our results suggest that this is not limited to feeling embarrassed during sexual activity.

With regard to individuals experiencing sexual problems, the results indicated that those who reported sexual problems reported greater sexual CSW (for the total and subscale scores) compared to those without sexual problems. These findings provide support for the construct (known-groups) validity of the Sexual CSW Scale (i.e., that the measure differentiated between groups that were expected to vary on sexual CSW). Thus, the impact of sexual CSW might be particularly relevant for individuals who report sexual problems. Perceived failures in contingent domains might result in negative psychological, relational, and physical health outcomes (Crocker & Park, 2004). For example, for individuals high in sexual CSW, experiencing a sexual dysfunction could lead to greater sexual and psychological

distress because this difficulty is perceived to be a threat to their self-esteem. Individuals struggling with sexual dysfunction are known to report higher rates of sexual distress, anxiety, and depression (Desrochers et al., 2008; Heiman, 2002; McCabe & Althof, 2014; van Lankveld et al., 2010), and sexual CSW could be a risk factor and a potential treatment target. Clinicians could assist individuals struggling with sexual problems and who base their self-worth on their sexual relationships to a larger extent, to focus on a broader range of CSW domains. Clinicians might also help people with greater sexual CSW to reformulate their sexual experiences so that a problem is not seen as a “failure” per se, such that they are still able to engage in a positive and satisfying sexual relationship. Indeed, focusing on abilities as malleable rather than fixed helps buffer the consequences of perceived failures in a CSW domain (Niiya, Crocker, & Bartmess, 2004). Therefore, future studies should examine the psychological and sexual repercussions of greater sexual CSW in populations struggling with sexual dysfunction.

We found support for the reliability of the Sexual CSW Scale through tests of internal consistency and test-retest reliability, indicating that the items on the Sexual CSW Scale were measuring the same construct and that level of sexual CSW was relatively stable over a two-week period of time. Future studies should examine whether sexual CSW remains relatively stable over longer intervals of time. Furthermore, Kernis (2003) has suggested that while self-esteem is relatively stable, CSW requires continual validation and may therefore fluctuate based on changes in levels of perceived validation. The sexual relationship is dynamic and could be impacted by relational and psychological factors that vary on a daily basis (e.g., sexual thoughts, mood, relational conflict; Davison, Bell, LaChina, Holden, & Davis, 2008), with corresponding state changes in an individual’s level of sexual CSW. Future studies might examine the role of sexual CSW in psychological, sexual, and relational well-being using daily experience methodology to better capture these effects. Further, given that the sexual relationship is necessarily interpersonal, future research should examine the dyadic influence of sexual CSW by including both members of a couple.

This study had some limitations. One of the shortcomings was the reliance on self-report; however, these constructs are difficult to measure objectively and are based on an individual’s subjective experience. The current study was cross-sectional, and as a result we were not able to draw causal conclusions about the associations between sexual CSW and related constructs. However, there was also a longitudinal component of this study (i.e., test-retest reliability of the Sexual CSW Scale was measured over an interval of two weeks). Future studies could employ experimental, longitudinal, and daily experience designs to explore the causal impact of sexual CSW on relational, sexual, and psychological well-being. Finally, the measure was developed primarily with participants who were White Americans in mixed-gender committed relationships, limiting the generalizability of the findings. As a result, the Sexual CSW Scale may or may

not be applicable among individuals who identify as ethnicities other than White, or who are transgendered, queer, gender nonconforming, or other, and/or among those in same-gender relationships. Findings may also vary for individuals in casual dating relationships. Future studies should explore the structure and impact of sexual CSW in a variety of diverse populations and relationships, including those in same-gender relationships.

Subsequent research might also examine predictors of greater sexual CSW from a developmental perspective and using longitudinal study designs. For example, a history of conditional acceptance in sexual relationships could lead to evaluations of self-worth based on the success or failure of sexual relationships. Prior studies have suggested that CSW develops in a particular domain when a caregiver communicates that being successful in that domain deserves awards and acceptance (i.e., feedback on abilities rather than efforts), whereas failure is punishable (Crocker & Knight, 2005; Kamins & Dweck, 1999). Thus, it may be that strong positive and negative feedback from early and important sexual partners, as well as individual perceptions of prior sexual experiences, could lead to relying on sexual relationships for self-validation.

## Conclusions

Sexual CSW refers to the degree to which individuals base their self-worth on maintaining a successful sexual relationship. We developed an eight-item self-report measure of sexual CSW composed of two related but distinct factors: self-worth based on positive events in the sexual relationship and self-worth based on negative sexual events. Our findings indicated that the Sexual CSW Scale has good construct validity (convergent, discriminant, and known-groups validity), incremental validity, test-retest reliability, and internal consistency. The results of the current study suggest that this construct may be particularly relevant for individuals who experience sexual problems. Future research should examine the predictors and outcomes of greater sexual CSW to establish the specific role of sexual CSW in individuals’ psychological, relational, and sexual well-being.

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