Sexual Coercion, Mate Retention, and Relationship Satisfaction in Brazilian and American Romantic Relationships

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Abstract

We investigated the relationships among men's sexual coercion, men's performance of mate retention behaviors, and their partner's relationship satisfaction in Brazil (Study 1) and the United States (Study 2). In addition, we adapted the Sexual Coercion in Intimate Relationships Scale (SCIRS) to the Brazilian context (Escala de Coerção Sexual em Relacionamentos Amorosos [ECSRA]; Study 1) and investigated the suitability of the adapted version in the American context (Sexual Coercion in Intimate Relationships Scale–Short Form [SCIRS-SF]; Study 2). Study 1 included 181 Brazilians, aged between 18 and 49 years (M = 23.5; SD = 5.1), mostly female (60.8%). Study 2 included 508 Americans, aged between 19 and 70 years (M = 34.7; SD = 9.7), mostly male (52.6%). Participants were in a heterosexual, romantic relationship for

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at least 3 months. Participants completed the SCIRS, a 34-item measure assessing how often participants experienced each sexually coercive behavior, the MRI-SF, a 38-item measure assessing how often participants performed each mate retention act, and several items regarding relationship satisfaction. The results indicated that American (but not Brazilian) men's sexual coercion is positively correlated with their performance of cost-inflicting and benefit-provisioning mate retention behaviors. Men's sexual coercion did not affect their partner's relationship satisfaction in either the American or Brazilian contexts. The SCIRS-SF (nine items) reliably represents the SCIRS (34 items) in the American context. We recommend the SCIRS-SF for assessing performance frequency of sexual coercion. The SCIRS-SF may be used as a screening tool to identify patterns of sexual coercion in couples from Brazil and the United States. We highlight limitations of the current research and identify directions for future research.

Keywords

sexual coercion, mate retention, relationship satisfaction, validity, reliability, evolutionary psychology

Forced in-pair copulation—the forceful act of sexual intercourse without the consent of a romantic partner—is a recurrent feature of many intimate relationships. Intimate partner sexual violence is perpetrated disproportionately by men against women (e.g., Smith et al., 2017). For example, in the United States, approximately 10-14% of married women are raped at least once by their husbands (Bergen & Barnhill, 2006). Despite the devastating consequences of forced in-pair copulation for women (World Health Organization [WHO], 2018), its frequency suggests that forced in-pair copulation may have conferred benefits to men over human evolutionary history. These benefits may have included, for example, an increase in the certainty that the man is genetically related to his partner's future child (Buss, 2015), which is especially relevant if the female partner was recently sexually unfaithful (Goetz & Shackelford, 2006).

In contrast, forced in-pair copulation is extremely costly to women, potentially affecting *social*, physical, mental, and sexual health (WHO, 2018). Men who engage in forced in-pair copulation may benefit from increased paternity certainty, but at the expense of inflicting substantial costs on their partner, thus risking their partner defecting from the relationship.[1] One strategy men may use to secure frequent sexual intercourse with their partner without increasing the risk of partner's defection is *sexual coercion*. That is,

by using more discreet or subtle forms of persuasion and intimidation (as opposed to explicit force), men may avoid inflicting on their partner some of the costs associated with forced in-pair copulation.

Shackelford and Goetz (2004) identified and assessed sexually coercive behaviors perpetrated by men against their female partners. They developed the SCIRS, which assesses the performance frequency of 34 sexually coercive behaviors that men might direct toward their female partners. These behaviors are organized into three factors: *Resource Manipulation/Violence*—behaviors in which men threaten or use violence as sexual coercion tactics (e.g., "My partner threatened violence against someone or something I care about if I did not have sex with him"); *Commitment Manipulation*—behaviors in which men manipulate their partners by making them feel guilty and sexually obliged (e.g., "My partner hinted that it was my obligation or duty to have sex with him"); and *Defection Threat*—behaviors in which men threaten to pursue sexual affairs with other women (e.g., "My partner hinted that he would have sex with another woman if I did not have sex with him").

Research provides evidence for the reliability, utility, and construct validity of the SCIRS in North America (e.g., Kaighobadi, Starratt, Shackelford, & Popp, 2008; Shackelford & Goetz, 2004). Specifically, this research has documented associations between sexual coercion, mate retention behaviors, and relationship satisfaction. For example, men who sexually coerce their partner also perform more mate retention behaviors (Kaighobadi et al., 2008), perhaps because men employ a variety of anti-cuckoldry tactics to guard their paternity (Buss, 2015), and sexual coercion may serve as one of these anti-cuckoldry tactics (Buss, Shackelford, & McKibbin, 2008; Goetz & Shackelford, 2006). In addition, research has documented that men's sexual coercion against their partners negatively affects their partners' relationship satisfaction (e.g., Rhatigan & Axsom, 2006; Shackelford & Goetz, 2004). For example, women who reported more (vs. less) exposure to psychological aggression also reported lower relationship satisfaction (Rhatigan & Axsom, 2006), women in coercive relationships (vs. noncoercive relationships) reported lower relationship satisfaction (Busby & Compton, 1997), and verbal sexual coercion is negatively associated with perceived relationship quality and sexual functioning among female undergraduates (Katz & Myhr, 2008).

Intimate partner violence—including sexual coercion—has been found to occur cross-culturally (Devries et al., 2013). In some cultures, however, there may be contexts that increase the frequency and negative impacts of sexual coercion perpetrated by men against their partners (WHO, 2018). For example, Brazil's female homicide victimization rate is among the highest in the world, surpassing Middle Eastern and African countries (Sitta, Medeiros, Faria, & Scavone, 2011), and is several times higher than in the United States.

(Waiselfisz, 2015). Because sexual coercion is a predictor of intimate partner homicide (Juodis, Starzomski, Porter, & Woodworth, 2014), research on sexual coercion in intimate relationships, including assessments of participants from Brazil, is warranted.

No previous research has investigated the relationships among men's sexual coercion against their partners, men's performance of mate retention behaviors, and their partner's relationship satisfaction in the Brazilian context. The most closely related study used the Revised Conflict Tactics Scales (CTS2; Moraes, Hasselmann, & Reichenheim, 2002). However, the CTS2 identifies nine types of violence (e.g., psychological aggression, physical violence) in couples, which is a broader assessment than "sexual coercion." To address this gap in the literature, the current research investigates the relationships among men's sexual coercion against their partner, men's performance of mate retention behaviors, and their partner's relationship satisfaction in Brazil, by first adapting and validating the SCIRS to the Brazilian context, which we term the Escala de Coerção Sexual em Relacionamentos Amorosos (ECSRA; Study 1). In addition, although previous research conducted in the United States has reported relationships between sexual coercion and mate retention (e.g., Goetz & Shackelford, 2006) and between sexual coercion and relationship satisfaction (e.g., Katz & Myhr, 2008), no previous research has integrated these results by using a single psychometrically sound assessment of sexual coercion. We attempt to replicate the findings of this previous research by first investigating the suitability of the adapted version of the SCIRS in the American context (Study 2). Following previous research (e.g., Buss et al., 2008; Kaighobadi et al., 2008; Shackelford & Goetz, 2004), we hypothesize that men's sexual coercion will be positively associated with the performance frequency of men's mate retention behaviors and negatively associated with their partner's relationship satisfaction in Brazil (Hypotheses 1 and 2, respectively) and in the United States (Hypotheses 3 and 4, respectively).

Study 1

Method

Participants. Participants were 181 individuals born and residing in Fortaleza (Brazil), aged between 18 and 49 years ($M = 23.5$; $SD = 5.1$), and mostly female (60.8%). The mean relationship length was 37.6 months ($SD = 37.1$). This sample size is above the minimum suggested for factor analyses (i.e., at least $n = 100$, and minimum subjects-to-variables ratio of 2; Kline, 1979). In parallel with previous research on sexual coercion (e.g., Shackelford & Goetz, 2004), this sample included only individuals in a heterosexual, romantic relationship for at least 3 months.

Materials. Participants completed an on-line survey that included the following parts:

1. Escala de Coerção Sexual em Relacionamentos Amorosos (ECSRA), a Brazilian-Portuguese version of the SCIRS (Shackelford & Goetz, 2004). The ECSRA includes 34 items, organized into three factors following the structure of the SCIRS (see Introduction). Men provided self-reports of their sexually coercive behaviors against their partners, whereas women provided reports of their partner's sexually coercive behaviors against them in the past month using a 6-point Likert-type scale (0 = *Act did not occur in the past month* and 5 = *Act occurred 11 or more times in the past month*). The psychometric properties of the ECSRA are reported in the Results.

2. Escala de Retenção de Parceiros Reduzida (ERP-R; Lopes, Shackelford, Santos, Farias, & Segundo, 2016), a Brazilian-Portuguese version of the Mate Retention Inventory–Short Form (MRI-SF; Buss et al., 2008). The ERP-R is a 38-item inventory in which participants report how frequently they performed each mate retention behavior using a 4-point scale varying from 0 = *never* to 3 = *often*. The items are organized into two domains (see Miner, Starratt, & Shackelford, 2009): *Cost-Inflicting* (α = 0.78, behaviors that reduce the likelihood of partner infidelity by inflicting costs on a partner) and *Benefit-Provisioning* (α = 0.76, behaviors that reduce the likelihood of partner infidelity by increasing a partner's relationship satisfaction).

3. Demographic questions. We assessed several demographic variables, including age, sex, height and weight, and race/ethnicity. We also included questions about the romantic relationship, to which participants responded on a 10-point Likert-type scale (1 = *Low* and 10 = *High*): "What are the odds that your relationship will exist in 12 months?," "To what extent are you satisfied with your relationship?," "What is the average level of physical intimacy in your current relationship?," and "What is the average level of emotional intimacy in your current relationship?." Finally, participants were asked to indicate the length of the relationship ("What is your relationship length [in months]?").

Procedure. The current study employed a correlational design and nonprobability sampling. We invited prospective participants through messages on Brazilian Facebook groups, such as university communities, political groups, and hobbies, in an attempt to secure data from participants from a wide range of contexts. We explained that participation was anonymous to limit responses motivated by social desirability concerns. Only individuals at least 18 years old who provided informed consent were allowed to participate.

The translation followed the guidelines suggested by Borsa, Damásio, and Bandeira (2012). Specifically, (a) two bilingual translators translated the ECSRA from English to Brazilian-Portuguese, resulting in two translated versions; (b) two different bilingual translators synthesized the versions by comparing them and evaluating semantic, idiomatic, conceptual, linguistic, and contextual discrepancies, resulting in a single Brazilian-Portuguese version; (c) a fifth bilingual translator compared this version and the English version, suggesting semantic adjustments; (d) we administered the translated version to five residents of Fortaleza to identify abstruse terms, which were replaced with synonyms (semantic validation; residents were randomly recruited in the surroundings of a university in Brazil); (e) a seventh and eighth bilingual translators performed the back translation; and (f) a researcher with acknowledged expertise in the sexual coercion literature and unrelated to the current research compared the original and the back-translated versions, suggesting minor modifications to improve correspondence of the translated version with the original version.

Data analysis. First, we conducted preliminary analyses by investigating the distribution of each item separately by conducting Shapiro–Wilks's tests, assessing skewness and kurtosis, and analyzing Q-Q plots. Second, we investigated the psychometric properties of the ECSRA by calculating polychoric correlation coefficients and conducting a Polychoric Factor Analysis. We also calculated composite reliability scores, which is a better estimate of internal consistency than Cronbach's α because it incorporates weights of factor loadings and error variances (Raykov, 1997). Third, we tested our hypotheses by calculating Spearman's rho correlation coefficients.

Results

We first investigated the distribution of each item separately. Specifically, we conducted a Shapiro–Wilks's test, which tests the null hypothesis that a sample distribution was drawn from a normally distributed population. We then assessed skewness and kurtosis for each item, in which z scores greater than 1.96 for either skewness or kurtosis suggest a nonnormal distribution. Finally, we analyzed Q-Q plots, which compare the observed values to expected values (i.e., normally distributed values). The nearer the observed values are to the expected values, the nearer the distribution is to normality. The results indicated a nonnormal distribution for all items.

Nonnormal distributions may lead to biased estimates of factor loadings when the loadings are extracted from a Pearson correlation matrix (Holgado-Tello, Chacón-Moscoso, Barbero-García, & Vila-Abad, 2010). In addition, the interpretation of Likert-type-scale measurements as ordinal (vs. interval) is more appropriate when investigating dimensionality (Holgado-Tello et al.,
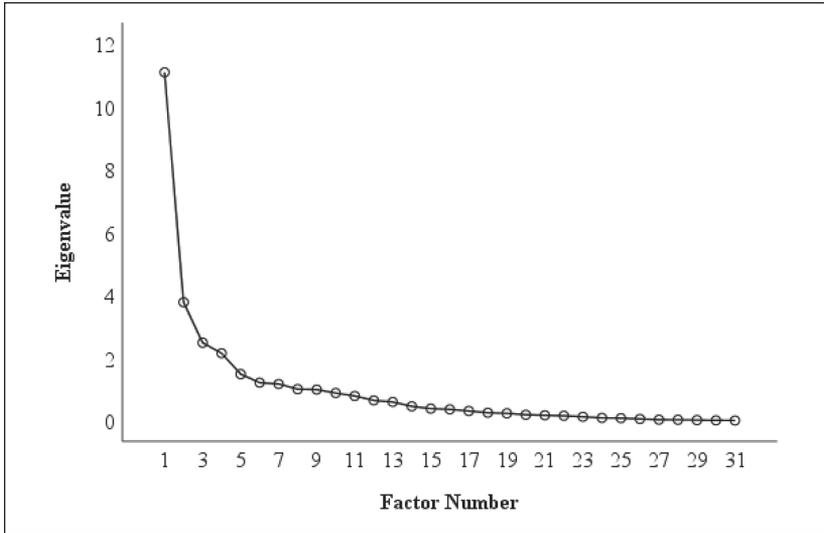
Figure 1. Scree plot of the items of the ECSRA.
Note. ECSRA = Escala de Coerção Sexual em Relacionamentos Amorosos.

2010). To accommodate the nonnormality and the measurement level of the items of the ECSRA, we conducted a Polychoric Factor Analysis (PFA; see Holgado-Tello et al., 2010), by using a polychoric correlation matrix to estimate the correlation coefficients among the ECSRA items. PFA is appropriate for factor-analyzing nonnormally distributed variables or variables measured using ordinal scales (e.g., Likert-type scales), and factor results show a better fit to the theoretical model when the factorization is conducted using the polychoric rather than the Pearson correlation matrix (Holgado-Tello et al., 2010).

Three items showed no variance (i.e., all participants scored "0 = *Act did not occur in the past month*") and were excluded from further analyses (e.g., "My partner withheld benefits that I depend on to get me to have sex with him"). We then verified that Kaiser–Meyer–Olkin (0.73) and Bartlett's sphericity tests, $\chi^2(465) = 7{,}020.36$, $p \leq 0.001$, supported the suitability of the data for PFA. The former indicates the total amount of variance that might be caused by a common factor, with 0.50 suggested as the minimum acceptable value (Kaiser, 1970), whereas the latter indicates the existence of correlations in the dataset by testing the null hypothesis that all variables are uncorrelated.

We performed a PFA with 31 items. The results indicated seven factors meeting the Kaiser criterion (eigenvalue ≥ 1), explaining 75.2% of total variance. However, the scree plot (Cattell criterion, see Figure 1) suggested three factors (55.9% of total variance), a result corroborated by the results of a

parallel analysis (Horn criterion). The parallel analysis generates randomized data with the same parameters as the observed data (i.e., 181 participants and 31 variables). The Horn criterion suggests retention of factors for which the eigenvalue in the observed data is greater than the associated eigenvalue in the randomized data (Horn, 1965).

Factor extraction criteria suggested different numbers of factors for extraction, but because the Horn criterion is the most rigorous (Garrido, Abad, & Ponsoda, 2013), and because two of three criteria (Cattell and Horn) suggested a structure that is identical to the original version (Shackelford & Goetz, 2004), we performed another PFA, setting the number of factors to three, and followed with *oblimin* rotation. We retained only items that loaded > 0.40 on a single factor. Twelve items did not meet the factor loading requirements and were excluded. For example, the item "My partner persisted in asking me to have sex with him, even though he knew that I did not want to" did not load > 0.40 on any factor, and "My partner hinted that other women were willing to have sex with him, so that I would have sex with him" loaded > 0.40 on multiple factors.

For parsimony, we excluded 10 items that were redundant or too broad in content. The excluded items, although statistically acceptable, did not add unique information to the constitutive definition of the factor on which they loaded. For example, we excluded the item "My partner gave me gifts or other benefits so that I would feel obligated to have sex with him" because it showed a lower factor loading on the factor Commitment Manipulation, relative to an item similar in content ("My partner reminded me of gifts or other benefits he gave me so that I would feel obligated to have sex with him"; $r = 0.86$; $p < 0.001$). In addition, the items "My partner and I had sex, even though I did not want to" and "My partner made me feel obligated to have sex with him" were excluded because they do not describe specific sexual coercion tactics.

We labeled Factor 1 "Violence" because it includes behaviors that impose threat or use violence as sexual coercion tactics (e.g., "My partner threatened violence against someone or something I care about if I did not have sex with him"). We labeled Factor 2 "Commitment Manipulation" because it includes behaviors in which men manipulate their partners by telling them that the couple's relationship status makes sexual access obligatory (e.g., "My partner reminded me of gifts or other benefits he gave me so that I would feel obligated to have sex with him"). We labeled Factor 3 "Resource Manipulation/Defection Threat" because it includes threats to pursue sexual affairs with others, or threats to withhold benefits on which their partner depends on (e.g., "My partner hinted that he would have sex with another woman if I did not have sex with him"). The item factor loadings and communalities (h^2), and

Table 1. Factor Structure and Loadings for the Items of the ECSRA (*n* = 181).

Item Description (Item Number From the SCIRS)	Factor Loadings			h^2
	I	II	III	
My partner told me that other couples have sex more than we do, to make me feel like I should have sex with him. (22)	**0.69**	−0.21	0.23	0.53
My partner threatened violence against someone or something I care about if I did not have sex with him. (05)	**0.46**	0.29	0.20	0.26
My partner initiated sex with me when I was unaware (e.g., I was asleep, drunk, or on medication) and continued against my will. (09)	**0.41**	0.27	−0.09	0.21
My partner reminded me of gifts or other benefits he gave me so that I would feel obligated to have sex with him. (06)	−0.13	**0.71**	−0.16	0.55
My partner hinted that I was cheating on him, in an effort to get me to have sex with him. (04)	0.33	**0.58**	−0.11	0.45
My partner hinted that it was my obligation or duty to have sex with him. (25)	0.38	**0.55**	0.18	0.38
My partner hinted that he would have sex with another woman if I did not have sex with him. (32)	0.16	0.15	**0.92**	0.85
My partner hinted that he would withhold benefits that I depend on if I did not have sex with him. (14)	0.30	0.39	**0.58**	0.44
My partner hinted that other women were interested in a relationship with him, so that I would have sex with him. (28)	0.36	−0.10	**0.51**	0.34
Eigenvalue	11.09	3.76	2.48	
Explained variance (%)	35.76	12.14	7.99	
Composite reliability	0.54	0.65	0.72	

Note. The bold numbers refer to the loading of each item in its respective factor. ECSRA = Escala de Coerção Sexual em Relacionamentos Amorosos; SCIRS = Sexual Coercion in Intimate Relationships Scale; I = Violence; II = Commitment Manipulation; III = Resources Manipulation/Defection Threat.

the factor eigenvalue, explained variance, and composite reliability for each factor are displayed in Table 1. Composite reliability is a better estimate of internal consistency than Cronbach's α because it incorporates weights of factor loadings and error variances (Raykov, 1997).

We hypothesized that men's sexual coercion will be positively associated with the performance frequency of men's mate retention behaviors (Hypothesis 1). Mate retention behaviors are deployed to reduce the risk of partner infidelity

or relationship defection (Buss, 2015). Because sexual coercion may be understood as a sperm competition tactic designed to "correct" a partner's sexual infidelity (Goetz & Shackelford, 2006), men who sexually coerce their partner may also perform more mate retention behaviors—a hypothesis supported in previous research (e.g., Goetz & Shackelford, 2006; Kaighobadi et al., 2008). We correlated men's performance of the sexual coercion factors with men's performance of cost-inflicting and benefit-provisioning mate retention behaviors. Hypothesis 1 was not supported: The results revealed no correlations between men's performance of the sexual coercion factors and men's performance of cost-inflicting and benefit-provisioning mate retention behaviors in the Brazilian context (Spearman's rhos varying from -0.14 to 0.19; ps > 0.05, $n = 78$).[2] In addition, cost-inflicting and benefit-provisioning mate retention behaviors were positively correlated (Spearman's $rho = 0.60$; $p < .001$).

We also hypothesized negative correlations between men's sexual coercion and their partner's relationship satisfaction (Hypothesis 2), in line with previous research (Katz, Kuffel, & Brown, 2006; Shackelford & Goetz, 2004). We then correlated women's relationship satisfaction with the frequency with which they experienced sexual coercion by their partners. To assess relationship satisfaction, we created an index of relationship satisfaction by averaging responses to four variables ($\alpha = 0.61$): "What are the odds that your relationship will exist in 12 months?," "To what extent are you satisfied with your relationship?," "What is the average level of physical intimacy in your current relationship?," and "What is the average level of emotional intimacy in your current relationship?." We found no correlations between relationship satisfaction and the ECSRA factors (Spearman's rhos varying from -0.07 to 0.06; ps > 0.05, $n = 103$).

Discussion

In the current study, we investigated the relationships among men's sexual coercion against their partners, men's performance of mate retention behaviors, and their partner's relationship satisfaction in Brazil, by first adapting and validating the SCIRS for use in Brazil, which we term the Escala de Coerção Sexual em Relacionamentos Amorosos (ECSRA). Similar to Shackelford and Goetz (2004), the results suggested a three-factor structure. The factors' contents for the ECSRA are similar to the factors' contents for the SCIRS and therefore were labeled following Shackelford and Goetz. For example, both the ECSRA and the SCIRS include a factor labeled "Commitment Manipulation," because in both measures this factor includes behaviors to make a partner feel obligated to have sex because of the couple's relationship status (e.g., "My partner hinted that it was my obligation or duty to have sex with him").

One difference between the ECSRA and the SCIRS is that behaviors involving withholding of benefits (e.g., "My partner hinted that he would withhold benefits that I depend on if I did not have sex with him") loaded on "Defection Threat" in the ECSRA, but loaded on "Violence" in the SCIRS. From a woman's perspective, the costs associated with having a partner withhold expected benefits are similar to the costs associated with having a partner defect from the relationship—that is, both interrupt a partner's investment in the woman and her offspring (Buss, 2015). Behaviors involving the withholding of benefits therefore may be interpreted as more similar to defection threats than to acts of violence. Moreover, composite reliability scores for two factors of the ECSRA were slightly below the minimum recommended (0.70; Eisinga, teGrotenhuis, & Pelzer, 2013). However, each factor is comprised of three items only, and the number of items interferes with calculation of composite reliability. Internal consistency indices less than 0.70 are expected for scales with very few items (a high α with very few items indicates item redundancy; Eisinga et al., 2013).

Our results revealed no correlations between men's sexual coercion and men's performance of cost-inflicting mate retention behaviors, in contrast to the results of previous work (e.g., Goetz & Shackelford, 2006). Previous research reported differences in interpretation and performance frequency of mate retention behaviors among Americans and Brazilians (Lopes et al., 2016). For example, some behaviors considered cost-inflicting in the American context are interpreted as benefit-provisioning in the Brazilian context. The tactic "emotional manipulation" (e.g., "Pleaded that I could not live without my partner"), for example, was interpreted by Brazilians as benefit-provisioning, in that it may demonstrate commitment and devotion to the relationship. Because sexual coercion may function as a cost-inflicting mate retention behavior (Goetz & Shackelford, 2006), and because some cost-inflicting behaviors are interpreted as benefit-provisioning in Brazil (Lopes et al., 2016), it is possible that Brazilian men did not associate the performance of sexually coercive behaviors with cost-inflicting or benefit-provisioning mate retention *enough* to reveal a significant correlation between these behaviors.

The results indicated no correlation between men's sexual coercion and their partner's relationship satisfaction. Brazil has some of the highest rates of domestic violence and homicide among Western countries (e.g., Waiselfisz, 2015), and yet Brazilian couples (relative to U.S. couples) report that they are more satisfied with their romantic relationships (e.g., Brazilian women are more likely than U.S. women to report sexual satisfaction; Heiman et al., 2011). It is therefore possible that Brazilians do not interpret frequency of sexual coercion as a proxy of the quality of a romantic relationship as much as do individuals from countries in which previous research was conducted (e.g., the United States). Alternatively, our findings corroborate previous research

conducted in the U.S. documenting that women's relationship satisfaction may not be affected by their partner's sexual coercion (e.g., Meyer, Vivian, & O'Leary, 1998; Oswald & Russel, 2006). For example, college students do not perceive sexually coercive behaviors as negatively affecting a romantic relationship (Oswald & Russel, 2006), male sexual aggression—such as sexual coercion—is not directly associated with female marital satisfaction (Meyer et al., 1998), and women who report to be in a sexually coercive relationship also report that their partners are more invested in the relationship, relative to women who report to not be in sexually coercive relationships (Katz et al., 2006). These inconsistent results warrant metanalytical research investigating the reported associations between sexual coercion and relationship satisfaction cross-culturally.

The current study adapted the SCIRS to a shorter version (nine items) that reliably represents the longer version (34 items) developed by Shackelford and Goetz (2004). However, although the ECSRA is a shorter version of the SCIRS—providing the advantage of parsimony—it is unknown whether the ECSRA is appropriate for use in other countries, including the United States. For example, the deletion of items in the ECSRA may have caused loss of information that is valuable in the American context. The item "My partner physically forced me to have sex with him," for example, was deleted because it did not load > 0.40 on any factor in the ECSRA. However, this item loaded on "Resource Manipulation/Violence" in the SCIRS and may provide relevant information to the constitutive definition of this factor in the United States, where rates of rape and sexual assault—especially among college students—have shown multiple spikes in the last decades (Sinozich & Langton, 2014).

Previous research has documented different intimate partner violence rates in Brazil and the United Sates—for example, Brazil's female violence victimization rate is several times higher than in the United Sates (Waiselfisz, 2015). Therefore, it is possible that Brazilians interpret sexual coercion differently than Americans. For example, because Brazilian (relative to Americans) experience more frequent violence victimization (Waiselfisz, 2015), Brazilians (relative to American) may be less likely to perceive (and therefore less likely to report) certain sexually coercive behaviors that may have been considered too "subtle"—an interpretation supported by several items showing no variance in the Brazilian context, such as "My partner withheld benefits that I depend on to get me to have sex with him" (i.e., all Brazilian participants scored "0 = *Never*"). These possible cross-cultural differences may have caused the ECSRA to incorporate modifications from the SCIRS that may not be appropriate in the American context. We therefore conducted a second study to investigate whether the ECSRA is appropriate for use in an American context (Study 2). Because the ECSRA is a shorter version of the SCIRS, we will refer to the ECSRA in the American context as the SCIRS-SF.

Study 2

Method

Participants. Participants were 508 individuals born and residing in the United States and in a heterosexual, romantic relationship for at least three months. They were aged between 19 and 70 years ($M = 34.7$; $SD = 9.7$) and were mostly male (52.6%). The mean relationship length was 80.3 months ($SD = 96.9$). This sample size is above the minimum suggested for a confirmatory factor analysis with 34 parameters (Bentler & Chou, 1987).

Materials. Participants completed an online survey identical to the survey completed in Study 1.

Procedure. The current study employed a correlational design and a nonprobability sampling. We invited prospective participants through Amazon Mechanical Turk (MTurk). Prospective participants viewed an advertisement for the study on MTurk's job listings. Interested and eligible individuals were provided a link to an informed consent form for the study. Those who agreed to participate could access and complete the survey.

Data analysis. We conducted preliminary analyses identical to the preliminary analyses conducted in Study 1. To investigate the suitability of the ECSRA for use in an American context, we conducted structural equation modeling. We estimated model parameters using polychoric correlation coefficients to accommodate the ordinal level of the items of the ECSRA. In addition, we tested our hypotheses by calculating Spearman's rho correlation coefficients.

Results

We first investigated the distribution of each item separately. Specifically, we conducted a Shapiro–Wilks's test, assessed skewness and kurtosis for each item, and analyzed Q-Q plots. The results indicated a nonnormal distribution for all 34 items. We next conducted a confirmatory factor analysis (CFA) to investigate whether the SCIRS-SF (Figure 2) has a good fit, and whether it has a better fit than the SCIRS (Figure 3), to the data provided by American participants. We estimated parameters using a polychoric correlation matrix. We calculated six global fit indices, with the threshold for good model fit shown in parentheses (Hooper, Coughlan, & Mullen, 2008): (a) chi-square to degrees of freedom ratio—χ^2/df ($p > 0.05$), (b) root mean square error of approximation (RMSEA) $< .06$, (c) Tucker–Lewis index TLI > 0.90, (d) comparative fit index (CFI ≥ 0.95), (e) standardized mean
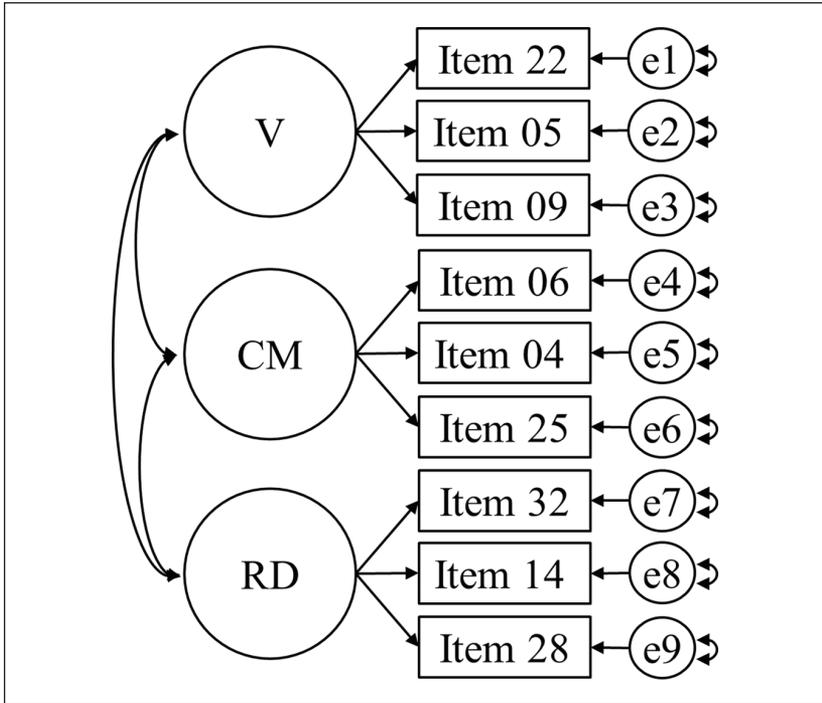
Figure 2. Conceptual model of the SCIRS-SF.
Note. Item numbers reflect the original version for comparison. V = Violence; CM =
Commitment Manipulation; RD = Resource Manipulation/Defection Threat; SCIRS-SF =
Sexual Coercion in Intimate Relationships Scale–Short Form.

square residual (SMSR < 0.10), and (f) Akaike information criterion (a comparative measure of fit, with smaller AIC indicating better model fit; Burnham & Anderson, 2004).

Global fit indices for the SCIRS-SF indicated good fit to the data ($\chi^2/df =$ 4.68, $p < 0.001$; RMSEA = 0.090 [90% confidence interval (IC): 0.074, 0.106]; TLI = 0.98; CFI = 0.99; SMSR = 0.01; AIC = −18,706.94), suggesting that the SCIRS-SF is aprroriate for use in the United States. Standardized path coefficients varied from 0.85 to 0.99 (ps < 0.001). Global fit indices of the 34-item SCIRS also indicated good fit to the data ($\chi^2/df = 4.98$, $p < 0.001$; RMSEA = 0.089 [90% CI: 0.085, 0.092]; TLI = 0.93; CFI = 0.93; SMSR = 0.02; AIC = −89,824.64). Standardized path coefficients varied from 0.83 to 0.95 (ps < 0.001). The SCIRS showed a slightly better fit than the SCIRS-SF (AIC$_{\text{SCIRS}}$ < AIC$_{\text{SCIRS-SF}}$). However, differences in AIC criteria should not
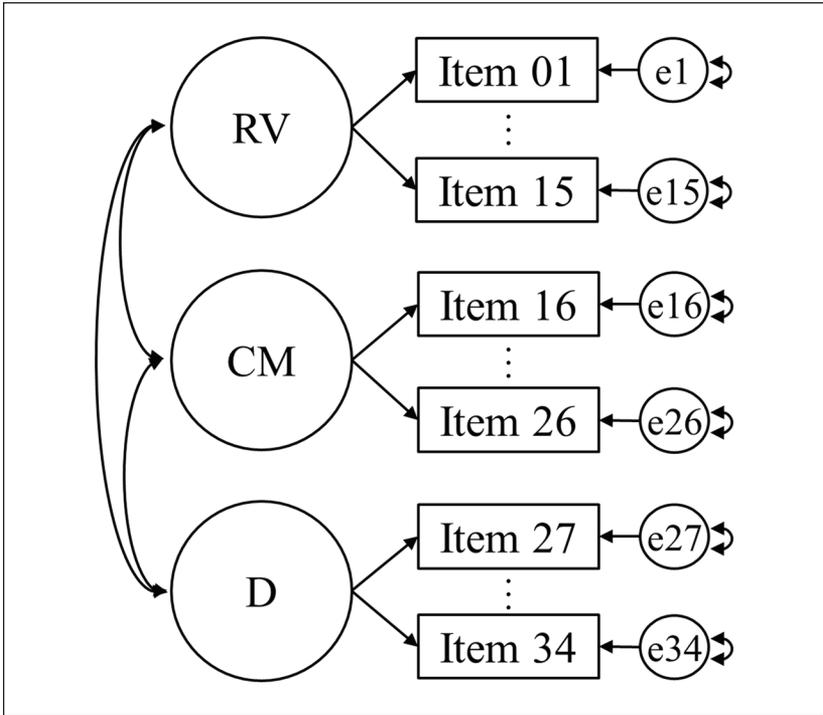
Figure 3. Conceptual model of the SCIRS.
Note. RV = Resource Manipulation/Violence; CM = Commitment Manipulation; D = Defection Threat; SCIRS = Sexual Coercion in Intimate Relationships Scale.

outweigh parsimony in model selection (Burnham & Anderson, 2004), and the SCIRS-SF is considerably less time-consuming to complete than the SCIRS. We therefore used the SCIRS-SF for further analyses (Violence: $\alpha = 0.85$; Commitment manipulation: $\alpha = 0.89$; Resources manipulation/Defection threat: $\alpha = 0.92$).

We correlated men's sexual coercion with men's performance of cost-inflicting ($\alpha = 0.96$) and benefit-provisioning mate retention behaviors ($\alpha = 0.84$). The SCIRS-SF factors were positively correlated with both cost-inflicting (Spearman's rhos varying from 0.59 to 0.61; $ps < 0.001$, $n = 265$) and benefit-provisioning (Spearman's rhos varying from 0.27 to 0.28; $ps < 0.001$, $n = 265$) mate retention behaviors, supporting Hypothesis 3. For reportorial completeness, we conducted Fisher's r-to-z transformations to investigate differences in the magnitude of these relationships.

The relationships between the SCIRS-SF factors and cost-inflicting mate retention behaviors were significantly larger than the relationships between the SCIRS-SF factors and benefit-provisioning behaviors (zs varying from 4.55 to 4.99; ps < 0.001). In addition, cost-inflicting and benefit-provisioning mate retention behaviors were positively correlated (Spearman's rho = 0.50; p < 0.001). Finally, we correlated men's sexual coercion with their partner's relationship satisfaction. We created an index of relationship satisfaction by averaging responses to four variables (α = 0.84; see Study 1). We found no correlations between the SCIRS-SF factors and relationship satisfaction (Spearman's rhos varying from −0.05 to −0.06; ps > 0.05, n = 239), failing to support Hypothesis 4.

For reportorial completeness, we compared the performance frequency of sexual coercion between Brazilian participants (Study 1) and American participants (Study 2). We entered the SCIRS-SF factors into a multivariate analysis of variance to identify differences in mean scores of these factors between American and Brazilian participants. We also included sex of participant as a between-subject variable in an attempt to detect differences between men's reports abour their own behaviors and women's reports about their partner's behaviors. The results indicated cross-cultural differences in mean scores of the factors, Wilks' lambda = 0.96, $F(3, 688)$ = 10.17, p < 0.001. The results of follow-up univariate tests revealed that American men (compared with Brazilian men) more frequently perform Violence, $F(1, 690)$ = 25.68, p < 0.001; Americans: M = 1.48; SD = 0.98; Brazilians: M = 1.12; SD = 0.31, Commitment Manipulation, $F(1, 690)$ = 29.90, p < 0.001; Americans: M = 1.45; SD = 0.97; Brazilians: M = 1.07; SD = 0.27, and Resource Manipulation/Defection Threat, $F(1, 690)$ = 25.34, p < 0.001; Americans: M = 1.40; SD = 0.96; Brazilians: M = 1.04; SD = 0.20. Moreover, the results did not reveal significant differences with participant sex or in the interaction between participant nationality and sex, suggesting a relatively high correspondence between self-reports (men's report about their own behaviors) and partner-reports (women's report about their partner's behaviors), in line with previous research (e.g., Shackelford & Goetz, 2004).

Discussion and Conclusion

In the current research, we investigated the relationships among men's sexual coercion against their partners, men's performance of mate retention behaviors, and their partner's relationship satisfaction in Brazil (Study 1) and in the United States (Study 2). We also psychometrically validated a Brazilian-Portuguese adaptation of the SCIRS for use in Brazil (the Escala de Coerção Sexual em Relacionamentos Amorosos; ECSRA), which is a shorter version of the SCIRS

(nine items) that reliably represents the original version (34 items) in an American context, termed the SCIRS-SF. Specifically, the results of Study 2 revealed adequate fit indices for the SCIRS and SCIRS-SF in an American context, except for χ^2/df and RMSEA. However, these indices are relatively unreliable for models with large samples or large correlations (Hooper et al., 2008). Because both models showed adequate model fit, and the SCIRS-SF is less time-consuming to complete than the SCIRS, we recommend the SCIRS-SF for assessment of performance frequency of sexual coercion in Brazilian and American samples.

The results of Study 2 revealed that American men's sexual coercion is positively correlated with their performance of cost-inflicting and benefit-provisioning mate retention behaviors, replicating the findings of previous research—for example, Goetz and Shackelford (2006) found that men's sexual coercion correlated positively with their mate retention behaviors ($r = 0.15$; $p < 0.05$, $n = 244$). The current research extends these findings by investigating the cost-inflicting and benefit-provisioning domains of mate retention separately. For example, our findings revealed that men's sexual coercion was more strongly correlated with cost-inflicting mate retention behaviors (relative to benefit-provisioning behaviors). Because some sexually coercive behaviors (e.g., "My partner hinted that he would have sex with another woman if I did not have sex with him") may resemble cost-inflicting mate retention behaviors (e.g., "Talked to another woman at a party to make my partner jealous"), it is possible that men who perform sexual coercion are also more likely to perform cost-inflicting (vs. benefit-provisioning) mate retention behaviors.

The results of Study 2 indicated no correlation between American men's sexual coercion and their partner's relationship satisfaction, in line with the results found in the Brazilian sample (Study 1). Although some empirical research has found support for the negative effects of men's sexual coercion on their partner's relationship satisfaction (e.g., Busby & Compton, 1997; Katz & Myhr, 2008; Shackelford & Goetz, 2004), there is a growing body of evidence suggesting that men's sexual coercion does not affect their partner's relationship satisfaction (e.g., Katz et al., 2006; Meyer et al., 1998; Oswald & Russel, 2006). Sexual coercion may portend partner rape (Juodis et al., 2014), and would-be rapists prefer and target more attractive women, to maximize the probability of conception (McKibbin, Shackelford, Goetz, & Starratt, 2008; Thornhill & Palmer, 2000). Therefore, a man's sexual coercion against his partner, if expressed in more subtle forms, may be interpreted by his partner as a subtle signal that she is physically attractive, or generally desirable as a sexual partner (e.g., "My partner hinted that it was my obligation or duty to have sex with him")—an interpretation that resembles some benefit-provisioning mate retention behaviors (e.g., "I had a

physical relationship with my partner to deepen our bond"). Previous research has provided support for this interpretation—for example, women who report to be in a sexually coercive relationship also report that their partners are more invested in the relationship, relative to women who reported to not be in sexually coercive relationships (Katz et al., 2006).

Moreover, the results indicate that American men (compared with Brazilian men) reported to more frequently perform sexual coercion, in contrast to the results of previous research documenting, for example, that Brazil's intimate partner violence rate is higher than in the United States (Waiselfisz, 2015). Because Brazil reports high rates of extremely violent forms of cost-inflicting behaviors (e.g., female homicide; Waiselfisz, 2015), it is possible that some sexually coercive behaviors were too "subtle" for some Brazilian participants to perceive and therefore report—for example, the item "My partner reminded me of gifts or other benefits he gave me so that I would feel obligated to have sex with him" may have been interpreted by some Brazilian participants as an expression of love and care (i.e., the man is reminding his partner of his investment in and commitment to the relationship). This cross-cultural difference might be attributable to the fact that the Brazilian government has only recently implemented policies addressing domestic violence and sexual assault. The first law against domestic violence—the Domestic Violence Law—was only implemented in 2006, for example. In contrast, in the last several decades, the United States has implemented several federal policies to address and prevent domestic violence and sexual coercion (e.g., Violence Against Women Act), some of which have been improved since their original implementation (e.g., Sherman & Berk, 1984). Future research may profitably investigate cross-cultural differences in the role and efficacy of governmental policies on partner-directed domestic violence and sexual coercion.

Continued threat of forced copulation may have selected, over human evolutionary history, for psychological mechanisms in women that motivate efforts to avoid circumstances that facilitate rape and sexual coercion (McKibbin et al., 2009; Thornhill & Palmer, 2000). Future research may benefit from investigating the mediational role of women's performance of rape avoidance tactics on the effects of men's sexual coercion on their partner's relationship satisfaction. In addition, victims of intimate partner violence—such as sexual coercion and rape—who have more to lose in terms of future reproductive success report more psychological pain than women with less to lose in terms of future reproductive success (McKibbin, Shackelford, Miner, Bates, & Liddle, 2011; Thornhill & Palmer, 2000). Future research may investigate, for example, whether women's self-perceived mate value mediates the effects of men's sexual coercion on women's relationship satisfaction.

The current research has limitations. First, the Brazilian sample size may not be sufficient to detect small effects—for example, some correlations of moderate effect size were not significant (e.g., Brazilian men's sexual coercion did not significantly correlate with their performance of mate retention behaviors). Nonetheless, the results are consistent with previous findings (e.g., Katz et al., 2006; Lopes et al., 2016), and our Brazilian sample size is above the minimum suggested for factor analyses (Kline, 1979). Future research may benefit from testing the hypotheses using larger samples and samples from contexts in which intimate partner violence—such as sexual coercion—is socially tolerated. For example, Nepal reports higher rates of sexual violence within marriage than many other countries, perhaps accounted for by the view that it is in women's *dharma* (i.e., moral duty) to be obedient to their husbands (Puri, Tamang, & Shah, 2011). We did not assess and thus could not control for certain demographics that may affect intimate partner violence risk (e.g., educational level, employment status). Future research may profitably investigate the influence of these variables on the effects of partner's performance frequency of sexual coercion and mate retention on women's relationship satisfaction, for example. Finally, our assessment of relationship satisfaction may not have captured smaller effects of relationship satisfaction (e.g., a person may not be physical intimate with their partner and *still* be satisfied with their relationship). Future research may benefit from using psychometrically validated measures of relationship satisfaction (e.g., Røysamb, Vittersø, & Tambs, 2014).

The current research may have applied value. For example, we document that men's sexual coercion did not affect their partner's relationship satisfaction in either the American or Brazilian contexts. The results documented here may provide insights to policy makers regarding the relative importance that men and women place on sexually coercive behaviors, for example. Moreover, the SCIRS-SF may be used as a screening tool to identify patterns of sexually coercive behaviors in couples from Brazil and the United States, thus providing valuable information for understanding the relatively subtle behaviors contributing to the emergence of more severe types of intimate partner violence, cross-culturally.

Our research is the first to investigate the relationships among men's sexual coercion against their partners, men's performance of mate retention behaviors, and their partner's relationship satisfaction in Brazil. For example, our research documents that men's sexual coercion does not affect their partner's relationship satisfaction in the Brazilian context. The conflicting evidence regarding this hypothesis, however, warrants cross-cultural meta-analyses on the effects of men's sexual coercion on their partner's relationship satisfaction. Moreover, we adapted and validated a shorter version of the SCIRS to the Brazilian context—the Escala de Coerção Sexual em Relacionamentos

Amorosos (ECSRA). We also verified the suitability of the ECSRA for use in an American context, which we term the SCIRS-SF, in line with a growing demand for short scales as an alternative to nonabbreviated scales in social sciences research (Ziegler, Kemper, & Kruyen, 2014).

Declaration of Conflicting Interests

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Notes

1. Forced in-pair copulation may also be a product of sexual concurrence (Parker, 2006). Selectively allowing males to force in-pair copulation may ensure that the female gains indirect benefits through offspring (males with low mating advantage are screened out by resistance; Parker, 2006)—that is, females can effectively "gain by losing" (Eberhard, 2005).
2. For reportorial completeness, we also correlated men's sexual coercion on each of the factors with men's performance of each mate retention item separately. The overall pattern of results revealed no correlations, with the exception that Commitment Manipulation was positively correlated with the item "Held my partner's hand while other men were around" (Spearman's rho = 0.35; $p = 0.008$). We are not prepared to speculate about the relationship between Commitment Manipulation and *one* mate retention item.

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