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Development and preliminary validation of The Multidimensional Sexual Coercion Questionnaire (MSCQ)

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Abstract *The goal of this study is to present the development and validation of a sexual coercion assessment instrument for college students, the Multidimensional Sexual Coercion Questionnaire (MSCQ). An exploratory factor analysis for ordinal Likert data, followed by a confirmatory factor analysis in 762 college students, revealed seven factors. These pertained to commonly noted tactics such as pressure to have sex, exploitation, relational manipulation as well as less commonly measured tactics of humiliation and two clusters of tactics pertaining to forced compliance based on past coercion. Although several other measures exist, this measure was designed specifically for college students and therefore includes a wider array of tactics than generally considered. The measure also makes an attempt to include more nuanced and difficult-to-measure coercion strategies. The MSCQ is likely to be of interest to researchers and clinicians who wish to consider a more nuanced analysis of sexual coercion dynamics among college student, young adult and general populations.*

Keywords *Sexual coercion; scale development; intimate relationships*

The goal of this study is to present the development and validation of a sexual coercion instrument for college students. This measure attempts to expand upon existing measures by: (1) including a wider range of tactics; (2) including coercion obtained by duress under three different temporal contexts rather than focusing only on coercion preceding the most recent event; and (3) connecting compliance to duress in all items to more sharply discriminate between unwanted but freely consented sex and unwanted and non-consensual sex. Finally, in addition to the measure development, we attempt to advance theory on non-physical sexual coercion. In the following sections, we briefly review the sexual coercion literature followed by existing measures, before presenting the development of this scale.

The research community has become increasingly aware that non-consensual sex is often coerced without physically constraining or incapacitating the unwilling victim (Basile, 1999; Broach & Petretic, 2006; Kernsmith & Kernsmith, 2009). Using verbal tactics such as nagging, pressuring, manipulating or threats, the coercer generally obtains compliance without resorting to overt acts of violence (Basile, 1999; Livingston, Buddie, Testa, &

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vanZile-Tamsen, 2004). Although the prevalence of sexual coercion is confirmed by research, sexual coercion estimates vary greatly among studies from 8.7% to 78% (Broach & Petretic, 2006; Kernsmith & Kernsmith, 2009; Koss & Oros, 1982; Livingston et al., 2004; Struckman-Johnson, Struckman-Johnson, & Anderson, 2003) with national sample estimates of women and men's experience of sexual coercion at 13% and 6%, respectively (Black et al., 2011). Varying rates of reported sexual coercion are difficult to compare for numerous reasons. The variability of sexual coercion rates depends on sample type (community, clinical or college), how coercion was measured (the definition of sexual coercion and the number of items used to assess coercion) and whether lifetime prevalence, past year prevalence or other timelines were used. In general, lower rates of coercion are obtained when sexual coercion requires completed intercourse (e.g., Broach & Petretic, 2006), if fewer items are used, or if narrower definitions of tactics are applied (DeGue & DiLillo, 2005).

The gender of the respondent is also a factor when measuring sexual coercion. Women generally report experiencing higher rates of overall coercion and perpetrating lower rates of coercion than do men (e.g., Black et al., 2011; Hogben & Waterman, 2000; Schatzel-Murphy, Harris, Knight, & Milburn, 2009; Struckman-Johnson et al., 2003), although several studies have noted that men and women report similar rates of perpetrating coercion (e.g., Kernsmith & Kernsmith, 2009), albeit using different tactics (Struckman-Johnson et al., 2003; Waldner-Haugrud & Magruder, 1995), for different reasons (Schatzel-Murphy et al., 2009; Wright, Norton, & Matusek, 2010; Zurbriggen, 2000) and with different outcomes (Kernsmith & Kernsmith, 2009). In sum, research on sexual coercion continues to garner interest; however, more work on tactics within specific dating populations and their related outcomes are needed to better understand this form of abuse.

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Definition of sexual coercion and sexual coercion tactics

Although the definition of sexual coercion varies slightly across studies, the core tenet focuses on obtaining sex with an unwilling partner using verbal coercion without the use of physical force or overt aggression (Basile, 1999; Black et al., 2011; DeGue & DiLillo, 2005). Katz, Moore, and Tkachuk (2007) further exclude sexual contact that was obtained by use of incapacitation. Force may not be completely absent, however. Many researchers (e.g., Camilleri, Quinsey, & Tapscott, 2009; Schatzel-Murphy et al., 2009; Shackelford & Goetz, 2004; Struckman-Johnson et al., 2003) include forced sexual arousal (also referred to as sexual touching or seduction with an unwilling partner) as a key tactic in sexual coercion and most consider incapacitation through the use of drugs and alcohol as a non-physical coercive tactic (e.g., Schatzel-Murphy et al., 2009; Shackelford & Goetz, 2004). Finally, a few researchers include physical force such as hitting and pushing (e.g., Shackelford & Goetz, 2004; Struckman-Johnson et al., 2003) as one of the tactics used in sexual coercion but generally distinguish physical versus non-physical force.

Sexual coercion occurs when the victim resists unsuccessfully, does not give consent (non-consent) or complies under duress (i.e., threats, pressure, intimidation and humiliation which results in forced compliance). Although these three categories of responses are ways of saying "no", they differ somewhat from each other. For the purposes of this study, we define non-consent when someone refuses a sexual request or resists a sexual request but endures sexual intercourse, whereas, forced compliance refers to agreeing to have sex under duress and without full freedom to refuse. Resistance (and sometimes refusal) includes verbal, non-verbal, direct and indirect signs that the target engages in to indicate unwillingness for sexual intercourse. While non-consent and forced compliance are similar, non-consent requires that

the target never complied, whereas, forced compliance requires that the target resisted but finally complied unwillingly and under duress.

Numerous studies have explored the sorts of tactics that a partner might use to coerce another into unwanted sexual behaviour. Most studies have found that coercive tactics generally fall into three to five categories: using preliminary sexual arousal to insist on unwanted further sexual contact (persistent kissing and touching after refusal), applying psychological pressure and emotional manipulation (arguments and/or use of guilt and obligation), using deception (false promises, lying and blackmail) and taking advantage of someone who is intoxicated (Anderson, Kontos, Tanigoshi, & Struckman-Johnson, 2005; Basile, 1999; Kernsmith & Kernsmith, 2009; Koss, Gidycz, & Wisniewski, 1987; Koss & Oros, 1982; Koss et al., 2007; Livingston et al., 2004; Shackelford and Goetz, 2004; Struckman-Johnson et al., 2003; Waldner-Haugrud & Magruder, 1995).

Because sexual coercion tends to occur between individuals who know each other to varying degrees, (i.e., acquaintance, dating partner, spouse), the notion of compliance because of past negative experiences may also be important. For example, Livingston et al. (2004) found that coercers who knew their victim used more negative tactics, whereas coercers who did not know their victims used sweet talk, false promises and deception. In addition, Basile (1999) found that women acquiesced to sex as a result of different kinds of abuse that occurred prior to the current coercive incident.

If there has been a history of negative sexual experiences, either across relationships or within the relationship, the effort that the coercer has enacted for a particular sexual encounter may not appear coercive in traditionally defined terms and correspondingly, compliance may appear misleadingly consensual. Indeed, in longer-term relationships, sexually coercive dynamics are likely to be ongoing and subtle (e.g., Basile, 1999; Shackelford & Goetz, 2004) However, regardless of whether the threat is distal or proximal, a victim may comply because she is intimidated by the perpetrator, because resistance has not worked in the past with the same or a different perpetrator, and/or because resistance has met with negative outcomes that impact other areas of the relationship. This often occurs when coercive control is established; once the power imbalance has been established the person in power requires little effort to obtain the required outcome (Beck & Raghavan, 2010; Dutton & Goodman, 2005; Stark, 2006, 2007; Tanha, Beck, Figueredo, & Raghavan, 2010). While past sexual history has been discussed by a number of theorists (e.g., Basile, 1999; Livingston et al., 2004), how it relates to actual coercive behaviours and forced compliance remains understudied and is not captured in any current measure of sexual coercion.

In addition to studying a range of tactics, some researchers have further suggested that these tactics might be usefully conceptualised as occurring on a continuum of severity with sexual arousal at one end (least severe) and physical force and threats of harm at the other end (most severe; e.g., DeGue & DiLillo, 2005; Struckman-Johnson et al., 2003) although this has not been empirically tested and some incidental evidence suggests that such linearity may be artificial (Schatzel-Murphy et al., 2009).

Existing sexual coercion measures

Several relatively recent measures of sexual coercion exist, including the revised Sexual Experiences Survey (SES; Koss & Oros, 1982; Koss et al., 2007) and the Sexual Coercion in Intimate Relationships Scale (SCIRS; Shackelford & Goetz, 2004), which is specifically designed to measure coercion in committed relationships. Additionally the more general seven-item sexual coercion scale of the Revised Conflict Tactics Scale (CTS2; Straus, Hamby, Boney-McCoy, & Sugarman, 1996) intended for dating partners and the Sexual

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Coercion Inventory (SCI; Waldner, Vaden-Goad, & Sikka, 1999) intended for a wide range of perpetrators are also used. Finally, the National Intimate Partner and Sexual Violence Survey (Black et al., 2011) includes multiple sexual victimisation items including penetrative sex and unwanted sexual contact obtained without physical tactics. Each existing measure includes items that measure coercive tactics; however, none of them cover a wide range of tactics developed to measure sexual coercion in young adult relationships. Although the SCIRS is particularly strong in assessment of relational manipulation, it is weaker in items that tap more traditional domains of verbal pressure and coercion and does not measure intimidation or humiliation. The SES has been thoughtfully revised and offers an efficient format to obtain estimates of a wide variety of sexual outcomes as a result of different tactics; however, multiple classes of coercive tactics are grouped together, rendering it less sensitive to understanding specific tactics. Finally, the CTS-2 contains a limited number of coercion tactics and therefore it is likely to generate underestimates of sexual coercion. Although no measure can address all the shortcomings in the field, we hope to develop a scale that is relevant and sensitive to a wide array of tactics in young adults.

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Development of Multidimensional Sexual Coercion Questionnaire (the MSCQ)

The new items for the MSCQ were written after surveying the literature in the field and piloting items with male and female undergraduate college students (see item construction and procedure, below). Items were also adapted from existing measures that have demonstrated utility, reliability and validity. Consistent with many sexual coercion researchers, we included items that include physical tactics such as forced arousal but not penetrative intercourse.

In addition to the above, we measured instances of coercion in intimate relations where coercion was indicated not only by discrete events, but also various kinds of compliance that were shaped by intimidation, histories of failed resistance or aversive outcomes over time. Thus, we defined coercion as occurring if sex was obtained under duress in three different temporal contexts: whether the duress was current, whether the duress was previously established but affected future responses because the victim had reason to believe that denying sex would result in negative consequences, and whether the duress was in the past where the victim had attempted to avoid unwanted sexual contact but learned/believed that it was pointless and therefore felt forced to comply in the present. Further, we tied forced compliance to different types of duress (e.g., intimidation) in all items to more sharply discriminate between unwanted but freely consented sex and unwanted and non-consensual sex regardless of the coercive tactic used (Broach & Petretic, 2006; O'Sullivan & Allegeier, 1998). Although we include a broad array of tactics, we use a conservative definition of coercion that requires completed sexual intercourse (oral, anal or vaginal) for the majority of items. A few items that did not involve sexual intercourse (e.g., forced arousal, and being forced to participate in unwanted sexual fantasies) were included to be comprehensive and consistent with other measures.

Finally, in addition to traditional coercion items pertaining to psychological manipulation, obligation and incapacitation through drug and alcohol abuse and deception, we included two sets of tactics that have been noted to obtain sex. The first cluster, comprising items measuring public humiliation/blackmail (e.g., threatened to tell peers or family something embarrassing about victim), has frequently been noted as a tactic (Basile, 1999; Kernsmith & Kernsmith, 2009) but is not included in existing measures or too few items are included to obtain an understanding of the cluster itself (e.g., Koss et al., 2007). The second cluster comprised verbal abuse items (e.g., swearing at victim or insulting the victim to obtain

sex). Although verbal abuse is routinely included in measures of partner violence, it is generally not assessed in specific sexual coercion contexts, or, alternatively, is conflated as part of tactics that include physical force and intimidation. It should be noted that the SES does include verbal abuse tactics but they are grouped together as one item (Abbey, Jacques-Tiura, & LeBreton, 2011; Abbey, Parkhill, & Koss, 2005). However, general verbal abuse and threatening behaviours are conceptually distinct tactics. Accordingly, at this preliminary stage of measure development, we separated verbal abuse from threats of harm to obtain sex for the purpose of exploring the potential utility of such items.

Methods

Participants

Data for this study were obtained from subjects in a variety of sites, representing both rural and urban student populations, as well as a wide variety of ethnic and socio-economic status. Specifically, paper and pencil questionnaires were distributed to participants in a state-funded college (N = 366); a private, suburban, northeastern four-year university (N = 205); a private, southeastern two-year technical college (N = 115) and a public northeastern two-year community college (N = 87). The battery of instruments comprising the questionnaire was filled by the students in one session. The study obtained Internal Review Board (IRB) or IRB-equivalent approval in all participating institutions. Written informed consent was obtained from all participants and participants received introductory psychology or some other course credit for participating.

To be included in the study, participants had to be at least 18 years old and to have been in a sexual relationship that lasted at least a month. The total sample comprised of 773 students. Eleven participants were eliminated due to extensive missing data, resulting in a final sample size of 762 students.

Demographics

Average age of participants was 21 (SD = 8, N = 757, 5 participants failed to indicate age). Female participants were 58.9% (N = 449) of the final sample of 762. Thirty-five per cent (N = 270) of the participants in the sample identified themselves as White, Caucasian or European American; 19.2% (N = 146) as Black, African-American or Afro-Caribbean; 11.4% (N = 87) as Hispanic or Latino(a); 4.9% (N = 37) as Arab or Arab-American; and 2.1% (N = 16) as Asian or Pacific Islander. The remaining 24.4% (N = 186) self-identified as South Asian, Native American, Other or Mixed. Eight participants did not indicate their ethnicity.

As a preliminary step before psychometric analyses, we examined the distribution of total scores of the instrument. Total scores ranged from 0 to 80 (the final instrument included 37 items on a Likert-type scale ranging from 0 ("this has never happened") to 4 ("this happened more than 5 times in the past year"). About half the sample, 49.73% (N = 379) indicated experiencing at least one act of sexual coercion and about a third, 27.69% (N = 211) reporting a total score of at least 10 or more, indicating a widespread and high frequency of sexual coercion in their last intimate relationship.

Item construction and procedure

Potential items for the instrument were constructed by discussion groups comprised of master's level students of psychology that were run as part of a domestic violence and sexual abuse research working group headed by the first author. Overall, these discussions spanned

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2 academic years and involved approximately 20 students, (of whom half were of minority ethnicity, two were male and two identified as lesbian gay bisexual transgender) divided into two consecutive groups. Utilising both top-down and bottom-up approaches, the students discussed questionnaire items that could capture the variety of reasons and motivations to engage in sexual acts within a coercive (but not overtly violent) relational context, as they might be experienced (and endorsed) by the victim. Contextual considerations when formulating items included level of sexual experience of young dating partners, control in non-sexual aspects of the relationship, extent of commitment, socially acceptable pressure tactics, internalised and externalised norms that both partners may hold when perpetrating or complying and gender and cultural differences across these factors. While we considered sexual orientation as a factor, the differing cultural realities lead us to focus on items for heterosexual relationships. Within the top-down approach, sexually coercive practices, circumstances and motives were culled or rephrased from known instruments that tap related constructs (e.g., coercive control), whereas within the bottom-up approach, students discussed potential items that represented their experience working with partner violence victims in shelters and hotlines. In accord with a growing body of evidence that points to a robust effect of item wording and framing in questionnaires of sexual coercion and violence (e.g. Abbey et al., 2005; Fisher, Cullen, & Turner, 2000; Hamby, Sugarman, & Boney-McCoy, 2006), and in order to augment the consistency and ecological validity of the instrument, all items were formulated using the preamble "I had sex when I didn't want to because".

From this process, a large pool of over 50 items were written and then administered to another 10 MA-level psychology and criminal justice students who were not part of the working group. Feedback fell into the following clusters: (1) item wording was unreliable or unclear; (2) the tactic could be mistakenly endorsed as coerced when it could have been unwanted but willing sex; (3) items were repetitious; and (4) items were too obscure or too rare in the collective experience of the group. Based on feedback, items were iteratively modified, added or eliminated by working group consensus, sometimes with added feedback from the outside pool of students. A final version of the instrument included 41 items. In a preliminary analyses, four out of 41 items were endorsed by less than 10% of the respondents, and their base rates were therefore too low for a reliable estimation of their correlations with other items. These were omitted from subsequent analysis. These items concerned coercive sexual acts associated with (1) the partner blackmailing the participant; (2) the partner threatening to consider the responder gay should they refuse to have sex; (3) the partner threatening to consider the responder a prude should they refuse to have sex; and (4) the partner threatening to consider the responder impotent or frigid should they refuse to have sex.

The final version of the instrument included 37 items on a Likert-type scale ranging from 0 to 4, and including 0 (this has never happened); 1 (this happened once in the past year); 2 (this happened twice in the past year); 3 (this happened 3–5 times in the past year); and 4 (this happened more than 5 times in the past year). Students were prompted first by a more general reference to a dating partner followed by instructions for the sexual coercion questionnaire as follows: "The following questions are about your current or most recent partner. By partner, we mean your boyfriend, girlfriend, domestic partner or anyone with whom you are romantically involved". Before students completed the sexual coercion questionnaire, they were prompted by the following instructions: "Relationships are often complicated and challenging. Sometimes disagreements between partners are about sex. The following questions ask about how you and your partner have negotiated your intimate and sexual life in the past 12 months. Each question has two parts. The first part asks about your experiences and the second part asks about things you may have done to your partner. Each

question asks about how often something has happened to you or your partner. If it did not happen within the past year, but happened before that, please circle "A". If it has never happened with your partner, please circle "B".

Data analytic procedure overview

In the following, we describe the multi-step process that was used to establish the internal structure of the instrument and its subscales (and inter alia determine its optimal scoring scheme), as well as to assess its reliability and validity. Items deemed conceptually relevant to sexual coercion were retained even if they did not exhibit substantial correlations with other items, provided that their base rates were adequate. The number of latent factors and subscales for the instrument were determined by bootstrap minimisation of a discrepancy function between the sample polychoric correlation matrix and various theoretical covariance structures that do not require an underlying normal distribution of the variables. This procedure produced a clear minimum in a modified information function—allowing an exact estimation of the number of factors without heuristic rules of thumb such as scree tests or arbitrary cut-off levels of factor loadings. Lastly, confirmatory factor analysis was conducted to evaluate the construct validity of each of the resulting 7 factors, and the reliability, internal consistency and interrelations between the subscales were estimated using their Pearson correlations, Cronbach's alpha and split-half reliability.

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Results

Item prevalence and endorsement rate

Mean prevalence rates for each item of the final questionnaire were calculated by tallying the number of times that an item was positively endorsed. The mean endorsement rate for the items in the final version of the questionnaire was 8.63% (range: 1.72–22.50%, $N = 760$; Two subjects fail to indicate their sex). The mean endorsement rate by females was 10.68% (range: 2.00–25.61%, $N = 449$), and the corresponding rate for males was 5.65% (range: 0.96–17.89%, $N = 313$). Figure 1 shows the prevalence rate for each of the variables in the final questionnaire. The prevalence rate among female respondents was on average 1.91 times that of male respondents for all items, with the exception of V8 and V25 (which female respondents endorsed 4.65 and 5.58 times more than male respondents, respectively). Apart from a consistently lower endorsement rate of the items by males, the pattern of endorsement across all items is highly concordant between men and women, with Pearson correlation of $r = .946$ ($p < .0001$; $N = 760$). The Pearson correlation was used since straightforward comparison of the distributions would be affected by the differences in the base rate. In fact, with the exception of V8 and V25, the series of females to males endorsement ratios was markedly consistent, with the standard deviation amounting to only 20% of the mean ratio (1.91), and with an interquartile range of 0.53

Exploratory factor analysis

Estimation of factor loadings and their reliabilities was carried out using the Comprehensive Exploratory Factor Analysis program version 3.04 (CEFA; Browne, Cudeck, Tateneni, & Mels, 2008), using the Ordinary Least Squares metric (OLS; Jöreskog, 1977) to minimise the discrepancy function between the sample polychoric correlation matrix and the expected covariance matrix for the number of factors in the model after rotation (see Table I). CEFA was chosen for its implementation of Zhang and Browne's Bootstrap method for estimating

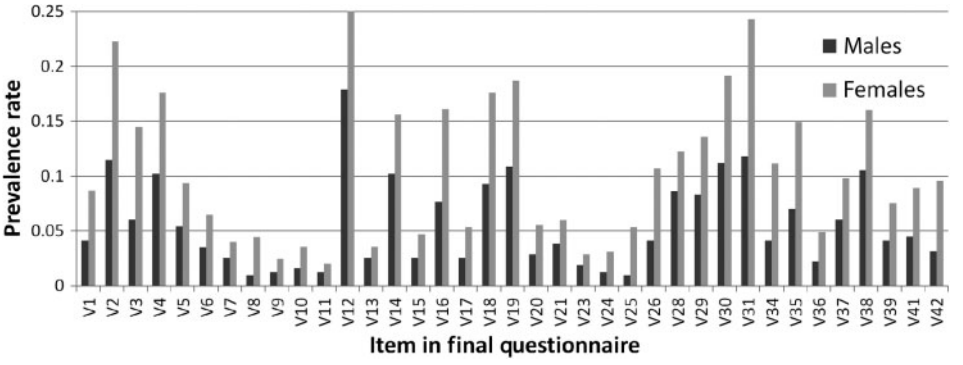


FIGURE 1. *Prevalence rates and the pattern of item endorsement for males and females (N = 760). Y-axis represents the prevalence rate of the items in the sample as the proportion of respondents who endorsed the item at any intensity.*

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the standard error in the factor loadings after OLS estimation (for a review see Zhang, Preacher, & Luo, 2010). The OLS metric was deemed preferable to the maximum Likelihood method, in accord with a growing body of research that demonstrated its relative robustness in estimating latent class models of ordinal variables, particularly when the underlying factors might be weakly correlated—as is often the case in psychological questionnaire data (e.g., Briggs & MacCallum, 2003). However, to facilitate the comparability of this study's results to other studies, and considering the higher popularity and inferential utility of the maximum likelihood method, all viable factorial models to be reported in the following were also estimated using the Maximum Wishart Likelihood function in CEFA. No substantive differences were found between the two estimation methods. Thus, only the OLS estimates will be reported. For the models estimated using the ML method, the empirical polychoric correlation matrix—which was estimated bivariately for each pair of items—had to be first adjusted to its nearest positive definite matrix. This was done using Higham's (2002) algorithm, as implemented in the "Matrix" module (Bates & Maechler, 2011) of the R statistical Package (Version 2.13.0, the R project for statistical computing).

Zhang and Browne's Bootstrap method for estimating the standard error in the factor loadings is purported to result in superior generalisability of the results (e.g., Browne et al., 2008) due to the repeated resampling inherent in the technique. The resampling inherent in the bootstrapping technique effectively attenuates random dissimilarities between the two samples, and augments the generalisability of the model beyond the two samples at hand. This strategy afforded us with the statistical power of the combined sample to achieve better accuracy of the factor loadings point estimates, while minimally compromising the generalisability of the model to other samples. These assumptions will be revisited later on in the discussion section.

One of the largest sources of factor analysis model instability (and compromised generalisability) is the "aliasing" associated with the subjective estimation of the number of underlying factors and the resulting over- or under-extraction (e.g., Beauducel, 2001; Block, 1995). We eliminated this source of instability by using an information-derived statistic that provides an exact minimum (rather than a questionable "elbow") to the goodness of fit as a function of number of retained factors.

Specifically, the number of factors to retain in the final model was determined by comparing various CEFA goodness-of-fit indices after fitting the data on the same obliquely rotated OLS model with increasing number of retained factors. In this manner, the

Table I. *Factor loadings (Pattern matrix) of the seven factor model after oblique rotation*

Var#	Item content	Threats	Exploit	Humiliate	Pressure	Rel.	Hopeless	Helpless
V11	Partner threatened to use force	**0.678**	0.063	−0.034	−0.096	0.062	0.212	−0.050
V9	Had anal sex because partner used force	**0.612**	0.073	−0.001	−0.110	0.027	0.030	0.038
V8	Had oral sex because partner used force	**0.512**	0.001	0.069	0.060	0.053	−0.059	0.039
V10	Had sex because partner used force	**0.507**	0.108	0.057	0.212	−0.210	0.021	0.136
V7	Had sex to stop partner from swearing	**0.349**	−0.100	0.202	0.134	0.184	−0.014	0.187
V30	Partner pressured me to not use condom	0.028	**0.539**	0.018	0.066	−0.030	0.016	0.088
V20	Partner gave me alcohol or drugs	−0.004	**0.512**	0.120	−0.029	0.029	−0.001	−0.063
V26	Partner pressured sex fantasies	0.131	**0.376**	−0.007	0.050	0.004	0.114	0.028
V14	I was too drunk to resist	0.116	**0.365**	−0.257	−0.012	0.147	0.144	0.143
V29	Partner made false promises	0.033	**0.246**	0.185	−0.159	**0.194**	0.135	0.161
V36	Partner left last time I said no	0.042	**0.235**	0.015	0.143	0.158	0.060	0.155
V23	Partner threatened to embarrass me	−0.001	0.212	**0.627**	0.010	0.050	0.025	−0.090
V24	Partner threatened to badmouth me	0.021	−0.015	**0.595**	0.037	0.088	0.095	0.068
V39	Partner lied to me	0.087	0.023	**0.384**	−0.062	0.037	0.242	0.054
V13	Partner was shouting and screaming	**0.233**	−0.023	**0.304**	0.211	0.108	0.064	0.035
V6	Had sex to stop partner from insulting me	0.148	0.046	**0.219**	0.115	**0.189**	−0.003	0.192
V16	Partner constantly pressured	−0.084	0.092	0.032	**0.458**	0.126	0.068	0.178
V34	Saying no to partner caused a fight	−0.031	0.054	0.003	**0.392**	0.164	0.087	0.201
V15	Overwhelmed by arguing	0.039	−0.061	0.133	**0.371**	0.259	0.083	0.017
V31	Overwhelmed by persistence	−0.045	**0.333**	0.175	**0.330**	0.003	−0.036	0.022
V25	Partner pressured having sex with others	0.157	0.102	−0.055	**0.297**	0.188	0.113	−0.141
V28	Partner demanded sex to prove my love	0.030	0.110	0.076	0.047	**0.514**	−0.008	0.063
V18	Partner insisted sex part of commitment	−0.009	−0.077	0.067	0.177	**0.495**	0.088	0.054
V21	Partner accused me of being bad lover	−0.133	0.120	0.271	−0.127	**0.356**	0.238	0.026
V17	Partner threatened to end relationship	0.224	0.063	0.178	0.125	**0.319**	0.019	0.024
V19	Afraid partner will find somebody else	0.053	0.144	−0.010	0.028	**0.316**	0.154	0.148
V41	Partner threatened to have sex with others	**0.215**	0.071	0.057	0.152	**0.252**	0.070	0.063
V37	There was too much to lose by saying no	0.121	0.054	0.061	−0.016	0.025	**0.575**	0.022

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Table I (*Continued*)

Var#	Item content	Threats	Exploit	Humiliate	Pressure	Rel.	Hopeless	Helpless
V38	Partner made me feel like I owe it to him/her	0.038	−0.025	0.117	0.210	0.086	**0.363**	0.090
V35	Did not seem worthwhile to resist	−0.115	0.083	0.158	**0.259**	−0.009	**0.313**	0.078
V4	Afraid how partner will treat me later	0.039	−0.008	−0.001	−0.034	0.067	0.156	**0.580**
V5	Had bad experience not complying	0.072	0.029	0.091	0.003	−0.089	0.244	**0.489**
V2	Afraid how partner would react to 'no'	−0.014	0.034	−0.005	0.075	0.172	0.018	**0.468**
V1	Afraid partner would do something bad	0.186	0.146	0.124	0.038	0.123	−0.288	**0.462**
V3	Saying no never worked	0.092	0.117	−0.042	0.174	0.036	0.008	**0.391**
V12	Partner insisted	−0.122	0.109	−0.038	**0.253**	0.062	0.170	**0.303**
V42	Partner ignored my verbal requests to stop	0.204	0.178	**0.232**	0.195	−0.126	0.002	**0.246**

Note: Loadings in bold are statistically significant based on the 90% one-at-a-time confidence intervals. Factor 1 = threats and/or physical force; Factor 2 = exploitation; Factor 3 = humiliation/intimidation; Factor 4 = pressure; Factor 5 = relational threats and manipulation; Factor 6 = hopelessness; and Factor 7 = helplessness.

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determination of the optimal number of factors became integrated with the general estimation of model fit. Of the various goodness-of-fit measures, the index that seemed to be most sensitive to changes in the number of OLS factors in the model was the "modified Akaike Information Criteria (AIC)" point estimate, which was suggested by other studies as a sensitive fit measure for OLS rotation models (e.g. Browne & Cudeck, 1993). As can be seen in Figure 2, the modified AIC index shows a clear minimum in the seven-factor model fit. As such the final model retained seven OLS-estimated factors. Factor rotation was performed in two stages, with orthogonal rotation serving as the starting point for the oblique rotation. Thus, the number of factors was estimated without heuristic methods such as scree tests or eigenvalues and their derivatives, as is routinely done in other factor analyses.

Table I shows the estimated factor loadings of the seven-factor solution, after rotation. The Crawford–Ferguson equivalent of the Varimax rotation was used to carry out both orthogonal and oblique rotation (Crawford & Ferguson, 1970). This prevented spurious local minima from being mistaken as the best solution. To ascertain the stability of the rotation solution, each rotation was computed from a number of random starts. Identical rotated factor loadings were obtained whether 20 or 100 random starts were used. These loadings were also identical to the ones obtained using oblique rotation directly, where global optimum was sought. Standard errors of the rotated factor loadings were obtained by computing the bordered information matrix (Asparouhov & Muthén, 2009; Browne et al., 2008). These were used to establish significant cross-loading and factor inclusion, rather than the traditional (and arbitrary) threshold of 0.3. As can be seen from Table I, even using a relatively liberal one-at-a-time 90% confidence interval for the factor loadings, the number of cross-loadings is rather low (8 out of possible 294, or less than 3%).

Thus, good empirical support for the theoretical basis of the instrument—and for its commensurate latent structure—may be derived from the finding that all items had at least one statistically significant loading on latent factors. Furthermore, the loadings were strong despite the conservative (and exact) method of their estimation (average significant loads was 0.415 ± 0.107), and the prevalence of cross-loading was very low (Byrne, 2010).

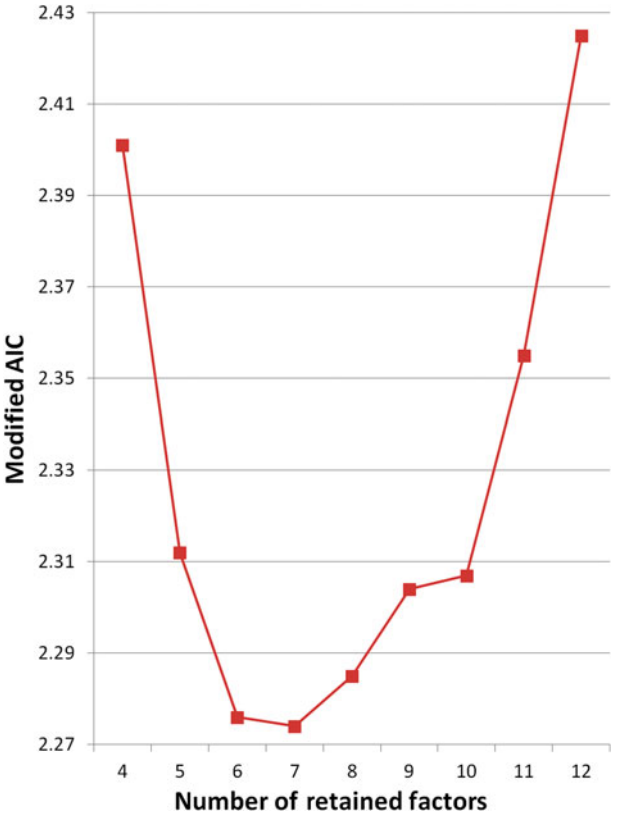


FIGURE 2. *Modified AIC as a function of number of retained factor using OLS estimates of the obliquely rotated polychoric correlation matrix.*

Labelling of the factors was anchored in both the adequate quality of their identification, as described above, in addition to the conceptual and phenomenological commonalities that unify them. As such, the first factor was labelled *threats and/or physical force*; Factor 2 was labelled *exploitation*; Factor 3 was labelled *humiliation/intimidation*; Factor 4 was labelled *pressure*; Factor 5 was labelled *relational threats and manipulation*; Factor 6 was labelled *hopelessness*; and Factor 7 was labelled *helplessness*.

Confirmatory factor analysis

To further test the construct validity of each of the exploratory model, its goodness of fit to the theoretical model, along with the reliabilities of each of the proposed factors, was examined using the structural equation modelling equivalent of confirmatory factor analysis. In doing so all intercorrelations between the latent factors were computed, and the goodness of fit between their values and those that are expected from the covariance structure of the theoretical model was estimated.

Table II lists three of the most popular goodness-of-fit measures for the proposed model along with the average score of each factor, which would be the score that researchers would obtain were they to administer the measure to a similar population and scored it as we suggested. The goodness-of-fit index (GFI; Bentler, 1983) and the adjusted goodness-of-fit index (AGFI; Bentler, 1983) are two "classic" measures of absolute model fit. The GFI takes

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Table II. *Goodness of fit for confirmatory factor analysis of the proposed model*

	GFI	AGFI	RMSEA	Mean score of factor, SD
Factor 1	0.996	0.981	0.049	0.272, 1.556
Factor 2	0.988	0.971	0.055	1.184, 2.669
Factor 3	0.995	0.974	0.063	0.412, 1.699
Factor 4	0.987	0.960	0.072	1.104, 2.532
Factor 5	0.985	0.964	0.061	1.154, 2.939
Factor 6	0.998	0.993	0.011	0.734, 1.851
Factor 7	0.976	0.944	0.084	1.905, 4.097

Note: A good fit is suggested when GFI and AGIF values are above 0.90 and RMSEA values are under .10 (see text for more details). Factor 1 = threats and/or physical force; Factor 2 = exploitation; Factor 3 = humiliation/intimidation; Factor 4 = pressure; Factor 5 = relational threats and manipulation; Factor 6 = hopelessness; and Factor 7 = helplessness.
GFI = goodness-of-fit index; AGFI = adjusted goodness-of-fit index; RMSEA = root mean square error of approximation.

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into account the sample size and the AGFI adjusts the GFI to the complexity of the model. The root mean square of approximation (RMSEA; Steiger & Lind, 1980 as noted by Steiger, 1990) is another absolute fit index that was included in Table II for its pertinence to our model (Hu & Bentler, 1998).

Overall, the goodness-of-fit indices listed in Table II suggest an excellent fit between the empirical and the theoretical covariance structures of the proposed model. Following recent statistical reviews, the cut-off values for adequate model fits were: GFI $\geq$ 0.9, AGFI $\geq$ 0.9 and RMSEA $\leq$ 0.1 (Byrne, 2010; Hooper, Coughlan, & Mullen, 2008; Hu & Bentler, 1999). However, it is worth mentioning that the evaluation of the goodness of fit based on these metric is still a matter of consensus and custom rather than a fully-grounded scientific inference.

Internal consistency of the instrument was evaluated using Cronbach's alpha, Guttman's split-half reliabilities and the fraction of the total variance that each factor explains, in addition to the intercorrelations between the factors. These indices are listed in Table III. Cronbach's alpha ranges from 0.71 to 0.86, and Guttman's split-half reliabilities range from 0.70 to 0.81. Taken together, these indices suggest an adequate internal consistency (Nunnally, 1978;

Table III. *The factor correlation matrix after oblique rotation*

	Threats	Exploit	Humiliate	Pressure	Rel.	Hopeless	Helpless	PropVar[a]	Cronbach alpha	Split-half reliability
Factor 1	–							0.16	0.857	0.782
Factor 2	0.396	–						0.20	0.713	0.694
Factor 3	0.366	0.381	–					0.30	0.757	0.725
Factor 4	0.322	0.506	0.458	–				0.38	0.726	0.772
Factor 5	0.346	0.596	0.470	0.679	–			0.19	0.804	0.805
Factor 6	0.283	0.582	0.479	0.628	0.673	–		0.11	0.738	0.704
Factor 7	0.308	0.581	0.427	0.658	0.630	0.330	–	0.40	0.848	0.808

Factor 1 = threats and/or physical force; Factor 2 = exploitation; Factor 3 = humiliation/intimidation; Factor 4 = pressure; Factor 5 = relational threats and manipulation; Factor 6 = hopelessness; and Factor 7 = helplessness.
[a]The proportion of the variance conferred by each factor is listed in the rightmost column.
N = 762; all correlations $p < .001$

Peterson, 1994). Table III also shows the proportion of the total variance for each factor. This proportion is traditionally viewed as an indication of the relative prominence of every factor. However, since our model used oblique rotation and OLS discrepancy function, the proportion of variance cannot be unequivocally attributed to any particular latent factor, and hence these values have to be interpreted with caution.

All intercorrelations between the factors (Table III) reached statistical significance—attesting to the construct validity of the instrument. The significance level of the correlations was estimated based on their standard errors and their one-at-a-time 90% confidence intervals.

Discussion

In this study, we were interested in empirically examining the multidimensional nature of sexual coercion in college students and sought to explore the potentially complex range of tactics that have been noted by researchers (e.g., Basile, 1999; Kernsmith & Kernsmith, 2009; Koss et al., 2007; Struckman-Johnson et al., 2003). Further, we attempted to distinguish unwanted sex from coerced sex, and included a more nuanced measure of coercion that accounted for sex obtained by duress that occurred in the past. Total distribution scores revealed that while half the sample had not experienced sexual coercion, the remainder reported at least one act of coercion in the past 12 months, with a third endorsing an alarmingly high frequency of unwilling sex. The overall rates, which are consistent with national sample estimates of rape and coercion (Koss et al., 1987) underscore the importance of paying attention to this line of research.

Subsequently, a series of factor analyses revealed seven interrelated factors as follows: threats and/or physical force, exploitation, humiliation/intimidation, pressure, relational threats and manipulation, hopelessness, and helplessness. All factors were associated with one another suggesting, that perpetrators rarely confine themselves to one set of tactics but likely use numerous strategies simultaneously, or at least, within a particular relationship to obtain sex (Anderson et al., 2005; Basile, 1999; Kernsmith & Kernsmith, 2009; Koss et al., 2007; Livingston et al., 2004; Shackelford & Goetz, 2004; Struckman-Johnson et al., 2003; Waldner-Haugrud & Magruder, 1995). The first (physical force), second (exploitation), fourth (pressure), and fifth factors (relational threats and manipulation) have been noted in previous research and for the most part, resembled other research findings in terms of tactics (Basile, 1999; Kernsmith & Kernsmith, 2009 Livingston et al., 2004). Specifically, the threats and/or physical force factor was composed of typical behaviours that utilise threat of harm and force and are generally found to occur rarely in intimate relationships (e.g., Waldner-Haugrud & Magruder, 1995). All items loaded on one factor and had high factor loadings suggesting that these sorts of tactics tend to co-occur. While we were primarily interested in measuring non-violent tactics, by including such items, researchers are able to rule out or rule in the use of physical force to obtain sex and therefore are able to characterise the sexual encounter more accurately. Thus, we would recommend that researchers use this subscale but provide separate estimates of physical versus coercive tactics as relevant to their research questions.

The second factor, *exploitation*, includes a variety of tactics that at first glance appeared marginally related. These included obtaining sex through drug and alcohol use, deception or pressure to engage in unwanted sex acts. However, what may unite these sexual approaches is that some form of exploitation and/or deception is used to obtain sex. Alternatively, what might unite these tactics may be a latent factor such that these dynamics are more likely present in couples with lower intimacy and possibly lower commitment. As found by Livingston et al. (2004), perpetrators who were not in a relationship with the victim were

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more likely to use deception and lies. More research on the types of sexual approaches and the relationship to intimacy and commitment is warranted to clarify these tactical differences.

The fourth factor, *pressure*, resembled the traditional tactics of verbal sexual coercion and comprised items that were related to arguments, being overwhelmed by pressure and persistence (e.g., Basile, 1999; DeGue & DiLillo, 2005; Kernsmith & Kernsmith, 2009; Waldner-Haugrud & Magruder, 1995). This factor is commonly measured; however, its particular strength in this measure is in the separation of the tactics of pressure, arguments and persistence, all of which are related but are differentially utilised in obtaining sex. The fifth factor *relational threats and manipulation* focuses on tactics that are oriented towards obtaining sex by capitalising on a sense of obligation or duty, and/or a fear of relationship dissolution as a result of refusing sex. The fourth and fifth factors differ from each other in that the former makes direct demands for sex while the latter manipulates social norms and internal fears to obtain sex.

The third and especially the sixth and seventh factors (e.g., CTS2; Straus et al., 1996; SES: Koss et al., 2007) are typically not fully represented in existing sexual coercion assessments. First, the third factor, *humiliation/intimidation*, comprises a variety of behaviours that are intended to intimidate the victim into complying using shame and humiliation tactics. Interestingly, the two verbal abuse items "I had sex to stop partner screaming and shouting" and "I had sex to stop partner from insulting me" loaded on this factor. While shaming and insulting may appear intuitively as belonging to separate factors, several methods of factor analysis have repeatedly demonstrated that, at least in our sample, these items tend to be endorsed together. This particular configuration suggests that behaviours either include threats of humiliation or result in humiliation as a consequence of insults and abuse to form a particular constellation of tactics. This double-faceted factor is noteworthy for two reasons. One, although guilt in the context of relational obligation has been suggested as an important coercive tactic (e.g., Basile, 1999; Kernsmith & Kernsmith, 2009; Shackelford & Goetz, 2004), intimidation that does not overtly threaten harm, shame and humiliation has been less studied. Viewed in concert with the *threats and/or physical force*, and the *relational threats and manipulation* factors, these three separate factors suggest that threats/force, obligation and shame/humiliation may constitute overlapping but separate tactics to coerce sex and should be measured separately. *Humiliation/intimidation* may be particularly important for intimate relationships where degradation is more likely to occur, possibly suggesting a more abusive dynamic than in relationships where degradation is not utilised to obtain sex (Hogben & Waterman, 2000). More research is warranted to explore how these different tactics might colour the dynamics of intimidation and abuse within an intimate relationship.

The sixth and seventh factors appear to capture forced compliance as a result of past negative experiences (e.g., Basile, 1999; Livingston et al., 2004). Intuitively, items reflecting past duress and future negative consequences, and items reflecting past duress and unsuccessful resistance would be expected to form separate factors. However, the results indicated a somewhat different factor structure. First, the sixth factor, which seems to denote *hopelessness* appeared to tap into a general feeling of hopelessness where the participant complied because the cost of noncompliance felt too high. Unlike Factor 2 that measures compliance under proximal pressure, this factor measures compliance given a history of pressure.

The seventh factor, *helplessness*, captures quite succinctly the expected compliance that stems from past negative sexual encounters. Specifically, this factor suggests that victims comply either because they have learned that no compliance results in negative consequences or they fear future negative consequences. All except one of the items in this factor (ignored my verbal requests to stop) are defined by the forced compliance, rather than by a delineated

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coercive tactic. The item (ignored my verbal requests to stop) suggests that phenomenologically, victims may abandon resistance because of a mixture of sexual approaches including proximal evidence that resistance is futile and potentially triggering past experiences that evoke helplessness and fear. Indeed, factor analysis indicated that this item is cross-loading (albeit faintly) with Factor 3, *humiliation/intimidation*. These findings are consistent with the presumed role of chronic exposure to coercive control in the induction of learned helplessness. Learned helplessness (e.g. Peterson, Maier, & Seligman, 1993) is often invoked to partially explain and the erosion of the motivation and/or the capacity to initiate and follow through with removing oneself from the coercive environment (Launius & Lindquist, 1988; Walker, 1979).

The role of helplessness and hopelessness presents a new challenge in how to prevent sexual coercion. The helplessness data suggest that multiple experiences, possibly with different partners, have lead young students to believe that they do not have personal agency to negotiate sex. Helplessness, as we know from years of depression research is pernicious to combat, especially when significant cognitive shifts about one's agency has occurred. Equally problematic, hopelessness data suggest that perpetrators of coercion continually nag, bully, pressure and threaten their partners until they obtain sex and that low intensity but chronic ongoing pressure coupled with negative outcomes may simultaneously serve to paralyse the victim while guaranteeing the perpetrator with sexual access. For example in response to V2, over 20% of the female sample endorsed that they gave in to sex because they were afraid of how their partner would react to a "no" (compared to less than 10% of the men). These data are disturbing—they suggest that some coercive tactics are embedded in the overall dynamics of intimate relationships and that men (and to a lesser extent women) use punitive and psychologically damaging long-term strategies to protect sexual access. These data suggest that more research on these factors with focus on tactics, negative outcomes and the accompanying cognitive shift is crucially needed.

The prevalence rate of the items was robust, with overall mean item endorsement of 9% using a conservative binary estimate and not intensity rating. Further, female participants consistently exhibited twice the prevalence rate exhibited by males across most items (with the exception of V8 and V25), the pattern of reporting was nearly identical, with a near-perfect correlation. The similar patterns suggest that the instrument may be sensitive to capturing gender differences. However, using prevalence rates alone is insufficient to capture the motivations, outcomes and meaning of coercion in male and female victims. All we can say is that college women report twice as much coercion as men, and these reports are consistent with other researchers who find that women report more sexual victimisation than do men (e.g., Black et al., 2011). More contextual research should be conducted to better understand the intersections of sex, gender and coercion.

Obviously, more research is needed to examine psychometric properties of the MSCQ including construct validity, replication of its factor structure in different samples and an exploration of gender differences and what these differences mean. Until such results are available, this measure should be treated as preliminary. Nevertheless, the MSCQ has several strengths noted here. The primary strength is its inclusion of a wide array of tactics and the coverage of new territory, which we have labelled *helplessness and hopelessness*. Another strength of the measure lies in the rigorous data analytic analysis strategy. Maintaining the multidimensionality of the coercive tactics, rather than forcing it into an efficient number of components is argued to capture the reality of how sexual coercion is enacted. Furthermore, the multidimensionality is likely to be important in distinguishing between different situations and different coercers, including contributing to the growing body of research that suggests that men and women coerce differently and for different reasons.

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The findings in this study also raise several interesting observations. First, we found that many respondents indicated that they had consented because of past experiences, suggesting an inability to resist or the inadvisability of resisting. Thus, while sex was obtained under duress, duress was not neatly and causally tied to specific tactics and clear non-consent at the time of the demand. While some researchers may argue that such types of compliance do not indicate coercion, we disagree. While non-consent or resistance strategies are important to measure for legal frameworks and/or victim safety/perpetrator education, it is not central to establishing whether sexual coercion occurred for a potential victim in a psychological sense. In fact, the inability to resist speaks to the heart of negative sexual precedence specifically and coercive control more generally. Thus, it is more important to establish that sex was obtained under duress (i.e., that compliance was forced) regardless of how the victim resisted or showed non-consent at the time.

This reframing of how to measure sexual coercion brings us back to an overarching question—that of the relationship between sexual coercion to other coercive dynamics including emotional and physically coercive behaviours. While a full discussion of power dynamics in general and coercive control more specifically is outside the scope of this paper, the relationship between the different forms of coercion to sexual coercion are crucial to better understand the dynamic and tactics used to obtain sex and the function of coercive sex overall to the relationship (e.g., Beck & Raghavan, 2010; Stark, 2006, 2007; Tanha et al., 2010).

In conclusion, the results of this study are consistent with much of the extant research and suggest that non-physical sexual coercion in young adults is a complex interpersonal dynamic with a wide range of tactics and severity (e.g., Kernsmith & Kernsmith, 2009). The results also provide preliminary confirmation that past sexual experiences may play an important role in why victims acquiesce to sex unwillingly. Such experiences, whether with the same partner or a different partner, are argued to be crucial to ongoing relationships and including such a measure may provide a richer understanding of how sexual coercion is enacted in longer-term relationships. The MSCQ may also be helpful for researchers who are interested in a nuanced understanding of particular sets of tactics and its relationships to external variables including relational commitment, personality of perpetrators and victims and conditions under which coercion occurs.

As with all research, this piece has its share of flaws. One of the challenges we faced was to write items that were balanced on the details and had some context but at the same time were not overly wordy, making scale administration unwieldy and unreliable. Further, although we focused on generating items that had potential applicability across different age groups, we validated only on college students. As such, a particularly important question is the extent to which these patterns of sexual coercion which we measure in young adulthood persist into later mature sex lives. Do adults in more committed relationships continue with such patterns of coercion and if so, do tactics change? Alternatively do older couples learn to renegotiate their sexual lives better or do they simply reinterpret the same acts of coercion as compromise? More research tracking such patterns will help us understand sexual coercion better. Additionally, while we attempt to include a wide array of tactics that are generally used in young populations, differences in norms based on race, gender and social class are likely to impact what is attempted and what is accepted or rejected as coercion. Although rates of coercion suggest that women are twice as likely to experience sexual coercion than are men, it is unclear if the motivations of the perpetrator (and accordingly the outcomes) differ by sex. Research that disentangles such intersections can inform us about sex and power in more detail. We also measured perpetration data but do not present it here. It is possible that including perpetration questions may have influenced some participants to withhold answers and others, to endorse

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victimisation more freely. We cannot account for such biased reporting but other research should attempt to disentangle biased reporting. Finally, while we discussed sexual orientation in detail during the planning phase, we chose not to include items that were more relevant to male–male or female–female coercion. A more refined analyses of orientation will further our understanding of sexual coercion. In conclusion, we hope that this measure provides a starting point for other interested researchers to pursue some of these questions and look forward to other expansion of our results.

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