Testing the Internal Consent Scale for Measurement Invariance Across Women and Men

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Abstract

The Internal Consent Scale (ICS) was created to measure feelings associated with a person's willingness to engage in partnered sexual activity. Although previous studies using the ICS have assessed gender differences, evidence has not been provided to suggest that the ICS functions similarly for women and men. Using data from an online cross-sectional survey of adults ($N = 874$; 53.1% women), we subjected the 25-item ICS to tests of measurement invariance across gender. We found that only partial measurement invariance was tenable, which indicated that direct comparisons across gender should be interpreted with caution when using the ICS. Therefore, we created a gender-invariant short form. In support of construct validity, we found that this 15-item ICS–Short Form demonstrated similar associations with measures of sexual consent communication as the full 25-item ICS. If researchers aim to compare women and men on internal sexual consent, we recommend using the 15-item ICS–Short Form. Cognitive interviews should be conducted to further understand how women and men might differentially interpret ICS items.

Keywords Sexual consent · Internal consent scale · ICS-short form · Measurement invariance · Gender

Introduction

A core component of sexual consent is how people internally experience their willingness to engage in sexual activity with another person (Jozkowski et al., 2014; Muehlenhard et al., 2016; Willis et al., 2019). This internal consent is distinct from, but related to, external consent (i.e., the ways that people communicate their willingness to engage in sexual activity). People report actively communicating consent–by saying words or using behaviors to indicate their willingness to engage in partnered sexual activity–as well as assuming

consent via passive cues (e.g., not resisting or refusing) or cues associated with context (e.g., relationship status).

Informed by conceptual and empirical reviews, Willis and Jozkowski (2019) defined sexual consent as "one's voluntary, sober, and conscious willingness to engage in a particular sexual behavior with a particular person within a particular context" (p. 1723). Whether somebody is willing to engage in a specific sexual event depends on a multidimensional internal process. For example, a person may want to experience the physical response and arousal of a sexual encounter but ultimately not be willing because they do not yet feel ready. Or a person who does not feel comfortable trying a new sexual position may ultimately be willing because they want to satisfy their partner. In these ways, various subjective states and motives (i.e., consent feelings) can contribute to whether a person decides to engage in sexual activity, but none of them on their own necessarily constitute a person's internal sexual consent.

The Internal Consent Scale (ICS) was developed to assess individual variation in feelings associated with willingness to engage in partnered sexual activity. Based on initial elicitation data from young people, Jozkowski et al. (2014) drafted items reflecting various internal consent feelings and refined them by consulting content experts. Using data from

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a sample of undergraduate university students in the United States (US), they then conducted an exploratory factor analysis (EFA) to create the ICS, which contains 25 items across five factors: physical response, safety/comfort, arousal, agreement/want, and readiness. This five-factor model has been supported by CFAs in another sample of undergraduate university students in the US (Walsh et al., 2019) and a racially/ethnically diverse national sample of adult women in the US (Willis et al., 2019). However, whether this measure functions similarly for women and men still has not been evaluated.

Sexual Consent and Gender

Sexual consent is typically conceptualized as a gendered phenomenon–at least in sexual interactions between women and men. Stereotypical gender roles in heterosexual contexts suggest that women are more likely to be gatekeepers during a sexual encounter, accepting or rebuffing men's attempts for sex as sexual initiators (Curtis & Burnett, 2017; Wiederman, 2005). Aligning with these expected roles, both women and men tend to describe sexual consent as something men get from women (Hirsch et al., 2019; Pugh & Becker, 2018; Righi et al., 2019). Because women are reinforced as gatekeepers and may subsequently experience inhibited sexual agency, they tend to communicate their willingness to engage in sexual activity indirectly–while men are encouraged to do so directly (Muehlenhard et al., 2016; Newstrom et al., 2021). These gendered expectations for sexual communication clarify why and how external consent might vary between women and men, but what about internal consent?

Findings from studies using the ICS are inconsistent. For example, Jozkowski et al. (2014) found that women reported lower levels of arousal and higher levels of safety and comfort than men, while Walsh et al. (2019) found that women scored higher on physical response. Mixed findings across the few published studies using the ICS might suggest that women and men differentially experience certain aspects of internal sexual consent or that they are interpreting the items themselves differently. In either case, women might consistently conceptualize items as grouping together in ways that differ from men. As such, further examination of the ICS's psychometric properties by gender is needed to determine whether conclusions regarding women's and men's experience of internal sexual consent are robust when using this measure.

Present Study

The initial goal of the present study was to conduct tests of measurement invariance to evaluate the extent that the ICS functions similarly across women and men–and thus whether we can compare these gender groups on the same construct of internal sexual consent. In the case that we were unable to provide evidence that the assumptions of invariance are tenable, we then aimed to explore whether the ICS could be modified to function better for women and men individually. Finally, if the 25-item ICS did not demonstrate full measurement invariance across gender, we sought to propose a gender-invariant short form of the ICS that would permit valid comparisons between women and men on the construct of internal sexual consent.

We assessed the construct validity of the shortened version by examining its associations with external sexual consent. In line with prior research, we expected internal consent feelings to be positively correlated with active consent communication and not correlated with passive consent communication (Jozkowski et al., 2014; Walsh et al., 2019; Willis et al., 2019).

Method

Participants and Procedure

Participants at least 18 years old were recruited to complete an online cross-sectional Qualtrics-hosted survey on their sexual experiences via Prolific, which is a large-scale data collection service that manages a panel of participants in the United Kingdom (UK) and the US. Once participants provided their informed consent, the survey took about 10 min to complete. Participants were compensated at rates of £6 (GBP) or $7.50 (USD) per hour for their participation. The procedure for this study was approved by the university's research ethics committee. In total, 950 people participated in this online study. To be included in the present analysis, participants must have (1) identified as either a woman or a man, (2) reported a previous sexual experience, and (3) completed the ICS in full. Participants were removed for identifying as a gender other than woman or man ($n = 17$), not reporting a previous sexual experience ($n = 54$), or not responding to all 25 ICS items ($n = 5$). Table 1 presents sociodemographic characteristics for the full analytic sample by gender ($N = 874$; 53.1% women).

Measures

In addition to the sociodemographic items, we administered the ICS. Although the original validation study of the ICS specifically referenced vaginal-penile sex (Jozkowski et al., 2014), we asked participants to report feelings associated with their most recent partnered sexual activity to be more inclusive of diversity in sexual expression–as has been done in previous studies using the ICS (Jozkowski & Wiersma, 2015; Willis et al., 2019). Participants reported their agreement with 25 items on a four-point Likert-type scale, ranging

Table 1 Sociodemographic Characteristics

Variable	Women (n=464)	Men (n=410)	Total (N=874)
Age			
M (SD)	32.8 (11.4)	32.5 (11.3)	32.6 (11.4)
Country of Residence			
United Kingdom	275 (59.3%)	206 (50.2%)	481 (55.0%)
United States	189 (40.7)	204 (49.8)	393 (45.0)
Race/Ethnicity			
White	374 (80.6)	336 (82.0)	710 (81.2)
Black	33 (7.1)	20 (4.9)	53 (6.1)
Asian	30 (6.5)	31 (7.6)	61 (7.0)
Multiracial/Other	27 (5.8)	23 (5.6)	50 (5.7)
Education Level			
A-Levels/High School or less	111 (23.9)	96 (23.4)	207 (23.7)
Some university but no degree	99 (21.3)	93 (22.7)	192 (22.0)
Bachelor's degree	155 (33.4)	137 (33.4)	292 (33.4)
Master's degree	79 (17.0)	63 (15.4)	142 (16.2)
Doctoral/Professional degree	20 (4.3)	21 (5.1)	41 (4.7)
Student Status			
Currently a student	111 (23.9)	96 (23.4)	207 (23.7)
Not a student	353 (76.1)	314 (76.6)	667 (76.3)
Household Income			
Less than £/$20,000	92 (19.8)	78 (19.0)	170 (19.5)
£/$20,000 to £/$39,999	131 (28.2)	94 (22.9)	225 (25.7)
£/$40,000 to £/$59,999	106 (22.8)	80 (19.5)	186 (21.3)
£/$60,000 to £/$79,999	61 (13.1)	58 (14.1)	119 (13.6)
£/$80,000 to £/$99,999	25 (5.4)	36 (8.8)	61 (7.0)
£/$100,000 or more	49 (10.6)	64 (15.6)	113 (12.9)
Sexual Orientation[a]			
Heterosexual	366 (78.9)	363 (88.5)	729 (83.4)
Homosexual	15 (3.2)	17 (4.1)	32 (3.7)
Bisexual	68 (14.7)	24 (5.9)	92 (10.5)
Unsure/Other	15 (3.2)	6 (1.5)	21 (2.4)
Current Sexual Partners			
0 partners	107 (23.1)	115 (28.0)	222 (25.4)
1 partner	340 (73.3)	273 (66.6)	613 (70.1)
2+ partners	17 (3.6)	22 (5.4)	39 (4.5)

$\chi^2(3)=21.78$, $p<.001$, $\varphi_C=.16$. No other sociodemographic variables significantly differed by gender

[a]Gender was significantly associated with sexual orientation

from 1 (*Strongly disagree*) to 4 (*Strongly agree*). The items measured five factors related to internal sexual consent: physical response, safety/comfort, arousal, agreement/want, and readiness. These five factors of the ICS have demonstrated strong internal reliability in past research (Jozkowski, et al., 2014; Walsh et al., 2019). The internal consistency of these factors in the current study was supported by coefficient omega (ω) values that ranged from 0.79 to 0.91 (see Table 2).

We also included a four-item measure of active sexual consent communication (Willis et al., 2021a).

Specifically, these items assessed the extent that participants relied on explicit cues, implicit cues, verbal cues, or nonverbal cues to communicate their willingness to engage in their most recent partnered sexual activity. Response options ranged from 0 (*Not at all*) to 10 (*Very much*). To complement these active consent communication items, we added a fifth item that has been used to measure passive consent communication: "I let the behavior happen without resisting or stopping it" (Willis et al., 2019), which was evaluated dichotomously (0=*No*; 1=*Yes*).

Table 2 Descriptive Statistics and Bivariate Correlations for Subscales of the ICS by Gender

Factor	Items	Total (N = 874)			Women (n = 464)			Men (n = 410)			Correlation (r)				
		M	SD	ω	M	SD	ω	M	SD	ω	1	2	3	4	5
1. Physical Response	6	3.15	.59	.84	3.08	.64	.88	3.22	.51	.75	—	.61*	.84*	.70*	.65*
2. Safety/Comfort	7	3.43	.55	.91	3.42	.60	.94	3.44	.48	.88	.55*	—	.69*	.81*	.85*
3. Arousal	3	3.43	.61	.88	3.31	.68	.91	3.57	.49	.80	.64*	.64*	—	.78*	.73*
4. Agreement/Want	5	3.59	.50	.90	3.56	.54	.91	3.63	.46	.88	.57*	.67*	.68*	—	.86*
5. Readiness	4	3.45	.51	.79	3.44	.55	.82	3.46	.47	.74	.55*	.80*	.66*	.68*	—

Correlations for women are presented above the diagonal; correlations for men are below

$^{*}p < .001$

Data Analysis

Descriptive statistics and bivariate correlations by gender were conducted for the ICS. We ran these analyses with SPSS 27. We conducted a series of confirmatory factor analyses (CFA) using structural equation models with the *lavaan* and *semTools* packages in *R* (Rosseel, 2012; Jorgensen et al., 2020, respectively). We initially conceptualized the ICS's four-point scale as ordinal and attempted to use the variance adjusted weighted least-squared method (WLSMV) estimator, which is recommended for data that are categorical in nature (Muthén & Muthén, 2009). However, this estimator resulted in biased estimates of the absolute fit index, so we present findings based on the maximum likelihood (ML) estimator.

First, to assess whether the ICS functioned similarly for women and men, we conducted tests of measurement invariance. We began by examining whether the underlying factor structures were similar across groups (i.e., configural invariance; Vandenberg & Lance, 2000), then we constrained factor loadings to be the same for women and men (i.e., metric invariance; Horn & McArdle, 1992), and finally we constrained intercepts to be the same (i.e., scalar invariance; Steenkamp & Baumgartner, 1998). If the data-model fit did not decline with the addition of constraints, the next set of constraints was applied. However, if the fit substantially worsened, we released individual constraints according to modification indices until the decrement in model fit was no longer significant (i.e., partial invariance; Byrne et al., 1989).

Next, if the assumptions for full measurement invariance were not tenable, we evaluated the factor structure of the ICS separately for women and men. Using modification indices, we identified items that would significantly improve the data-model fit if they loaded onto a different factor than the one proposed by Jozkowski et al. (2014).

Finally, we created a short form of the ICS that functioned similarly across gender. We began by removing the items that the previous set of gender-specific analyses found to load onto separate factors for women and men.

We then consulted modification indices to further remove items until the assumptions for configural invariance, metric invariance, and scalar invariance were tenable. To provide evidence regarding the construct validity of the gender-invariant short form, we assessed its correlations with measures of external sexual consent and compared those with the correlations obtained when using the full 25-item ICS.

Data-model fit was evaluated using χ^2 difference tests; a non-significant result ($\alpha = 0.05$) suggests that the nested models fit the data similarly (i.e., the pattern of invariance in question is tenable). We also provided three alternative fit indices: comparative fit index (CFI), root mean square error of approximation (RMSEA), and standardized root mean square residual (SRMR). A better data-model fit is reflected by a greater CFI, lower RMSEA, and lower SRMR. Hu and Bentler (1999) recommended that the CFI should be greater than 0.95, the RMSEA less than 0.06, and the SRMR less than 0.08. However, these cut-offs may not be useful in all situations (e.g., adding constraints as proceeding through the steps of testing for each level of measurement invariance) and are not well agreed upon among experts in this field (Marsh et al., 2004).

Results

Descriptive Statistics and Correlations by Gender

Descriptive statistics for the ICS are presented in Table 2. Based on the response scale of 1–4, the average composite scores for each of the five ICS subscales ranged from 3.15 to 3.59. Despite these high average levels of agreement across internal consent feelings, each of these subscales were approximately normally distributed or did not have substantially non-normal distributions (Ryu, 2011). Intercorrelations across the fives ICS subscales tended to be higher for women than men (Table 2).

Tests of Measurement Invariance by Gender

The five-factor model of the ICS fit our data adequately, $\chi^2(265) = 1485.08$, $p < .001$, CFI = 0.921, RMSEA = 0.073, SRMR = 0.049. Therefore, we began testing whether this data-model fit withstood constraints across gender. The absolute and alternative fit indices associated with each test of measurement invariance described below are presented in Table 3.

First, the model imposing configural invariance across gender for the ICS demonstrated that the data-model fit did not substantially decrease according to the alternative fit indices, suggesting that the five-factor model worked similarly well for women and men. Because the model testing configural invariance was not nested within the overall model, a χ^2 difference test could not be conducted to evaluate whether the change in fit was statistically significant.

To evaluate metric invariance, we then constrained the factor loadings to be the same for women and men. Doing so significantly worsened the data-model fit, $\Delta\chi^2 = 40.44$, $\Delta df = 20$, $p = .004$, which indicated that the items did not load onto their factors with the same strength across gender. To achieve partial metric invariance, the factor loadings for "I felt in control" and "The sexual act itself felt agreed to" needed to be freely estimated. Once these two constraints were released, the partial metric invariance model fit the data similarly to the configural invariance model, $\Delta\chi^2 = 26.56$, $\Delta df = 18$, $p = .088$.

We then assessed partial scalar invariance by constraining the intercepts for the 23 items for which the constraints

on factor loadings remained; doing so significantly worsened the data-model fit, $\Delta\chi^2 = 98.45$, $\Delta df = 18$, $p < .001$. To achieve partial scalar invariance, the intercepts for five further items needed to be freely estimated for women and men: "I felt erect/vaginally lubricated," "I felt flushed," "I felt comfortable," "I felt interested," and "I felt sure." Once these five additional constraints were released, the partial scalar invariance model fit the data similarly to the partial metric invariance model, $\Delta\chi^2 = 22.22$, $\Delta df = 13$, $p = .052$. Parameter estimates for these models testing measurement invariance for the 25-item ICS are presented in Table 4.

Modifying the ICS for Women and Men Individually

Because the tests of measurement invariance suggested that the ICS functions differently by gender, we consulted modification indices to determine whether the five factors–physical response, safety/comfort, arousal, agreement/want, and readiness–might comprise different combinations of items for women and men. The absolute and alternative fit indices associated with each modification described below are presented in Table 5.

For women, the data-model fit substantially improved when switching (1) "The sexual act itself felt desired" from *agreement/want* to *arousal*, (2) "The sexual act itself felt wanted" from *agreement/want* to *arousal*, and (3) "I felt eager" from *physical response* to *arousal*. For men, the data-model fit improved when switching (1) "I felt willing" from *readiness* to *agreement/want* and (2) "I felt erect/vaginally lubricated" from *physical response* to *arousal*.

Table 3 Tests of Measurement Invariance by Gender for the 25-Item ICS

Model	χ^2	df	CFI	RMSEA	SRMR	Comp	$\Delta\chi^2$	Δdf	Decision
1. Configural	1866.50	530	.914	.076	.053	—	—	—	—
2. Metric	1906.94	550	.913	.075	.058	1	40.44*	20	Reject
2a. Metric[a]	1899.71	549	.913	.075	.058	1	33.20*	19	Reject
2b. Metric[b]	1893.06	548	.914	.075	.057	1	26.56	18	Accept
3. Scalar	1989.51	566	.909	.076	.057	2b	96.45*	18	Reject
3a. Scalar[c]	1959.02	565	.911	.075	.057	2b	65.96*	17	Reject
3b. Scalar[d]	1941.60	564	.912	.075	.057	2b	48.53*	16	Reject
3c. Scalar[e]	1928.34	563	.913	.074	.057	2b	35.28*	15	Reject
3d. Scalar[f]	1921.43	562	.913	.074	.056	2b	28.36*	14	Reject
3e. Scalar[g]	1915.29	561	.913	.074	.056	2b	22.22	13	Accept

Comp = the comparison model

*indicates that the chi-squared difference test between nested models ($\alpha = .05$)

[a]The factor loading constraint for "I felt in control" was released

[b]The factor loading constraint for "The sexual act itself felt agreed to" was released

[c]The intercept constraint for "I felt erect/vaginally lubricated" was released

[d]The intercept constraint for "I felt flushed" was released

[e]The intercept constraint for "I felt comfortable" was released

[f]The intercept constraint for "I felt interested" was released

[g]The intercept constraint for "I felt sure" was released

Table 4 Parameter Estimates for Models Testing Measurement Invariance by Gender for the 25-Item ICS

	Configural Invariance				Partial Metric Invariance				Partial Scalar Invariance			
	Women		Men		Women		Men		Women		Men	
	λ	τ	λ	τ	λ	τ	λ	τ	λ	τ	λ	τ
Factor 1: Physical Response												
Rapid heart beat	.55	3.03	.39	3.17	.55	3.03	.55	3.17	.55	3.04	.55	3.04
Flushed	.57	2.88	.34	2.80	.55	2.88	.55	2.80	.55	**2.88**	.55	**2.67**
Eager	.65	3.18	.47	3.39	.65	3.18	.65	3.39	.65	3.20	.65	3.20
Heated	.60	3.02	.51	3.11	.62	3.02	.62	3.11	.62	2.99	.62	2.99
Lustful	.64	3.15	.47	3.30	.64	3.15	.64	3.30	.64	3.15	.64	3.15
Erect/vaginally lubricated	.60	3.23	.41	3.57	.59	3.23	.59	3.57	.59	**3.23**	.59	**3.43**
Factor 2: Safety/Comfort												
Secure	.60	3.46	.48	3.45	.61	3.46	.61	3.45	.61	3.47	.61	3.47
Protected	.63	3.40	.43	3.35	.62	3.40	.62	3.35	.62	3.39	.62	3.39
Safe	.55	3.57	.42	3.56	.55	3.57	.55	3.56	.55	3.57	.55	3.57
Respected	.59	3.50	.43	3.47	.58	3.50	.58	3.47	.58	3.49	.58	3.49
Certain	.57	3.37	.48	3.39	.59	3.37	.59	3.39	.59	3.39	.59	3.39
Comfortable	.62	3.39	.44	3.49	.61	3.39	.61	3.49	.61	**3.39**	.61	**3.50**
In control	.50	3.27	.47	3.37	**.50**	3.27	**.62**	3.37	**.50**	3.27	**.62**	3.38
Factor 3: Arousal												
Aroused	.67	3.29	.45	3.59	.67	3.29	.67	3.59	.67	3.29	.67	3.29
Turned on	.68	3.30	.44	3.58	.67	3.30	.67	3.58	.67	3.30	.67	3.30
Interested	.61	3.35	.44	3.54	.62	3.35	.62	3.54	.62	**3.35**	.62	**3.27**
Factor 4: Agreement/Want												
Consented to	.46	3.66	.41	3.69	.48	3.66	.48	3.69	.47	3.64	.47	3.64
Agreed to	.47	3.65	.45	3.66	**.47**	3.65	**.55**	3.66	**.47**	**3.65**	**.55**	**3.58**
Wanted	.58	3.46	.43	3.57	.56	3.46	.56	3.57	.57	3.47	.57	3.47
Consensual	.46	3.66	.41	3.69	.48	3.66	.48	3.69	.48	3.64	.48	3.64
Desired	.59	3.38	.45	3.52	.58	3.38	.58	3.52	.58	3.41	.58	3.41
Factor 5: Readiness												
Ready	.56	3.41	.46	3.49	.56	3.41	.56	3.49	.56	3.42	.56	3.42
Sure	.58	3.44	.50	3.42	.59	3.44	.59	3.42	.59	**3.44**	.59	**3.35**
Willing	.50	3.55	.38	3.62	.49	3.55	.49	3.62	.49	3.56	.49	3.56
Aware of my surroundings	.35	3.35	.28	3.30	.35	3.35	.35	3.30	.34	3.31	.34	3.31

All factor loadings (λ) and intercepts (τ) were statistically significant from 0 ($ps < .001$). Bold-faced font highlights a parameter that was freely estimated across women and men

Proposing a Gender-invariant ICS–Short Form

To create a shortened version of the ICS that demonstrated measurement invariance across gender, we started by conducting tests of measurement invariance after removing the five items that the previous analyses identified as loading onto separate factors for women and men. However, for the assumptions of configural, metric, and scalar invariance to be tenable, five further items needed to be sequentially removed according to modification indices: (1) "I felt flushed," (2) "I felt protected," (3) "I felt safe," (4) "I felt respected," and (5) "I felt in control." The data-model fit of the resulting 15-item version of the ICS did not significantly worsen when constraining factor loadings or intercepts (Table 6). Parameter estimates for the models testing measurement invariance for the proposed ICS–Short Form are presented in Table 7.

To evaluate the construct validity of the 15-item ICS–Short Form, we examined whether it procured similar associations with measures of external sexual consent as the 25-item ICS. Bivariate correlations were similar in magnitude and significance across these two versions of the ICS for each type of consent communication cue assessed (Table 8).

Discussion

To date, the Internal Consent Scale (ICS) is the only validated measure of internal sexual consent (Jozkowski et al., 2014). Because gender is an important construct to consider for sexual consent, researchers have previously examined potential gender differences in internal consent using the ICS (Jozkowski et al., 2014; Walsh et al., 2019). However, these

Table 5 Confirmatory Factor Analyses for Modified Versions of the 25-Item ICS by Gender

	χ^2	df	CFI	RMSEA	SRMR
Women (n = 464)					
ICS without modifications	1075.65	265	.921	.081	.052
"The sexual act itself felt desired" = Arousal	953.88	265	.933	.075	.050
"The sexual act itself felt wanted" = Arousal	844.24	265	.943	.069	.044
"I felt eager" = Arousal	808.57	265	.947	.066	.041
Men (n = 410)					
ICS without modifications	790.85	265	.902	.070	.058
"I felt willing" = Agreement/Want	746.78	265	.911	.067	.056
"I felt erect/vaginally lubricated" = Arousal	698.73	265	.920	.063	.052

Models were incremental not mutually exclusive

studies assumed that women and men similarly interpret and respond to the items comprising this measure. To empirically evaluate this assumption, we subjected the ICS to tests of measurement invariance across gender.

We found that the five-factor model proposed by Jozkowski et al. (2014) could be constrained across women and men without substantially impairing data-model fit, suggesting that the underlying constellation of factors–physical response, safety/comfort, arousal, agreement/want, readiness–likely represents an overall conceptualization of internal sexual consent as measured by these items that is similar across gender. Otherwise, we found that the ICS generally did not function the same for women and men; only partial metric invariance and partial scalar invariance could be supported. If the assumptions of full metric and scalar invariance were tenable, women and men would have the same expected score on each item holding all other items constant, but that was not the case with the full 25-item ICS in our sample.

Because the constraints for more than a quarter of the items needed to be released to achieve partial measurement invariance and several of the items loaded onto discrepant factors by gender, we concluded that the full 25-item ICS did not function similarly for women and men. Any gender differences using this measure do not necessarily reflect that women and men scored differently on a theoretically equivalent composite of internal sexual consent (Sakaluk, 2019); as such, direct comparisons between women and men should be avoided or interpreted with caution when using the 25-item version of the ICS.

That factor loadings could not be fully constrained indicated that some of the items might align with disparate factors for women and men. To follow up this finding and investigate specifically how the ICS might function differently by

gender, we conducted separate factor analyses for women and men. These findings suggested that women tended to conceptualize items related to sexual desire (i.e., "The sexual act itself felt desired/wanted") more closely with those related to arousal (e.g., "I felt aroused/turned on") than with those reflecting agreement. However, for men, those items regarding sexual desire best grouped with the ones capturing agreement (e.g., "The sexual act itself felt agreed to/consented to") as proposed by Jozkowski et al. (2014). Instead of conceptualizing sexual desire as being similar to arousal like women did, men tended to connect sexual response (i.e., "I felt erect/vaginally lubricated") with arousal. This distinction regarding sexual arousal corroborates evidence from cognitive interviews that were conducted to develop a version of the ICS to be used for experience sampling methodology (Willis et al., 2021a). In that study, women tended to describe arousal as a mental or emotional experience that is similar to wanting; however, men described arousal as a physical or sexual experience. To further examine this discrepancy in how women and men conceptualize sexual arousal, researchers should conduct cognitive interviews that are specifically designed to investigate how the relationships between the items and factors of the ICS may be experienced or interpreted differently by gender.

To facilitate valid comparisons of women and men on the same construct, we created a refined 15-item ICS–Short Form that was fully invariant across gender. This abbreviated version of the scale retained all five subscales–each comprising three items. Even though we removed items explicitly assessing desire and sexual response, these aspects that were identified by Jozkowski et al. (2014) as important components of internal consent feelings may still be captured

Table 6 Tests of Measurement Invariance by Gender for the 15-Item ICS–Short Form

Model	χ^2	df	CFI	RMSEA	SRMR	Comp	$\Delta\chi^2$	Δdf	Decision
1. Configural	375.47	160	.973	.056	.032	—	—	—	—
2. Metric	386.41	170	.973	.054	.036	1	10.95	10	Accept
3. Scalar	404.73	180	.972	.053	.038	2	18.32	10	Accept

Comp = the comparison model

Table 7 Parameter Estimates for Models Testing Measurement Invariance by Gender for the 15-Item ICS–Short Form

	Configural Invariance				Metric Invariance				Scalar Invariance			
	Women		Men		Women		Men		Women		Men	
	λ	τ	λ	τ	λ	τ	λ	τ	λ	τ	λ	τ
Factor 1: Physical Response												
Rapid heart beat	.56	3.03	.41	3.17	.55	3.03	.55	3.17	.55	3.04	.55	3.04
Heated	.60	3.02	.52	3.11	.62	3.02	.62	3.11	.62	3.00	.62	3.00
Lustful	.65	3.15	.48	3.30	.65	3.15	.65	3.30	.65	3.16	.65	3.16
Factor 2: Safety/Comfort												
Protected	.64	3.40	.42	3.35	.63	3.40	.63	3.35	.63	3.39	.63	3.39
Safe	.57	3.57	.42	3.56	.58	3.57	.58	3.56	.58	3.58	.58	3.58
Respected	.59	3.50	.45	3.47	.60	3.50	.60	3.47	.60	3.50	.60	3.50
Factor 3: Arousal												
Aroused	.67	3.29	.45	3.59	.67	3.29	.67	3.59	.67	3.30	.67	3.30
Turned on	.68	3.30	.44	3.58	.67	3.30	.67	3.58	.67	3.30	.67	3.30
Interested	.61	3.35	.44	3.54	.62	3.35	.62	3.54	.61	3.33	.61	3.33
Factor 4: Agreement												
Consented to	.49	3.66	.43	3.69	.49	3.66	.49	3.69	.49	3.66	.49	3.66
Agreed to	.50	3.65	.47	3.66	.51	3.65	.51	3.66	.51	3.64	.51	3.64
Consensual	.51	3.66	.42	3.69	.50	3.66	.50	3.69	.50	3.66	.50	3.66
Factor 5: Readiness												
Ready	.58	3.41	.48	3.49	.57	3.41	.57	3.49	.57	3.43	.57	3.43
Sure	.57	3.44	.50	3.42	.57	3.44	.57	3.42	.58	3.42	.58	3.42
Aware of my surroundings	.36	3.35	.29	3.30	.36	3.35	.36	3.30	.35	3.32	.35	3.32

All factor loadings (λ) and intercepts (τ) were statistically significant from 0 ($ps < .001$)

by the more ambiguous items that remain, such as "I felt interested" or "I felt turned on." In this way, the ICS–Short Form comprises only the items that were experienced and interpreted similarly for women and men, which means it can be used to directly compare these two genders on experiences of internal sexual consent. Because the 25-item ICS functions well for women and men separately and captures a broader range of feelings associated with willingness to engage in partnered sexual activity, we generally recommend administering the original measure when possible and using the short form's 15 items when conducting analyses that involve gender comparisons (e.g., an investigation of dyadic discrepancies in internal sexual consent within heterosexual relationships).

Supporting the convergent validity of the 15-item ICS–Short Form, we found that this version of the measure produced positive associations with each type of active consent communication cue that were about the same in effect size as those obtained when using the full 25-item ICS. We evaluated the discriminant validity of the short form through its association with passive consent communication. As expected, both versions of the ICS were not significantly correlated with passive consent communication for women, which corroborates previous research (Jozkowski et al., 2014; Willis et al., 2019); however, this association was significant and positive for men. In other words, men in this sample who indicated that they had let their most recent sexual activity happen without resisting reported higher levels

Table 8 Bivariate Correlations between Internal and External Sexual Consent

	15-Item ICS–Short Form			25-Item ICS		
	Women	Men	Total	Women	Men	Total
1. Explicit Cues	.46***	.24***	.38***	.46***	.24***	.38***
2. Implicit Cues	.36***	.13**	.27***	.36***	.12*	.27***
3. Verbal Cues	.31***	.14**	.26***	.32***	.14**	.25***
4. Nonverbal Cues	.41***	.18***	.31***	.41***	.17***	.32***
5. Passive Cues	.06	.15**	.09**	.07	.15**	.09**

*$p < .05$; **$p < .01$; ***$p < .001$

of willingness to engage in that sexual activity. Because men have been underrepresented in or excluded from studies that have assessed this relationship (or lack thereof) between internal consent feelings and passive consent communication, further investigation regarding the extent that "no response" cues reflect consent versus refusal–and whether that varies by gender–is warranted.

Limitations and Future Research Directions

Given our focus on comparing how well the ICS functions across gender, a strength of the present study was that we recruited a sample that was almost evenly split between women and men. For each of the previous samples used to validate the factor structure of the ICS using EFA and CFA, at least two-thirds were women (Jozkowski et al., 2014; Walsh et al., 2019, respectively). Such discrepant gender compositions may have biased the parameter estimates in previous studies. Our binary conceptualization of gender in the present study should be extended in future work to assess how well the ICS measures internal sexual consent for people who identify as a gender other than a woman or a man.

Despite being relatively balanced regarding women and men, a limitation regarding the generalizability of our study was that most of our participants identified as White and heterosexual, which aligns with most studies on sexual consent (Willis et al., 2019). Replicating the current findings in a more diverse sample regarding race/ethnicity, sexual orientation, and gender identity would be a helpful endeavor to better understand the broader utility of this measure. To this end, even though we provided evidence that the ICS functioned well in a sample that comprised participants from both the UK and the US, efforts to better understand cross-cultural nuances regarding sexual consent may benefit from the translation, validation, and implementation of this measure and others that have currently only been used in English-speaking, Western contexts.

Because people's experiences of internal sexual consent can vary from one encounter to the next (Willis et al., 2021b), researchers should consider collecting event-level contextual data to further understand the situational nuances of being willing to engage in sexual activity with another person. While we did not assess such characteristics in the present study, contexts in which sexual consent can vary include type of relationship with the sexual partner, gender of the sexual partner, type of sexual behavior, and whether substances were used. For example, people engaging in sexual activity with a committed partner tend to endorse elevated feelings of internal sexual consent compared with those interacting with casual sexual partners (Jozkowski et al., 2014; Marcantonio et al., 2018; Walsh et al., 2019). Given such complexities regarding sexual consent, further investigation into how well the ICS functions across contexts is warranted.

Finally, another strength of this study was that we used a data aggregator service to collect more representative samples than convenience sampling of university students, which was the approach used in previous validation studies of the ICS (Jozkowski et al., 2014; Walsh et al., 2019). Compared with other platforms (e.g., Amazon's MTurk), there is evidence that participants on Prolific are less dishonest, produce higher data quality, are more naïve, fail fewer attention-check questions, and are more diverse (Peer et al., 2017). However, as a self-report retrospective survey, our data were likely still affected by social desirability and recall bias. To complement the present methodology, cognitive interviews and other qualitative study designs (e.g., focus groups) may help uncover how the measurement of internal sexual consent–or even the phenomenon itself–varies across women and men.

Practice Implications

Consent is an integral part of healthy sexual interactions and comprises three primary components: feelings, communication, and perceptions (Marcantonio et al., 2020; Muehlenhard et al., 2016). However, researchers tend to exclusively investigate sexual consent communication and public health initiatives often exclusively tout affirmative consent messages (e.g., "yes means yes") that are unable to adequately address the gendered complexities underlying sexual consent (Willis & Jozkowski, 2018). As such, previous work has not properly acknowledged nuances regarding people's willingness to engage in partnered sexual activity or considered how that experience might vary by gender. To better understand internal consent, we sought to evaluate the lone measure of this underrepresented aspect of sexual consent and subsequently refine the ICS to expand its utility.

Our tests of measurement invariance provided initial evidence that the full ICS does not function the same across gender. That configural invariance was tenable suggests the 25-item version of this measure may be used to assess internal sexual consent in either women or men; however, the extensive accommodations that were required to achieve partial measurement invariance means that comparisons of internal sexual consent across gender should be done with caution. Further, when using the full 25-item ICS, adjustment to the items that load onto each factor may be needed to account for potential discrepancies in how women and men conceptualize the components of internal sexual consent–particularly feelings of arousal. We recommend that researchers aiming to directly compare event-level internal sexual consent across women and men should use the gender-invariant 15-item ICS–Short Form described in this paper.

Conclusion

Sexual consent is an ongoing and iterative process that builds toward and continues throughout a consensual sexual encounter (Beres, 2010; Muehlenhard et al., 2016; Willis & Jozkowski, 2022). Indeed, sexual consent is neither a static nor discrete experience–often varying from one sexual encounter to the next (Willis et al., 2021b). As such, people can differ in their levels of willingness to engage in sexual activity with another person, and the Internal Consent Scale is the only validated psychometric assessment of this aspect of sexual consent (Jozkowski et al., 2014). Because feelings of sexual willingness are associated with consent communication (Willis et al., 2019) as well as other constructs related to sexual health like contraceptive use (Willis et al., 2021), substance-involved sexual activity (Jozkowski & Wiersma, 2015), and sexual satisfaction (Marcantonio et al., 2020), valid measurement of internal sexual consent is important for understanding healthy and consensual sexual behavior. Acknowledging the gendered dynamics underlying sexual consent (Hirsch et al., 2019; Pugh & Becker, 2018; Righi et al., 2019), we facilitated the evolution of the Internal Consent Scale by evaluating and subsequently refining its ability to produce robust comparisons between women and men.

Authors' Contributions Malachi Willis: Conceptualization, Methodology, Formal analysis, Investigation, Writing – Original draft, Project administration, Funding acquisition. Kristen N. Jozkowski: Writing – Reviewing and editing. Tiffany L. Marcantonio: Writing – Reviewing and editing.

Availability of Data and Material The data underlying this article will be shared on reasonable request to the corresponding author.

Code Availability The code used for this article will be shared on reasonable request to the corresponding author.

Declarations

Ethics Approval The protocol for the present study involving human participants was approved by the ethics review committee at the University of Greenwich (#19.4.5.7).

Conflicts of Interest/Competing Interests None.

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