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ORIGINAL PAPER

The Development and Validation of the Orgasm Beliefs Inventory

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Abstract
While orgasm is often conceptualized as a physiological reflex, research has also shown it to be symbolic and to be attributed significant meaning. However, in the absence of a comprehensive measure assessing cultural orgasm scripts and beliefs, the extent to which individuals personally endorse them is unknown. Grounded in sexual script theory, the present research aimed to develop and validate a measure assessing cultural orgasm beliefs, and to investigate gender differences in their endorsement using the new measure. In Study 1, an MTurk sample ($N = 448$) completed a preliminary version of the Orgasm Beliefs Inventory (OBI). Exploratory factor analyses revealed 11 orgasm beliefs that could be grouped into seven broad categories (Men's Orgasms are Easy/Women's Orgasms are Difficult, Partner Interest Fosters Orgasm, Orgasm is Essential to Men's Sexual Satisfaction, Orgasm as a Relational Quality Benchmark, Orgasm is Unessential to Women's Sexual Satisfaction, Simultaneous Orgasm is Ideal, and Orgasm Requires and Fosters Connection). In Study 2, the OBI was completed by 392 participants. Confirmatory factor analysis was conducted and supported a slightly different 7-factor model. The Sexual Dysfunctional Beliefs Questionnaire, Sexual Scripts Scale, and Types of Jealousy Scales were also completed concurrently with the OBI and yielded results in support of the OBI's convergent and discriminant validity. Compared to women, men scored lower on Men's Orgasms are Easy/Women's Orgasms are Difficult, but higher on Orgasm Absence Reflects Relationship Problems. No other gender differences were found on OBI subscale scores. The OBI is a new measure that can be used in future sexual scripts research to explore the relationships between orgasm beliefs and other sexual outcomes and behaviors (e.g., faking orgasm, sexual communication and assertiveness, sexual function and satisfaction, etc.).

Keywords Orgasm · Orgasms Beliefs Inventory · Sexual scripts · Sexual beliefs

Introduction

Orgasm often has been examined and described as a physiological reflex accompanied by subjective pleasure. For instance, Meston, Levin, Sipski, Hull, and Heiman (2004) have defined orgasm as encompassing intense pleasurable sensations involving a distinct set of physiological behaviors and processes, while Masters and Johnson (1966) have described it as a distinct phase of human sexual response during which the vasocongestion and myotonia developed during sexual arousal are released. However, research has also shown orgasm to be highly symbolic and to be attributed significant meaning (Cacchioni, 2015; Fahs, 2011, 2014). For instance, research findings on pretending orgasm suggest that orgasm can be construed as a sign of sexual normalcy and adequacy, notably coital orgasm (Muehlenhard & Shippee, 2010; Séguin, Milhausen, & Kukkonen, 2015). Other research has shown orgasm to be conceptualized and represented as the main source of pleasure and satisfaction (Lavie-Ajayi, 2005; Lavie-Ajayi & Joffe, 2009; Lavie & Willig, 2005), notably for men (Porter, Douglas, & Collumbien, 2017; Rogers, 2005), and as both requiring and fostering connection, familiarity, and closeness between partners (Fahs, 2011, 2014; Lavie & Willig, 2005; Opperman, Braun, Clarke, & Rogers, 2014; Séguin & Blais, 2019).

Orgasm beliefs can be examined using sexual script theory (Simon & Gagnon, 1986). Essentially, sexual scripts are prototypes of how sexual events "typically" proceed and allow people to understand and interpret their own and others' sexual behaviors, including orgasm. From this theoretical standpoint, sexual practices and events are "not viewed as an intrinsically significant aspect of human behavior; rather,

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[they are] viewed as becoming significant either when [they are] defined as such by collective life […]; or when individual experiences or development assign [them] a special significance" (Simon & Gagnon, 1984, p. 54). In other words, rather than being inherently meaningful, orgasm, like any other sexual event or practice, becomes significant because it is attributed meaning.

The previous research has identified several orgasm-related scripts. The orgasm imperative (Potts, 2000), for instance, constructs orgasm as the highest form of sexual enjoyment, the sole desired outcome, and the only method of ending a sexual encounter. The coital imperative (Potts, 2000) extends the orgasm imperative by constructing penile–vaginal intercourse as "real sex," that is, the typical and ideal form of (hetero)sex (Potts, 2000). In light of this discourse, other non-coital sexual practices are seen as unessential "extras" and not as "real" sex. Together, these two discourses not only suggest that orgasm "should" happen during sex, but also that it should ideally be reached during vaginal intercourse.

Another relevant script is the heterosexual male performance script, which posits that men tie their adequacy as sexual partners to their skills, their ability to read and respond to their partners' sexual needs, and to their partners' experience of pleasure and orgasm (Roberts, Kippax, Waldby, & Crawford, 1995; Sakaluk, Todd, Milhausen, Lachowsky, & the Undergraduate Research Group in Sexuality URGiS, 2014; Wiederman, 2005). Sakaluk et al. also found evidence for an emerging sexual script surrounding the need for women to also be sexually skilled, notably at performing oral sex. Lastly, the ethics of reciprocity during partnered sexual activity is another component of sexual scripts that may influence how sexual encounters proceed (Braun, Gavey, & McPhillips, 2003). This discourse posits that "fair" sexual encounters involve orgasm for both partners, and that a lack of reciprocity in these matters is viewed as problematic or unfair.

Some research on sexual behaviors and outcomes suggests that individuals endorse or are at least aware of cultural sexual scripts and beliefs, including the orgasm scripts described above. For instance, research on pretending orgasm indicates that individuals engage in this behavior for a variety of reasons, such as to reassure a partner of their adequacy as a lover, to avoid upsetting a partner, or to buttress a partner's self-esteem (Cooper, Fenigstein, & Fauber, 2014; Muehlenhard & Shippee, 2010; Roberts et al., 1995; Séguin et al., 2015). These motivations may stem from the conceptualization of orgasm as an indicator of a partner's sexual skills or performance (Braun et al., 2003; Fahs, 2011, 2014; Muehlenhard & Shippee, 2010; Opperman et al., 2014; Roberts et al., 1995; Salisbury & Fisher, 2014), or of a (male) partner's love and commitment (Fahs, 2011; Lavie & Willig, 2005). Another commonly reported motivation for pretending orgasm includes wanting to end the sexual encounter "normally" to avoid awkwardness or appearing abnormal or inadequate (Cooper et al., 2014; Muehlenhard & Shippee, 2010). This motivation may be associated with the conceptualization of orgasm as the goal and end point of sex (Opperman et al., 2014; Salisbury & Fisher, 2014) and as a normal part of human sexual response (Lavie & Willig, 2005). In a survey study having directly investigated the associations between orgasm scripts and sexual outcomes, Harris et al. (2019) found that women who had pretended orgasm at least once in their lives were more likely to endorse the belief that female orgasm is necessary for men's sexual gratification compared to women who had never faked orgasm.

The Present Study

To our knowledge, very little quantitative research has either examined the extent to which individuals personally endorse cultural orgasm scripts and beliefs or directly assessed the associations between their endorsement and sexual outcomes. This could be explained at least partially by the fact that, while a growing body of research has explored women's and men's perceptions and experiences of orgasm, currently no measure grouping and assessing individuals' endorsement of cultural orgasm scripts and beliefs currently exists. Thus, grounded in sexual script theory, the present research aimed to fill this gap by developing and validating a comprehensive measure assessing cultural orgasm beliefs. Using this new measure, we have also investigated gender differences in their endorsement.

Study 1

Method

Participants

Participants were recruited on Amazon Mechanical Turk (MTurk), a widely used crowdsourcing Internet marketplace. MTurk is a website where Requesters can post tasks known as Human Intelligence Tasks (HITs) for MTurk users (known as Workers) to complete for a nominal fee. Requesters can ask that *Workers* fulfill certain qualifications before engaging in a task. In the present study, MTurk Workers were only able to access the survey if they had a 95% HIT approval rate and had completed a minimum of 100 approved HITs, to help ensure data quality.

Participants were recruited in two waves. In the first wave, eligible criteria included being North American (American or Canadian), at least 18 years old, in a committed different-gender relationship, sexually active with their partner, as well as ever having had an orgasm. After data cleaning, the first wave sample included 245 participants. Sakaluk and Short (2017) recommend samples of 200–250 for EFA in

moderately optimal conditions and to adjust sample size in function of the observed data's nature and quality. In view of ensuring sufficient statistical power as well as including participants who had never reached orgasm, we recruited a booster sample (second wave). Eligibility criteria for the second wave were identical to those of the first, except for ever having had an orgasm.

Of the 864 eligible participants who accessed the survey (first and second wave participants combined), 12 exited after having answered the eligibility questions, 49 after having completed the sociodemographic section of the questionnaire, and nine participants had duplicate entries (one of the two entries was removed for each participant). A total of 119 participants exited the survey before completion. *T* tests have not revealed any differences between survey dropouts and participants having completed it in terms of age, relationship duration, and religiosity. Similarly, chi-squared tests showed that the groups were similar to one another relative to gender identity, religious affiliation, and relationship status. However, the analyses revealed that participants who had completed the survey were more educated than those who had dropped out, $\chi^2(5, N=751)=30.55$, $p<.001$, with the former more likely to hold a Bachelor's (56.7% vs. 40.8%) and a Master's degree (23.3% vs. 13.2%), and the latter, more likely to only hold a high school diploma (27.6% vs. 9.6%). Survey dropouts were also less likely to be working full-time, $\chi^2(1, N=755)=22.45$, $p<.001$, compared to those who completed the study (58.4% vs. 81.6%), but both groups were as likely to be working part-time and to be students.

Relative to data quality evaluation, 41 participants were excluded because they incorrectly answered to at least three out of six "attention check" questions, and another 305 participants were removed because they had agreed or disagreed to both items of five or more of the ten selected pairs of positively and negatively worded items. The number of incorrectly answered attention check questions significantly and positively correlated with the number of incoherently answered antonym item pairs, $r=.29$, $p<.001$.

The final EFA sample consisted of 448 participants (see Table 1 for the sample's characteristics). Over half (58.4%) identified as men and 41.6% as women. Participants were between the ages of 18 and 70 ($M=36.1$, $SD=10.15$), were in a relationship for an average of 8.45 years ($SD=8.74$), and reported low levels of religiosity ($M=3.10$, $SD=1.96$, range 1–7, with higher values representing higher frequencies of attendance to religious services in the last few years).

Table 1 Study 1 and Study 2 sample characteristics

Characteristic	Study 1 ($N=448$) %	Study 2 ($N=392$) %
Gender		
Men	58.4	64.6
Women	41.6	35.4
Ethnicity[a]		
American or Canadian	87.7	92.8
European	33.9	20.6
Asian	9.8	6.4
South/Central American	6.5	5.9
African	5.6	6.1
Indigenous	3.3	2.0
Oceanian/Pacific Islander	2.0	2.5
Religious affiliation		
Yes	68.1	91.3
No	31.9	8.7
Education		
High school diploma or less	14.4	6.9
Trade/vocational school diploma	13.1	1.8
Bachelor's degree	57.0	58.6
Graduate degree	15.6	32.8
Employment status[a]		
Full time	77.6	91.3
Part-time	11.2	9.9
Unemployed	7.0	2.8
Other (e.g., stay-at-home spouse, student, on disability, etc.)	12.8	7.6
Sexual orientation		
Heterosexual	80.1	66.1
Bisexual/Pansexual	17.4	32.6
Asexual/Queer/Questionning	2.5	1.3
Relationship status		
Committed relationship, non-cohabiting	25.4	25.8
Committed relationship, cohabiting	37.1	42.6
Married/common law/Engaged	37.5	31.6

[a]Participants could select more than one option

Measures

Demographic Characteristics

Participants were asked to report on their gender, age, ethnic background, sexual orientation, religious affiliation and religiosity, educational attainment, employment status, and relationship status and duration.

Orgasm Beliefs Inventory (OBI)

This questionnaire was developed following DeVellis' (2017) guidelines. First, the purpose of the scale was clearly articulated: to assess the endorsement of partnered orgasm-related scripts and beliefs. To include the widest array of participant-generated beliefs into the questionnaire, the scale's constructs were developed and defined based on a review of the qualitative research having examined social representations of orgasm. Articles were sought on SAGE Journals Online,

PsycINFO, PubMed, PsycArticles, and Google Scholar using the keywords qualitative, orgasm, faking orgasm, pretending orgasm, meaning, sexual meanings, representations, and social representations. The search was limited to qualitative articles published in the past 25 years (1994–2019, inclusively) that examined the meanings and importance of orgasm in the context of partnered sex. (Articles on masturbation were excluded.) The search yielded fourteen eligible studies, published between 1995 and 2019. Five studies were conducted in England (Lavie-Ajayi, 2005; Lavie-Ajayi & Joffe, 2009; Lavie & Willig, 2005; Nicolson & Burr, 2003; Opperman et al., 2014), four in Canada (Lafrance, Stelzl, & Bullock, 2017; Salisbury & Fisher, 2014; Séguin & Blais, 2019; Thomas, Stelzl, & Lafrance, 2017), three in the U.S. (Bell & McClelland, 2017; Fahs, 2014; Muehlenhard & Shippee, 2010), one in Australia (Roberts et al., 1995), and one in New Zealand (Braun et al., 2003).

Items were created by the first author based on the qualitative literature review's findings. For instance, items such as "If her partner does the right things, a woman should achieve orgasm" and "Women's orgasms depend on their partners' sexual skills" were created to capture the recurring finding that women's orgasms are constructed as the product of men's sexual skills. Item redundancy was prioritized to favor inclusiveness and maximize scale size. Exceptionally lengthy items, unnecessary wordiness, long and complex words, multiple negatives, and double-barreled items were avoided to favor simplicity and avoid confusion. Throughout the questionnaire, positively and negatively worded items measuring the same concept have been generated in order to control for an agreement bias (i.e., avoid having participants provide a response pattern, always highly or lowly endorsing items regardless of how they are worded). This latter strategy is also posited to increase the data's validity, as it would allow for the elimination of indiscriminate "agreers" (Litman, Robinson, & Rosenzweig, 2015). Third, a Likert scale comprised of six response options ranging from 1—*strongly disagree* to 6—*strongly agree* was selected for measurement. The Likert scale did not include a middle or neutral point in view of "forcing" participants to either agree or disagree with each statement.

Fourth, the item pool was reviewed by a panel of experts in the fields of human sexuality, sex therapy, and scale development to assess the questionnaire's face and content validity, the exhaustiveness of its dimensions, and the suitability, clarity, and conciseness of each item. Specifically, the inventory was revised by graduate students from the Sexual Diversity and Relationships Laboratory as well as Dr. Hannah Frith, Dr. Breanne Fahs, Dr. Anne-Julie Lafrenaye-Dugas, and Dr. Robin Milhausen. After incorporating their feedback and suggestions, the pilot version of the OBI was comprised of 269 items, hypothesized to measure seven overarching dimensions: (1) Simple/Complex, which assesses gender dichotomous scripts and discourses surrounding male and female orgasm prerequisites (e.g., "In order for a woman to have an orgasm, everything has to be just right," "Men's orgasms are uncomplicated"); (2) Primal Need/Unessential Bonus, which evaluates the belief that male orgasm is central to successful (hetero)sexual encounters while female orgasm is comparatively deemed unnecessary (e.g., "Men's sexual satisfaction primarily depends on reaching orgasm," "For most women, intimacy is the best part of sex"); (3) Orgasm Imperative, which measures the endorsement of orgasm as a necessary part of sex and of orgasm as positioned in a prescribed sequence of (hetero)sexual events (e.g., "When a man has an orgasm, the sex is basically over," "For sex to be good, both partners need to orgasm"); (4) Coital Imperative, which assesses the endorsement of orgasm as tied to particular (hetero)sexual practices (e.g., "Vaginal orgasms are superior to other types of orgasm," "Simultaneous orgasms are the most pleasurable"); (5) Orgasm as an Indicator of Relationship Quality, which evaluates the belief that orgasm requires emotional connection between partners and being in a healthy relationship (e.g., "To be able to have an orgasm, partners need to have good chemistry," "If a person orgasms easily, it generally means their relationship is going well"); (6) Dyadic Orgasm, which measures people's endorsement of orgasm as a deeply connective experience and that a partner's orgasm contributes to one's own sexual pleasure and satisfaction (e.g., "Orgasm brings partners closer," "Seeing a partner reach orgasm is very arousing to most people"); and (7) Personal Orgasm Responsibility, which assesses the belief that one's orgasm requires personal investment (e.g., "Being in the present helps most people achieve orgasm," "Communicating during sex makes orgasm easier to achieve").

Procedure

A link to the survey on LimeSurvey was posted on the study's HIT page. Once on the LimeSurvey website, and before beginning the survey, interested participants were presented a consent form. Upon indicating consent, participants were required to answer eligibility questions. Eligible participants then accessed the survey, which took 30–40 min to complete.

Some research shows that MTurk data meet acceptable psychometric standards (Buhrmester, Kwang, & Gosling, 2011), and that they are virtually indistinguishable from laboratory data (Casler, Bickel, & Hackett, 2013), or in some cases, of greater quality than other recruiting methods (Paolacci, Chandler, & Ipeirotis, 2010). However, other studies show MTurk data to be of poorer quality for several reasons, whether it is due to participants having created fake accounts, participants' poor understanding of English, or participants' inattention or dishonesty (Chandler, Mueller, & Paolacci, 2014; Feitosa, Joseph, & Newman, 2015; Harms & DeSimone, 2015; Litman et al., 2015; Smith, Roster, Golden, &

Albaum, 2016). In light of these limitations, a few strategies were implemented in the present study to optimize data quality. First, six "attention check" questions were included throughout the questionnaire, explicitly asking participants to select a specific answer choice (Litman et al., 2015). Second, the data of ten pairs of items, each composed of one positively worded and one negatively worded statement, were analyzed to eliminate indiscriminate "agreers" (DeVellis, 2017; Litman et al., 2015). Participants having agreed or disagreed to both items of five or more of these pairs were excluded from analyses (having an even-numbered Likert scale, without a neutral midpoint, made this possible).

Participants were each compensated $1.50 for completing the survey. The present study was approved by the the Université du Québec à Montréal's research ethics board.

Statistical Analyses

Mplus version 8.3 was used to conduct exploratory factor analysis (EFA) to determine the OBI's factor structure. The data were analyzed using weighted least square mean and variance adjusted (WLSMV) estimator factor analysis with geomin rotation. The WLSMV was selected because it is a robust estimator that provides a good option for modeling categorical data (Brown, 2015). We considered oblique rotation to be appropriate because the items were based on a theoretical model of independent overarching constructs, with potentially correlated subconstructs within each (Brown, 2015). To determine the optimal number of extracted factors within models, parallel analysis was conducted for the initial EFA and each subsequent EFA throughout the item elimination process, in addition to examining indices of model fit (see details below) and the item composition of each factor of several potential models for interpretability and theoretical relevance (Sakaluk & Short, 2017). Mplus does not compute the variance explained by each factor in EFA given that this type of analysis, as opposed to principal component analysis, is based on correlations rather than explained variance, and because using oblique rotation to extract factors muddles the variance explained by each factor (Muthen, 2008). Given the inappropriateness of calculating and reporting explained variance for EFA (Muthen, 2019), only eigenvalues, which are an indicator of variance, are reported in the present paper.

The item elimination process was grounded in Brown's (2015) and Devellis's (2017) guidelines and recommendations. Poorly defined factors, that is, factors on which only two items have sufficient loadings (≥ 0.40; Stevens, 2002) and factors defined by items that have small loadings (< 0.40), were removed (Brown, 2015). Items with loadings on more than one factor (i.e., cross-loadings), items with low factor loadings on all factors (Brown, 2015), items with loadings greater than 1 (while these are rare, they are usually indicative of multicollinearity; Babakus, Ferguson, & Joreskog, 1987), and items that conceptually differed from the rest of the factor's items (DeVellis, 2017) were also removed. After the removal of problematic items, the factor analysis was rerun to verify that the resulting models were stable and that no new items needed to be removed.

Final factor solutions were considered as such because they had no non-loading or cross-loading items, no single- or two-item factors, and because they were interpretable and theoretically meaningful. Final solutions' model fit was also considered and was evaluated by examining the following fit indices: model χ^2 (Bollen, 1989); Tucker–Lewis Index (TLI; Bentler & Bonett, 1980); Comparative Fit Index (CFI; Bentler, 1990); root mean square error of approximation (RMSEA; Steiger, 1990); and standardized root mean square residual (SRMR; Hu & Bentler, 1998). The model was determined to fit well if most measures met or exceeded generally accepted levels. While it is assumed that model χ^2 should be nonsignificant if the model fits well, relying solely on χ^2 to evaluate model fit is not recommended due to its many limitations (Brown, 2015). According to Hu and Bentler (1999), good model fit is obtained when (1) TLI and CFI values are close to 0.95 or greater; (2) RMSEA values are close to 0.06 or below; and (3) SRMR values are close to 0.08 or below.

To create subscales based on factors, the mean of items loading on a factor was calculated. In lieu of Cronbach's alphas, ordinal coefficient alphas were also computed for each factor to evaluate their internal consistency, which are considered more appropriate for ordinal data such as Likert scale data (Zumbo, Gadermann, & Zeisser, 2007).

Results

Exploratory Factor Analysis

Traditional guidelines for EFA suggest a ratio of at least five subjects per questionnaire item (Gorsuch, 1983), though MacCallum, Widaman, Zhang, and Hong (1999) suggest that fewer participants are needed when communalities are high. Given that the item pool was much too large for the sample size by conventional standards and that preliminary analyses suggested suboptimal conditions (i.e., many items with low communalities), the item pool was drastically reduced prior to conducting EFA. Items that violated normality (kurtosis/skewness violations $> \pm 2.0$; $n = 32$), that did not explicitly address orgasm (e.g., "Women mostly have sex to experience love and connection"; $n = 8$), that assessed redundant orgasm belief subdimensions (e.g., "Women Should Reach Orgasm Before Men" and "Men's Orgasm Mark the End of Sex" items essentially measure the same concept; $n = 59$), and that were potentially unclear, confusing, or misleading (e.g., "Having an orgasm is easier when partners are sexually incompatible" $n = 10$) were eliminated. To further reduce the number of

items to approximately five per respective orgasm subdimension, internal consistency analyses were conducted on each set of items forming a potential subscale. Items weakening each subscale's internal consistency alpha were eliminated, resulting in the removal of 74 additional items.

An initial factor analysis was conducted on the remaining 86 items. Parallel analysis showed that the data could be represented by a 7-factor model. Eleven cross-loading items and one item with loadings below 0.40 were removed. Two additional successive factor analyses resulted in the further suppression of three items with loadings below 0.40, and one item (i.e., "Women normally take a long time to have an orgasm") that conceptually contrasted with the other items loading on the same factor, which assessed the belief that men's orgasm is essential to their sexual satisfaction. The resulting model presented good fit indices (see Table 2), and its 7 factors were named: Men's Orgasms are Easy/Women's Orgasms are Difficult (7 items), Partner Interest Fosters Orgasm (12 items), Orgasm is Essential to Men's Sexual Satisfaction (5 items), Orgasm as a Relational Quality Benchmark (14 items), Orgasm is Unessential to Women's Sexual Satisfaction (4 items), Simultaneous Orgasm is Ideal (5 items), and Orgasm Requires and Fosters Connection (23 items).

Because four factors (i.e., Men's Orgasms are Easy/Women's Orgasms are Difficult, Partner Interest Fosters Orgasm, Orgasm as a Relational Quality Benchmark, and Orgasm Requires and Fosters Connection) seemed to be comprised of items that assessed more than one concept, we examined the possibility that there were subfactors within each. This approach would result in the retainment of fewer items without eliminating any salient facets of these factors, also allowing for the production of more parsimonious scales. The four factors were thus each individually factor analyzed using the same estimator (WLSMV) and rotation (geomin). For each of these factors, parallel analysis showed that the data could be represented by 2-factor models. Together, the EFAs resulted in the removal of one cross-loading item and 21 items loading below 0.40. Men's Orgasms are Easy/Women's Orgasms are Difficult's subfactors were named Men's Orgasms are Easy (3 items) and Women's Orgasms are Difficult (3 items), Partner Interest Fosters Orgasm's subfactors were named Partner Interest Fosters Women's Orgasm (4 items) and Partner Interest Fosters Men's Orgasm (4 items), Orgasm as a Relational Quality Benchmark's subfactors were named Duty and Reciprocity (5 items) and Orgasm Absence Reflects Relationship Problems (5 items), and Orgasm Requires and Fosters Connection's subfactors were named Orgasm Fosters Intimacy (5 items) and Orgasm Requires Self-Knowledge and Communication (5 items). EFA was rerun on all remaining items to confirm the overall model's stability. Again, parallel analysis indicated that the data could be represented by a 7-factor model, which resulted in good fit.

The final OBI included 48 items, 7 factors, and 8 subfactors. Table 3 shows the OBI's descriptive statistics, and Table 4 displays scale items and their factor loadings. While the hypothesized orgasm belief dimensions developed from the qualitative orgasm literature (i.e., Simple/Complex, Primal Need/Unessential Bonus, Orgasm Imperative, Coital Imperative, Orgasm as an Indicator of Relationship Quality, Dyadic Orgasm, and Personal Orgasm Responsibility) greatly resemble the 7-factor solution, some differences are noted. Rather than being grouped into a single factor (i.e., Primal Need/Unessential Bonus), items formed two distinct factors: Orgasm is Essential to Men's Sexual Satisfaction and Orgasm is Unessential to Women's Sexual Satisfaction. Rather than forming their own factor, items measuring the belief that orgasm is an indicator of relationship quality (i.e.,

Table 2 Study 1 and Study 2 goodness-of-fit indicators for OBI models

Model	χ^2	*df*	TLI	CFI	RMSEA	SRMR
Study 1 (EFA)						
7-Factor (before higher-order EFAs)	2983.04*	2009	.949	.959	.033	.035
2-Factor (men's orgasms are easy/women's orgasms are difficult)	5.52	4	.999	.999	.029	.009
2-Factor (partner interest fosters orgasm)	12.17	13	.999	.998	.001	.014
2-Factor (orgasm as relational quality benchmark)	120.45*	26	.977	.987	.090	.032
2-Factor (orgasm requires and fosters connection)	43.19	26	.994	.996	.039	.020
7-Factor (final)	1394.89*	813	.952	.966	.040	.032
Study 2 (CFA)						
1-Factor	4600.00*	1080	.770	.780	.091	.092
7-Factor	1825.34*	1059	.949	.952	.043	.049
7-Factor with subfactors	1762.76*	1051	.952	.956	.042	.047
6-Factor	1890.35	1065	.945	.948	.044	.050
7-Factor (final)	1676.61	1059	.959	.961	.039	.045

*$p < .01$

Table 3 Study 1: Descriptive data for the final model ($N = 448$)

Factor	*M*	*SD*	Skewness	Kurtosis	Eigenvalue	Alpha
Men's orgasms are easy/women's orgasms are difficult					12.37	
Women's orgasms are difficult	3.66	1.42	− .086	− 1.083		.83
Men's orgasms are easy	3.96	1.54	− .317	− 1.136		.86
Partner interest fosters orgasm					6.87	
Partner interest fosters women's orgasm	4.97	.84	− .870	.884		.67
Partner interest fosters men's orgasm	4.78	.87	− .781	.838		.79
Orgasm is essential to men's sexual satisfaction	4.77	.93	− .778	.530	3.64	.88
Orgasm as a relational quality benchmark					2.80	
Duty and reciprocity	3.96	.91	− .455	.259		.73
Orgasm absence reflects relationship problems	3.65	1.29	− .292	− .824		.92
Orgasm is unessential to women's sexual satisfaction	3.18	.94	.337	.002	1.97	.83
Simultaneous orgasm is ideal	4.79	1.01	− 1.020	1.184	1.91	.90
Orgasm requires and fosters connection					1.44	
Orgasm fosters intimacy	5.12	.82	− .952	.789		.75
Orgasm requires self-knowledge and communication	5.04	.78	− .943	1.054		.86

OBI subscale scores ranged from 1—strongly disagree, to 6—strongly agree

Orgasm Absence Reflects Relationship Problems) loaded on the same factor as items evaluating orgasm imperative beliefs (i.e., Duty and Reciprocity). Also, all items assessing the belief that "vaginal" orgasms are an idealized norm were not retained in the final factor solution, leaving Simultaneous Orgasm is Ideal items, which also measure a heteronormative concept, to load on their own factor. Lastly, rather than forming two separate factors, items assessing the belief that orgasm requires personal investment (i.e., sexual self-knowledge and communication) and that it is a connective experience loaded on the same factor (i.e., Orgasm Requires and Fosters Connection). No new categories emerged from the factor analyses, though some earlier dimensions were collapsed under a single factor. Higher scores on each subfactor reflect stronger endorsements of the orgasm script it measures.

Factor 1: Men's Orgasms are Easy/Women's Orgasms are Difficult

The first factor is comprised of 6 items and two subfactors. The first subfactor, Women's Orgasms are Difficult ($M = 3.66$, $SD = 1.42$), had factor loadings ranging from 0.672 to 0.776 and had an internal consistency coefficient of 0.83. Items relate to the belief that women's orgasm is difficult to reach. The second subfactor, Men's Orgasms are Easy, had factor loadings ranging from 0.758 to 0.834 and had an internal consistency coefficient of 0.86. Items pertain to the belief that men's orgasms are uncomplicated and easy to achieve. The mean score for this subfactor was 3.96 ($SD = 1.54$).

Factor 2: Partner Interest Fosters Orgasm

The second factor is comprised of 8 items and two subfactors. The first subfactor, Partner Interest Fosters Women's Orgasm ($M = 4.97$, $SD = 0.84$), had factor loadings ranging from 0.427 to 0.538 and had an internal consistency coefficient of 0.67. Items pertain to the idea that a partner's enthusiasm, interest, and investment in women's sexual pleasure fosters women's orgasm. The second subfactor, Partner Interest Fosters Men's Orgasm ($M = 4.78$, $SD = 0.87$), had factor loadings ranging from 0.645 to 0.709 and an internal consistency coefficient of 0.79. Items loading on this subfactor pertain to the same notion as the first subfactor, but relative to men's orgasm.

Factor 3: Orgasm is Essential to Men's Sexual Satisfaction

The third factor consisted of 5 items assessing the belief that orgasm is paramount to men's sexual satisfaction and is their main sexual motivation. This factor had an internal consistency coefficient of 0.88, and factor loadings ranged from 0.638 to 0.794. The mean score for this factor was 4.77 ($SD = 0.93$).

Factor 4: Orgasm as a Relational Quality Benchmark

The fourth factor is comprised of 10 items and two subfactors. The first subfactor, Duty and Reciprocity ($M = 3.96$, $SD = 0.91$), had factor loadings ranging from 0.463 to 0.592 and an internal consistency coefficient of 0.73. Items pertain to the notion that both partners should reach orgasm for a sexual encounter to be considered good and fair, and that

Table 4 Study 1: Factor scales and factor loadings from EFAs

Factor and item	Factor loading	Item number
1. Men's orgasms are easy/women's orgasms are difficult		
1.1 Women's orgasms are difficult		
Normally, women quickly reach orgasm (*R*)	.776	5
Most women easily reach orgasm (*R*)	.757	4
It is commonly easy for women to achieve orgasm (*R*)	.672	9
1.2 Men's orgasms are easy		
Men's orgasms are complicated (*R*)	.834	58
It is commonly difficult for men to achieve orgasm (*R*)	.804	59
Men normally take a long time to have an orgasm (*R*)	.758	56
2. Partner interest fosters orgasm		
2.1 Partner interest fosters women's orgasm		
When their partners are enthusiastic about their pleasure, it is easier for women to have an orgasm	.538	40
When their partners are genuinely interested in their pleasure, it is easier for women to have an orgasm	.503	33
Women orgasm more easily when their partners are excited about their pleasure	.490	37
Most women reach orgasm more easily when their partners are invested in their pleasure	.427	35
2.2 Partner interest fosters men's orgasm		
Orgasm is easier to reach for men when their partners care about their pleasure	.709	89
Men orgasm more easily when their partners are motivated in their pleasure	.695	86
It helps most men reach orgasm when their partners care about their pleasure	.683	82
When their partners are enthusiastic about their pleasure, it is easier for men to have an orgasm	.645	90
3. Orgasm is essential to men's sexual satisfaction		
Most men consider orgasm to be the most important part of sex	.794	102
Orgasm is a man's primary motivation for having sex	.764	101
Men's sexual satisfaction primarily depends on reaching orgasm	.759	104
Men think that orgasm is the best part of sex	.705	103
Most men need to have an orgasm to feel sexually satisfied	.638	106
4. Orgasm as a relational quality benchmark		
4.1 Duty and reciprocity		
A woman's orgasm is proof of her partner's sexual skills	.592	10
It is unfair when one partner has an orgasm, but not the other	.572	148
For sex to be good, both partners need to orgasm	.541	149
Women's orgasms depend on their partners' sexual skills	.471	12
It's acceptable when one partner achieves orgasm, but not the other (*R*)	.463	156
4.2 Orgasm absence reflects relationship problems		
When orgasm is difficult, it is because there is a problem with the relationship	.849	187
When orgasm is often difficult, it is because partners are having issues in their relationship	.837	188
When someone regularly has trouble reaching orgasm, it is because something is wrong with their relationship	.820	191
When someone often doesn't reach orgasm, it means there is a problem in their relationship	.813	189
If someone regularly has trouble reaching orgasm, it's because they don't have a very strong connection with their partner	.732	180
5. Orgasm is unessential to women's sexual satisfaction		
Women's sexual satisfaction primarily depends on reaching orgasm (*R*)	.887	113
Women need to reach orgasm regularly (*R*)	.733	114
Orgasm is a woman's primary motivation for having sex (*R*)	.626	110
Most women don't need to have an orgasm to feel sexually satisfied	.608	115
6. Simultaneous orgasm is ideal		
Simultaneous orgasms are the most pleasurable	.834	168
Simultaneous orgasms are the most intimate	.810	167
Having an orgasm at the same time as a partner feels better than separate orgasms	.771	171
The best sex is when both partners have an orgasm at the same time	.758	174

Table 4 (continued)

Factor and item	Factor loading	Item number
Having an orgasm at the same time as a partner is ideal	.746	169
7. Orgasm requires and fosters connection		
7.1 Orgasm fosters intimacy		
Seeing a partner have an orgasm brings joy to most people	.507	211
Orgasm promotes intimacy between partners	.495	206
People love seeing their partners have an orgasm	.488	213
People find it satisfying to see their partners achieve orgasm	.475	214
Partners feel closer to one another when they reach orgasm	.470	201
7.2 Orgasm requires self-knowledge and communication		
To be able to have an orgasm, a person needs to be aware of their own sexual needs	.820	236
Sexual communication is key to being able to have an orgasm	.752	265
A person needs to know their body if they want to be able to achieve orgasm	.713	235
If a person wants to reach orgasm, they need to know what works for them sexually	.707	237
Orgasm is more difficult when people don't let their partners know what they want	.642	268

(*R*) are reverse-coded items

women's orgasm depends on their partner's sexual skills. Items loading on the second subfactor, Orgasm Absence Reflects Relationship Problems ($M = 3.65$, $SD = 1.29$), evaluate the belief that orgasm difficulties are a sign of relationship troubles. Factor loadings ranged from 0.732 to 0.849 and had an internal consistency coefficient of 0.92.

Factor 5: Orgasm is Unessential to Women's Sexual Satisfaction

The fifth factor consisted of 4 items assessing the belief that orgasm is not the main sexual motivation in women and that it is unessential to women's sexual satisfaction. This factor had an internal consistency of 0.83, and factor loadings ranged from 0.608 to 0.887. The mean score for this factor was 3.18 ($SD = 94.$).

Factor 6: Simultaneous Orgasm is Ideal

The sixth factor was composed of 5 items related to the notion that simultaneous orgasms are superior to separate orgasms in terms of pleasure and intimacy. Factor loadings ranged from 0.746 to 0.834. The mean score for this factor was 4.79 ($SD = 1.01$), and its internal consistency coefficient was 0.90.

Factor 7: Orgasm Requires and Fosters Connection

The seventh factor was comprised of 10 items and two subfactors. The first subfactor, Orgasm Fosters Intimacy ($M = 5.12$, $SD = 0.82$), had factor loadings ranging from 0.470 to 0.507, and an internal consistency coefficient of 0.75. Items relate to the notion that partnered orgasm involves emotional and erotic connection and fosters closeness between partners. The second subfactor, Orgasm Requires Self-Knowledge and Communication ($M = 5.04$, $SD = 0.78$), had factor loadings ranging from 0.642 to 0.820, and speaks to the notion that orgasm requires that a person knows their sexual needs and desires and shares them with their partner. This subfactor's internal consistency was 0.86.

Study 2

In Study 1, the OBI was developed with EFA. The purpose of Study 2 was to test its factor structure by performing a confirmatory factor analysis (CFA), evaluate the measure's convergent and discriminant validity, and assess gender differences on the OBI subscales.

Method

Participants

The inclusion criteria were identical to those used in Study 1's second wave of data collection. Of the 540 eligible participants who accessed the survey, one exited after having answered the eligibility questions, and 4 after having completed the sociodemographic section of the questionnaire. An additional 15 participants were excluded because they incorrectly answered to at least three out of six "attention check" questions, and another 128 participants were removed because they had agreed or disagreed to both items of five or more of the ten pairs of positively and negatively worded items. The final sample for CFA consisted of 392 participants

(see Table 1 for the sample's characteristics). Two-thirds of the sample identified as men (64.6%) and 35.4% as women. Participants were between the ages of 22 and 69 ($M = 37.5$, $SD = 10.34$), were in a relationship for an average of 9.38 years ($SD = 8.9$), and reported moderate levels of religiosity ($M = 4.77$, $SD = 1.71$, range 1–7, with higher values representing higher frequencies of attendance to religious services in the last few years).

Measures

Demographic Characteristics

Study 2's sociodemographic variables were identical to Study 1's.

Orgasm Beliefs Inventory (OBI)

Developed in Study 1, the 48-item OBI was administered to participants.

Sexual Dysfunctional Beliefs Questionnaire

In order to evaluate the OBI's convergent validity, the Beliefs about Women's Satisfaction (e.g., "A man who doesn't sexually satisfy a woman is a failure") and Body-Image Beliefs (e.g., "An ugly woman is not capable of sexually satisfying her partner") subscales of the Sexual Dysfunctional Beliefs Questionnaire (SDBQ; Nobre, Pinto-Gouveia, & Gomes, 2003) were administered to participants. The SDBQ assesses sexual dysfunctional beliefs as an indicator of vulnerability to sexual dysfunction in both men and women. Together, the selected subscales are comprised of nine items, with response choices ranging from 1—*completely disagree*, to 5—*completely agree*. In the current sample, internal consistency coefficients were 0.78 and 0.83 for the Beliefs about Women's Satisfaction and the Body-Image Beliefs subscales, respectively.

Because the Beliefs about Women's Satisfaction subscale pertains to coital and orgasm imperative beliefs, and to the notion that men are responsible for women's sexual satisfaction, they were expected to positively correlate with the endorsement of the belief that orgasm requires being with a good sexual partner (Orgasm as a Relational Quality Benchmark and Partner Interest Fosters Orgasm subscales), and that simultaneous orgasm is ideal (Simultaneous Orgasm is Ideal subscale). Given that the Body-Image Beliefs subscale assesses the belief that women must be attractive in order to both be sexually satisfied and to sexually satisfy their partners—which attributes orgasm occurrence to fixed external factors, and therefore to something they cannot control—it was expected to negatively correlate with the belief that one's orgasm requires personal effort and investment (Orgasm Requires Self-Knowledge and Communication subscale), but to positively correlate with the belief that orgasm is an indicator of relationship quality (Orgasm Absence Reflects Relationship Problems subscale). Moreover, because this subscale assesses a belief grounded in sexual objectification, it was also expected to be negatively associated with the belief that orgasm is a dyadic or connective experience (Orgasm Fosters Intimacy and Partner Interest Fosters Orgasm subscales), as the latter implies that a partner's experience of pleasure is valued; something that is by definition lacking from sexual objectification.

Sexual Script Scale

The Sexual Simplicity/Complexity (e.g., "Men are more easily aroused than women"), Sex Drive (e.g., "Men have a higher sex drive than women"), and Performance and Orgasm subscales (e.g., "If a man wants a woman to sleep with him again, he has to give her an orgasm") of the Sexual Script Scale (SSS; Sakaluk et al., 2014) were used to assess the OBI's convergent validity. Together, these subscales are comprised of 16 items measuring individuals' degree of endorsement of common gendered beliefs regarding (hetero) sexual encounters, and the notion that orgasm is the goal of sex. Response choices ranged from 1—*strongly disagree*, to 6—*strongly agree*. In the present sample, internal consistency coefficients were 0.81, 0.80, and 0.78 for the Sexual Simplicity/Complexity, Sex Drive, and Performance and Orgasm subscales, respectively. Because the Sexual Simplicity/Complexity and Sex Drive subscales both measure gender-stereotypical notions of sexual function and desire, their scores were expected to positively correlate with the endorsement of the belief that men's orgasms are easy and essential while women's are complex and unessential (i.e., the Men's Orgasms are Easy/Women's Orgasms are Difficult, Orgasm is Essential to Men's Sexual Satisfaction, and Orgasm is Unessential to Women's Sexual Satisfaction subscales). In addition, because they both measure sexual performance beliefs and the belief that both partners "should" reach orgasm, the SSS's Performance and Orgasm scores were expected to positively correlate with scores on the OBI's Orgasm as a Relational Benchmark subscales.

Types of Jealousy Scales

The Types of Jealousy Scales (Buunk, Dijkstra, & Barelds, 2020) were used to assess the OBI's discriminant validity because they both relate to sex and relationships yet measure different concepts. This measure includes three 5-item subscales, each assessing a different type of jealousy. The Reactive Jealousy subscale assesses the level of distress individuals experience at the thought of their partner engaging in

intimate behaviours with another person (e.g., "How would you feel if your partner would have sexual contact with someone else?"), the Preventive Jealousy subscale measures people's mate-guarding behaviors and desires (e.g., "I don't want my partner to meet too many people of the opposite sex"), and the Anxious Jealousy subscale evaluates the degree of worry that one may have to the idea of their partner getting emotionally and sexually involved with someone else (e.g., "I worry that my partner might leave me for someone else"). Each subscale's response options range from 1—*not at all upset/not applicable/never*, to 5—*extremely upset/very much applicable/very often*. In the current sample, internal consistency alphas for the Reactive, Preventive, and Anxious Jealousy scales were 0.81, 0.83, and 0.89, respectively. Because the Types of Jealousy Scales assess emotional and behavioral reactions to a partner's intimate involvement with someone else, while the OBI measures gendered and relational beliefs about orgasm, all three Types of Jealousy Scales were expected to be uncorrelated with all OBI's subscales with the exception of Orgasm as a Relational Quality Benchmark subscales. Because this latter scale assesses insecurity-related relational factors, its scores were expected to positively correlate with scores on all three Types of Jealousy Scales.

Procedure

Study 2's procedure was identical to Study 1's. Participants were recruited on MTurk, and those who completed the survey were each compensated $1.00. The survey took 20–30 min to complete.

Analysis

To assess the OBI's factor structure, CFA was conducted. We identified all CFA models by fixing the latent variables' variance to 1, while freely estimating all factor loadings. Model fit was evaluated by examining the same fit indices used in Study 1. To test the OBI's convergent and discriminant validity, Pearson's *r* correlation coefficients were calculated. Analyses of covariance (ANCOVAs) were conducted to explore gender differences on OBI subscales. Due to the plausibility that beliefs change over time and that they may be significantly associated with religious belief, analyses were conducted using age, age squared, relationship duration, and religiosity as control variables.

Results

Confirmatory Factor Analyses

First, the possibility that a unidimensional model fit the OBI's items was assessed. This model resulted in a moderate fit (see Table 2), which indicated that the data did not adequately support the existence of a 1-factor model. Fitting the data to the seven-factor model identified in Study 1 resulted in an acceptable fit, though the possibility that the data would better fit to a higher-order model (i.e., a model in which factors are further comprised of subfactors), with the subfactors identified in Study 1, was also examined. Model fit indices only superficially improved for this higher-order model. In addition, in this model, Orgasm is Unessential to Women's Sexual Satisfaction and Orgasm as a Relational Quality Benchmark were too highly correlated with each other ($r \geq 1$) and Partner Interest Fosters Women's Orgasm, Duty and Reciprocity, and Orgasm Requires Self-Knowledge and Communication loaded too highly on their main factors (≥ 1). While correlations of 1 indicate that factors are indistinguishable, and therefore redundant, correlations between factors that are larger than 1 suggest that too many factors have been specified in the model or that the model does not adequately represent the data (Brown, 2015). Similarly, while loadings greater than 1 are rare, they are usually indicative of multicollinearity (Babakus et al., 1987). Therefore, the seven-factor model, without subfactors, was retained for further analyses. While this 7-factor model did result in overall good fit indices, two of its factors (i.e., Orgasm is Unessential to Women's Sexual Satisfaction and Orgasm as a Relational Quality Benchmark) were too highly correlated with each other ($r \geq 1$). Merging these two factors together, thus creating a 6-factor model, slightly weakened fit indices. Upon inspection, this new merged factor seemed to be assessing two distinct beliefs: (1) that women's orgasm is essential to good sex, and therefore, that both partners should reach orgasm for a sexual encounter to be "good" and "fair," and (2) the notion that the absence of orgasm is an indication that something is wrong with the relationship. Therefore, another analysis was conducted with the merged factor split into two separate factors—Women's Orgasm is also Important, and Orgasm Absence Reflects Relationship Problems—which resulted in a significantly better fit [$\chi^2_{diff} = 213.13$, $p < .001$) $\chi^2 = 1676.61(1059)$]. Standardized factor loadings for this model were all significant and ranged from 0.506 to 0.832 ($M = 0.633$), and all factors were significantly correlated with each other (*r* ranging from .34 to .93). This 7-factor model was retained and used for the remainder of our analyses (see Appendix A for the final measure and scoring instructions). See Table 5 for this model's descriptive statistics and internal consistency alphas.

Table 5 Study 2: Descriptive statistics and internal consistency alphas for OBI subscales

Factor	*M*	*SD*	Skewness	Kurtosis	Alpha
Men's orgasms are easy/women's orgasms are difficult	3.84	1.20	.047	− 1.236	.88
Partner interest fosters orgasm	4.84	.83	− .568	.002	.85
Orgasm is essential to men's sexual satisfaction	4.69	1.06	− .548	− .164	.79
Women's orgasm is also important	4.05	.92	− .562	.101	.82
Orgasm absence reflects relationship problems	3.38	1.40	− .360	− 1.005	.88
Simultaneous orgasm is ideal	4.71	1.05	− .849	.945	.80
Orgasm requires and fosters connection	4.99	.79	− .663	− .179	.87

OBI subscale scores ranged from 1—strongly disagree, to 6—strongly agree

The coding of items formerly loading on Study 1's Orgasm is Unessential to Women's Sexual Satisfaction subscale were changed to correspond with the new subscale's dimension, Importance of Women's Orgasm (i.e., item 115 is now reverse-coded, while items 110, 113, and 114 are not)

Convergent and Discriminant Validity

Sexual Dysfunctional Beliefs Questionnaire

As expected, Beliefs about Women's Satisfaction subscale scores were significantly and positively correlated with OBI subscales that assessed the belief that orgasm requires being with a good sexual partner and that simultaneous orgasm is ideal (Orgasm Absence Reflects Relationship Problems, Women's Orgasm is also Important, Partner Interest Fosters Orgasm, and Simultaneous Orgasm is Ideal subscales) and did not correlate with any other OBI subscale, thus providing supporting evidence of the OBI's convergent and discriminant validity (see Table 6 for correlation coefficients between all measures). Consistent with hypotheses, negative associations were also found between Body-Image Beliefs scores and OBI subscales that pertain to the idea that people are responsible for their own orgasm, and that orgasm is a connective experience (i.e., Orgasm Requires and Fosters Connection and Partner Interest Fosters Orgasm subscales). The hypothesized positive correlation between the Body-Image Beliefs subscale and OBI subscales that relate to the belief that the absence of orgasm is an indicator of relationship difficulties (i.e., Orgasm Absence Reflects Relationship Problems) was also supported. However, Body-Image Beliefs subscale scores were also strongly and negatively correlated with those obtained on the Men's Orgasms are Easy/Women's Orgasms are Difficult and Orgasm is Essential to Men's Sexual Satisfaction subscales. It is possible that individuals who endorse the belief that sexual satisfaction depends on external factors, as measured by the Body-Image Beliefs subscale, tend not to believe that ease of orgasm and sexual satisfaction are influenced by internal factors (in this case, gender). Body-Image subscale scores were also found to be uncorrelated with Women's Orgasm is also Important.

Table 6 Study 2: 6orrelation coefficients between OBI subscales and all other measures

OBI subscales	Beliefs about women's satisfaction	Body Image	Sexual simplicity/complexity	Sex drive	Orgasm and performance	Reactive jealousy	Preventive jealousy	Anxious jealousy
1	− .01	− .55**	.22*	.08	− .12	.24*	− .36**	− .12
2	.23*	− .38**	.24*	.12	.40**	.23*	− .09	− .24*
3	.17	− .34**	.54**	.45**	.34**	.34**	.12	.01
4	.63**	.06	.44**	.31**	.80**	.09	.28**	.06
5	.48**	.39**	.23*	.23*	.36**	− .09	.49**	.34**
6	.28*	− .26*	.49**	.28*	.22*	.14	.13	− .03
7	.04	− .43**	.28*	.08	.17	.34**	− .03	− .23*

1—Men's orgasms are easy/women's orgasms are difficult, 2—partner interest fosters orgasm, 3—orgasm is essential to men's sexual satisfaction, 4—women's orgasm is also important, 5—orgasm absence reflects relationship problems, 6—simultaneous orgasm is ideal, 7—orgasm requires and fosters connection

All correlation coefficients are adjusted for age, age squared, relationship duration, religiosity, and gender

OBI subscale scores ranged from 1—strongly disagree, to 6—strongly agree

* $p \leq .01$

** $p \leq .001$

Sexual Scripts Scale

The expectation of positive correlations between Sexual Simplicity/Complexity and the OBI's Men's Orgasms are Easy/Women's Orgasms are Difficult subscale scores was met (see Table 6 for correlation coefficients between all measures). However, Simplicity/Complexity scores were most highly and positively correlated with Orgasm Absence Reflects Relationship Problems, Simultaneous Orgasm is Ideal, and Women's Orgasm is also Important. Congruent with hypotheses, Sex Drive scores were most significantly and positively correlated with Orgasm is Essential to Men's Sexual Satisfaction. Sex drive scores were nonetheless also strongly and positively correlated with Women's Orgasm is also Important, though this could be attributable to the fact that this latter subscale also evaluates the general belief that orgasm "should" happen in any "fair" and satisfying sexual encounter. Sex Drive scores were also found to be uncorrelated or only weakly correlated with all other OBI subscales, further supporting the OBI's discriminant validity. Lastly, as expected, Performance and Orgasm scores were most strongly and positively correlated with scores on the OBI's Women's Orgasm is also Important subscale (formerly part of the Orgasm as a Relational Benchmark subscale). Orgasm and Performance scores were also found to be uncorrelated with the OBI's Men's Orgasms are Easy/Women's Orgasms are Difficult and Orgasm Requires and Fosters Connection scores, and to be weakly to moderately and positively correlated with all other OBI subscale scores, offering some evidence in support of the OBI's discriminant validity.

Types of Jealousy Scales

As expected, the Types of Jealousy subscales, notably the Reactive and Anxious Jealousy subscales, were either uncorrelated or only weakly correlated with OBI subscales, with the hypothesized exception of Orgasm Absence Reflects Relationship Problems, thus demonstrating good overall discriminant validity (see Table 6).

Gender Differences

Mean scores for women and men are shown in Table 7. After controlling for age, age squared, relationship duration, and religiosity, ANCOVAs revealed that, compared to their female counterparts, men scored lower on the Men's Orgasms are Easy/Women's Orgasms are Difficult subscale, but higher on Orgasm Absence Reflects Relationship Problems. No gender differences were found on the other OBI subscales.

Discussion

The purpose of the present paper was twofold: (1) to develop and validate a measure assessing the endorsement of a wide range of orgasm-related scripts and beliefs, and (2) to investigate gender differences in their endorsement using this new measure. Participants reported endorsing many of the scripts and beliefs surrounding partnered orgasm that were documented in the existing qualitative research on orgasm. Exploratory factor analysis indicated they could be grouped into seven broad categories, four of which were comprised of two subcategories. Confirmatory factor analysis was also conducted. However, this analysis did not support a higher-order model, and instead supported a slightly different 7-factor model than Study 1's: (1) Men's Orgasms are Easy/Women's Orgasms are Difficult, (2) Partner Interest Fosters Orgasm (3) Orgasm is Essential to Men's Sexual Satisfaction, (4) Women's Orgasm is also Important, (5) Orgasm Absence Reflects Relationship Problems, (6) Simultaneous Orgasm is Ideal, and (7) Orgasm Requires and Fosters Connection. Correlations between OBI subscales and other measures were also computed, and results offered supporting evidence for the OBI's convergent and discriminant validity. While all orgasm beliefs assessed by the OBI were endorsed

Table 7 Study 2: Gender comparisons on OBI scales

	M with 95% CI		*F*	*p*
	Women	Men		
Men's orgasms are easy/women's orgasms are difficult	$_{3.82}$ 4.14 $_{4.46}$	$_{3.37}$ 3.63 $_{3.87}$	6.339	*.013
Partner interest fosters orgasm	$_{4.46}$ 4.70 $_{4.93}$	$_{4.77}$ 4.95 $_{5.13}$	2.838	.095
Orgasm is essential to men's sexual satisfaction	$_{4.29}$ 4.61 $_{4.93}$	$_{4.51}$ 4.75 $_{4.99}$	0.463	.498
Women's orgasm is also important	$_{3.61}$ 3.88 $_{4.14}$	$_{3.98}$ 4.18 $_{4.39}$	3.244	.074
Orgasm absence reflects relationship problems	$_{2.72}$ 3.08 $_{3.44}$	$_{3.33}$ 3.60 $_{3.87}$	5.166	*.025
Simultaneous orgasm is ideal	$_{4.28}$ 4.58 $_{4.87}$	$_{4.56}$ 4.78 $_{5.01}$	1.176	.280
Orgasm requires and fosters connection	$_{4.66}$ 4.89 $_{5.12}$	$_{4.87}$ 5.05 $_{5.22}$	1.059	.306

OBI subscale scores ranged from *1* – Strongly disagree, to *6* – Strongly agree

All means are adjusted for age, age squared, relationship duration, and religiosity

*$p \leq .05$

to some extent by both men and women, men scored lower than women on Men's Orgasms are Easy/Women's Orgasms are Difficult, but higher on Orgasm Absence Reflects Relationship Problems. No other gender differences were found on OBI subscales. In Study 2, the least endorsed belief was Orgasm Absence Reflects Relationship Problems ($M = 3.38$), and the most highly endorsed, Orgasm Requires and Fosters Connection ($M = 4.99$).

It is interesting to note that some of the most well documented orgasm beliefs were among the least endorsed. On average, participants only slightly agreed with the belief that men's orgasms are easy, and women's, difficult to achieve (i.e., Men's Orgasms are Easy/Women's Orgasms are Difficult), that orgasm should be reached by both partners—not just men, and that women's orgasm are the product of men's skills (i.e., Women's Orgasm is also Important). These findings point to a discrepancy between cultural and intrapsychic scripts: While the existence of these scripts is broadly recognized by individuals, they do not seem to be strongly endorsed on a personal level. Some research has shown that, while individuals as a group tend to recognize cultural level scripts, there is considerable variability in how these scripts are integrated and conveyed on interpersonal and intrapsychic levels. For example, in their interview study examining gendered sexual scripts among emerging adult heterosexual men and women, Masters, Casey, Wells, and Morrison (2013) found that, while some of their participants personally agreed with and conformed to traditional gender sexual scripts, many accepted these scripts as a reality while finding themselves to be the exception to the rule, and others attempted to transform these cultural scripts for themselves or perceived their own deviating scripts and behaviors to be equally normative. Relative to the present study, it is possible that some participants feel the need to distance themselves from mainstream sexual beliefs or what they perceive "most people" believe. On the other hand, the discrepancy found in the present study may be an indication of changing cultural sexual scripts: It is possible that, while several older or more traditional representations of orgasm continue to exist in cultural sexual scripts, the importance that individuals attribute to them gradually changes as new representations of orgasm emerge.

The present study's findings also suggest that orgasm in the context of partnered sex is seen by most participants as both fostered by connection with a partner (Partner Interest Fosters Orgasm subscale) and as a deeply connective experience in and of itself (Orgasm Requires and Fosters Connection subscale), regardless of gender. These results contradict the cultural belief that men divorce emotionality from sexuality and sexual pleasure (Sakaluk et al., 2014). It is possible that this discrepancy could be due to the age difference between samples, with the present study's being older than Sakaluk et al. (2014).

On a cultural level, it is possible that the conceptualization of orgasm as a symbol of intimacy is linked to the relatively recent adoption of the "pure relationship" model, as the "romantic love complex," an older, more conventional relationship model, fades and is ascribed less importance over time (Giddens, 1992). According to Giddens, romantic love, which is central to the romantic love complex, is based on the heterosexist notion of complementarity between women and men, with femininity and masculinity each defined in function of what the other is not. In this regard, the romantic love complex is reminiscent of the OBI's Men's Orgasms are Easy/Women's Orgasms are Difficult and Orgasm is Essential to Men's Sexual Satisfaction subscales. Romantic love is also said to be based on the notions of soul mates and a lifelong relationship, and as characterized by inequality between partners. By contrast, Giddens argues that confluent love, central to the pure relationship model, depends on the transparency and disclosure of oneself to the other. Whereas romantic love is static, confluent love is active and dynamic, requiring ongoing effort and investment. Giddens argues that confluent love, and therefore the pure relationship, also implies that both partners are equally emotionally invested in one another via shared intimacy and self-disclosure. Relative to the present study, orgasm could be conceptualized as a window to a person's vulnerability, or as a form of authentic emotional exchange, and therefore as a contributing factor to confluent love. Simultaneous orgasm could be constructed as authenticity and erotic and emotional intimacy in their highest form, which the present study has shown to be esteemed by individuals as more intimate and pleasurable than orgasms reached separately. Thus, it is possible that partnered orgasms more generally, and simultaneous orgasms more specifically, are understood by many individuals as playing an important role in the construction and maintenance of emotional connection and intimacy between partners.

The pure relationship model, by its defining quality of equality, attributes great importance to reciprocity between partners in terms of sexual pleasure, and therefore, to the development of sexual skills to be able to sexually satisfy one's partner, regardless of gender (Giddens, 1992). The present study supports this notion by showing that both men and women endorse the idea that women's *and* men's orgasm are more likely to occur when their partners are enthusiastic about and invested in their pleasure, thereby illustrating the increasingly egalitarian and democratic nature of sexual scripts in the context of committed relationships. While more traditional sexual scripts prescribe that men be skilled at providing satisfying sexual stimulation and orgasms to their partners (i.e., the male sexual performance script; Nicolson & Burr, 2003; Roberts et al., 1995; Salisbury & Fisher, 2014), the current study contributes to a growing body of research documenting the emergence of a female heterosexual performance script (Sakaluk et al., 2014; Séguin & Blais, 2019).

That items pertaining to sexual self-knowledge and communication loaded on the same factor as items that relate to erotic intimacy reflect the democratic aspect of Gidden's 1992 pure relationship model: that both partners not only be equally invested in the relationship and each other's pleasure, but also be invested in and responsible for their own. In the present study, this personal investment in one's own orgasm takes the form of being aware of and familiar with one's own sexual needs and desires, and of communicating them to a partner, which was highly endorsed by both women and men. This suggests that orgasm is not perceived as solely depending on a partner's efforts and investment, but also on certain personal factors that are beyond a partner's control. Again, this finding conflicts with the more traditional sociocultural notion that sexual partners, notably male sexual partners, are responsible for their partner's orgasms during sex (Nicolson & Burr, 2003; Roberts et al., 1995; Salisbury & Fisher, 2014). However, this emerging script also speaks to a broader, relatively recent cultural shift toward neoliberalism, that is, the prioritization of self-interest and personal autonomy, and the acceptance of personal responsibility for all outcomes (Brown, 2003). In the sexual sphere of life, this translates into a script of individual agency and personal responsibility in ensuring one's sexual pleasure and orgasm.

This cultural shift toward neoliberalism could also explain the finding that the current samples did not highly endorse the belief that consistent orgasms are an indicator of relationship quality, or that orgasm difficulties are a sign of relationship problems (i.e., Orgasm Absence Reflects Relationship Problems subscale). Attributing ease of orgasm to external factors upon which one has little direct control is more congruent with the romantic love complex's static concepts of fate and soulmates, and less in line with the pure relationship model's dynamic notions of democracy, ongoing effort and investment, and personal responsibility. The present study's relatively low Orgasm Absence Reflects Relationship Problems scores nonetheless contrast other research findings suggesting that several facets of healthy committed relationships, such as satisfaction, trust, intimacy, and familiarity are conducive to orgasm, notably for women (Backstrom, Armstrong, & Puentes, 2012; Bois, Bergeron, Rosen, McDuff, & Grégoire, 2013; Salisbury & Fisher, 2014; Witting et al., 2008). Given that individuals' behaviors do not always reflect personal beliefs (England, 2011), future research should investigate the possible associations between the endorsement of cultural orgasm beliefs and orgasm function among women and men.

Strengths and Limitations

The current study presents some limitations. First, given that participants volunteered to participate in this study, it is possible that those who chose to participate happened to be more comfortable thinking about sex and orgasm compared to the general population. Furthermore, while the present sample did include some self-identified bisexual and pansexual participants, most identified as heterosexual, and all were in different-gender relationships. Therefore, the current study's findings do not provide any information on gay and lesbian individuals' endorsement of the different orgasm scripts and beliefs assessed by the OBI, nor on those of other people who are in same-gender relationships. It is conceivable that, for example, individuals in same-gender relationships endorse orgasm scripts and beliefs at significantly different levels than those found in the present sample, notably relative to scripts that are tied to gender (e.g., that men's sexual satisfaction depends on reaching orgasm; that men's orgasms are easy to reach while women's are difficult; etc.).

Another limitation concerns sample sizes. Because the overall sample was relatively modest, especially after the elimination of indiscriminate agreers, analyses could not be conducted separately by gender to assess gender invariance. It is therefore possible that, had the respective subsamples of women and men been larger and separate analyses had been conducted for each gender, the OBI factor structure would be different for women and men.

The present research also presents several strengths. Recruiting this sample online allowed for a more heterogeneous sample in terms of age, ethnicity, education, and student and employment status compared to much sexuality research samples which tend to be predominantly comprised of U.S. college or university students. Moreover, while our data cleaning method yielded a significantly smaller sample than at the outset, it resulted in the retention of better quality data, thereby increasing the results' validity.

Conclusions

The present study has contributed to sexual script theory by having categorized several orgasm-related cultural scripts and beliefs. The findings derived from the current study also allow for a better understanding of individuals' intrapsychic scripts vis-à-vis cultural scripts. Our data show that cultural sexual scripts are personally endorsed at varying degrees, but that, with the exception of the belief that men's orgasms are essential to their sexual satisfaction (i.e., Orgasm is Essential to Men's Sexual Satisfaction), more traditional orgasm-related beliefs (e.g., Orgasm Absence Reflects Relationship Problems, Men's Orgasms are Easy/Women's Orgasms are Difficult, etc.) are less endorsed than gender-neutral, emotionally connective, and agentic orgasm scripts (e.g., Partner Interest Fosters Orgasm, Orgasm Requires and Fosters Connection, etc.).

Lastly, this study produced a new, comprehensive measure of cultural orgasm scripts and beliefs that can be used in future research. The OBI can enhance our understanding of sexual beliefs overall, and can be administered concurrently

with other measures and questionnaires to gain insight on how such beliefs may be implicated in other sexual behaviors (e.g., pretending orgasm, orgasm function, sexual communication and assertiveness, investment in a partner's sexual pleasure, etc.), and how they may be associated with psychological factors such as romantic attachment and sexual motivations.

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Compliance with Ethical Standards

Conflict of interest The authors declare that they have no conflict of interest.

Ethics Approval The questionnaire and methodology for this study was approved by the Human Research Ethics committee of the Université du Québec à Montréal (Ethics approval number: 1259).

Informed Consent Informed consent was obtained from all individual participants included in the study.

Appendix: The Orgasm Beliefs Inventory

Participant Instructions: The following is a list of statements that describe some of the most common beliefs about orgasm. Please read each statement carefully and select the number in the right-hand column which corresponds to the extent to which you *personally* agree or disagree with each statement.

1 Strongly disagree	2 Moderately disagree	3 Slightly disagree	4 Slightly agree	5 Moderately agree	6 Strongly agree

1. Most women easily reach orgasm (*R*)
2. When their partners are genuinely interested in their pleasure, it is easier for women to have an orgasm
3. Orgasm is a man's primary motivation for having sex
4. A woman's orgasm is proof of her partner's sexual skills
5. Women need to reach orgasm regularly
6. If someone regularly has trouble reaching orgasm, it's because they don't have a very strong connection with their partner
7. Simultaneous orgasms are the most intimate
8. Partners feel closer to one another when they reach orgasm
9. If a person wants to reach orgasm, they need to know what works for them sexually
10. Normally, women quickly reach orgasm (*R*)
11. Most women reach orgasm more easily when their partners are invested in their pleasure
12. Most men consider orgasm to be the most important part of sex
13. Women's orgasms depend on their partners' sexual skills
14. Orgasm is easier to reach for men when their partners care about their pleasure
15. Women's sexual satisfaction primarily depends on reaching orgasm
16. When orgasm is difficult, it is because there is a problem with the relationship
17. Simultaneous orgasms are the most pleasurable
18. Orgasm promotes intimacy between partners
19. To be able to have an orgasm, a person needs to be aware of their own sexual needs
20. It is commonly easy for women to achieve orgasm (*R*)
21. Women orgasm more easily when their partners are excited about their pleasure
22. Men think that orgasm is the best part of sex
23. It is unfair when one partner has an orgasm, but not the other
24. When orgasm is often difficult, it is because partners are having issues in their relationship
25. Having an orgasm at the same time as a partner is ideal
26. Seeing a partner have an orgasm brings joy to most people
27. Men normally take a long time to have an orgasm (*R*)
28. When their partners are enthusiastic about their pleasure, it is easier for women to have an orgasm
29. Men's sexual satisfaction primarily depends on reaching orgasm
30. For sex to be good, both partners need to orgasm
31. When their partners are enthusiastic about their pleasure, it is easier for men to have an orgasm
32. When someone often doesn't reach orgasm, it means there is a problem in their relationship
33. Having an orgasm at the same time as a partner feels better than separate orgasms
34. People love seeing their partners have an orgasm
35. Sexual communication is key to being able to have an orgasm
36. Men's orgasms are complicated (R)
37. It helps most men reach orgasm when their partners care about their pleasure
38. Most men need to have an orgasm to feel sexually satisfied
39. It's acceptable when one partner achieves orgasm, but not the other (*R*)
40. When someone regularly has trouble reaching orgasm, it is because something is wrong with their relationship
41. The best sex is when both partners have an orgasm at the same time

42. People find it satisfying to see their partners achieve orgasm
43. It is commonly difficult for men to achieve orgasm (*R*)
44. Men orgasm more easily when their partners are motivated in their pleasure
45. Orgasm is a woman's primary motivation for having sex
46. A person needs to know their body if they want to be able to achieve orgasm
47. Most women don't need to have an orgasm to feel sexually satisfied (*R*)
48. Orgasm is more difficult when people don't let their partners know what they want

Scoring: Items 1, 10, 20, 27, 36, 39, 43, and 47 are reverse-coded. Items from each subscale are averaged to obtain subscale scores. The Orgasm Beliefs Inventory is comprised of seven subscales:

(1) Men's Orgasms are Easy/Women's Orgasms are Difficult (items 1, 10, 20, 27, 36, and 43)
(2) Orgasm Requires Partner Interest (items 2, 11, 14, 21, 28, 31, 37, 44)
(3) Orgasm is Essential to Men's Sexual Satisfaction (items 3, 12, 22, 29, and 38)
(4) Women's Orgasm is also Important (items 4, 5, 13, 15, 23, 30, 39, 45, and 47)
(5) Orgasm Absence Reflects Relationship Problems (items 6, 16, 24, 32, and 40)
(6) Simultaneous Orgasm is Ideal (items 7, 17, 25, 33, and 41)
(7) Orgasm Requires and Fosters Connection (items 8, 9, 18, 19, 26, 34, 35, 42, 46, and 48)

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