Sexual Medicine, 2023, **11**, 1–9
https://doi.org/10.1093/sexmed/qfad030
Original Research

Self-reported reasons for having difficulty reaching orgasm in men with diverse etiologies

David L. Rowland, PhD[1,*], Sarah Padilla, BS[1], Zsuzsanna Kövi, PhD[2], Krisztina Hevesi, PhD[3]

[1]Department of Psychology, Valparaiso University, Valparaiso IN 46383, United States
[2]Institute of Psychology, Károli Gáspár University of the Reformed Church, Budapest 1037, Hungary
[3]Institute of Psychology, Eötvös Loránd University, Budapest 1053, Hungary

*Corresponding author: Department of Psychology, Valparaiso University, Valparaiso IN 46383, United States. Email: david.rowland@valpo.edu

Abstract

Background: Difficulty reaching orgasm/ejaculation during partnered sex, a primary characteristic of delayed or absent ejaculation, affects about 5% to 10% of men, but the reasons underlying this problem are poorly understood.

Aim: The study sought to gain insight into possible etiologies of delayed ejaculation by assessing men's self-perceptions as to why they experience difficulty reaching orgasm.

Methods: We drew 351 men reporting moderately severe to severe difficulty reaching orgasm during partnered sex from a sample of over 3000 respondents obtained through an online survey. As part of the 55-item survey, participants responded to 2 questions asking about their self-perceived reasons for having difficulty reaching orgasm and selected from a list of 14 options derived from the research literature, a series of men's focus groups, and expert opinion. The first question allowed respondents to select all the reasons that they felt contributed to the problem, the second to select only the most important reason. In addition, both men with and without comorbid erectile dysfunction were investigated and compared.

Outcomes: Hierarchical ordering of men's self-pereceived reasons for having difficulty reaching orgasm, including typal reasons established through principal component analysis.

Results: The major reasons for difficulty were related to anxiety/distress and lack of adequate stimulation, with relationship and other factors endorsed with lower frequency. Further exploration using principal components analysis identified 5 typal reasons, in descending order of frequency: anxiety/distress (41%), inadequate stimulation (23%), low arousal (18%), medical issues (9%), and partner issues (8%). Few differences emerged between men with and without comorbid ED other than ones related to erectile problems, such as higher level of endorsement of medical issues. Typal reasons showed correlations, albeit mostly weak, with a number of covariates, including sexual relationship satisfaction, frequency of partnered sex, and frequency of masturbation.

Clinical Implications: Until supplemental medical treatments for delayed ejaculation are developed and approved, a number of men's purported reasons for difficult or absent ejaculation/orgasm—anxiety/distress, inadequate stimulation, low arousal, relationship issues—fall into areas that can be addressed in couples counseling by a trained sex therapist.

Strengths and Limitations: This study is unique in scope and robust in sample size. Drawbacks include those associated with online surveys, including possible bias in sample selection, limitation to Western-based samples, and the lack of differentiation between men with lifelong and acquired difficulty.

Conclusion: Men who have difficulty reaching ejaculation/orgasm identify putative reasons for their problem, ranging from anxiety/stress, inadequate stimulation, and low arousal to partner issues and medical reasons.

Keywords: erectile dysfunction; partnered sex; men; attributions; reasons; inhibited ejaculation; delayed ejaculation.

Introduction

Delayed ejaculation (DE), a disorder that often includes inhibited ejaculation, is among the least studied and understood of the male sexual dysfunctions. Not only does it lead to a lack of sexual fulfillment and satisfaction for the man and/or the couple, but it may also interfere with attempts at procreation.[1-4] Although the prevalence of DE is uncertain, recent clinical and community samples have estimated it around 5% to 10%[5-7] or higher.[8,9]

DE can be lifelong or acquired; it presumably has physiological/somatic, pathophysiological, and/or psychological origins.[3,10-15] Furthermore, a sizable percentage of men experiencing DE also report comorbid erectile dysfunction (ED).[8-10] Whatever the etiology and complicating factors, central to the concept of DE is men's self-reported difficulty reaching orgasm/ejaculation, contributing over 50% of the variation to its diagnosis.[16,17] Other factors also play a role: for example, men who have difficulty reaching orgasm report not only prolonged or absent ejaculatory latencies (ELs), but also higher levels of bother/distress than men with normal ejaculatory function.[16-18]

Despite progress in understanding men with DE, specific etiologies remain obscure, that is, why some men have difficulty reaching ejaculation whereas others do not. In instances

Received: March 19, 2023. **Revised:** May 9, 2023. **Accepted:** May 15, 2023

involving acquired (secondary) DE, an etiology may become apparent through a medical or psychosexual history.[3,4,15] But for men having a lifelong condition of DE, etiological pathways remain largely hypothetical. Based on recent theoretical and empirical reports, several differentiating etiological risk factors have been proposed to explain men's difficulty reaching orgasm/ejaculation, including ones related to genetic/biological predispositions,[18,19] levels of distress/anxiety,[16,20-22] relationship issues,[13,23] and insufficient arousal to reach ejaculation.[24,25] Each hypothesized factor has garnered some support. For example, regarding a biological predisposition, the argument has been made that the normal variation in EL in men—a positively skewed distribution—reflects, in part, the influence of genetic factors,[19] particularly toward the extremes of the distribution. As of yet, however, no specific data support this assumption, and one twin study concluded that genetic factors did not reliably predict DE status.[26] Regarding a role for distress/anxiety, men with DE consistently report greater levels of distress/anxiety than men without DE,[16,18,20] but whether these negative emotional states are a cause or consequence of DE has not been clarified. Insufficient sexual arousal—which might well be linked to poorer relationship quality/satisfaction[16]—has also been identified as a putative factor for DE. Specifically, men with DE report lower arousal to erotic stimuli despite having erections comparable to men without DE,[24] show possible sexual arousal deficits as signified by functional magnetic resonance imaging neurotransmitter acitivity,[25] and in some instances, may prefer an autoerotic orientation that could interfere with arousal during partnered sex.[18,27]

Although expert opinion and clincal experience can provide insight into etiological pathways for various sexual problems,[28–30] patients' self-report—often included as part of a clinical interview—could well play an important role in understanding men's reasons for difficulty reaching orgasm/ejaculation.[31-33] Yet, such self-analysis is lacking in the research literature on DE—information that might not only offer insight into the etiology of DE symptomology, but also suggest relevant strategies for remediation/treatment. Against this background, the present study (1) described several major sample parameters of men reporting difficulty reaching orgasm/ejaculation during partnered sex (aim 1); (2) assessed men's frequencies of self-reported reasons for such difficulty, comparing across different DE groups that included those with and without concomitant ED (aim 2); (3) explored patterns of interrelatedness for reasons for orgasmic difficulties during partnered sex using principal components analysis in order to establish "typal" reasons (aim 3); and (4) related typal reasons for difficuly reaching orgasm to putative covariates of DE, including sexual relationship satisfaction, frequency of partnered sex and masturbation, and frequency of pornography use during masturbation (aim 4).

Methods

Participants

Participants were recruited through voluntary self-selection from July 2019 through February 2020 to complete a survey pertaining to sexual health and behavior. The sample was recruited through 2 approaches. The first group was recruited from the United States and other English-speaking countries (USA+; n = 699) and included men who responded to the research homepage, postings on several reddit.com forums, or any of the unpaid social media (eg, Facebook) and public announcements. The second group was recruited from Hungary and included men who responded to comparable forum posts, unpaid online/public announcements, or the Hungarian research webpage (n = 3243). A final group (not included in this study sample) consisted of men in Hungary (n = 134) who volunteered to take an anonymously coded pencil-and-paper version of the questionnaire to enable test-retest reliability analysis on specific questionnaire items after 4 to 6 weeks.

The completion rate for the survey was 81% of those who initially opened it (active n = 3142). Among those completing the survey, men who had never had a sexual partner, identified as asexual or transgender/nonbinary, reported having premature ejaculation or normal ejaculatory function, chose not to ejaculate during partnered sex or masturbation, or showed inconsistency in responding as determined by embedded "attention checks" in the survey were excluded, yielding a final active sample of 3026 men. When men reporting moderately severe to severe difficulty reaching orgasm were extracted from the larger sample for inclusion in this analysis, the sample consisted of 351 men 18+ years of age (mean 37.5 ± 14.1 years of age).

Survey questionnaire

During the survey development process, 7 focus groups were convened. Two groups included men in the United States (n = 10, mean age = 32.4 years) and 5 groups included men from Hungary (n = 79, mean age = 22.7 years), the latter consisting primarily of university students in several professional and academic disciplines. Group members reviewed the questionnaire items, commented on their relevance and clarity of phrasing, and suggested both wording changes and additional response categories.[28] Focus groups also appraised item face validity and assessed the time required for survey completion. For Hungarian respondents, the questionnaire was translated to Hungarian and back-translated to English by professional translators to ensure preservation of meaning. Because items drawn from existing standardized assessment instruments embedded in the survey had already been validated in Hungarian, these translated items were used, with minor wording changes to fit the requirements of the present study (eg, modifying "intercourse" to "partnered sex").

The first part of the 55-item survey queried about demographic and health characteristics. The second portion examined participants' sexual histories during the previous 12 to 24 months, including sexual orientation, self-reported interest in sex, general relationship satisfaction, sexual relationship satisfaction, estimated ELs, and frequencies of partnered sex, masturbation, and pornography use during masturbation. The third section addressed common sexual problems in men during partnered sex and masturbation, and included relevant items from the International Index of Erectile Function, abridged version (IIEF-5),[34] and the Premature Ejaculation Diagnostic Tool,[35] as well as questions aimed at assessing DE (see the following).

Measures

Variables used in the analyses for this study are presented in detail in Supplementary Table 1.

Major organizing variable of interest

We note that although *ejaculation* and *orgasm* refer to distinct physiological processes, based on feedback from the focus groups, these processes were not differentiated, and as a result, they were typically used in tandem or sometimes interchangeably in the survey. For reporting in this study, however, we often use either term as a general proxy for both of these processes.

The organizing variable in this study was whether or not men indicated difficulty reaching orgasm/ejaculation during partnered sex, a face-valid and empirically supported defining characteristic of men with DE.[16,17] The sample of men with DE was further defined in 2 ways: the first group included DE men with comorbid ED (DE + ED) and the second group included men indicating difficulty reaching orgasm but not experiencing ED (pure DE).

Assessment of DE

As no patient reported outcomes have been validated for assessing DE, we selected an experimenter-derived item from the questionnaire to assess DE symptomology. Specifically, respondents were asked about their difficulty reaching orgasm during partnered sex, a construct that is central to a DE diagnosis.[9,16,17] Responses were scaled from 1 to 5, such that higher scores represented greater difficulty: 1 and 2 represented no/mild DE, 3 represented moderate DE, and 4 and 5 represented moderately severe to severe DE. For this analysis, we focused on men who self-reported 4 or 5 on this question, as a preliminary analysis found that a substantial percentage of men reporting 3 followed up on a subsequent question in a manner that indicated that their difficulty did rise to the level of a significant problem. Furthermore, the 4 and 5 categories (representing 75% of the time or more) constituted a DE group that aligns with the DSM-5 criterion for DE.[36] Test-retest reliability for this item was 0.73.

Control and explanatory covariates

Erectile function, an explanatory covariate, was assessed to define 2 study groups: DE men with and without comorbid ED. Four IIEF-5 items related specifically to erection[34] were used; an item focusing on satisfaction during intercourse was not included, as it did not specifically assess erectile function. Consistent with a proportional scoring rubric for the IIEF-5, lower scores indicated greater ED, and men with scores <10 (moderately severe to severe ED) were removed in order to create the pure DE group. Internal reliability for the scale was 0.89, and test-retest reliability was 0.86.

Frequency of partnered sex and masturbation were explanatory covariates assessed in connection with difficulty reaching orgasm. The first was rated on a 9-point scale (1 = almost never, 9 = more than once a day), the second on a 10-point scale (1 = almost never, 10 = more than 4 times a day). Test-retest reliability values were 0.81 and 0.79, respectively.

Sexual relationship satisfaction, an explanatory covariate, was assessed with a single question asking about satisfaction with the sexual aspects of the relationship, rated on a 5-point scale (1 = not at all satisfied, 5 = very satisfied). Test-retest reliability was 0.89.

Frequency of pornography use, an explanatory covariate, was assessed with the following question: About what percent of the time do you use erotic/pornographic materials when you masturbate? Response options ranged from 0 (never) to 5 (85% or more), with percentage ranges corresponding to each of the intermediate response options. Test-retest reliability for this variable was 0.70.

Origin of data, as described in the Participants section, samples were drawn from 2 primary regions of the world (USA+ and Hungary), so this control covariate was explored in relationship to the outcome variables related to reasons for difficulty reaching orgasm.

Outcome variables

Reasons for difficulty reaching orgasm was assessed with 2 items: (1) "If you are typically unable to reach orgasm (ejaculation) or have difficulty doing so during partnered sex, what do you think are the reasons? CHECK ALL THAT APPLY"; and (2) "If you are typically unable to reach orgasm (ejaculation) or have difficulty doing so during partnered sex, WHAT ONE FACTOR DO YOU THINK CONTRIBUTES MOST TO THE PROBLEM?" For each question, 13 response options were provided, with a 14th for "Other—I don't know or some other reason," with the option to elaborate. These response options were derived from the existing literature as cited in the Introduction[16-25] and further elaborated and specified by 2 sexologists (DR, KH) and 1 clinical psychologist. The options were then presented to the focus groups, which endorsed the existing response categories, verified face validity, offered wording clarifications, and recommended additional response categories. Broadly speaking, these reasons fell into several broad face-valid categories: negative feelings surrounding sex (anxiety, distress, guilt), performance issues (problems with arousal, erection, sexual interest, penile sensation), issues with the partner/relationship (relationship boredom, partner not enjoying sex, self not enjoying sex with partner), and externally driven conditions (medical/medication, lack of privacy, pain/irritation).

In a preliminary exploration of the data, we reviewed all the reasons listed in the other/don't know categories for the 2 questions (n = 40 and n = 21, respectively) and distributed them to an existing category when an alignment between the 2 was apparent. Because 16 respondents specifically identified their excessive use of pornography in connection with masturbation as a reason for difficulty reaching orgasm during partnered sex, we added a new category, "15 masturbation with pornography use." The remaining respondents in the "other" category endorsed "I do not know" without further elaboration.

Procedure

Ethics approval was obtained from the Institutional Review Boards at the authors' institutions in the United States and Hungary. The online distribution of the survey and collection of data followed best practices, including approximately 20 to 25 minutes (or less) for survey completion, guaranteed anonymity, safeguards to prevent multiple submissions, embedded attention checks, reporting of internal consistency for standardized assessment scales for the study sample, and not offering incentives for participation.[37-41] Informed consent was obtained by participants' checking boxes attesting to (1) their current age being ≥18 years and (2) their informed consent before accessing the questionnaire. Respondents could voluntarily end participation at any time by closing the webpage.

Table 1. Comparison of DE + ED and pure DE groups on demographic and sex-related covariates.

	Men with DE + ED			Men with pure ED			Total		
	Mean	Median	Variance[a]	Mean	Median	Variance[a]	Mean	Median	Variance[a]
Current Age	39.29[b]	38	14.40	36.53[b]	34	13.80	37.49	36	14.06
Highest level of education	3.12[b]	3	2.0/4.0	2.74[c]	3	1.0/4.0	2.87	3	1.0/4.0
Frequency of masturbation (1-10)	6.26[b]	6	5.0/8.0	6.03[b]	6	5.0/8.0	6.11	6	5.0/8.0
Frequency of partnered sex (1-9)	5.03[b]	5	3.0/6.0	6.04[c]	6	5.0/7.0	5.69	6	4.0/7.0
Pornography use during masturbation (0-5, ≥75%)	4.16[b]	5	4.0/5.0	4.11[b]	5	4.0/5.0	4.13	5	4.0/5.0
Satisfaction with sexual relationship (1-5, very)	2.63[b]	3	2.0/3.0	3.39[c]	4	3.0/4.0	3.15	3	2.0/4.0

Abbreviations: DE, delayed ejaculation; ED, erectile dysfunction. [a]The variance measure for age is the standard deviation, and for all other measures, the 25th and 75th percentiles. [b,c]Values in the same row not sharing the same superscript are significantly different at $P < .05$ in the 2-sided test of equality for column proportions. Tests are adjusted for all pairwise comparisons using the Bonferroni correction.

Analytical strategy

Preliminary analysis assessed the role of origin of data (USA+ vs Hungary) on the typal reasons for difficulty reaching orgasm, with results shown in Supplementary Table 2. Differences between groups occurred on only 1 of 7 typal reasons, with the Hungarian sample endorsing low arousal more frequently than the USA+ sample. Given this limited difference (as well as a percentage difference of about 10%), we collapsed the data across the 2 groups. We did, however, retain origin of data as a control covariate in the correlational analyses (see the following).

We then established frequencies/means of responses on key demographic and sex-related variables—including reasons for difficulty reaching orgasm, as described previously—comparing them across the 2 groups, DE men with and without comorbid ED. In addition, principal component analysis (PCA) using varimax rotation with Kaiser normalization was used to explore patterns of relatedness among the reasons and to derive principal/typal dimensions. Finally, Pearson correlations were used to determine the relationships between frequency of masturbation, frequency of partnered sex, frequency of pornography use, and sexual relationship satisfaction on the one hand and the PCA-derived typal reasons for difficulty reaching orgasm on the other. For these correlations, age, education, and origin of data were included as covariates, with only the relevant partial correlations evaluated.

Results

Sample parameters related to difficulty reaching orgasm during partnered sex (aim 1)

Of the 3026 men in the active sample, 7.4% (n = 222) reported moderately severe ("4") and 4.3% (n = 129) severe ("5") difficulty reaching ejaculation. In addition, 34.8% of men (n = 122) responding 4 or 5 also reported moderately severe to severe ED (DE + ED group), and the remaining 65.2% (n = 229) reported only DE symptomology, that is, with no comorbid ED (pure DE group). Interestingly, 23.6% of the sample, in addition to having difficulty reaching orgasm during partnered sex, also reported difficulty reaching orgasm during masturabation; the remainder (76.4%) reported little or no such difficulty.

Differences between the DE + ED and pure DE groups on age, education, and 4 key sex-related variables are presented in Table 1. Men in the DE + ED group indicated a higher level of education, lower sexual satisfaction, and lower frequency of partnered sex. Groups did not differ on age, frequency of masturbation, or frequency of pornography use during masturbation.

Self-reported reasons for difficulty reaching orgasm during partnered sex (aim 2)

Tables 2 and 3 list levels of endorsement for each of the reasons for difficulty reaching orgasm, using ED status (DE + ED vs pure DE) as the organizing variable for each of the 2 questions, the first allowing multiple reasons and the second allowing only the most important reason. In addition, the 2 groups were combined to provide an overall hierarchy of frequencies for each question.

Multiple reasons.

Regarding the question allowing multiple responses (Table 2), several patterns stood out. When the 2 groups were combined, for all 14 items together, there was a 295% endorsement rate, indicating that on average, respondents endorsed 2.95 reasons. Regarding overall frequencies (ie, combined over both groups), general and sex-specific anxiety/stress and guilt were strongly endorsed (48%, 41%, and 9%, respectively). Lack to adequate stimulation sensitivity, erection, or arousal represented a second broad overall category (35%, 31%, and 27% endorsements, respectively). Relationship issues involving boredom or lack of enjoyment (either self or partner) comprised a third reason for both groups combined (14%, 13%, and 11% endorsements, respectively). Medical reasons represented 17% of the endorsements, with other reasons (eg, guilt, pain, pornography use with masturbation, lack of interest, and "other") endorsed at low rates, 6% or less. In summary, stress/anxiety, inadequate stimulation/arousal, and partner/relationship issues were the more frequently endorsed reasons.

In comparing across groups, the DE + ED group endorsed reasons of any kind more frequently than the pure DE group (353% vs 244%), a point that needs to be considered as raw frequencies are interpreted. Within the larger categories identified previously, the following differences stood out: Consistent with the grouping status, men with DE + ED endorsed erection and medical problems more frequently than DE men without ED. Men with DE + ED also endorsed problems with inadequate arousal and anxiety more frequently; in contrast, pure DE men more frequently endorsed lack of sufficient time/privacy than men with DE + ED.

Most important reason.

For this question, response patterns followed those identified in the previous question. Specifically, general anxiety and sex-specific anxiety again received heavy endorsement, together accounting for 29% of the total (100%) (Table 3).

Table 2. Comparison of DE + ED and pure DE group endorsements (in descending order) allowing multiple reasons for difficulty reaching orgasm.

Reason	Men with DE + ED	Men with pure DE	Total
General anxiety, stress, distraction	54%[a]	45%[a]	48%
Anxiety about sexual performance	50%[a]	34%[b]	41%
Not adequate penile stimulation	40%[a]	30%[a]	35%
Poor erection	57%[a]	12%[b]	31%
Not sufficiently aroused	33%[a]	23%[b]	27%
Lack of time or privacy	16%[a]	26%[b]	22%
Medical condition or medication	23%[a]	13%[b]	17%
Bored with sexual relationship	17%[a]	12%[a]	14%
Partner not enjoy sex with me	15%[a]	12%[a]	13%
Partner not enjoy sex generally	13%[a]	1%[a]	11%
Feeling guilt about sex	10%[a]	8%[a]	9%
Experience pain/irritation	6%[a]	7%[a]	6%
Not very interested in sex	8%[a]	5%[a]	6%
Other or I do not know	4%[a]	5%[a]	5%
Excessive masturbation with pornography	5%[a]	3%[a]	4%

Abbreviations: DE, delayed ejaculation; ED, erectile dysfunction. [a,b]Values in the same row not sharing the same superscript are significantly different at $P < .05$ in the 2-sided test of equality for column proportions. Tests are adjusted for all pairwise comparisons using the Bonferroni correction.

Table 3. Comparison of DE + ED and pure DE endorsements (in descending order) for only the most important reason for difficulty reaching orgasm (out of 100%).

Reason	Men with DE + ED	Men with pure DE	Total
General anxiety, distress, distraction	14.8%[a]	19.2%[a]	17.3%
Not adequate stimulation	11.3%[a]	14.7%[a]	13.3%
Poor erection	25.2%[a]	3.2%[b]	12.5%
Anxiety about sexual performance	10.4%[a]	12.8%[a]	11.8%
Not very aroused	7.8%[a]	9.0%[a]	8.9%
Medical condition or medication	8.7%[a]	5.8%[a]	7.0%
I don't know	5.2%[a]	8.3%[a]	7.0%
Lack of time or privacy	0.9%[a]	8.3%[b]	5.2%
Feeling guilt about sex	4.3%[a]	3.2%[a]	3.7%
Partner not enjoy sex with me	3.5%[a]	3.8%[a]	3.7%
Partner not enjoy sex in general	3.5%[a]	2.6%[a]	3.0%
Not very interested in sex	2.6%[a]	3.2%[a]	3.0%
Bored with sexual relationship	1.7%[a]	2.6%[a]	2.2%
Experience pain/irritation	0.0%[c]	1.3%[a]	0.7%
Other (eg, alcohol, intoxication)	0.0%[b]	1.3%[a]	0.7%
Excessive masturbation with pornography	0.0%[b]	0.0%[c]	0.0%

Abbreviations: DE, delayed ejaculation; ED, erectile dysfunction. [a,b]Values in the same row not sharing the same superscript are significantly different at $P < .05$ in the 2-sided test of equality for column proportions. Tests are adjusted for all pairwise comparisons using the Bonferroni correction. [c]Comparisons involving 0% not valid.

Inadequate stimulation, time, and arousal/erection (together) accounted for 43%, and relationship issues involving boredom or lack of enjoyment accounted for 9%. Medical reasons and pain together represented about 8%, with other reasons endorsed at low rates—under 4%. Interestingly, 7% of respondents indicated that they did not know. Consistent with the previous question, stress/anxiety, inadequate stimulation/arousal, and partner/relationship issues stood out as the more frequently endorsed reasons.

Comparing across DE + ED and pure DE groups, significant differences again occurred on erectile problems and lack of time/privacy. The former was endorsed more frequently by the DE + ED group, the latter more frequently by the pure DE group.

Patterns of interrelated reasons for difficulty reaching orgasm (aim 3)

Using the question that allowed multiple responses, PCA was used to derive typal reasons for difficulty reaching orgasm. Because erection problems were known to represent the major distinguishing characteristic between DE + ED and pure DE groups, this "biasing" reason (that is, not represented equivalently across the 2 groups) was removed from the analysis. Reasons endorsed by fewer than 5% of the participants were also removed (pornography use and "I don't know"), as their retention would overrepresent their influence on establishing typal reasons.[42]

Table 4 shows the results of this analysis, with rotation converging in 6 iterations, generating the following renamed typal reasons in descending order of endorsement for the question allowing multiple responses: (1) anxiety (general stress; performance anxiety; guilt), with 66% of respondents choosing at least 1 item from this grouping; (2) inadequate stimulation (lack of time/privacy; insensitive penis), with 52% of respondents choosing at least 1 item from this grouping; (3) low arousal (bored; lack of interest; lack of arousal), with 35% of respondents choosing at least 1 item from this grouping; (4) partner issues (self not enjoying sex; partner not

Table 4. Comparison of DE + ED and pure DE group endorsements (in descending order) allowing multiple reasons for difficulty reaching orgasm based on typal reasons.

Reason	Men with DE + ED	Men with pure DE	Total
Anxiety	74%[a]	61%[b]	66%
Inadequate stimulation	52%[a]	52%[a]	52%
Low arousal	40%[a]	32%[a]	35%
Partner issues	22%[a]	18%[a]	19%
Medical issues	23%[a]	13%[b]	17%
Pain	6%[a]	7%[a]	6%

Abbreviations: DE, delayed ejaculation; ED, erectile dysfunction. [a,b]Values in the same row not sharing the same superscript are significantly different at $P < .05$ in the 2-sided test of equality for column proportions. Tests are adjusted for all pairwise comparisons using the Bonferroni correction.

Table 5. Comparison of DE + ED and pure DE endorsements for only the most important reason for difficulty reaching orgasm (out of 100%) based on typal reasons.

Reason	Men with DE + ED	Men with pure DE	Total
Anxiety	42.5%[a]	40.4%[a]	41.2%
Inadequate stimulation	17.5%[a]	26.5%[a]	23.1%
Low arousal	17.5%[a]	17.6%[a]	17.6%
Medical issues	12.5%[a]	6.6%[a]	8.8%
Partner issues	10.0%[a]	7.4%[a]	8.3%
Pain	0.0%[b]	1.5%[b]	0.9%

Abbreviations: DE, delayed ejaculation; ED, erectile dysfunction. [a]Values in the same row not sharing the same subscript are significantly different at $P < .05$ in the 2-sided test of equality for column proportions. Tests are adjusted for all pairwise comparisons using the Bonferroni correction. [b]Comparisons involving 0% not valid.

enjoying sex), with 19% of respondents choosing at least 1 of the items from this grouping; (5) medical conditions, 17%; and (6) pain, 6%. Importantly, PCA-derived groupings parsed the face-valid dimension of inadequate arousal/erection into 2 dimensions: inadequate stimulation and low arousal.

For the question allowing only the most important reason (Table 5), these typal reasons followed a similar order, with the exception of partner issues, which was endorsed at a slightly lower rate than medical issues (ie, the order of these 2 reasons was inverted).

In comparing DE + ED vs pure DE groups for the question allowing multiple reasons, DE + ED men endorsed anxiety and medical issues more frequently than pure DE men. For the most important reason, no differences emerged between DE + ED and pure DE groups.

Role of explanatory covariates in understanding typal reasons for difficulty reaching orgasm

Pearson correlations were run between the typal reasons and 4 explanatory variables: sexual relationship satisfaction, frequency of partnered sex, frequency of masturbation, and frequency of pornography use (Table 6). Prior studies had demonstrated that these variables sometimes show covariation with sexual dysfunctions in men.[8,10-13,16-18] In addition, 3 control variables (age, education level, and origin of data) were included, allowing the remaining partial correlations to represent the actual (and unique) covariance between the typal reasons and the explanatory covariates.

Seven correlation coefficients were significant: partner reason correlated with lower frequency of partnered sex (−0.304) and lower sexual relationship satisfaction (−0.364), inadequate stimulation correlated with higher frequency of masturbation (0.164) and lower sexual relationship satisfaction (−0.190), low arousal also correlated with lower sexual relationship satisfaction (−0.181), medical correlated with lower frequency of partnered sex (−0.186), and pain correlated with lower frequency of masturbation (−0.208). However, 4 of the 7 correlations were under 0.20, indicating very weak relationships.

Discussion

In the first study of its kind, we have cataloged men's perceived reasons as to why they have difficulty reaching orgasm during partnered sex. In addition, we compared and contrasted reasons across men with and without comorbid ED and, using PCA, identified typal reasons that might not only guide future research on the topic, but also assist therapists both in understanding the lived experiences of men with DE symptomology and in developing appropriate treatment protocols.

Answering the question regarding why men believe that they have difficulty reaching orgasm

The results of this study affirmed several prior assumptions regarding potential etiologies and/or risk factors for DE while also offering new insights that are worthy of attention and further investigation. Specifically, anxiety and negative emotions—whether sex-specific or more general distress—received the strongest endorsements from respondents, a pattern consistent across both DE + ED and pure DE groups. The association between anxiety and sexual performance problems has long been known,[10,18,20,27,43] but we were surprised that it occupied such primacy in the list of reasons for DE symptomology: as noted in Table 5, 4 of every 10 participants uniquely identified it as the most important typal reason for their problem. Whether or not anxiety/distress is an actual cause for the sexual difficulty is not known; however, whether cause or consequence, it was the reason most associated with difficulty reaching orgasm by the men in our sample and, as such, reiterates the importance of the management of stress/anxiety in any protocol designed to address this sexual problem.[44]

The next 2 most strongly endorsed reasons for difficulty reaching orgasm were articulated only through PCA analysis, that is, in our face-valid groupings, these 2 reasons were considered one and the same. Yet, the 2 PCA-derived reasons—inadequate stimulation and low arousal—might be seen as representing 2 different aspects of the same problem. Specifically, these categories together—inadequate stimulation (23.1%) and low arousal (17.6%)—indicated that a fairly high percentage of men (about 51%) attributed their problem with reaching orgasm as lying somewhere along the stimulus → arousal pathway. This general idea is consistent with several existing reports that for men with DE symptomology physical stimuli and/or psychosexual arousal may be inadequate to reach ejaculation.[18,24,25] Such inadequacy may be due to a range of factors, for example, to sexual boredom,[45] a general lack of sexual interest/desire,[46] lack adequate stimulation from the partner (either physical or psychological-perceptual),[47] lack of adequacy of response systems (eg, aging

Table 6. Correlations (with 2-tailed *P* values) between typal reasons and sex-related covariates.

Control variables: age, education level, origin of data			Satisfaction with the sexual relationship	Frequency of partnered sex	Frequency of masturbation	% Time use erotic materials when masturbate
Typal Reasons	Partner issues	Pearson r	−0.364[a]	−0.304[a]	0.098	0.054
		Significance	.000	.000	.177	.461
		df	189	189	189	189
	Anxiety/stress	Pearson r	−0.068	−0.075	0.003	0.057
		Significance	.351	.300	.969	.432
		df	189	189	189	189
	Low arousal	Pearson r	−0.181[a]	−0.070	0.013	0.007
		Significance	.012	.338	.856	.929
		df	189	189	189	189
	Inadequate stimulation	Pearson r	−0.190[a]	−0.025	0.164[a]	−0.009
		Significance (2-tailed)	.008	.729	.023	.900
		df	189	189	189	189
	Medical	Pearson r	−0.136	−0.179[a]	−0.077	0.016
		Significance	.060	.013	.289	.831
		df	189	189	189	189
	Pain	Pearson r	0.049	0.012	−0.208[a]	0.086
		Significance	.497	870	.004	.236
		df	189	189	189	189

[a] $P < .05$

and penile sensitivity),[48] or situational factors that cut short or disrupt the mounting sexual tension needed for ejaculation (eg, lack of time/privacy). These reasons might also include a strong autoerotic orientation that—for whatever reason—lead some men to prefer the physical and psychological (eg, sexual fantasy) stimulation associated with masturbation over that of partnered sex.[18,20] On a positive note, both inadequate stimulation and low arousal are processes that could be addressed within the sexual dyad, particularly under the guidance of a knowledgeable therapist.[1,3,49] Specifically, relative to partnered sex, DE symptomology is greatly attenuated during masturbation[49] and, consistent with this general idea, the current study found that nearly 3 out of every 4 men who indicated difficult or absent ejaculation during partnered sex reported no or only mild difficulty during masturbation. Both findings suggest that the capacity to reach orgasm is present in most such men, for example, under optimal conditions as might occur during masturbation. Thus, just as premature ejaculation is often considered a couples problem,[1,35,50] so too, for the majority of the respondents in our study, DE might also be viewed as a couples problem, one that manifests and/or intensifies primarily in situations involving the sexual partner.

Other reasons for difficulty reaching orgasm were endorsed at lower rates. Relationship issues—previously noted as a potential risk factor for DE[13,23]—emerged as the most important reason in only 8% of the respondents. Thus, while relationship issues are perceived to play a role for some men, they did not constitute a predominating reason, perhaps because men who never had a sexual partner were not included in our analysis. Nevertheless, the sense of mutual enjoyment and satisfaction during sex with the partner undoubtedly enhances arousal,[51,52] and its absence is likely to quell both sexual desire and arousal during partnered sex. Thus, relationship issues have the potential to affect sexual arousal, albeit through an indirect pathway. Finally, medical issues and pain accounted for another 9% of the respondents' endorsements. For these individuals, their difficulty may have been an acquired (secondary) problem. Numerous medications are known to inhibit ejaculation directly and/or modulate emotional/arousal response,[53] and a number of medical conditions themselves such as diabetes and cardiovascular disease interfere with erectile response.[54] Thus, this attribution was not surprising.

The previous analyses have identified possible points for discussion with men who are seeking help for problems reaching ejaculation during partnered sex. At the same time, given the limited information most men have regarding DE as a bona fide male sexual problem, we reiterate that men's endorsements of various reasons for their problem represent their lived experiences and therefore only their best guesses regarding their problem; they do not represent verified etiologies. That is, in an actual clinical intake interview or investigation, the clinician must still explore the meaning and possible interrelationships among the various attributions so as to develop a more holistic and multifactorial view of the problem that could then guide treatment. At the same time, further longitudinal studies could also help determine causal links and interactions among these patient-attributed causes.

Differences between the DE + ED and pure DE groups

Differences between the DE + ED and pure DE groups were relatively small and, to some extent, predictable. Men with comorbid ED were, as expected, more likely to endorse erectile problems as their reason for difficulty ejaculating than DE men without ED, and given that erectile problems are often associated with chronic diseases and aging,[54] these men were also more likely to identify medical reasons as the root of their difficulty. Based on the PCA-derived typal reasons, DE + ED men also endorsed anxiety more frequently, perhaps the result of having multiple dysfunctions (both DE and ED). Overall, however, these 2 groups showed a high level of consistency in terms of the ordering of the reasons, and when only the most important reason was identified, once lack of erection was removed as a response option, group differences were no longer significant and the orderings showed 100% consistency. Of course, the 2 groups would differ in terms of where emphasis might be placed regarding a comprehensive treatment protocol.

Explanatory covariates

We identified several relationships between typal reasons for difficulty reaching orgasm and explanatory covariates. However, 4 of the 7 relationships were very weak, explaining under 4% of the covariance. Of the 3 that showed r values >0.20, only one revealed a novel pattern worthy of further inquiry, namely that the pain reason was associated with a lower frequency of masturbation but not partnered sex. The other 2 associations reiterated patterns already reported in the literature; specifically, the partner reason for difficulty reaching orgasm was, not surprisingly, associated with lower sexual relationship satisfaction and lower frequency of partnered sex.[13,14,16,23] At the same time, it is worthwhile to note that when respondents were asked to select the most salient/important reason for their difficulty reaching orgasm, factors such as low sexual interest, pain during sex, relationship boredom, feelings of sex-related guilt, and pornography use received very low levels of endorsement.

Limitations

Although we followed best practices for online survey distribution and collection of data,[37-41] research strategies that rely heavily on public and social media for recruitment are subject to biases in education, class, social media access, and other factors. Second, although this study included comparison of men with and without comorbid ED, it did not explore differences between men with different DE etiologies, for example, lifelong vs acquired DE, an issue that awaits future analyses. Finally, given our predominantly Westernized sample, we do not assume that our findings apply to worldwide populations of men.[55,56] Indeed, we encourage other research groups to explore this topic further in both Western and nonWestern populations.

Conclusion

Anxiety/distress, inadequate stimulation, and low arousal predominated as explanations men offered for their difficulty reaching orgasm. Relationship issues were endorsed at a much lower frequency. Although no regulatory approved biomedical treatments are available for difficulty reaching orgasm, a number of the factors identified by men in this study can be addressed within the context of the sexual dyad.

Supplementary material

Supplementary material is available at *Sexual Medicine* online.

Funding

None received.

Conflict of interest: The authors report no conflicts of interest.

Data availability

Interested researchers may make reasonable requests to review the output files from our analyses.

References

1. Althof SE, McMahon CG. Contemporary management of disorders of male orgasm and ejaculation. *Urology*. 2016;**93**:9–21.
2. Shindel AW. Anejaculation: relevance to sexual enjoyment in men and women. *J Sex Med*. 2019;**16**(9):1324–1327.
3. Shindel AW, Althof SE, Carrier S, *et al*. Disorders of ejaculation: an AUA/SMSNA guideline. *J Urol*. 2022;**207**(3):504–512. https://doi.org/10.1097/JU.0000000000002392.
4. Rowland DL. Evaluation of delayed ejaculation. In: IsHak W ed. *The Textbook of Clinical Sexual Medicine*. Springer; 2017: 241–254.
5. Lewis RW, Fugl-Meyer KS, Corona G, *et al*. Definitions/epidemiology/risk factors for sexual dysfunction. *J Sex Med*. 2010;**7**(4 Pt 2):1598–1607.
6. Laumann EO, Paik A, Rosen RC. Sexual dysfunction in the United States: prevalence and predictors. *JAMA*. 1999;**281**(6):537–544. https://doi.org/10.1001/jama.281.6.537.
7. Rowland DL, Cote-Leger P. Moving toward empirically based standardization in the diagnosis of delayed ejaculation. *J Sex Med*. 2020;**17**(10):1896–1902.
8. Rowland DL, Oosterhouse LB, Kneusel JA, Hevesi K. Comorbidities among sexual problems in men: results from an internet convenience sample. *Sex Med*. 2021;**9**(5):100–416. https://doi.org/10.1016/j.esxm.2021.100416.
9. Perelman MA. Reexamining the definitions of PE and DE. *J Sex Marit Ther*. 2017;**43**(7):633–644. https://doi.org/10.1080/0092623X.2016.1230161.
10. Morgentaler A, Polzer P, Althof S, *et al*. Delayed ejaculation and associated complaints: relationship to ejaculation times and serum testosterone levels. *J Sex Med*. 2017;**14**(9):1116–1124.
11. Corona G, Jannini E, Lotti F, *et al*. Premature and delayed ejaculation: two ends of a single continuum influenced by hormonal milieu. *Int J Androl*. 2010;**2010**(34):41–48.
12. Sadowski DJ, Butcher MJ, Köhler TS. A review of pathophysiology and management options for delayed ejaculation. *Sex Med Rev*. 2016;**4**(2):167–176.
13. Paduch DA, Polzer P, Morgentaler A, *et al*. Clinical and demographic correlates of ejaculatory dysfunctions other than premature ejaculation: a prospective, observational study. *J Sex Med*. 2015;**12**(12):2276–2286. https://doi.org/10.1111/jsm.13027.
14. Rowland DL. A conceptual approach to understanding and managing men's orgasmic difficulties. *Urol Clin North Am*. 2021;**48**(4):577–590. https://doi.org/10.1016/j.ucl.2021.06.012.
15. Butcher MJ, Serefoglu EC. Treatment of delayed ejaculation. In: IsHak WW, ed. *The Textbook of Clinical Sexual Medicine*. Springer; 2017: 255-269.
16. Rowland DL, Attinger D, Morrow A, Motofei I, Hevesi K. Characteristics of men who report symptoms of delayed ejaculation: providing support for empirically derived diagnostic criteria. *J Sex Med*. 2023;30(4):426-438.
17. Rowland DL, McNabney SM, Teague LG, Padilla SM, Bacys KR, Hevesi K. Description of and relationships among potential variables supported for the diagnosis of delayed ejaculation. *Theol Sex*. 2023;**4**(1):40–54. https://doi.org/10.3390/sexes4010005.
18. Perelman M. Delayed ejaculation. In: Binik YM, Hall KS, eds. *Principles and Practice of Sex Therapy*. 5th ed. The Guilford Press; 2014: 138-155.
19. Waldinger MD, Schweitzer DH. Retarded ejaculation in men: an overview of psychological and neurobiological insights. *World J Urol*. 2005;**23**(2):76–81.
20. Rowland DL, Morrow AL, Hamilton BD, Hevesi K. Do pornography use and masturbation frequency play a role in delayed/inhibited ejaculation during partnered sex? A comprehensive and detailed analysis. *Theol Sex*. 2022;**3**(1):115–133. https://doi.org/10.3390/sexes3010010.
21. Rowland DL, Georgoff VL, Burnett AL. Psychoaffective differences between sexually functional and dysfunctional men in response to

a sexual experience. *J Sex Med*. 2011;**8**(1):132–139. https://doi.org/10.1111/j.1743-6109.2010.01904.x.
22. Sandström E, Fugl-Meyer KS. When ejaculation becomes the goal in itself: a psychodynamic approach to delayed ejaculation. *Am J Mens Health*. 2021;**15**(3):15579883211014774. https://doi.org/10.1177/15579883211014774.
23. Rowland DL, van Diest S, Incrocci L, *et al*. Psychosexual factors that differentiate men with inhibited ejaculation from men with no dysfunction or another sexual dysfunction. *J Sex Med*. 2005;**2**(3): 383–389.
24. Rowland DL, Keeney C, Slob AK. Sexual response in men with inhibited or retarded ejaculation. *Int J Impot Res*. 2004;**16**(3): 270–274. https://doi.org/10.1038/sj.ijir.3901156.
25. Flannigan R, Heier L, Voss H, Chazen JL, Paduch DA. Functional magnetic resonance imaging detects between-group differences in neural activation among men with delayed orgasm compared with normal controls: preliminary report. *J Sex Med*. 2019;**16**(8): 1246–1254. https://doi.org/10.1016/j.jsxm.2019.05.007.
26. Jern P, Santtila P, Witting K, *et al*. Premature and delayed ejaculation: genetic and environmental effects in a population-based sample of Finnish twins. *J Sex Med*. 2007;**4**(6):1739–1749.
27. Apfelbaum B. Retarded ejaculation: A much misunderstood syndrome. In: Leiblum SR, Rosen RC eds. *Principles and Practice of Sex Therapy*. 2nd ed. New York City, NY: Guilford Press; 2000: 205–241.
28. Rowland DL, Althof SE, McMahon CG. The unfinished business of defining premature ejaculation: the need for targeted research. *Sex Med Rev*. 2022;**10**(2):323–340. https://doi.org/10.1016/j.sxmr.2021.11.003.
29. Cronbach LJ, Meehl PE. Construct validity in psychological tests. *Psychol Bull*. 1955;**52**(4):281–302.
30. Strauss ME, Smith GT. Construct validity: advances in theory and methodology. *Annu Rev Clin Psychol*. 2009;**5**:1–25.
31. International advisory group for the revision of ICD-10 mental and behavioural disorders. A conceptual framework for the revision of the ICD-10 classification of mental and behavioural disorders. *World Psychiatry*. 2011;**10**(2):86-92. https://doi.org/10.1002/j.2051-5545.2011.tb00022.x.
32. Ustün B, Kennedy C. What is "functional impairment"? Disentangling disability from clinical significance. *World Psychiatry*. 2009;**8**(2):82–85. https://doi.org/10.1002/j.2051-5545.2009.tb00219.x.
33. Committee on Diagnostic Error in Health Care; Board on health care services; Institute of Medicine; the National Academies of Sciences, Engineering, and Medicine; Balogh EP, Miller BT, Ball JR, eds. *Improving Diagnosis in Health Care*. National Academies Press; 2015. Accessed Accessed March 15, 2023. https://www.ncbi.nlm.nih.gov/books/NBK338593/.
34. Rosen RC, Cappelleri JC, Smith MD, Lipsky J, Peña BM. Development and evaluation of an abridged, 5-item version of the international index of erectile function (IIEF-5) as a diagnostic tool for erectile dysfunction. *Int J Impot Res*. 1999;**6**(6):319–326. https://doi.org/10.1038/sj.ijir.3900472.
35. Symonds T, Perelman MA, Althof S, *et al*. Development and validation of a premature ejaculation diagnostic tool. *Eur Urol*. 2007;**52**(2):565–573. https://doi.org/10.1016/j.eururo.2007.01.028.
36. American Psychiatric Association. *Diagnostic and Statistical Manual of Mental Disorders*. 5th ed. American Psychiatric Association; 2013.
37. Hoerger M. Participant dropout as a function of survey length in internet-mediated university studies: implications for study design and voluntary participation in psychological research. *Cyberpsychol Behav Soc Netw*. 2010;**13**(6):697–700. https://doi.org/10.1089/cyber.2029.0445.
38. Ross MW, Daneback K, Mansson SA, Tikkanen R, Cooper A. Characteristics of men and women who complete or exit from an on-line internet sexuality questionnaire: a study of instrument dropout biases. *J Sex Res*. 2003;**40**(4):396–402. https://doi.org/10.1080/00224490209552205.
39. Versta Research. *How to estimate the length of a survey*. Evanston IL USA: Versta Research. Accessed March 15, 2023. https://verstaresearch.com/newsletters/how-to-estimate-the-lengthofa-survey/.
40. Survey Monkey. *Does adding one more question impact scompletion*? San Mateo CA, USA: Momentive. Accessed March 15, 2023. https://www.surveymonkey.com/curiosity/survey_questions_and_completion_rates/.
41. Kays K, Keith T, Broughal M. Best practice in online survey research with sensitive topics. In: Sappleton N ed. *Advancing Research Methods with New Technologies*. IGI Global; 2013: 157–168.
42. Chakraborty D, Narayanan V, Ghosh A. Integration of deep feature extraction and ensemble learning for outlier detection. *Pattern Recogn*. 2019;**89**:161–171. https://doi.org/10.1016/j.patcog.2019.01.002.
43. Rowland DL, van Lankveld JJDM. Anxiety and performance in sex, sport, and stage: identifying common ground. *Front Psychol*. 2019;**10**:1615. https://doi.org/10.3389/fpsyg.2019.01615.
44. Rowland DL, Moyle G, Cooper SE. Remediation strategies for performance anxiety across sex, sport and stage: identifying common approaches and a unified cognitive model. *Int J Environ Res Public Health*. 2021;**18**(19):10160. https://doi.org/10.3390/ijerph181910160 PMID: 34639462; PMCID:.
45. Varga BA, Sal D, Oosterhouse LB, Hevesi K, Rowland DL. Narcissism, sexual response, and sexual and relationship satisfaction. *Sex Relat Ther*. 2022; https://doi.org/10.1080/14681994.2022.2073345.
46. Carvalheira A, Traeen B, Štulhofer A. Correlates of men's sexual interest: a cross-cultural study. *J Sex Med*. 2014;**11**(1):154–164. https://doi.org/10.1111/jsm.12345.
47. Perelman M, Rowland DL. Retarded or inhibited ejaculation (male orgasmic disorder). In: Rowland DL, Incrocci L, eds. *Handbook of Sexual and Gender Identity Disorders*. Wiley; 2008: 100-121.
48. Rowland DL, Greenleaf WJ, Dorfman LJ, *et al*. Aging and sexual function in men. *Arch Sex Behav*. 1993;**22**(6):545–557. https://doi.org/10.1007/BF01543300.
49. Rowland DL, Hamilton BD, Bacys KR, Hevesi K. Sexual response differs during partnered sex and masturbation in men with and without sexual dysfunction: implications for treatment. *J Sex Med*. 2021;**18**(11):1835–1842. https://doi.org/10.1016/j.jsxm.2021.09.005.
50. Rosen RC, McMahon CG, Niederberger C, *et al*. Correlates to the clinical diagnosis of premature ejaculation: results from a large observational study of men and their partners. *J Urol*. 2007;**177**(3): 1059–1044. discussion 1064.
51. Pascoal PM, Narciso I, Pereira NM. Emotional intimacy is the best predictor of sexual satisfaction of men and women with sexual arousal problems. *Int J Impot Res*. 2013;**25**(2):51–55. https://doi.org/10.1038/ijir.2012.38.
52. Lawless NJ, Karantzas GC, Mullins ER, McCabe MP. Does it matter who you feel sexually aroused by? Associations between sexual arousal, relationship quality, and sexual satisfaction. *Sex Med*. 2022;**10**(4):100523. https://doi.org/10.1016/j.esxm.2022.100523.
53. Conaglen HM, Conaglen JV. Drug-induced sexual dysfunction in men and women. *Aust Prescr*. 2013;**36**:42–45. https://doi.org/10.18773/austprescr.2013.02.
54. Chen L, Shi G-R, Huang D-D, *et al*. Male sexual dysfunction: a review of literature on its pathological mechanisms, potential risk factors, and herbal drug intervention. *Biomed Pharmacother*. 2019;**112**:108585. https://doi.org/10.1016/j.biopha.2019.01.046.
55. Henrich J, Heine SJ, Norenzayan A. Most people are not WEIRD. *Nature*. 2010;**466**(7302):29. https://doi.org/10.1038/466029a.
56. Rowland DL. Culture and practice: Identifying the issues. In: Rowland DL, Jannini EA eds. *Cultural Differences and the Practice of Sexual Medicine: A Guide for Sexual Health Practitioners*. Cham, Switzerland: Springer Nature; 2020: 3–22.