Sexual Medicine, 2023, **11**, 1–7
https://doi.org/10.1093/sexmed/qfad014
Original Research

Progressive arousal: a new concept and definition for premature ejaculation

Pedro Lucas Bustos, MHS[1,*], Tesifón Parrón Carreño, PhD[1], Salvador Moreno Gutiérrez, PhD[2], Inmaculada Fernández Agis, PhD[1]

[1]CERNEP Research Center, University of Almería, 04120, Almería, Spain
[2]Independent research, Granada, Spain
*Corresponding author. CERNEP Research Center, University of Almería, 04120, Almería, Spain. Email: consultasexologo@gmail.com

Abstract

Background: Premature ejaculation (PE) is a nosologic entity with issues in its conceptualization and definition.
Aim: To understand if the altered sexual response in men with PE is in the orgasm phase, as currently assumed, or the arousal phase with difficulties in modulating, regulating, or decreasing sexual arousal.
Methods: Men were recruited who looked for help for PE and met the diagnostic criteria according to clinical standards. The participants completed a sociodemographic survey and the Premature Ejaculation Diagnostic Tool. They also performed a masturbation exercise with a maximum of 5 stops, with the intention of prolonging the arousal phase. The time of the exercise was measured from the beginning of genital masturbation to ejaculation.
Outcomes: We calculated the total time of the exercise, the median time at each start, and the number of dropouts. We performed a pairwise comparison analysis between starts and made a survival curve representing the percentage of men who remained in the exercise.
Results: A total of 481 men with PE participated (mean ± SD; age, 29.25 ± 8.72 years). We found that the expected median survival time until ejaculation was 317.00 seconds (95% CI, 288.34-345.65). However, the average time during stimulation decreased as the exercise progressed, and statistically significant differences were observed in their pairwise comparison ($P < .001$). Also, the chances of ejaculation increased as the exercise progressed, with 62.16% of the participants ejaculating before the end of the exercise. The results indicated increasing sexual arousal, where stops in stimulation were progressively less effective at maintaining ejaculation times at starts.
Clinical Implications: We showed that the arousal phase is altered in PE, not the orgasm phase, and this could finally have implications in the diagnosis and/or treatment of this condition.
Strengths and Limitations: The analysis of the times at starts and stops in a masturbation exercise in men with PE, had been barely addressed before. In the future, it would be important to verify the effect of stops during sexual intercourse and to incorporate a control group of men without PE.
Conclusions: We propose a new conceptualization and definition for PE: *progressive arousal disorder* is the inability to modulate, regulate, or decrease arousal during any sexual activity, even with brief stops during sexual stimulation, causing unwanted ejaculation.

Keywords: premature ejaculation; early ejaculation; progressive arousal; diagnostic criteria; ejaculatory control; ejaculatory latency time.

Introduction

Premature ejaculation (PE) is a nosologic entity with issues in its concept, definition, and diagnosis.[1] The diagnostic criteria—despite a broad consensus[1–8]—have limitations that affect the accuracy of its prevalence, evaluation, research results, and clinical judgment.[1] Currently, there is no consensus for the definition of PE because of the difficulty of clinically defining it.[6] Although there seems to be an agreement on how to treat it,[9–11] there are issues in discerning between what PE is and is not. Many of the current definitions[1–8] show a reductionist vision of it: it is excessively, sometimes exclusively, related with an established latency time and a specific sexual activity (eg, intravaginal penetration) and always associated with anguish or discomfort.

In this context and with PE being the male sexual dysfunction with the highest prevalence,[12–18] it is important to establish common criteria to conceptualize, define, and diagnose it. This would help lay the foundations to approach this condition from a much more precise and inclusive nosologic perspective.

Standards committees that have established the basic diagnostic criteria for PE[2–5] present certain contradictions among themselves,[1] reflecting the issues in its definition and classification.

Definition

Among the many definitions of PE, the most important ones are given by the 4 standard committees: the American Psychiatric Association, the International Society for Sexual Medicine (ISSM), the *International Classification of Diseases* (*ICD*), and the American Urological Association (AUA).

According to the fifth edition of the *Diagnostic and Statistical Manual of Mental Disorders* (*DSM-5*) of the American Psychiatric Association,[3] "premature or early ejaculation is defined as the persistent or recurrent pattern in which ejaculation produced during sexual activity with a partner occurs approximately 1 minute after vaginal penetration and before the individual wishes." This definition clearly excludes men without a partner and homosexual and bisexual men, who can also present PE.[19–22] In addition, this definition

Received: March 19, 2023. **Accepted:** March 28, 2023

excessively limits the type of sexual act, invalidating other sexual activities,[7] such as group sex, oral sex, anal sex, or even any preliminaries (before initiating contact or undressing). It also excludes masturbation in solitary,[23] contradicting the existence of generalized PE as indicated by both the *DSM-5* and the *ICD*.[3,5] Finally, this definition considers the variable "time in the vagina" as a delimiter of PE, excluding men for whom the ejaculatory latency time (ELT) lasts >1 minute[24] or <1 minute before vaginal penetration. The ISSM[2,6,8] convened a meeting of experts in 2007 and in 2013 to develop a definition based on scientific criteria and unify the one of lifelong PE (LPE) and acquired PE (APE). The main criticisms of the definitions from the 2013 meeting included the following: they were not evidence based, lacked specific operational criteria, and excessively relied on the subjective judgment of the clinician.[2,6] The ISSM defines PE as "a male sexual dysfunction characterized by ejaculation that always or almost always occurs before or within approximately 1 minute of vaginal penetration (LPE) or a clinically significant and bothersome reduction in latency time, often to approximately 3 minutes or less (APE)." However, it shares limitations with the *DSM-5* definition because the data used to generate it were obtained from studies of sexual intercourse with vaginal penetration.[3] Nevertheless, the ISSM definition for PE is somewhat broader: it includes the possibility that PE occurs before vaginal penetration. Moreover, although it describes the difference between LPE and APE in terms of ELT (greater for APE), it again invalidates the possibility that a man with LPE could have an ELT >1 minute.

According to the *ICD-11*,[5] "male premature ejaculation is characterized by ejaculation that occurs before or within a very short duration from the initiation of vaginal penetration or other relevant sexual stimulation, with little or no perceived control over ejaculation." Although this definition includes the diversity of sexual practices other than vaginal penetration, the time variable remains fundamental and delimiting, further highlighting the problem of establishing a time limit as an indicator of PE.

The AUA makes a slight distinction between LPE and APE[4]: "lifelong premature ejaculation is defined as poor ejaculatory control, associated bother, and ejaculation within about 2 minutes of initiation of penetrative sex that has been present since sexual debut. Acquired premature ejaculation is defined as consistently poor ejaculatory control, associated bother, and ejaculation latency that is markedly reduced from prior sexual experience during penetrative sex." In these definitions of LPE and APE, the associated discomfort is included as an important criterion, but penetration (whichever type: vaginal, anal, or oral) is again indicated as a condition for PE to occur. In this case, the ELT of LPE is greater than that in the ISSM definition, highlighting once again the important limitations of the ELT as a PE indicator.

Many definitions—both professional and institutional, similar to the previous versions of the *DSM*[25,26] and *ICD*[27]—fail to specify exactly and globally what happens in a man with this disorder regardless of latency time, sexual orientation, whether or not he has a partner, or situation in which it occurs.

All these common and certainly questionable aspects of the current definitions of PE[1,6] lead to a possibly lower prevalence rate[1] and a large disparity among studies (ranging from 2.5% to 30%).[12–18] In addition, these definitions are noninclusive for different sexual practices and for the LGBTIQIA+ collective.

Diagnostic criteria

The diagnostic criteria for PE established by the 4 standards committees share similarities and discrepancies. The ones from ISSM,[2,6,8] *ICD*,[5] and AUA[4] distinguish between men with LPE and APE, while the *DSM-5* mentions the subtypes of PE (primary/secondary and situational/generalized).[1,3] The existing diagnostic criteria have been barely reviewed since their establishment, except for the ISSM's inclusion of separate criteria for LPE and APE in 2014,[6] and the AUA recently applied minor modifications to the definitions of LPE and APE.[4]

The 3 diagnostic criteria for PE, which reflect most definitions of PE, are as follows: short ejaculatory latency, poor ejaculatory control, and annoyance or distress about the condition.[1–8] These criteria present contradictions and issues as predictive variables of PE since most patients are self-diagnosed for PE and do not meet all of them.[6] The ejaculatory control criterion may be the most important variable and the one that best predicts the state of PE.[28–32]

Concept

The concept of PE dates back to Gross in 1887.[33] In his publication, Gross referred to PE as a *disorder*—a term that was later used by other authors during the 20th century. However, in the first clinical definition, proposed in 1970, Masters and Johnson[34,35] used the same concept that Gross did: *premature ejaculation*.

The concept of PE has been modified by exclusively changing the adjective (ie, premature, early,[5] or rapid[34,36]). These changes attempt to define more precisely what happens in this disorder. However, they fail to describe it accurately: any man can have rapid, early, or premature ejaculations without experiencing PE, so the concept itself has limitations.

The history of PE as a concept shows that it has been conceived as a sexual dysfunction that belongs to the orgasm phase, as it is related to ejaculation. Despite the existence of many criticisms and new proposals regarding the definition of PE,[1–8] there is greater consensus on the concept itself: it includes an adjective (premature) and a noun (ejaculation). Following the diagnostic classification of other sexual dysfunctions, the noun should indicate the phase of the sexual response that is affected.[3,5]

This article seeks to understand how, in PE, the sexual response phase that is altered is the arousal phase, not the orgasm phase. The subjective sensation of orgasm is altered in men who experience PE.[37,38] As such, if the orgasm phase is altered, the sexual arousal phase would be unaltered (as in female anorgasmia).[3,5] Men with PE seem to have a different arousal phase in comparison with the rest. During arousal, they usually present anguish/anxiety and failed attempts to control the orgasm (inability to postpone the orgasm phase).

In short, the concept, definition, and diagnostic criteria for PE present important limitations that may be affecting a reliable clinical diagnosis and the research on PE.

At this point, it is worth asking that if men with PE report difficulties in decreasing arousal after stops in sexual stimulation, could there be a difficulty in modulating, regulating, or decreasing sexual arousal in people with PE?

Objective

The purpose of this study is to verify the existence of a difficulty to modulate, regulate, or decrease sexual arousal in men with PE and understand if the altered sexual response is related to the arousal phase.

Methods

We recruited men seeking sexologic help for PE. Participants had to be men who were at least 18 years old, presented with PE, and provided their voluntary consent to participate in the study.

The state of PE was diagnosed according to the current diagnostic criteria and with the Premature Ejaculation Diagnostic Tool, which has adequate psychometric properties in terms of reliability, validity, interobserver agreement, sensitivity, specificity, and test-retest stability.[39–41] The test includes 5 items that are answered on a 5-point Likert scale from 1 to 5. The result is given by the sum of the different answers: values >11 are the best predictors of PE. We also administered to the participants a sociodemographic questionnaire with questions related to age, relationship status, and sexual orientation. We collected data from November 2017 to March 2022 through a mobile application developed by the first author of this article. To encourage participation, we offered a previously published training program for PE free of charge.[36]

The participants were asked to complete the questionnaires and to perform a masturbation exercise that had 2 phases. In the first phase, they had to carry out body and genital self-sensitization until they reached good physiologic arousal. In the second phase, they had to perform genital masturbation. Specifically, the first phase consisted in hand massages on the body and perigenital and genital areas, simulating the preliminaries of a sexual interaction. Then, during the second phase of genital masturbation, the participants had to try to prolong the arousal phase and to delay the appearance of ejaculation as much as possible. This was done through the stop-and-start technique[42] in solo masturbation, where a maximum of 5 stops of stimulation were performed just before ejaculating. Participants had to record the duration of stimulation and the starts and stops through a stopwatch and a mobile application developed by the first author. Although this is a classic technique used in sexual therapy for PE treatment, this study used it to assess the ability to prolong the phase of sexual arousal. The entire masturbatory sequence had to be conducted in a supine position and without the use of audiovisual support, only with sexual fantasies. The objective of the stimulation stops was to lower or modulate the level of arousal and to delay the appearance of an imminent or uncontrolled ejaculation as much as possible. Specifically, stops had to be made when the participant felt that ejaculation was close, with the objective of avoiding it. Each of these stops was indicated to last half a minute to avoid a decrease in the erection. During the exercise, participants had to press a button in the mobile application to indicate the starts and stops. We refer to start 1 as the beginning of genital masturbation and start 6 as the moment where ejaculation is proposed to occur. The recorded, studied, and proposed sequence of genital masturbation from the beginning to the end was as follows: start 1 (start of genital masturbation) → stop 1 → start 2 → stop 2 → start 3 → stop 3 → start 4 → stop 4 → start 5 → stop 5 → start 6 (ejaculate). In total, there were 6 starts and 5 stops.

For statistical analysis, qualitative variables (sexual orientation and relationship status) are represented as frequency and percentage, and quantitative variables (age and data from the start-stop exercise) are presented as mean and standard deviation and as median and IQR. The normality study was performed with the Kolmogorov-Smirnov test. We compared the values of the start and stop distributions with the nonparametric Friedman test and its corresponding multiple comparisons. To study the times to event (ejaculate), Kaplan-Meier curves are represented and compared through the log-rank test. In all the analyses, an alpha criterion of 0.05 was considered.

Results

The study was conducted with 481 men with PE (Premature Ejaculation Diagnostic Tool score >11) aged between 18 and 67 years (mean ± SD, 29.25 ± 8.72). The sexual orientation of the participants was as follows: 92.72% heterosexual, 3.74% homosexual, and 3.54% bisexual. From the sample, 27.22% did not have a partner, 20.60% had recently began a relationship (<1 year), 13.51% were in a 1- to 3-year relationship, 8.52% were in a 3- to 5-year relationship, and 30.15% were in a >5-year relationship.

As shown in Table 1, the survival times for each start progressively decrease as masturbation progresses: both in the means (from 92.14 to 13.71 seconds) and in the medians (76 to 0 seconds). In contrast, the average values of the stops are more stable (~20 seconds until stop 4). As expected, there is a decreasing trend from start 1 to 6 in the analysis of the entire sample (see distributions of the start survival times).

After the third stop, men begin to have difficulty prolonging masturbation and begin to ejaculate without wanting to (dropouts). In start 4, there were already 64 dropouts (they ejaculated during stop 3). Furthermore, 93 participants ejaculated in start 4 (157 in total), 50 in stop 4 (207 in total), 60 in start 5 (267 in total), and 32 in stop 5 (last stop; 299 in total). This indicates that 62.16% of the men were unable to perform the 5 stops proposed for this exercise.

In Figure 1, observe how the survival times decrease as the starts progress. This shows that the stops become less effective as the exercise progresses.

To analyze the evolution of the starting times, the nonparametric Friedman test was performed. The results indicate statistically significant differences in the survival times of the different starts over time ($P < .001$). To identify in what step these differences lie, the corresponding multiple comparisons were made: start 1 vs 2-6 ($P < .001$), start 2 vs 3 ($P = .135$), start 2 vs 4-6 ($P < .001$), start 3 vs 4-6 ($P < .001$), start 4 vs 5 and 6 ($P < .001$), and start 5 vs 6 ($P = .028$).

All comparisons of the survival times present statistically significant differences except for that of start 2 vs 3, confirming a decrease in the survival times as the exercise progressed (Table 1 and Figure 1).

To estimate the duration of the exercise and understand the instant where the event (ejaculation) occurs, we made a Kaplan-Meier survival curve for ejaculation (Figure 2). In this way, we found that the expected median survival time until ejaculation was 317.0 seconds (95% CI, 288.34-345.65).

Table 1. Survival times for starts and stops.

	Dropouts, No. (%)	Survival time, s	
		Mean (SD)	Median (IQR)
Start			
1	0 (0)	92.14 (74.70)	76.0 (31.0-136.50)
2	0 (0)	42.35 (35.52)	31.0 (15.0-60.50)
3	0 (0)	38.16 (34.05)	27.0 (13.0-53.0)
4	64 (13.30)	29.77 (30.91)	20.0 (7.0-43.0)
5	207 (43.03)	20.07 (30.36)	8.0 (0-30.0)
6	299 (62.16)	13.71 (26.93)	0 (0-16.0)
Stop			
1	0 (0)	25.37 (16.94)	21.0 (12.0-36.0)
2	0 (0)	25.68 (17.60)	21.0 (12.0-35.0)
3	0 (0)	22.99 (17.08)	19.0 (10.0-32.0)
4	157 (32.64)	17.37 (24.52)	9.0 (0-25.0)
5	267 (55.50)	9.63 (19.56)	0 (0-11.0)

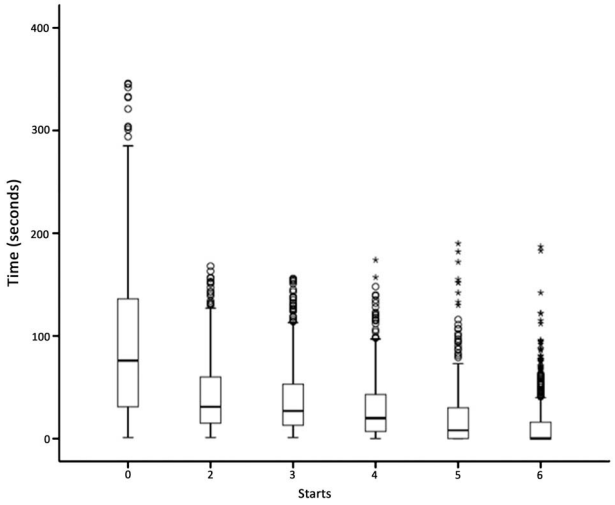

Figure 1. Survival times at each start. Boxes, 50% of the central cases; line, median; candlestick length, largest nonoutlier value; dots, outliers (1.5 × IQR + Q3); asterisks, extreme cases (3 × IQR + Q3).

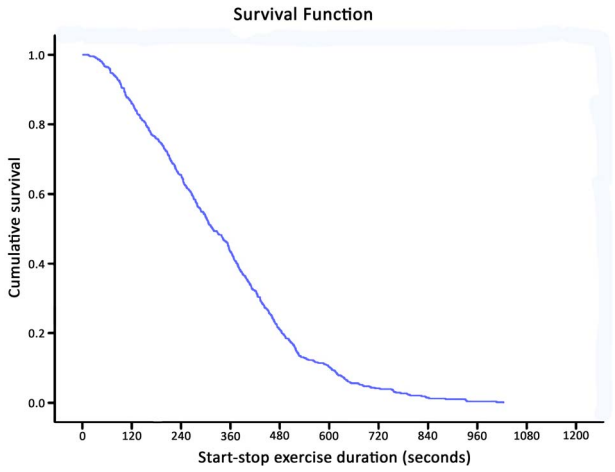

Figure 2. Survival curve that represents the percentage of men who remain in the exercise.

To understand the evolution of the exercise, we calculated the ejaculation survival curves for each step where ejaculation

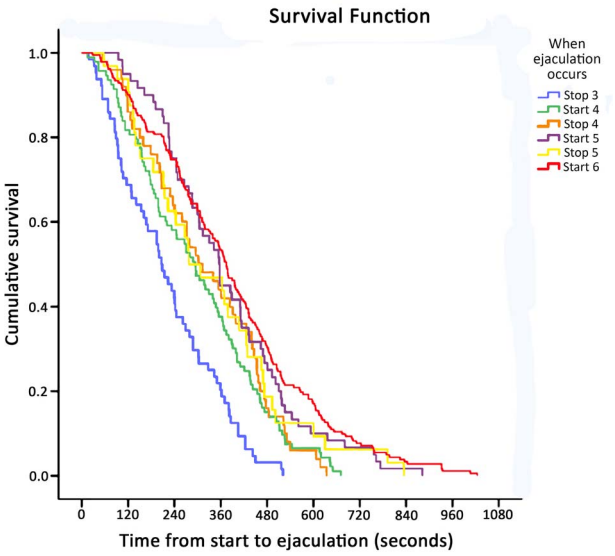

Figure 3. Survival curves for each step where ejaculation was recorded.

was recorded (see differences in Figure 3). Through the log-rank test, we verified that there are statistically significant differences in the survival curves for each ejaculation group (for a given moment/step where ejaculation occurs, $P < .001$).

To determine whether age is associated with ejaculation, Cox regression was calculated with age as a possible risk factor for the event. The regression results indicated that age was not significant as a risk factor for ejaculation, with an odds ratio of 1.003 (95% CI, 0.993-1.013; $P = .529$). In addition, a Kaplan-Meier survival analysis was performed for ejaculation according to sexual orientation, and the log-rank test indicated that there were no statistically significant differences in the survival curves in the groups according to sexual orientation ($P = .498$).

Through pairwise comparisons of the data in Figure 3, we verified that there are statistically significant differences between the curves: stop 3–start 4 ($P = .001$), stop 3–stop 4 ($P < .001$), stop 3–start 5 ($P < .001$), stop 3–stop 5 ($P = .001$), stop 3–start 6 ($P < .001$), start 4–start 5 ($P = .013$), start 4–start 6 ($P < .001$), and stop 4–start 6 ($P = .013$). In general, we can observe how the slope for the different survival curves

Table 2. Estimated survival times.

	Timing of ejaculation, s	
	Median	**95% CI**
Stop 3	206.000	151.991-260.009
Start 4	294.000	230.426-357.574
Stop 4	302.000	206.140-397.860
Start 5	356.000	321.840-390.160
Stop 5	279.000	144.565-413.435
Start 6	374.000	339.628-408.372
Global	317.000	288.343-345.657

decrease for the participants who remain in the exercise, reflecting that they better modulated their arousal. Finally, we calculated the median survival times and the corresponding confidence intervals (Table 2).

Discussion

With the stop-and-start technique[42] in masturbation, we observed that the stops of stimulation were less effective in increasing or maintaining the starting or stimulation time as the exercise progresses. Therefore, the mean times of stimulation start were progressively decreasing. This implies that arousal mostly tends to increase even when stimulation is paused, a common complaint of the patients with PE when performing the stop-and-start technique. The difficulty in modulating arousal is confirmed by the fact that most men were unable to finish the proposed exercise: the first ejaculations (abandonments) occurred at the third stop, and more than half of the sample ejaculated before the fifth stimulation stop. Therefore, we conclude that the altered sexual response in PE lies in the arousal phase, not in the orgasm phase.

In light of our results, we propose a new concept and definition for PE: *progressive arousal*[36] or *progressive arousal disorder* is the inability to modulate, regulate, or decrease arousal during any sexual activity, even with brief stops of sexual stimulation, causing unwanted ejaculation. This definition is inclusive. It includes the entire male population, regardless of their sexual orientation. It does not delimit a specific time, nor does it frame it within a specific situation or context.

In particular, ELT has been traditionally considered a diagnostic criterion for PE[1–8] with an established limit (1-3 minutes) for diagnosis. However, we believe that a differentiating time limit should not be established, for 2 reasons: the weakness shown in some studies[43–45] and the potential for men to be misdiagnosed (men without PE but with a short ELT would be included, and men with PE but a normal ELT would be excluded). Moreover, our results show that PE seems to be significantly related to difficulties in prolonging or modulating the arousal phase. This implies that the second diagnostic criterion for PE, ejaculatory control, could be more appropriate[28–32] than ELT. Finally, ELT should not be considered a diagnostic criterion for PE; instead, it could be classified as a serious symptom.

Regarding the third diagnostic criterion for PE, annoyance or distress, men typically seek counsel for PE only when either appears as a consequence of the couple's sexual dissatisfaction.[46–48] This poses 2 questions: (1) Do men seek medical advice only when there is annoyance or distress? (2) Can we find cases of PE that are not associated with these factors? For example, there could be couples enjoying sexual activities despite PE or men who do not want to voluntarily control their ejaculation.[49,50] Moreover, as a diagnostic criterion for PE, annoyance or distress excludes generalized PE, since it would not apply to a solitary setting. Therefore, annoyance or distress could be other symptoms of worsening PE but should no more be used as a diagnostic criterion.

Finally, the ejaculatory control seems to be the best diagnostic criterion[28–32] for PE, and ELT and discomfort can be symptoms and indicators of the condition's severity.

One of the most relevant aspects of our work is the use of the stop-start technique in men with PE, a method that had rarely been used to analyze what is happening in terms of time. This study also has limitations that represent a research challenge for the future. In particular, PE should be studied during sexual intercourse and incorporate a control group of men without this condition. However, it is complicated to find men without PE willing to participate in such a study.

Conclusion

PE is often associated with the orgasm phase; however, we showed that the altered sexual response could be in the arousal phase. In light of this, we propose a new concept and definition of PE that establish ejaculatory control as the main diagnostic criterion. Moreover, in contrast to the old definitions, the new definition refers to the entire male population, regardless of its sexual orientation, and it does not delimit a specific time and situation.

Funding

None declared.

Conflicts of interest: None declared.

References

1. 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.
2. McMahon CG, Althof SE, Waldinger MD, *et al*. An evidence based definition of lifelong premature ejaculation: report of the International Society for Sexual Medicine (ISSM) Ad Hoc Committee for the Definition of Premature Ejaculation. *J Sex Med*. 2008;**5**(7):1590–1606. https://doi.org/10.1111/j.1743-6109.2008.00901.x.
3. American Psychiatric Association ed. *The Diagnostic and Statistical Manual of Mental Disorders*. 5th ed. American Psychiatric Association; 2013.
4. 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.
5. World Health Organization. Definition of male early ejaculation. In: *International Classification of Diseases*. 11th rev. ed. World Health Organization; 2018.
6. Serefoglu EC, McMahon CG, Waldinger MD, *et al*. An evidence-based unified definition of lifelong and acquired premature ejaculation: report of the second International Society for Sexual Medicine Ad Hoc Committee for the Definition of Premature Ejaculation. *Sex Med*. 2014;**2**(2):41–59. https://doi.org/10.1002/sm2.27.

7. Segraves RT. Considerations for an evidence-based definition of premature ejaculation in the *DSM-V*. *J Sex Med*. 2010;**7**(2):672–679. https://doi.org/10.1111/j.1743-6109.2009.01682.x.
8. ISSM. ISSM announces new definition of premature ejaculation. *International Society of Sexual Medicine Newsbulletin*. 2007;**24**:6.
9. Saleh R, Majzoub A, Abu el-Hamd M, Majzoub A, El-Hamd MA. An update on the treatment of premature ejaculation: a systematic review. *Arab J Urol*. 2021;**19**(3):281–302. https://doi.org/10.1080/2090598X.2021.1943273.
10. Zhao GJ, Guo Q, Li YF, Zhang YG. Efficacy and safety of dapoxetine for premature ejaculation: an updated systematic review and meta-analysis. *Sex Health*. 2019;**16**(4):301–313. https://doi.org/10.1186/s12894-020-0580-3.
11. Althof SE, Abdo CH, Dean J, *et al*. International Society for Sexual Medicine's guidelines for the diagnosis and treatment of premature ejaculation. *J Sex Med*. 2010;**7**(9):2947–2969. https://doi.org/10.1111/j.1743-6109.2010.01975.x.
12. Broderick GA. Premature ejaculation: on defining and quantiying a common male sexual dysfunction. *J Sex Med*. 2006;**3**(suppl 4):295–302. https://doi.org/10.1111/j.1743-6109.2006.00304.x.
13. Montorsi F. Prevalence of premature ejaculation: a global and regional perspective. *J Sex Med*. 2005;**2**:96–102. https://doi.org/10.1111/j.1743-6109.2005.20369.x.
14. Porst H, Montorsi F, Rosen RC, Gaynor L, Grupe S, Alexander J. The Premature Ejaculation Prevalence and Attitudes (PEPA) survey: prevalence, comorbidities, and professional help-seeking. *Eur Urol*. 2007;**51**(3):816–823. https://doi.org/10.1016/j.eururo.2006.07.004.
15. Jannini E, Lenzi A. Ejaculatory disorders: epidemiology and current approaches to definition, classification and subtyping. *World J Urol*. 2005;**23**(2):68–75. https://doi.org/10.1007/s00345-004-0486-9.
16. Carson C, Gunn K. Premature ejaculation: definition and prevalence. *Int J Impot Res*. 2006;**18**(suppl 1):S5–S13.
17. Hatzimouratidis K, Amar E, Eardley I, *et al*. Guidelines on male sexual dysfunction: erectile dysfunction and premature ejaculation. *Eur Urol*. 2010;**57**(5):804–814. https://doi.org/10.1038/sj.ijir.3901507.
18. Waldinger M. The neurobiological approach to premature ejaculation. *J Urol*. 1998;**168**(6):2359–2367. https://doi.org/10.1016/S0022-5347(05)64146-8.
19. McNabney SM, Weseman CE, Hevesi K, Rowland DL. Are the criteria for the diagnosis of premature ejaculation applicable to gay men or sexual activities other than penile-vaginal intercourse? *Sexual Medicine*. 2022;**10**(3):1–13. https://doi.org/10.1016/j.esxm.2022.100516.
20. Barbonetti A, D'Andrea S, Cavallo F, Martorella A, Francavilla S, Francavilla F. Erectile dysfunction and premature ejaculation in homosexual and heterosexual men: a systematic review and meta-analysis of comparative studies. *J Sex Med*. 2019;**16**(5):624–632. https://doi.org/10.1016/j.jsxm.2019.02.014.
21. Shindel AW, Vittinghoff E, Breyer BN. Erectile dysfunction and premature ejaculation in men who have sex with men. *J Sex Med*. 2012;**9**(2):576–584. https://doi.org/10.1111/j.1743-6109.2011.02585.x.
22. Lawless P, Lovell G, Allen A, Kannis-Dymand L. Metacognitions in heterosexual, bisexual, and homosexual men: with or without premature ejaculation and erectile dysfunction. *Behav Cogn Psychother*. 2021;**49**(5):612–625. https://doi.org/10.1017/s1352465820000879.
23. Rowland DL, Teague LG, Hevesi K. Premature ejaculation measures during partnered sex and masturbation: what these findings tell us about the nature and rigidity of premature ejaculation. *J Sex Marital Ther*. 2022;**48**(7):680–693. https://doi.org/10.1080/0092623X.2022.2042442.
24. Kempeneers P, Desseilles M. The premature ejaculation "disorder": questioning the criterion of one minute of penetration. *Theol Sex*. 2014;**23**(3):e59–e63. https://doi.org/10.1016/j.sexol.2014.06.004.
25. Waldinger MD, Schweitzer DH. Changing paradigms from a historical *DSM-III* and *DSM-IV* view toward an evidence-based definition of premature ejaculation. Part II—proposals for *DSM-V* and *ICD-11*. *J Sex Med*. 2006;**3**(4):693–705. https://doi.org/10.1111/j.1743-6109.2006.00275.x.
26. American Psychiatric Association. *Diagnostic and Statistical Manual of Mental Disorders. 4th ed, text rev*. American Psychiatric Association; 2000.
27. World Health Organization ed. *International Classification of Diseases and Related Health Problems*. 10th ed. World Health Organization; 1994.
28. Rosen RC, McMahon CG, Niederberger C, Broderick GA, Jamieson C, Gagnon DD. Correlates to the clinical diagnosis of premature ejaculation: results from a large observational study of men and their partners. *J Urol*. 2007;**177**(3):1059–1064. https://doi.org/10.1016/j.juro.2006.10.044.
29. Patrick DL, Rowland D, Rothman M. Interrelationships among measures of premature ejaculation: the central role of perceived control. *J Sex Med*. 2007;**4**(3):780–788.
30. Janssen PK, Waldinger MD. The mathematical formula of the intravaginal ejaculation latency time (IELT) distribution of lifelong premature ejaculation differs from the IELT distribution formula of men in the general male population. *Investigative and Clinical Urology*. 2016;**57**(2):119–126. https://doi.org/10.4111/icu.2016.57.2.119.
31. Giuliano F, Patrick DL, Porst H, *et al*. Premature ejaculation: results from a five-country European observational study. *Eur Urol*. 2008;**53**(5):1048–1057. https://doi.org/10.1016/j.eururo.2007.10.015.
32. Shabsigh R, Patrick DL, Rowland DL, Bull SA, Tesfaye F, Rothman M. Perceived control over ejaculation is central to treatment benefit in men with premature ejaculation: results from phase III trials with dapoxetine. *BJU Int*. 2008;**102**(7):824–828. https://doi.org/10.1111/j.1464-410x.2008.07845.x.
33. Gross S. *Practical Treatise on Impotence and Sterility and Allied Disorders of the Male Sexual Organs*. YJ Pentland; 1887.
34. Raveendran AV, Agarwal A. Premature ejaculation—current concepts in the management: a narrative review. *Int J Reprod Biomed*. 2021;**19**(1):5–22. https://doi.org/10.18502/ijrm.v19i1.8176.
35. Masters WH, Johnson VE. *Human Sexual Inadequacy*. Little Brown; 1970.
36. Lucas P. *Training Program to Overcome Premature Ejaculation (PEEP)*. Liberman Editorial; 2017.
37. Brody S, Weiss P. Erectile dysfunction and premature ejaculation: interrelationships and psychosexual factors. *J Sex Med*. 2015;**12**(2):398–404. https://doi.org/10.1111/jsm.12738.
38. Arcos-Romero AI, Sierra JC. Revisión sistemática sobre la experiencia subjetiva del orgasmo. *Rev Int Androl*. 2018;**16**(2):75–81. https://doi.org/10.1016/J.ANDROL.2017.09.003.
39. 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.
40. Symonds T, Perelman M, Althof S, *et al*. Further evidence of the reliability and validity of the Premature Ejaculation Diagnostic Tool. *Int J Impot Res*. 2007;**19**(5):521–525. https://doi.org/10.1038/sj.ijir.3901567.
41. Vallejo-Medina P, Saffon JP, Peñuela-Trujillo C, Álvarez-Muelas A. Adaptation, and clinical validation of Premature Ejaculation Diagnostic Tool (PEDT) in Spanish. 2020. http://dx.doi.org/10.1093/sexmed/qfac017.
42. Semans JH. Premature ejaculation: a new approach. *South Med J*. 1956;**49**(4):353–357. https://doi.org/10.1097/00007611-195604000-00008.
43. Althof SE, McMahon CG, Rowland DL. Advances and missteps in diagnosing premature ejaculation: analysis and future directions. *J Sex Med*. 2021;**19**(1):64–73. https://doi.org/10.1016/j.jsxm.2021.10.010.

44. Rowland DL, Kolba TN. Understanding the effects of establishing various cutoff criteria in the definition of men with premature ejaculation. *J Sex Med*. 2015;**12**(5):1175–1183. https://doi.org/10.1111/jsm.12881.
45. Waldinger MD, Quinn P, Dilleen M, Mundayat R, Schweitzer DH, Boolell M. A multinational population survey of intravaginal ejaculation latency time. *J Sex Med*. 2005;**2**(4):492–497. https://doi.org/10.1111/j.1743-6109.2005.00070.x.
46. McCabe MP, Connaughton C. Psychosocial factors associated with male sexual difficulties. *J Sex Res*. 2014;**51**(1):31–42. https://doi.org/10.1080/00224499.2013.789820.
47. Shabsigh R, Perelman MA, Laumann EO, Lockhart DC. Drivers and barriers to seeking treatment for erectile dysfunction: a comparison of six countries. *BJU Int*. 2004;**94**(7):1055–1065. https://doi.org/10.1111/j.1464-410x.2004.05104.x.
48. Burri A, Giuliano F, McMahon C, Porst H. Female partner's perception of premature ejaculation and its impact on relationship breakups, relationship quality, and sexual satisfaction. *J Sex Med*. 2014;**11**(9):2243–2255. https://doi.org/10.1111/jsm.12551.
49. Waldinger M. Premature ejaculation: different pathophysiologies and etiologies determine its treatment. *J Sex Marital Ther*. 2008;**34**(1):1–13. https://doi.org/10.1080/00926230701640355.
50. Waldinger M. Pathophysiology of lifelong premature ejaculation. In: Jannini EA, McMahon CM, Waldinger MD, eds. *Premature Ejaculation From Etiology to Diagnosis and Treatment*. Springer-Verlag; 2013:71–80. https://doi.org/10.21037/tau.2016.06.04.