Prevalence and associated factors of premature ejaculation and erectile dysfunction in young, single men who have sex with men in Lima, Peru

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Abstract

Background: While there is literature on erectile dysfunction (ED) and premature ejaculation (PE) in men, conclusive evidence regarding these sexual health issues and potential associated factors in the young, single men who have sex with men (MSM) population is lacking.
Aim: The study sought to determine the prevalence and factors associated with PE and ED in young single MSM in the capital of Peru.
Methods: This was an analytical cross-sectional study in MSM using an online questionnaire. The presence of ED and PE was assessed using the 5-item International Index of Erectile Function and 5-item Premature Ejaculation Diagnostic Tool questionnaires, respectively. In addition, their association with personal, physical health, and sexual behavior variables was evaluated. Prevalence ratios (PRs) were estimated through regression models.
Outcomes: Premature ejaculation and Erectile dysfunction in MSM.
Results: Of 315 participants, most were between 20 to 29 years of age (71.8%), 43.5% identified as homosexual, 59.1% had between 2 and 5 sexual partners, and 40.6% reported that the duration of their sexual relationship was between 1 and 12 months. The prevalence of ED was 53.3% (95% confidence interval [CI], 47.66%-58.95%), and PE was present in 8.3% (95% CI, 5.46%-11.86%). Factors associated with a higher prevalence of ED were having between 6 and 9 sexual partners (PR, 1.48; 95% CI, 1.05-2.11) and having a sexual relationship lasting 13 to 24 months (PR, 0.70; 95% CI, 0.50-0.98). Furthermore, for each additional year from the onset of the first sexual encounter with another man, the prevalence of PE increased by 7% (PR, 1.07; 95% CI, 1.02-1.13).
Clinical Implications: These findings suggest that there is a relationship between an increased number of sexual partners and a higher prevalence of ED. It also suggests that relationships that last for some time may have a protective effect against ED.
Strengths and Limitations: Strengths include the use of validated instruments, adequate sample size, robust multivariate analysis, and being one of the few studies in Latin America assessing PE and ED in the MSM population. Limitations include the cross-sectional design, nonprobability sampling, and access to participants.
Conclusion: Having more sexual partners is associated with increased ED, while relationships lasting 13 to 24 months are associated with decreased ED. Each additional year from the onset of the first sexual relationship increases the prevalence of PE. These findings can guide the design of health policies and programs tailored to the MSM community to enhance their well-being and sexual quality of life.

Keywords: men who have sex with men; premature ejaculation; erectile dysfunction; homosexuality.

Introduction

Erectile dysfunction (ED) is defined as the inability or significant reduction in men's ability to achieve or maintain a penile erection with sufficient duration or rigidity for sexual activity, persisting over a period of at least several months and causing clinically significant distress, despite the desire for sexual activity and adequate sexual stimulation.[1] It is one of the most common sexual issues in men of all sexual orientations,[2] including men who have sex with men (MSM), in whom the impact can be even more significant.[3] A review found that 24% of MSM exhibited ED.[4] In MSM 40 to 59 years of age in Cuba, a high prevalence of ED was identified (ranging

from 13% to 28%).[5] In the United States, the recorded prevalence of ED stands at 79%.[6] The MSM population is commonly affected by ED, and it has a complex relationship with both biological and psychosocial factors.[3] According to previous evidence, influential factors for ED in MSM patients include limited access to required care, body dissatisfaction, and anxiety about sexual performance failure.[3]

Premature ejaculation (PE) is defined as the lack of voluntary control over the ejaculatory reflex.[7] It is the most common sexual dysfunction in MSM, with a prevalence ranging from 10.4% to 42.7%.[3] In comparison, the prevalence in young French men is 21.2%.[8] These high prevalence levels may be linked to psychological stress factors experienced by sexual minorities, including discrimination, victimization, and internalized homonegativity.[8] However, it has been reported that MSM are 28% less likely to experience PE compared with heterosexual men.[3] According to the results of a meta-analysis involving 57 229 patients, 21.2% of them were found to have PE.[9] Factors associated with the prevalence of PE in MSM include obesity, an estimated time of over 5 minutes between penetration and ejaculation,[10] younger age, and a fewer number of sexual partners.[11]

Currently, the most common self-reported sexual concerns in men are ED and PE, with evidence suggesting variations by sexual orientation.[12-15] It has been observed that homosexual men may have higher rates of ED and lower rates of PE compared with heterosexual men.[16-18] However, differences with bisexual men are unclear.[12] These findings may be explained by concerns specific to gay men, such as perceived masculinity, HIV transmission, and painful anal sex, which could affect erection quality.[12] On the other hand, possible distress about PE in gay men may be due to expectations related to the negative impact on partner enjoyment, more common in heterosexual men.[12,16-18]

Although there is extensive evidence documented on the prevalence and factors associated with ED and PE,[3] these have not been specifically conducted in the MSM population, especially not in Latin America.[2,5,19] Additionally, prior studies have not investigated if variables such as the age at the onset of the first sexual relationship,[3] history of sexually transmitted diseases (STDs),[4] condom use frequency,[20] number of sexual partners,[21] and relationship duration[22] are related to ED and PE, leading to information bias.[2] Prior studies have had nonstandardized indicators of sexual dysfunction by not specifying which dysfunction is referred to,[2] have been descriptive in focus,[2] have not estimated the association measure under multivariate models,[23] and have enrolled a limited number of MSM participants, leading to a lack of statistical power.[23] Therefore, this research aims to determine the prevalence and factors associated with PE and ED in MSM in the capital of Peru. Additionally, the frequency of STDs reported by this population will be described.

The undertaking of this study in Peru is highly relevant due to the scarcity of specific data on the prevalence and associated factors of ED and PE in the Peruvian population of MSM. The lack of local information may hinder the formulation of policies and sexual health programs tailored to the needs of this community. Furthermore, cultural and socioeconomic differences could uniquely influence the presentation and management of these health issues in Peru. Therefore, this study is poised to address the existing knowledge gap, offering foundational data that may serve as a catalyst for future research. This, in turn, could strengthen our understanding

of the associations identified in this investigation, ultimately enhancing care and sexual health interventions for the MSM population in the Peruvian context.

Consequently, our study seeks to address the following refutable question: what is the prevalence of PE and ED among young, single MSM in the capital of Peru, and what factors are associated with these conditions?

Methods
Design
This was a cross-sectional analytical study of MSM interviewed virtually during the period from October to December 2019, aimed at identifying the prevalence and factors associated with ED and PE.

Population, sample, and sampling
The study population consisted of MSM residing in Lima in 2019. Included were men over 18 years of age who had had sexual relations with another man in the past 6 months and who were residing in Lima at the time of their participation in the research. Excluded were men who did not authorize their participation in the study, those reporting any anatomical (individuals with anatomical malformations in the genital region; Peyronie's disease or penile curvature negatively affecting sexual activity; a history of penile surgery, including penile cancer surgery, penile plication, or grafting; and a previous penile fracture) or neurological (multiple sclerosis, Parkinson's disease, and spinal cord injury) disorder and those who did not complete the survey on the variables of interest (5-item International Index of Erectile Function [IIEF-5] and 5-item Premature Ejaculation Diagnostic Tool [PEDT-5] questionnaires). A representative sample of MSM was estimated using the Epidat 4.2 software(Directorate General of Innovation and Public Health Management (Xunta de Galicia)). A proportion of 16% for ED was used,[24] with a precision of 5%, a 95% confidence level, 20% for incomplete surveys, and 20% for participation rejections during informed consent, using the formula for an unknown population. This resulted in a sample size of 290 participants. Ultimately, data from 315 MSM participants were captured. The sampling was a nonprobabilistic snowball type.

Procedures
A virtual survey was designed to assess the sexual life of MSM, particularly concerning PE and ED, in addition to other potentially influencing conditions. The invitation to participate in the study was distributed online via the Grindr social network, a dating app targeted at the LGBTQ community. Potential participants received an invitation to complete the survey by clicking on a link provided on this social network. At that time, their informed consent was sought, and the purpose of the research was explained. Inclusion and exclusion criteria were verified, as was whether they had already completed the survey to prevent duplicate records from the same participant. Those who provided their authorization were automatically redirected to the online research questionnaire. The anonymity of the collected information was maintained throughout. The survey was available from October 1, 2019, to December 31, 2019, and was estimated to take approximately 10 minutes to complete.

Variables

The dependent variables were ED and PE. ED was operationally defined as a score of 21 or less obtained from the summation of the MSM participants' responses to the IIEF-5 questionnaire. Based on this, they were classified into the following levels: absence of ED, mild ED, mild-moderate ED, moderate ED, and severe ED.

PE was defined as a score of 11 or higher derived from the answers to the PEDT-5 questionnaire. Accordingly, MSM participants were classified into absent PE, probable PE, and PE.

Additionally, confounding variables for ED and PE were measured, such as age, which was later categorized (18-19, 20-29, 30-39, and 40 years or older), and marital status (single, cohabiting). Physical health variables were also evaluated, including comorbidity (none, HIV, others) and any occurrence of STDs in the past, which were later recategorized based on etiology (absence of STDs, viral, bacterial, viral and bacterial, parasitic). Finally, sexual behavior variables were taken into account, such as the report of drug use during current sexual relations (no, yes); sexual orientation (bisexual, homosexual); frequency of condom use in the past 6 months (no, rarely, sometimes, often, always); age of the first sexual relationship with another man; the number of sexual partners in the past 6 months, which was later categorized (1 partner, 2-5 partners, 6-9 partners, and 10 or more partners); and the duration of the longest sexual relationship in months, which was later categorized (<1, 1-12, 13-24, 25-36, and 37 or more).

Instruments

IIEF-5 questionnaire

The IIEF-5 is a questionnaire consisting of 5 questions with a Likert scale from 1 to 5, and explores the patient's ED in the last 6 months, with 1 being the lowest score for a question and 5 the highest.[25] It has been tested in controlled international clinical trials, showing adequate psychometric properties, a kappa coefficient of 0.85, 98% sensitivity, and 88% specificity, taking a score of 21 or less as the cutoff point. It classifies the absence of ED with a score of 22 to 25 points, mild with 17 to 21 points, mild-moderate with 12 to 16 points, moderate with 8 to 11 points, and severe ED with 5 to 7 points.[26] It has also been validated in the Latin American population, in which a study of patients seen in a sexology clinic in Colombia found invariance useful for group comparison.[27] Additionally, we utilized the modified tool for MSM from the IIEF-5, specifically addressing questions 4, 5, 6, 11, 12, 13, 15, and 19.[28] In our research, we used a score of 21 or less points to define ED, obtained by summing the responses from the IIEF-5 questionnaire.

PEDT-5 questionnaire

The PEDT-5 consists of 5 questions on a Likert scale from 0 to 4, allowing a brief diagnosis to assess PE, with 0 being the lowest classification for a question and 4 the highest.[29] It has been used in various studies with mainly heterosexual male populations[30] and has shown adequate psychometric properties, with a Cronbach's alpha of 0.71.[31] The PEDT-5 questionnaire has been utilized in various studies, predominantly with heterosexual male populations.[30] In studies conducted in a Colombian population, in which 9.4% of the sample identified as homosexual and 13.3% as bisexual, the questionnaire showed convergent validity with a moderate correlation (r = -0.31) and a Cronbach's alpha coefficient

of 0.71,[31] demonstrating adequate psychometric properties, including a sensitivity of 95.1% and specificity of 88.6% for a cutoff point of 11 points. Additionally, another study conducted among homosexual men in the United States reported a reliability of 0.80 (95% confidence interval [CI], 0.77-0.83).[32] Additionally, the sensitivity and specificity of the PEDT-5 have been analyzed, with 92% and 83%, respectively, taking a score higher than 8 as the cutoff point.[33] It classifies the absence of PE with a score of 8 or less, probable presence of PE with a score of 9 to 10, and presence of PE with a score of 11.[30] It has also been validated and adapted in European and Asian populations, in which it was found that this tool is beneficial for diagnosing PE.[33] In our research, we used a score of 11 or more points to define PE, obtained by summing the responses from the PEDT-5 questionnaire.

Data analysis

Upon completing data collection, an initial exploratory descriptive analysis was conducted, identifying missing data, out-of-range values, or implausible data.

For descriptive statistical analysis, summary measures of quantitative and qualitative variables were used: absolute and relative frequencies for categorical variables and measures of central tendency and dispersion in numerical variables based on evaluation of normal distribution.

For bivariate analysis, the chi-square test was used for categorical variables to identify factors associated with ED and PE, after evaluating the assumption of expected frequencies. To compare numerical variables, the Student t test was used.

For multivariate analysis, simple and multiple regression models were constructed to estimate prevalence ratios (PRs) and 95% confidence intervals (CIs) to evaluate factors associated with ED and PE in MSM. Variables significantly associated in simple regression ($P < .05$) entered the final multiple model. Collinearity between variables of interest was assessed.

For statistical analysis, the STATA 17.0 (StataCorp LP) statistical package was used.

Ethical aspects

This research was reviewed and approved by the Ethics Committee of Ricardo Palma University, Lima, Peru, identified with the code PG 0452024. Virtual informed consent was requested from all participants before their participation. Confidentiality of the collected data was guaranteed because the questionnaires were anonymous. The procedures carried out in this study preserved the integrity and basic ethical rights of the male subjects under investigation, in accordance with the guidelines for good clinical practice and ethics in biomedical research.

Results

Characteristics of the MSM participants

Of the 315 participants, the average age was 25.95 years, with the majority falling within the 20- to 29-year-old age range (71.8%). A vast majority of the participants identified as single (97.5%). A small percentage reported being HIV positive (3.5%). Regarding STIs, of those who reported having infections, viral infections were the most common (8.9%), followed by bacterial infections (4.8%) and combined viral and bacterial coinfections (2.9%). Drug use during sexual activity was reported by 11.1%. Most MSM identified as being
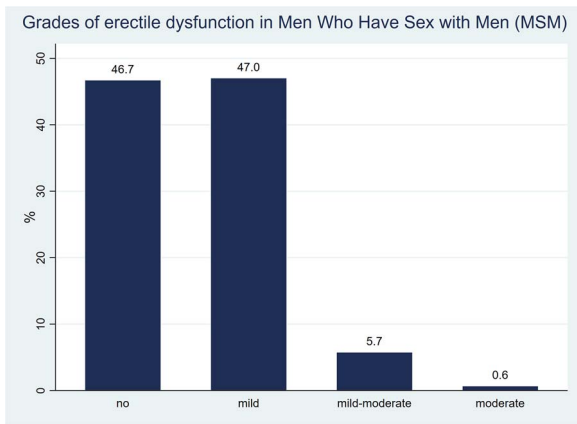
Figure 1. Grades of erectile dysfunction (ED) in men who have sex with men (MSM).
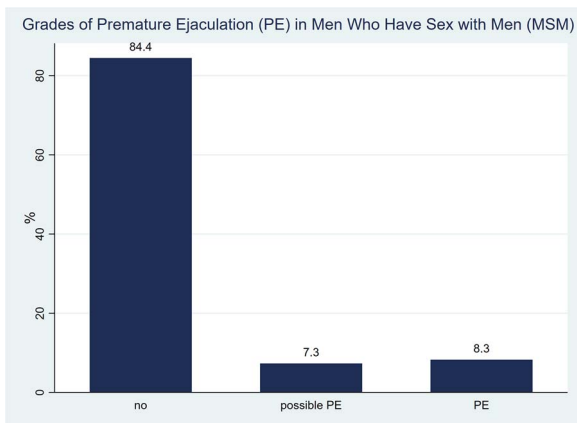

Figure 2. Grades of premature ejaculation (PE) in men who have sex with men (MSM).

bisexual and 60.3% claimed to always use condoms during sexual intercourse. Categorically, over half of the participants reported having between 2 and 5 sexual partners (59.1%). A total of 40.6% reported that their sexual relationships lasted between 1 and 12 months (Table 1).

In relation to other pathologies, 3.5% of participants reported having asthma, 0.6% were diabetic, 0.6% experienced hyperthyroidism/hypothyroidism issues, 0.6% experienced allergic rhinitis, and 1.6% had various other diseases including gastritis, migraines, anxiety, cardiovascular conditions, and cancer (Table 1).

Pertaining to sexual function, the prevalence of ED was 53.3% (95% CI, 47.66%-58.95%). The majority reported experiencing mild ED (47.0%) (Figure 1). Regarding PE, it was present in 8.3% (95% CI, 5.46%-11.86%) (Figure 2). Most participants reported having no issues (84.4%), while a smaller percentage reported experiencing probable PE (7.3%) (Table 1).

Factors associated with ED and PE in bivariate analysis

In the bivariate analysis, a significant association was found between the duration of the sexual relationship in months and

ED (*P* = .019). In this case, a higher proportion of participants with ED was observed in longer relationships (37 months or more) compared with relationships of <1 month (77.3% vs 57.1%) (Table 2).

Factors associated with ED and PE in simple and multiple regression analysis

In the simple regression analysis, it was found that participants with 6 to 9 sexual partners had a 50% higher prevalence of experiencing ED compared with those with fewer sexual partners (PR, 1.50; 95% CI, 1.05-2.15). Additionally, participants whose sexual relationship lasted 13 to 24 months had a 30% lower prevalence of experiencing ED compared with those with shorter or longer relationships (PR, 0.70; 95% CI, 1.05-2.15). In the multiple regression analysis, the observed associations in terms of magnitude and direction were retained. MSM participants with 6 to 9 sexual partners increased the prevalence of ED by 48% (PR, 1.48; 95% CI, 1.05-2.11) and having a sexual relationship lasting 13 to 24 months reduced this prevalence by 30% (PR, 0.70; 95% CI, 0.50-0.98) (Table 3).

Regarding PE, in the simple regression, it was found that for each additional year from the onset of the first sexual relationship with another man, the prevalence of PE increased by 7% (PR, 1.07; 95% CI, 1.02-1.13). The other variables did not show a significant association with PE (Table 3).

Discussion
Prevalence of ED

We found that 47% of MSM presented with mild ED and 5.7% with mild-moderate ED. This is consistent with the findings of Hirshfeld et al[6] in a study conducted in the United States in which 45% of MSM participants reported having some degree of ED. However, this contrasts with the findings of Lau et al[34] in their study conducted in China on MSM, in which only 10.4% of men reported ED. These differences may be attributed to variations in measurement methods, as individuals in the study by Lau et al were asked about their experience with ED in the past 12 months, following specific criteria from the DSM.

The higher prevalence of ED among MSM in our study prompts cautious interpretation, given the cross-sectional nature that limits assigning true causality. Various factors could contribute to this disparity, with one consideration being the role of sexual activity, particularly the prevalence of anal sex within this demographic. Engaging in anal sex may impose greater physical demands, requiring more rigid erections, potentially contributing to ED. Furthermore, variations in expectations of sexual performance among MSM could contribute to the perception of higher rates of ED. Comparing one's erection with that of a partner, along with distinct performance expectations, may predispose individuals to perceive their erections as less satisfactory. Importantly, these considerations are speculative, and we emphasize the need for utmost caution in attributing causality. These factors, coupled with concerns about performance failure leading to sexual inhibition, as suggested in previous literature,[4,11] could collectively contribute to the elevated prevalence of ED observed in our study.

Table 1. Characteristics of the men who have sex with men participants residing in Lima, Peru.

Age, years		25.95 ± 5.35
Age categorized		
	18-19 years	22 (7.0)
	20-29 years	226 (71.8)
	30-39 years	62 (19.7)
	40 years and older	5 (1.6)
Marital status		
	Cohabiting	8 (2.5)
	Single	307 (97.5)
Comorbidity		
	None	282 (89.5)
	HIV	11 (3.5)
	Others	22 (7.0)
Sexually transmitted disease		
	No	262 (83.2)
	Viral	28 (8.9)
	Bacterial	15 (4.8)
	Viral-bacterial	9 (2.9)
	Parasitic	1 (0.3)
Drug use during sexual encounters		
	No	280 (88.9)
	Yes	35 (11.1)
Sexual orientation		
	Bisexual	178 (56.5)
	Homosexual	137 (43.5)
Condom use		
	No	15 (4.8)
	Rarely	10 (3.2)
	Sometimes	26 (8.3)
	Often	74 (23.5)
	Always	190 (60.3)
Age at first sexual encounter with another man, years		17.57 ± 3.32
Sexual partners		3 (2-20)
Sexual partners (categorized)		
	1	67 (21.3)
	2-5	186 (59.1)
	6-9	40 (12.7)
	10 or more	22 (7.0)
Duration of sexual relationship, mo (months)		10 (2-19)
Duration of sexual relationship (categorized)		
	<1 mo	70 (22.2)
	1-12 mo	128 (40.6)
	13-24 mo	77 (24.4)
	25-36 mo	18 (5.7)
	37 mo or more	22 (7.0)
Erectile dysfunction		
	No	147 (46.7)
	Mild	148 (47.0)
	Mild to moderate	18 (5.7)
	Moderate	2 (0.6)
	Severe	0 (0.0)
Premature ejaculation		
	No	266 (84.4)
	Possible	23 (7.3)
	Yes	26 (8.3)

Values are mean $\pm$ SD, n (%), or median (interquartile range).

Prevalence of PE

We discovered that 8.3% of the MSM participants presented with PE. This aligns with a study by Bancroft et al[17] involving MSM participants recruited online, in which PE was present in 9.4%, showing a lower PE occurrence in MSM compared with heterosexual men (12.9%). Another study conducted in Australia by Lawless et al[12] found lower rates, with 5.8% of MSM participants reporting PE. The prevalence of this sexual issue in MSM may be influenced by psychological factors such as anxiety and depression, which are relatively common in individuals belonging to sexual minorities.[35]

Frequency of STDs

We noted that 8.9% of MSM had virally originated STDs, while 4.8% had a bacterial etiology. Additionally, 2.9% presented with both viral and bacterial STDs. In a study carried out in the United States by Johnson et al[36] on MSM, the

Table 2. Factors associated with erectile dysfunction and premature ejaculation in men who have sex with men, in bivariate analysis.

Variable	Erectile dysfunction		P^a	Premature ejaculation		P^a
	No (n = 147)	Yes (n = 168)		No (n = 289)	Yes (n = 26)	
Age categorized			.223			.324
18-19 years	7 (31.8)	15 (68.2)		22 (100.0)	0 (0.0)	
20-29 years	112 (49.6)	114 (50.4)		205 (90.7)	21 (9.3)	
30-39 years	27 (43.6)	35 (56.5)		58 (93.6)	4 (6.5)	
40 years and older	1 (20.0)	4 (80.0)		4 (80.0)	1 (20.0)	
Marital status			.848			.658
Cohabiting	4 (50.0)	4 (50.0)		7 (87.5)	1 (12.5)	
Single	143 (46.6)	164 (53.4)		282 (91.9)	25 (8.1)	
Comorbidity			.237			.179
None	136 (48.2)	146 (51.8)		258 (91.5)	24 (8.5)	
HIV	3 (27.3)	8 (72.7)		9 (81.8)	2 (18.2)	
Others	8 (36.4)	14 (63.6)		22 (100.0)	0 (0.0)	
Sexually transmitted disease			.601			.374
No	124 (47.3)	138 (52.7)		242 (92.4)	20 (7.6)	
Yes	23 (43.4)	30 (56.6)		47 (88.7)	6 (11.3)	
Drug use during sexual encounters			.231			.563
No	134 (47.9)	146 (52.1)		256 (91.4)	24 (8.6)	
Yes	13 (37.1)	22 (62.9)		33 (94.3)	2 (5.7)	
Sexual orientation			.340			.340
Bisexual	161 (90.5)	17 (9.6)		161 (90.5)	17 (9.6)	
Homosexual	128 (93.4)	9 (6.6)		128 (93.4)	9 (6.6)	
Condom use			.482			.482
No	12 (80.0)	3 (20.0)		12 (80.0)	3 (20.0)	
Rarely	9 (90.0)	1 (10.0)		9 (90.0)	1 (10.0)	
Sometimes	25 (96.2)	1 (3.9)		25 (96.2)	1 (3.9)	
Often	68 (91.9)	6 (8.1)		68 (91.9)	6 (8.1)	
Always	175 (92.1)	15 (7.9)		175 (92.1)	15 (7.9)	
Age at first sexual encounter with another man, years	17 (15-19)	17 (15-19)	.257[b]	17 (15-19)	18 (15-20)	.501[b]
Sexual partners (categorized)			.159			.426
1	38 (56.7)	29 (43.3)		64 (95.5)	3 (4.5)	
2-5	84 (45.2)	102 (54.8)		167 (89.8)	19 (10.2)	
6-9	14 (35.0)	26 (65.0)		38 (95.0)	2 (5.0)	
10 or more	11 (50.0)	11 (50.0)		20 (90.9)	2 (9.1)	
Duration of sexual relationship (categorized)			.019[c]			.685
<1 mo	30 (42.9)	40 (57.1)		62 (88.6)	8 (11.4)	
1-12 mo	56 (43.8)	72 (56.3)		120 (93.8)	8 (6.3)	
13-24 mo	46 (59.7)	31 (40.3)		70 (90.9)	7 (9.1)	
25-36 mo	10 (55.6)	8 (44.4)		16 (88.9)	2 (11.1)	
37 mo or more	5 (22.7)	17 (77.3)		21 (95.5)	1 (4.6)	

Values are n (%) or median (interquartile range) [a]P value for categorical variables calculated using the chi-square test. [b]P value for categorical-numerical variables calculated using the Mann-Whitney *U* test. [c]Associated results of the evaluated variables (*p*-value less than 0.05).

authors reported that 13.3% of participants had bacterial STDs, with chlamydia being the most prevalent. Moreover, MSM who reported being HIV positive were more often found to have a bacterial STD (8.2%) compared with those who were HIV negative (3.3%).[36] Chaiyabutr et al[37] reported a high presentation of viral STDs in MSM at 42.7%. Furthermore, 57.1% of the MSM in the study presented both viral and bacterial STDs.

The noted prevalence of STDs appears to be correlated with certain sexual behaviors, such as engaging in unprotected receptive and insertive anal intercourse, having frequent casual male partners, and drug use during sexual encounters.[38] Furthermore, it is crucial to highlight that individuals within this sexual minority often hesitate to seek professional help until the issue becomes chronic, possibly due to the embarrassment associated with disclosing their sexual orientation and the discrimination faced from healthcare professionals.[39] It is essential to underscore that these observations indicate potential associations rather than establishing causal relationships. These factors are put forth as plausible explanations based on observed patterns in the data, and caution should be exercised in drawing definitive causal conclusions.

Factors associated with ED

Having 6 to 9 sexual partners in the last 6 months was associated with a higher prevalence of ED compared with men who had only 1 sexual partner. This is consistent with findings by Lau et al,[34] who observed a relationship between ED in MSM and a higher number of sexual partners (odds

Table 3. Factors associated with erectile dysfunction and premature ejaculation in men who have sex with men, in simple and multiple regression analysis.

Characteristic	Erectile dysfunction						Premature ejaculation		
	Simple regression			Multiple regression			Simple regression		
	PR	95% CI	P[a]	PR	95% CI	P[a]	PR	95% CI	P[a]yyyyyy
Age categorized									
18-19 years	Ref.						Ref.		
20-29 years	0.74	0.54-1.01	.060				—-		
30-39 years	0.83	0.58-1.19	.304				—-		
40 years and older	1.17	0.69-1.98	.550				—-		
Marital status									
Cohabiting	Ref.						Ref.		
Single	1.07	0.53-2.16	.853				0.65	0.09-4.25	.654
Comorbidity									
None	Ref.						Ref.		
HIV	1.40	0.96-2.05	.079				2.14	0.57-7.94	.258
Others	1.23	0.88-1.72	.229						
Sexually transmitted disease									
No	Ref.						Ref.		
Yes	1.07	0.83-1.40	.591				1.48	0.62-3.52	.372
Drug use during sexual encounters									
No	Ref.						Ref.		
Yes	1.21	0.91-1.59	.189				0.67	0.16-2.71	.571
Sexual orientation									
Bisexual	Ref.						Ref.		
Homosexual	1.00	0.81-1.23	.988				0.69	0.32-1.50	.346
Condom use									
No	Ref.						Ref.		
Rarely	1.13	0.57-2.25	.739				0.50	0.06-4.17	.522
Sometimes	0.72	0.37-1.43	.346				0.19	0.02-1.69	.137
Often	1.06	0.64-1.78	.813				0.41	0.11-1.45	.164
Always	1.01	0.62-1.65	.979				0.39	0.13-1.22	.105
Age at first sexual encounter with another man***	1.01	0.97-1.04	.817				1.07	1.02-1.13	.006[b]
Sexual partners (categorized)									
1	Ref.			Ref.			Ref.		
2-5	1.27	0.93-1.72	.127	1.27	0.93-1.72	.127	2.28	0.70-7.48	.173
6-9	1.50	1.05-2.15	.025[b]	1.48	1.05-2.11	.027[b]	1.12	0.19-6.42	.902
10 or more	1.16	0.70-1.91	.572	1.18	0.73-1.92	.505	2.03	0.36-11.41	.421
Duration of sexual relationship (categorized)									
<1 mo	Ref.			Ref.			Ref.		
1-12 mo	0.98	0.76-1.27	.903	0.97	0.75-1.24	.791	0.55	0.21-1.40	.207
13-24 mo	0.70	0.50-0.99	.043[b]	0.70	0.50-0.98	.038[b]	.80	0.30-2.08	.641
25-36 mo	0.78	0.45-1.36	.375	0.77	0.43-1.37	.370	.92	0.23-4.20	.970
37 mo or more	1.35	0.99-1.83	.052	1.33	0.98-1.80	.067	.40	0.05-3.02	.372

Abbreviations: CI, confidence interval; PR, prevalence ratio. [a] *P* values obtained using generalized linear models, Poisson family, log link function, or robust variance. [b] Associated results of the evaluated variables (*p*-value less than 0.05).

ratio, 1.82). However, this contradicts the findings of Shindel et al[11] in an online survey, in which MSM participants who reported having more than 30 sexual partners in their lifetime showed a lower likelihood of experiencing ED (odds ratio, 0.83), though the association was not found to be significant (*P* = .252). This observed association suggests a potential link between multiple sexual partners and the prevalence of ED, which could be attributed to an increased risk of sexually transmitted infections (STIs).[38] It is noteworthy to consider that exposure to STIs, including HIV, may contribute to ED by potentially causing damage to blood vessels and nerves crucial for penile erection.[11] Importantly, these findings point to a correlation rather than establishing causation. While the observed association aligns with the notion that STIs could elevate the risk of ED, it is essential to exercise caution in attributing a direct causal relationship, particularly in the context of a cross-sectional study.

MSM who reported that their longest romantic relationship lasted between 13 and 24 months had a lower prevalence of ED compared with those whose longest relationship was <1 month. This is in line with findings by Shindel et al,[11] in which MSM were found to have a reduced risk of ED when in longer, stable relationships (odds ratio, 0.587). Contrarily, a compilation of studies by Grabski and Kasparek[39] found that being in a stable relationship did not influence the likelihood of MSM reporting erection problems, with the main factor being performance anxiety.

The association might be influenced by the psychological stress that MSM face due to societal stigma and discrimination, which, in turn, may lead to higher rates of mood disorders, unstable relationships, and increased chances of ED.[8] Furthermore, this connection might be attributed to the potential benefits of long-term sexual and romantic relationships in MSM, such as enhanced comfort and trust

during sexual encounters; improved sexual health, including increased sexual satisfaction; and a reduced frequency of sexual problems like ED.[34] Long-term relationships might allow men to better understand their partners and can improve comfort and trust during sexual encounters. Moreover, stable relationships might provide more emotional and social support, which can reduce stress and anxiety, known factors that contribute to ED.[21] It is essential to underscore that while these findings suggest a correlation between relationship duration and ED prevalence, causation cannot be definitively assigned in the context of a cross-sectional study. The observed associations offer potential insights into factors influencing ED but should be interpreted with caution.

Factors associated with PE

For every additional year of age at the onset of the first sexual encounter, the prevalence of PE increased by 7%. While no studies have linked the age of first sexual encounter with PE, we found others associating participants' age. In a review on MSM by Cheng,[4] it was reported that younger age increases the chances of PE. Similar findings were observed by Shindel et al[11] in their U.S. study, indicating that as age increases, the likelihood of PE also rises (odds ratio, 1.495). One possible explanation for the observed increase in PE prevalence with a later age of first sexual encounter is that PE may be related to psychological factors such as anxiety or stress. Men who initiate their sexual activities at a younger age might be less exposed to stressful situations or social pressure, potentially reducing the risk of PE.[6] Conversely, those who start their sexual life later might encounter more stressful circumstances or societal expectations, thereby increasing the risk of PE. Another potential reason for the observed association is that PE might be linked to hormonal and neurochemical factors. Younger men might have different hormonal and neurotransmitter levels compared with those who initiate sexual activities later in life. Additionally, changes in substance consumption habits like alcohol and drugs, which often accompany sexual initiation, can influence one's ability to control ejaculation.[34] It is emphasized that the proposed explanations are speculative, and the study's design limits our ability to establish a causal relationship. The findings offer avenues for further exploration and hypothesis generation, rather than definitive conclusions.

Strengths and limitations

This research had several limitations. First, the study was cross-sectional, which does not allow for the establishment of causality between the variables. Second, due to nonprobabilistic sampling, we cannot extrapolate the results to the entire MSM population of Peru but can only refer to the population participating in the study. Third, because the survey was conducted virtually, access to more participants was limited to the capability of the utilized social network. Fourth, there are variables that could interfere with the results, such as education level, employment status, substance use,[34] engagement in anal sex, use of protective barriers, perception of social discrimination,[4] levels of testosterone, assessing concomitant relationships with women, the nature of bisexual orientation, and the potential existence of men on the "down low," among others, which were not measured in this study.[40,41] Additionally, information on preferred sex roles (top, versatile, bottom) and preferred sexual activities (solo masturbation, receptive/insertive anal sex) was not included in the current

analysis but could potentially enrich the article by providing a more comprehensive understanding of factors influencing sexual health among MSM.[42,43] Fifth, it is important to note that the IIEF-5, utilized in our study, has been primarily validated in older populations, and there are limited data on its validity in sexual encounters between men.[27,44] Sixth, we acknowledge that, similar to many investigations on PE in men of any sexual orientation, our study relies on self-reporting based on a single-item question.[12] It is essential to recognize that self-diagnosed cases of PE may not accurately reflect clinical PE, which is generally defined by the chronic/frequent absence of a sense of control, bother, and a latency time of 2 minutes or less, according to prevailing definitions in the medical literature. This reliance on self-identification of the condition may not fully capture the clinical complexity of PE and serves as a potential limitation in our study. Seventh, as a limitation, it is crucial to acknowledge that this investigation faces a constraint in confirming the ED or PE status of participants due to the online nature of the study, as the reliance on self-reported data without direct clinical assessment poses a limitation in precisely verifying the prevalence of these conditions. Last, our study's dichotomous classification of marital status, limited to living with a partner or being "single," overlooks individuals in steady relationships who may not cohabit. The questionnaire's design lacks an option to accurately capture those in committed relationships but not living together. Consequently, this limitation impacts the understanding of relationship dynamics, particularly for participants in stable relationships who do not share a residence.

However, despite these limitations, this study presents novel findings using validated instruments to obtain variables associated with the occurrence of PE or ED in MSM. Additionally, it included an appropriate sample size and a multivariate analysis to solidly estimate the factors potentially influencing ED and PE in the MSM population. Last, to our knowledge, this is one of the few studies in Latin America assessing PE and ED in the MSM population, thereby laying the groundwork for subsequent research in this population.

Public health significance of findings

The findings of this study significantly contribute to the understanding of PE and ED in an MSM sample in the field of public health. This becomes even more relevant given the scant information found in Latin America regarding studies conducted on the MSM population.[10,45] This provides healthcare professionals with the necessary information for the proper approach in MSM care, recognizing the challenges and risks that they face when receiving health services. It also contributes to the development of care plans focused on MSM, creating empathetic spaces in healthcare facilities with sensitized staff for care.

The high prevalence of ED and PE found in our research indicates that these sexual health problems are common among MSM and require medical and psychological attention. Furthermore, the associated factors identified in the study, such as age at first sexual encounter and duration of the longest romantic relationship, can be valuable in guiding preventive and treatment interventions aimed at this population.[20] Early identification and appropriate management of these sexual health issues in MSM can significantly improve their quality of life and well-being.[9,34] Thus, it is crucial for healthcare professionals to be aware of these findings and incorporate them into their clinical practice.

The scarcity of information on ED and PE in Latin America may be attributed to various factors, including cultural norms, stigma around discussing sexual topics openly, and potential challenges in conducting sexual health studies. The conservative cultural environment and religious influences prevalent in certain Latin American societies may contribute to the hesitancy in addressing and studying issues related to sexual health openly. Stigma around discussing sexual matters and conducting studies on sexual health could also be a barrier, hindering comprehensive research in this domain. Understanding these contextual factors is crucial for expanding the public health significance of findings and tailoring interventions that consider the unique sociocultural aspects of the region. Addressing stigma, promoting open dialogue, and considering the influence of religiosity in sexual health studies can be essential steps toward improving the overall sexual well-being of the MSM population in Latin America.

Conclusions

We observed a prevalence of 47% for ED and 8.3% for PE among young, single MSM. Having a higher number of sexual partners in the past 6 months was associated with a higher prevalence of ED, while a romantic relationship lasting 13 to 24 months was linked to a lower prevalence of ED. On the other hand, the age at the first sexual encounter correlated with PE prevalence. The findings can inform the development of targeted health policies and programs addressing ED and PE issues in the MSM community in Latin America, ultimately enhancing their quality of life and sexual well-being, and it is crucial that these results are disseminated and taken into account in health policy decision making to ensure inclusive and appropriate care for this population.

Author contributions

Conceptualization, A.S.S.-R., M.J.V.-G., V.J.V.-P., and J.A.G.-U.; methodology, A.S.S.-R., M.J.V.-G., A.G.M.A., D.V.-G., and V.J.V.-P.; software, A.S.S.-R., M.J.V.-G., V.J.V.-P., C.J.P.-V., D.A.L.-F., and J.A.G.-U.; validation, A.S.S.-R., A.J.-U., A.G.M.A., and J.A.G.-U.; formal analysis, M.J.V.-G., D.V.-G., V.J.V.-P., and J.A.G.-U.; investigation, A.S.S.-R., M.J.V.-G., A.J.-U., A.G.M.A., D.V.-G., V.J.V.-P., C.J.P.-V., D.A.L.-F., and J.A.G.-U.; resources, A.G.M.A., D.V.-G., V.J.V.-P., and J.A.G.-U.; data curation, A.S.S.-R., A.J.-U., V.J.V.-P., C.J.P.-V., D.A.L.-F., and J.A.G.-U.; writing—original draft preparation, A.S.S.-R., M.J.V.-G., A.J.-U., A.G.M.A., D.V.-G., V.J.V.-P., C.J.P.-V., D.A.L.-F., and J.A.G.-U.; writing—review and editing, A.S.S.-R., M.J.V.-G., A.J.-U., A.G.M.A., D.V.-G., V.J.V.-P., C.J.P.-V., D.A.L.-F., and J.A.G.-U.; visualization, A.S.S.-R., M.J.V.-G., D.A.L.-F., and J.A.G.-U..; supervision, A.S.S.-R., M.J.V.-G., D.A.L.-F., and J.A.G.-U.; project administration, A.S.S.-R. and M.J.V.-G.,. All authors have read and agreed to the published version of the manuscript.

Funding

Conflicts of interest

The authors report no conflicts of interest.

Data availability

The data associated with this article are available from the corresponding author upon request.

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