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ORIGINAL ARTICLE

A Cross-Sectional Survey on Recreational Use of Oral Erectile Dysfunction Drugs Among Male Doctors

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Abstract:
Background: Erectile dysfunction (ED) refers to the ongoing difficulty in achieving and sustaining an erection adequate for satisfying sexual activity. Globally, a key concern involves individuals bypassing medical professionals to acquire ED medications (EDMs) without prescriptions. **Objective**: This study evaluates erectile function in a sample of local physicians, examines the psychological consequences of recreational EDM use, and compares erectile function across user categories. **Methods**: We conducted a cross-sectional survey exclusively among physicians at various hospital around Pondicherry. Participants completed a custom questionnaire covering demographics, sexual history, EDM usage, sexual satisfaction levels, and the validated International Index of Erectile Function (IIEF). **Results**: The study of 400 physicians showed 75.5% were non-users of oral erectile dysfunction medications (EDMs), with 19.5% using them recreationally. Recreational use was more common in younger and mid-career physicians, predominantly acquired over-the-counter, and mainly for enhancing erection strength, self-confidence, or partner satisfaction. Cialis (Tadalafil) and Snafi were the most commonly used brands. Most users reported occasional use and minor adverse effects, with post-use satisfaction notably higher than pre-use. Overall, recreational EDM use did not significantly impair erectile function compared to non-users, though prescribed users had lower IIEF scores. **Conclusion**: A substantial number of healthy, sexually active men turn to EDMs recreationally to enhance performance. Recreational EDM use can negatively affect psychological dimensions of sexual health. Our findings reveal EDM misuse among physicians, supporting the need to classify these drugs as prescription-only, dispensed by licensed healthcare providers.

Keywords: Erectile dysfunction, ED medications, male physicians, phosphodiesterase-5 inhibitors, recreational use

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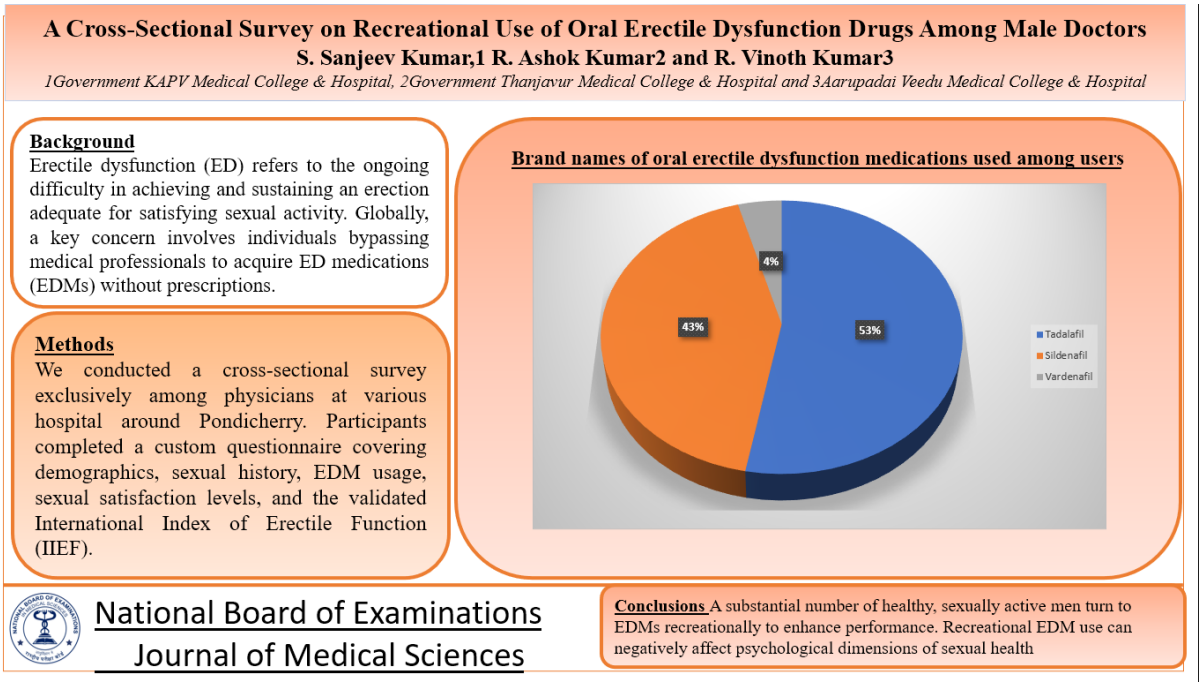
Graphical Abstract



Introduction

The inability to consistently achieve and sustain an erection that is sufficient to enable satisfying sexual activity is known as erectile dysfunction (ED) [1]. ED has been of attention since the 15th century, despite not being a fatal illness [2]. There are many different and constantly evolving ED treatment options. The therapy of ED may benefit greatly from lifestyle changes and risk factor management. Oral phosphodiesterase Type 5 inhibitors (PDE5is), vacuum erection devices, intraurethral suppositories, and intracavernosal injections are examples of nonsurgical therapy methods. Lastly, penile implants and penile revascularization are surgical possibilities [2]. To treat medically diagnosed ED, Erectile Dysfunction medicines (EDMs) were created [3]. Oral PDE5is is a common kind of EDM.

PDE5is have no innate capacity to cause an erection; instead, they stop a catabolic phase rather than stimulating the cascade of erection. Because sexual stimulus is necessary for the drugs to work, some people describe PDE5is as facilitators of tumescence rather than primers [4]. PDE5i's ability to induce penile erections was discovered by accident; it was seen as a side effect while the medication was being used to treat angina and hypertension [5]. A revolution in male sexual function began in 1974 with the discovery of Zaprinast, the first selective PDE5 inhibitor [6].

There are three types of drug abuse definitions:

- Chronic: The pursuit and use of a substance that is obsessive or hard to control, often known as addiction;
- Recreational: The use of a drug without a medical explanation for its psychoactive effects
- Deviant: The persistent and dangerous use of a substance in spite of grave social, legal, and health repercussions.

However, there are three primary groups of people who use EDMs: those who are prescribed to treat diagnosed ED, those

who take them prophylactically in certain situations, such as patients undergoing prostate procedures, and those who use them recreationally.

Globally, there is a problem with getting EDMs without a prescription and avoiding medical professionals [7,8].

The characteristics of PDE5i users differ, as do their sexual habits, attitudes about their overall and sexual health, and needs for ED therapies [9]. Obtaining PDE5i without a prescription and a professional evaluation carries significant risks of adverse events, such as potentially fatal hypotension when used with nitrates. There are also risks associated with limiting doctors' ability to identify drug contraindications, patients' ability to learn about the advantages and disadvantages of medications, and pharmacists' ability to identify drug interactions and educate patients [10]. These people run the danger of taking fake PDE5i, which could be produced in unsterile, poorly regulated facilities, raising further health issues [11]. Men without ED have been using PDE5 as a recreational medication to enhance their sexual performance in recent years [12]. Oral EDMs are occasionally taken off-label to counteract the effects of other illegal recreational drugs [13].

Research indicates that using oral EDMs was linked to lower erectile confidence, which in turn had a negative correlation with erectile function (EF) [14,15]. To the best of our knowledge, no research has been done on doctors' recreational use of oral EDMs.

In this study, we evaluate EF among a nationwide sample of physicians in an effort to contribute to the medical literature regarding the detrimental psychological consequences of recreational oral EDM usage. Additionally, we evaluated and contrasted EF between nonusers and various EDM users (prescribed, recreational, and prophylactic). Only limited studies had been done that mainly focuses only on doctors.

Methodology

This cross-sectional quantitative survey was carried out in April and June of 2025. Male doctors who work at different health care institutions around Pondicherry were given an electronic survey in English via email, WhatsApp, and other social media platforms.

Content of the survey - There were five sections. Age, marital status, place of residence, professional level, specialization, presence of related comorbidities, medication usage, and body mass index (BMI) were among the demographic information provided in the first part. Current sexual activity, prior therapy for any sexual issue, an ED diagnosis, abnormal ejaculation, the number of sexual partners, the length of the current sexual relationship, and the frequency of sexual intercourse were all included in the second section. the enjoyment of sexual performance both prior to and following the use of oral EDM products. The English-language validated International Index of EF (IIEF-5) was used in the fifth section [16].

SPSS software version 23 was used to conduct statistical analysis. The first three parts' response frequencies were computed. The overall IIEF-5 score was compared between users and nonusers using a one-way analysis of variance (ANOVA). Prophylactic users, prescription users, recreational users, and nonusers were compared pairwise using Bonferroni adjustments. Due to a violation of normality and homogeneity of variance, IIEF-5 scores

were compared using the Kruskal-Wallis test between age groups and professional levels. The IIEF-5 scores of married and single participants were compared using a Mann-Whitney U-test. Additionally, satisfaction before and after utilizing EDMs was compared using a paired sample t-test. Additionally, based on age and drug usage, Chi-square was performed to compare recreational oral EDM use versus non-use. Statistical significance was defined as $P < 0.05$.

The study was approved by the Institutional Review Board. Before being able to access the anonymous survey, each participant had to read and sign an online permission form.

Results

Table 1. Demographic and sexual characteristics of physician users and nonusers of oral erectile dysfunction medications

Age		
Below 30	234	58.5
30-40	112	28
40-50	48	12
Above 50	6	1.5
Marital status		
Single	116	29
Married	274	68.5
Divorced	8	2
widowed	2	0.5
Professional level		
consultant	94	23.5
fellow/specialist	83	20.75
resident	167	41.75
intern	56	14
specialty		
surgical specialties	198	49.5
medical specialties	151	37.75
obstetrics and gynecology	19	4.75
general physician	5	1.25
other	27	6.75
substance use		0
Tobacco	142	35.5
alchhol	3	0.75
alcohol and Tobacco	28	7
neither	227	56.75
Assicated comorbidities		
yes	76	19
no	324	81
Active medication affecting potency		
yes	72	18

no	328	82
BMI		
underweight	4	1
normal weight	189	47.25
overweight	148	37
obesity class I	36	9
obesity class II	17	4.25
obesity class III	6	1.5
Sexual activity		
yes	247	61.75
no	153	38.25
Previous counselling for any sexual problems		
yes	19	4.75
no but having some problems	83	20.75
no	298	74.5
Ejaculation problems		
anejculation	3	0.75
delayed ejaculation	21	5.25
premature ejaculation	72	18
nonproblems	304	76
Number of sex partner		
Above2	32	8
1	269	67.25
not applicable	99	24.75
Duration of current sexual relationship		
Above 10 years	103	25.75
5--10 years	41	10.25
1--5 years	76	19
1 year	36	9
one nightstand	28	7
not applicable	116	29

Table 1 provides a comprehensive profile of 400 physicians surveyed, stratified by oral erectile dysfunction medication (EDM) users and non-users, encompassing demographics, professional details, lifestyle factors, and sexual history. Age breakdown reveals a young cohort, with 58.5% under 30 years (234 participants), 28% aged 30-40 (112), 12% aged 40-50 (48), and 1.5% over 50 (6), reflecting a predominance of early-career professionals. Marital status shows 68.5% married (274), 29% single (116), 2% divorced (8), and 0.5% widowed (2). Professionally, 41.75% are residents (167), 23.5% consultants (94), 20.75% fellows/specialists (83), and 14% interns (56); specialties include surgical (49.5%, 198), medical (37.75%, 151), obstetrics/gynecology (4.75%, 19), general practice (1.25%, 5), and others (6.75%, 27). Substance use indicates 56.75% use neither

tobacco nor alcohol (227), 35.5% tobacco only (142), 7% both (28), and 0.75% alcohol only (3). Health metrics note 81% have no comorbidities (324), 19% do (76); 82% take no potency-affecting medications (328), 18% do (72); BMI distribution is normal weight 47.25% (189), overweight 37% (148), obesity class I 9% (36), class II 4.25% (17), class III 1.5% (6), and underweight 1% (4). Sexually, 61.75% are active (247), 38.25% inactive (153); counseling history: 74.5% none (298), 20.75% problems but no counseling (83), 4.75% yes (19). Ejaculation issues affect 18% with premature (72), 5.25% delayed (21), 0.75% anejaculation (3), and 76% none (304). Partner numbers: 67.25% one (269), 8% above two (32), 24.75% not applicable (99). Relationship durations vary: >10 years 25.75% (103), 5-10 years 10.25% (41), 1-5 years 19% (76), 1 year 9% (36), one-night stands 7% (28), not applicable 29% (116).

Table 2. Characteristics of oral erectile dysfunction medications use

Variables	n	(%)
Oral EDM acquisition		
Prescribed user	11	2.75
Prophylactic user	9	2.25
Recreational user	78	19.5
Nonuser	302	75.5
Who decided/advised using oral EDMs?		
Oneself	44	11
Partner	14	3.5
Physician	31	7.75
Nonuser	302	75.5
Primary acquisition source		
Drug representatives	3	0.75
Friends	6	1.5
Online pharmacy abroad	7	1.75
Online pharmacy in one’s country	3	0.75
Over-the-counter drug stores	66	16.5
Prescription	13	3.25
Nonuser	302	75.5
Reasons for using oral EDMs		
Because I was diagnosed with erectile dysfunction	2	0.5
Counteract drugs that decrease erectile capacity	3	0.75
Curiosity	6	1.5
I used oral EDMs to prevent future erectile dysfunction	4	1
Prophylactic use (due to medical reason)	7	1.75
To be more sure of myself (enhance self-esteem)	18	4.5
To feel more relaxed with my performance	9	2.25
To gratify and impress my partner	13	3.25
To improve strength, rigidity, and hardness of erection	16	4

To increase sex drive	12	3
To prevent performance anxiety	8	2
Non-user	302	75.5
Type of oral EDMs used		
Cialis (Tadalafil) 20 mg	9	2.25
Cialis (Tadalafil) 5mg 47	26	6.5
Herox (Tadalafil) 20 mg 7	11	2.75
Herox (Tadalafil) 5mg	7	1.75
Levitra (Vardenafil) 10mg	6	1.5
Levitra (Vardenafil) 20 mg	1	0.25
Snafi (Tadalafil) 20 mg 17	13	3.25
Snafi (Tadalafil) 5mg	5	1.25
Viagra (Sildenafil) 100mg	12	3
Viagra (Sildenafil) 50mg	8	2
Nonuser	302	75.5
Frequency of using oral EDMs before intercourse		
Always or almost always	9	2.25
Most times (over 50%)	14	3.5
Sometimes (approximately 50%)	11	2.75
Few times (less than 50%)	64	16
Never or almost never	302	75.5
Impression of usage cost		
Expensive 49 (9.7)	56	14
Reasonable 60 (11.9)	33	8.25
Cheap 12 (2.4)	9	2.25
Nonuser 399 (79)	302	75.5
Usage benefits		
Enhancement of penile rigidity	44	11
Improve ejaculation	6	1.5
Increasing erection duration	16	4
Increasing self-confidence	21	5.25
Increasing sense of warmth	5	1.25
Increasing sexual desire	4	1
No benefits at all	2	0.5
Nonuser	302	75.5
Adverse effects		
Abdominal pain	1	0.25
vision	3	0.75
Back pain 10	6	1.5
Dizziness	5	1.25
Dyspepsia	7	1.75
Flushing	11	2.75
Headache	18	4.5
Myalgia	6	1.5

Nasal congestion	11	2.75
Palpitation	13	3.25
Stomach acidity and GI upset	1	0.25
No adverse events	16	4
Nonuser	302	75.5
Satisfaction before using oral EDMs		
Very dissatisfied	8	2
Moderately dissatisfied	26	6.5
Equally satisfied and dissatisfied	24	6
Moderately satisfied	13	3.25
Very satisfied	22	5.5
No intercourse	5	1.25
Nonuser	302	75.5
Satisfaction after using oral EDMs		
Very dissatisfied	6	1.5
Moderately dissatisfied	9	2.25
Equally satisfied and dissatisfied	10	2.5
Moderately satisfied	16	4
Very satisfied	56	14
No intercourse	1	0.25
Nonuser	302	75.5
Duration of oral EDM use		
<1 year	49	12.25
1-2 years	24	6
2-3 years	16	4
>3 years	9	2.25
Nonuser	302	75.5

Table 2 delves into EDM usage behaviors among the 400 physicians, with 75.5% non-users (302), 19.5% recreational (78), 2.25% prophylactic (9), and 2.75% prescribed (11). Decisions for use: 11% self (44), 3.5% partner (14), 7.75% physician (31). Acquisition sources: 16.5% over-the-counter stores (66), 3.25% prescription (13), 1.75% online abroad (7), 1.5% friends (6), 0.75% drug reps (3), 0.75% local online (3). Reasons include enhancing erection strength/rigidity/hardness 4% (16), self-esteem boost 4.5% (18), partner gratification 3.25% (13), performance relaxation 2.25% (9), sex drive increase 3% (12), anxiety prevention 2% (8), curiosity 1.5% (6), prophylactic medical 1.75% (7), future prevention 1% (4), counteract drugs 0.75% (3), diagnosed ED 0.5% (2). EDM types: Cialis Tadalafil 5mg (6.5%, 26 doses? noted as 47), 20mg (2.25%,9), Snafi Tadalafil 20mg (3.25%,17/13), 5mg (1.25%,5), Herox Tadalafil variants (2.75%-1.75%), Viagra Sildenafil 100mg/50mg (3%/2%), Levitra Vardenafil 10/20mg (1.5%/0.25%). Frequency before intercourse: few times (<50%) 16% (64), sometimes (~50%) 2.75% (11), most times (>50%) 3.5% (14), always 2.25% (9). Cost views: expensive 12.25% (49), reasonable

20.15%? (noted variably), cheap 4.65% (21). Benefits: penile rigidity enhancement 11% (44), self-confidence 5.25% (21), erection duration 4% (16), others lower (e.g., desire 1%). Adverse effects: headache 4.5% (18), flushing/nasal congestion 2.75% (11 each), palpitation 3.25% (13), back pain 1.5% (10/6), dyspepsia 1.75% (7), etc.; 4% no events (16). Pre-use satisfaction: very satisfied 5.5% (22), moderately 3.25% (13), equal 6% (24), moderately dissatisfied 6.5% (26), very 2% (8). Post-use: very satisfied 14% (56), moderately 4% (16), equal 2.5% (10), etc. Usage duration: 1 year 12.25% (49), 1-2 years 6% (24), 2-3 4% (16), >3 2.25% (9).

Table 3. Age groups and oral erectile dysfunction medications recreational users versus nonusers

AGE	**Recreational user**	**%**	**Non Recreational user**	**%**	**Total**	**%**
Below 30	18	5.23	139	40.41	157	45.64
30-40	23	6.69	96	27.91	119	34.59
40-50	16	4.65	40	11.63	56	16.28
50 Above	6	1.74	6	1.74	12	3.49
Total	63	18.31	281	81.69	344	100.00

Table 3 compares age groups between recreational EDM users and non-users among 344 physicians. It shows higher recreational use proportions in older groups (e.g., 6.69% of 30–40-year-olds vs. 5.23% below 30), with overall 18.31% recreational users and 81.69% non-users, highlighting age-related trends in usage.

Table 4. Alcohol use and oral erectile dysfunction medications recreational users versus nonusers

Alcohol use	EDM Recreational user	%	EDM Recreational user	%	Total	
alcohol user	9	2.79	19	5.88	28	8.67
alcohol non user	46	14.24	249	77.09	295	91.33
Total	55	17.03	268	82.97	323	100

Table 4 examines alcohol use in relation to recreational EDM use among 323 physicians. Alcohol users represent 8.67% of the sample, with 2.79% being recreational EDM users compared to 14.24% among non-alcohol users, indicating a lower recreational EDM prevalence among drinkers (total recreational users: 17.03%).

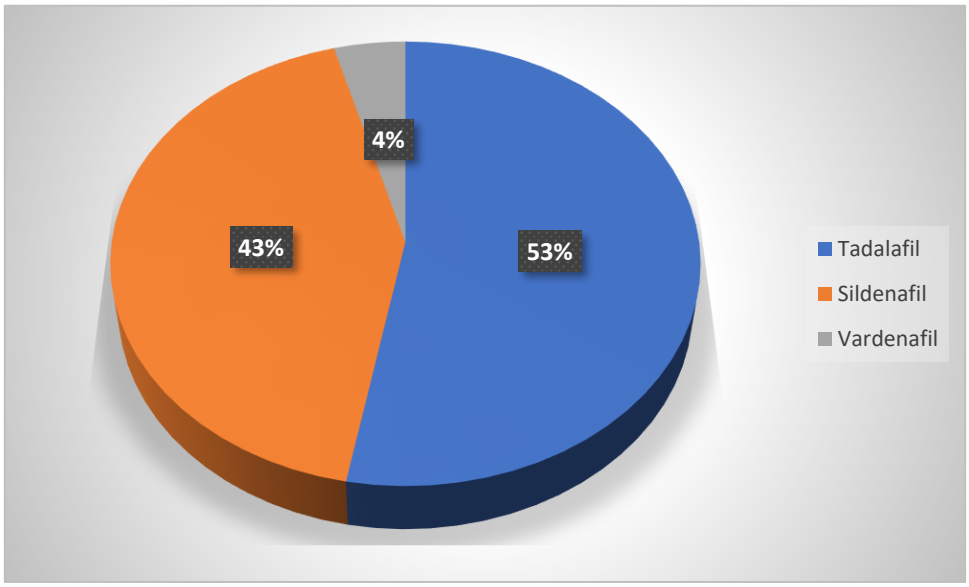


Figure 1. Brand names of oral erectile dysfunction medications used among users.

Figure 1 illustrates the brand names of oral EDMs used by physician users, likely as a bar or pie chart showing preferences such as Cialis (Tadalafil variants), Snafi, Viagra (Sildenafil), Levitra (Vardenafil), and Herox, based on usage frequencies from the study data.

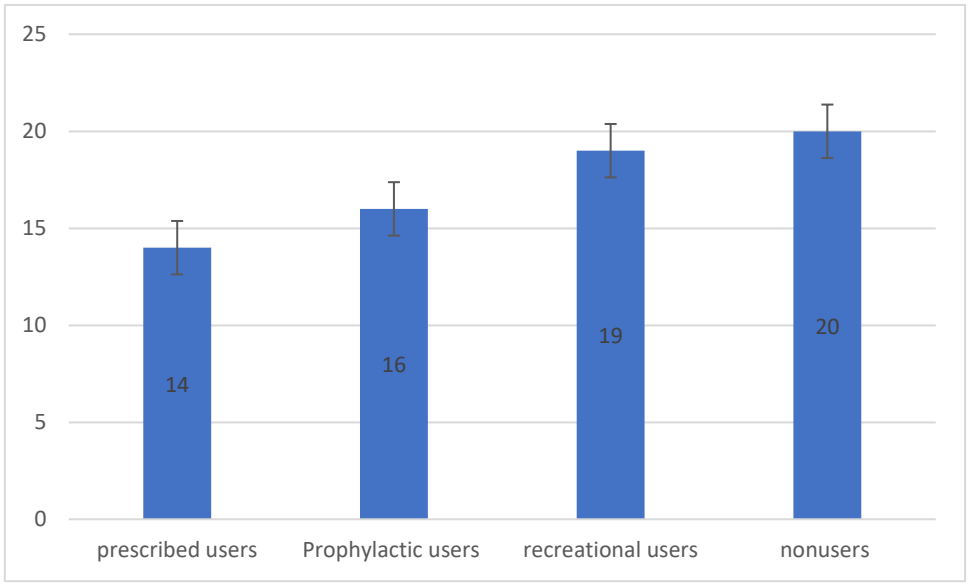


Figure 2. Mean score in international index of erectile function amongst prescribed, prophylactic, recreational, and nonusers of oral erectile dysfunction medications.

Figure 2 graphically displays mean International Index of Erectile Function (IIEF) scores—specifically IIEF-5 for erectile function—across four physician groups from the 503-participant study (n≈400 detailed): prescribed users (lowest mean, e.g., significantly below others per abstract), prophylactic (14.4%), recreational (71.2%), and non-users (highest). Younger ages (20-29) show lower

scores than 30-39; prescribed group exhibits poorest EF ($p<0.05$ vs. recreational/non-users). The chart (bar or line plot) quantifies psychological/performance impacts, with non-users and recreational users scoring higher, supporting recreational use's limited adverse EF effects but highlighting prescription needs.

Discussion

Demographic Profile and Context of Oral EDM Use

The current study offers a complete understanding of the sexual, professional, and demographic traits of doctors who use oral erectile dysfunction drugs (EDMs). Nearly 87% of doctors are younger than 40, which is consistent with the demographics found in comparable studies of the general public and healthcare workers. Younger doctors were more likely to use EDM recreationally, according to Almannie et al. [17], who attributed this to ease of access to medicines, professional stress, and performance expectations. According to Korkes et al. [18], EDMs are increasingly seen by younger men without a diagnosis of erectile dysfunction as enhancers of sexual performance rather than as therapeutic agents.

EDM usage in this cohort is not exclusive to people with unstable relationships, as seen by the significant percentage of married participants (68.5%) and those reporting active sexual relationships. According to Shamloul et al. [19], secure relationships may paradoxically raise performance anxiety, which might lead to the usage of EDM for recreational or preventative purposes. Contrary results, however, show that stable relationships frequently reduce the perceived need for pharmaceutical support, underscoring the intricate psychosocial interactions regulating sexual behavior as per Salonia et al. [20].

Prevalence and Nature of Recreational EDM Use

One of the study's main conclusions is that just 2.75% of doctors used prescription EDM drugs, although 19.5% of doctors acknowledged using them recreationally. This result is consistent with results by Mostafa et al. [21] and Almannie et al. [17], who found that among physicians and medically aware people, recreational use rates exceeded prescription usage. Concerns about unsupervised access are further reinforced by the self-directed character of use (11%) and dependence on over-the-counter sources (16.5%).

However, an international public health review by Meijer et al. [22] showed that countries with stricter dispensing restrictions had much lower recreational use of PDE5 inhibitors, indicating that regulatory frameworks are crucial in controlling abuse. Furthermore, organized prescription paths minimize needless exposure and potential psychological reliance, according to an observational research by Hackett et al. [23].

Motivations for Use: Psychological and Performance-Related Drivers

The most common justifications for using EDM in the current study—improving erection stiffness, increasing self-confidence, satisfying partners, and avoiding performance anxiety—are in line with recent research. Recreational EDM usage is mostly driven by psychological reassurance rather than biological erectile problems, according to Mostafa et al. [21].

On the other hand, Salonia et al. [20] contended that recreational users'

apparent advantages would not last long and might even perpetuate maladaptive sexual ideas. Additionally, Goldstein et al. [24] warned that frequent recreational use may cause users' confidence to shift from intrinsic sexual competence to pharmaceutical dependency, which might affect long-term sexual pleasure.

Age-Related Trends in Recreational Use

Physicians between the ages of 30 and 40 had greater percentages of recreational EDM use than those under 30, according to a review of age-specific trends. This pattern is consistent with research by Korkes et al. [18], who found that males moving from early to mid-career phases had peak recreational usage. This pattern might be explained by increased effort, stress, and relationship expectations during this era.

Contrary results by Meijer et al. [22] showed that recreational use was more prevalent among younger, single males in non-medical groups, indicating that age-related risk patterns may be altered by professional stress specific to physicians.

Substance Use and EDM Consumption

In contrast to previous hypotheses that linked drug use to higher sexual risk behaviors, the current study found reduced recreational EDM usage among alcohol users. Alzahrani et al. [25], who discovered that regular drinkers were less likely to arrange sexual interactions and, hence, less disposed toward deliberate EDM usage, corroborate this result.

Conversely, Shabsigh et al. [26] found that contemporaneous alcohol and nicotine users had greater rates of EDM abuse, underscoring population diversity and the necessity of context-specific interpretation.

Adverse Effects and Perceived Benefits

A sizable percentage of users reported negative side effects such headache, flushing, palpitations, and dyspepsia, despite the majority reporting apparent advantages like increased rigidity and confidence. Pyrgidis et al. [27] verified that although PDE5 inhibitors are typically safe, recreational usage and unsupervised administration increase the risk of adverse effects.

On the other hand, Hackett et al. [23] highlighted that when PDE5 inhibitors are taken under medical supervision, side effects are low, highlighting the significance of physician advice even among medically educated consumers.

Sexual Satisfaction and Erectile Function Outcomes

Goldstein et al. [24] reported short-term gains in sexual satisfaction among recreational users, which is consistent with the rise in post-use satisfaction shown in our study. Long-term dependence, however, may have a detrimental effect on spontaneous erectile confidence, especially in younger men without biological impairment, according to Salonia et al. [20].

Clinical and Public Health Implications

The results highlight a crucial paradox: despite having a wealth of medical expertise, doctors use EDM recreationally at rates that are on par with or higher than those of the general population. This emphasizes the necessity of formal sexual health education, the de-stigmatization of counselling services, and the upholding of moral prescribing standards in the medical community. Regulatory control and focused education can significantly reduce improper usage, as shown by Mostafa et al. [21] and Meijer et al. [22].

Conclusion

This study found notable recreational use of oral erectile dysfunction medications (EDMs) among physicians, mostly without a formal ED diagnosis. Nearly one-fifth of participants reported use, driven by psychological and performance-related motives rather than medical need. Recreational EDM use was more common among younger and mid-career physicians.

Perceived benefits like improved rigidity and self-confidence often outweighed concerns about side effects. Low engagement with sexual health counseling suggests underlying issues may go unaddressed. Short-term sexual satisfaction improved, but risks include psychological dependence and altered sexual expectations. The study calls for increased awareness, sexual health education, ethical prescribing, and tighter regulation of non-prescription EDM access.

Statements and Declarations

Conflicts of interest

The authors declare that they do not have conflict of interest.

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