

## Treatment of Unconsummated Marriage in Psychogenic Erectile Dysfunction among Iranian Couples

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**Purpose:** Sexual dysfunction associated with psychological reasons is one of the factors impacting unfulfilled marriages. There are limited data on treatment outcomes in this context. The aim of this study was determining the treatment of unconsummated marriage in psychogenic erectile dysfunction in Iranian Couples.

**Materials and Methods:** A total of 66 cases were selected from individuals referred to the Family Health Clinic (from 2006 to 2019), who had unconsummated marriages and experienced psychogenic erectile dysfunction, meeting the inclusion criteria for the study. Research tools included couples' demographic information, face-to-face interviews, and the International Index of Erectile Function (IIEF). The treatment was based on couple's therapy. In the initial session, a comprehensive assessment of the couples' condition was conducted, and research instruments were completed. Additionally, during this session, the formation of psychogenic erectile dysfunction and the lack of successful foreplay were discussed. In subsequent sessions, desensitization, instruction on foreplay, and intercourse were addressed. Treatment success was defined as the ability to achieve complete vaginal penetration. Data was analyzed using SPSS 16 software.

**Results:** All 66 couples continued the treatment until they achieved successful vaginal penetration. All International Index of Erectile Function (IIEF) domains improved significantly after couple-based behavioral therapy in men with psychogenic erectile dysfunction in unconsummated marriages (all  $p < .001$ ; large effect sizes for most domains). No significant associations were found between educational level, place of residence, engagement duration, or marriage duration and post-treatment scores (all  $p > 0.05$ ). Male age correlated negatively with overall ED ( $r = -.314, P = .001$ ), erectile function ( $r = -.361, P = .003$ ), intercourse satisfaction ( $r = -.365, P = .003$ ), and overall satisfaction ( $r = -.266, P = .031$ ). Similar negative associations were observed for female age with overall ED ( $r = -.371, P = .002$ ), erectile function ( $r = -.354, P = .004$ ), intercourse satisfaction ( $r = -.344, P = .005$ ), and overall satisfaction ( $r = -.246, P = .047$ ).

**Conclusion:** Psychogenic erectile dysfunction in unconsummated marriage can be addressed through couple-based therapy.

**Keywords:** unconsummated marriages; erectile dysfunction; erectile function; psychogenic erectile dysfunction; intercourse; couple therapy

## INTRODUCTION

Unconsummated marriage refers to a situation where a couple cannot achieve complete vaginal intercourse after marriage, sometimes persisting for years.<sup>(1-3)</sup> Definitions vary regarding the duration of marriage or number of attempts, reflecting the cultural context in which they are used.<sup>(4-6)</sup> This disorder is more common in traditional societies, with prevalence ranging from 7% to 63.9% across different communities.<sup>(7)</sup> In Iran, no documented prevalence exists; however, Foroutan et al. reported an 8% prevalence of vaginismus among individuals seeking treatment at a family health clinic over three years.<sup>(8)</sup> In a Turkish study, the reasons for unsuccessful intercourse were 67% female-related, 7% male-related, and 26% related to both genders.<sup>(9)</sup> Conversely, Murugan believes that 90% of unconsummated marriages are due to a problem in the male partner.<sup>(5)</sup>

Recent regional studies have demonstrated the role of socio-cultural norms in the persistence of unconsum-

mated unions and the effectiveness of non-pharmacological interventions.<sup>(10,11)</sup> Unconsummated marriages can lead to emotional distance, mutual blame, frequent conflicts, lack of trust, infidelity, or divorce.<sup>(13)</sup> Reported causes fall into three categories: female-related (vaginismus and other painful gynecological issues), male-related (erectile dysfunction and premature ejaculation), and shared factors. Most Eastern studies attribute this phenomenon primarily to cultural factors and couple interpersonal relationships.<sup>(3,4,10,12)</sup> Few studies have examined the impact of the woman's condition on male erectile dysfunction; however, some have suggested a link between vaginal atrophy or vaginismus and male sexual dysfunctions such as erectile dysfunction or premature ejaculation.<sup>(10,13)</sup>

Erectile dysfunction (ED) is defined as the persistent or recurrent inability to attain and maintain an erection sufficient for intercourse for at least three months.<sup>(14)</sup> Its prevalence in men under 40 years has been reported at 30%.<sup>(15)</sup> Causes may be organic (diseases, medications, surgery) or non-organic (psychological factors includ-

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**Table 1.** Demographic status in 66 couples with unconsummated marriages

variable		Female(N=66) Frequency (percent)	male(N=66) Frequency (percent)
Educational level	illiterate	0	1(1.5)
	High school	4 (6.1)	5(7.6)
	After high school	20(30.3)	11(16.7)
	University	42(72.6)	49(71.5)
	housewife	37(56.1)	0
Job status	employer	25(37.9)	44(66.7)
	Free job	1(1.5)	21(31.8)
	University student	3(4.5)	1(1.5)
Living location	Tehran(capital city)		41(62.2)
	Other cities		25(37.8)

ing anxiety, depression, communication issues).<sup>(16-19)</sup> In young men without vascular risk factors, psychological factors are often the primary cause.<sup>(19)</sup> Fear of repeated failure can hinder further attempts, creating a vicious cycle of sexual performance anxiety that may cease all sexual activity and increase marital distance.<sup>(20)</sup> Based on a review of studies worldwide and in Iran, no research has specifically addressed the impact of treating psychogenic erectile dysfunction in couples with unconsummated marriage. Therefore, this study is designed to treat psychogenic erectile dysfunction without explicitly focusing on it during the therapeutic process for unconsummated marriage, thereby effectively resolving the erectile dysfunction.

## MATERIALS AND METHODS

This study was a retrospective single-arm before–after clinical investigation conducted from January 2006 to December 2019 at the Family Health Clinic of Shahed University, Tehran, Iran.

**Study Population:** A comprehensive census approach was used, including all couples visiting this center who were experiencing unconsummated marriages. Based on interviews and completing forms, psychogenic erectile dysfunction was diagnosed in couples. In this research, unconsummated marriages refer to couples who have been married, and at least 2 months have passed since they have tried to have vaginal penetration, yet they have been unable to have complete intercourse, and there are no physical issues. Urology specialists diagnosed unconsummated marriages and psychogenic erectile dysfunction.

Since the number of eligible couples with unconsummated marriages and psychogenic erectile dysfunction was limited, a census method was used, and all cases meeting the inclusion criteria during the study period

were included. Therefore, no separate sample size calculation was required. This approach ensured that the study captured all available cases within a 13-year period, maximizing representativeness and statistical power.

Of 225 couples screened, 137 met the eligibility criteria and were diagnosed with unconsummated marriage combined with psychogenic erectile dysfunction. Eighty-eight couples were excluded for medical comorbidities, organic causes of ED, substance/alcohol use, or otherwise not meeting diagnostic criteria. During treatment, 60 couples were referred to a psychologist for family or interpersonal issues, and 11 couples withdrew after the first session. Sixty-six couples completed the intervention and were analyzed.

Inclusion and exclusion criteria, as well as diagnostic procedures conducted by urology specialists, are detailed below then.

**Inclusion and exclusion criteria:** For inclusion criteria, couples were selected in which men had complete morning erections and did not have erectile dysfunction before their first attempt at intercourse. Additionally, none of the men were using medications affecting erectile function. All marriages were heterosexual, and extramarital sexual relationships were not reported by the couples. The couples had a good relationship with each other and did not exhibit behavioral or marital disorders during the initial visit. Couples with medical conditions (sleep disorders, hypertension, diabetes, thyroid disorders, renal issues, cardiovascular diseases, sexually transmitted infections), those who experienced abdominal, pelvic, or reproductive surgeries, those with neurological disorders, and couples with psychopathological disorders with a history of substance or alcohol abuse in the past 24 months were excluded from the study. The secondary sexual characteristics of the couples were normal. The body mass index (BMI) of

**Table 2.** Erectile dysfunction before and after treatment in 66 couples with unconsummated marriages

Variable	Before treatment Median (Q3-Q1)	After treatment Median (IQR)	Wilcoxon Test	Effect size
Erectile dysfunction	17 (18-16)	48.5 (53-43.7)	$z = 7.071$ $P < .001$	$r = .870$
Erectile function	1(1-2.25)	22 (23-20)	$z = 7.084$ $P < .001$	$r = .871$
Orgasmic function	6(7-5)	6(8-6)	$z = 3.665$ $P < .001$	$r = .451$
Sexual desire	7(7-6)	6(7-6)	$z = 2.843$ $P = .004$	$r = .349$
Intercourse satisfaction	1(1-1)	8(10-7)	$z = 7.116$ $P < .001$	$r = .875$
Overall satisfaction	2(3-2)	6(6-5)	$z = 7.130$ $P < .001$	$r = .877$

**Table 3.** Correlation of erectile dysfunction and its domains base on age of 66 men with erectile dysfunction

Erectile dysfunction and its domains	Spearman test		Male age r (95% CI)		Female age Spearman test r (95% CI)			
	r	P	lower	upper	r	p	lower	upper
Erectile dysfunction	-.314	.001	-.578	-.150	-.371	.002	-.567	-.134
Erectile function	-.361	.003	-.560	-.123	-.354	.004	-.554	-.115
Orgasmic function	-.242	.051	-.463	.008	-.220	.076	-.445	.030
Sexual desire	-.123	.325	-.361	.130	-.139	.265	-.375	.114
Intercourse satisfaction	-.365	.003	-.522	-.127	-.344	.005	-.546	-.104
Overall satisfaction	-.266	.031	-.483	-.018	-.246	.047	-.466	.003

all couples ranged between 18.5 and 25, indicating that they did not experience abnormal weight gain or loss. Additionally, no woman was in the menopausal stage. As there was no mention of anatomical abnormalities in the description of men's conditions, genital examination was avoided to prevent stress in couples. Additionally, any form of genital examination in women, even if not accompanied by spasms, could potentially create negative memories and affect the treatment process. Therefore, women were not examined. Furthermore, since a decrease in sexual desire by the couples was not reported, hormonal tests were not requested for individuals experiencing unconsummated marriages.

It is worth mentioning that most of the individuals referred to this center after various unsuccessful interventions such as behavioral therapy, drug therapy, hymenectomy, etc. The delay in treatment often led to their discouragement, family conflicts, and interference from others in their lives. Consequently, while treatment, 60 couples were referred to as a psychologist due to family problems, and 11 couples withdrew treatment after the first session. Eventually, 66 couples were included in the study.

All participants (n=137 at baseline and n=66 finally) reported regular morning erections, verified by urology specialists during clinical interviews, consistent with established criteria for psychogenic ED diagnosis.

None of the men, except two of them, mentioned erectile dysfunction before initiating their first attempt at intercourse. These two men had complete erections before marriage but experienced erectile dysfunction after marriage due to anxiety-related thoughts about marital relationships.

**Procedures:** As sexual relations involve both spouses, the treatment is more likely to succeed when the couple actively participates in therapy sessions together, even when the sexual issue has a male origin. The increased collaboration and coordination of the couple during therapy sessions contributed to achieving more desirable outcomes in the treatment process.<sup>(22)</sup> Therefore, the treatments were structured based on couples' therapy, and both spouses attended the therapy sessions together. The intervention was delivered by two post-graduate-trained therapists specializing in sexual health counseling and clinical psychology, each with over 10 years' experience in the management of psychogenic sexual dysfunctions. Sessions lasted 60–90 minutes and were held weekly or biweekly depending on couple availability and progress, with a median of 4 sessions. Fidelity was maintained using therapist checklists and monthly peer-review meetings to ensure adherence to the protocol. No pharmacologic or device-based interventions were permitted; participants with prior PDE5 inhibitor or injection use underwent a minimum four-week washout prior to enrollment.

Throughout all stages of treatment, couples cooperated and expressed a willingness to undergo therapy and engage in complete intercourse. The number of therapy sessions was set at a minimum of four sessions, considering the progress of the couple. Treatment was designed based on the patient's complaint of erectile dysfunction, the wife's stress, and the lack of vaginal penetration. The treatment method was the same for all couples and did not depend on the duration of marriage. The number of sessions could be increased based on their needs.

The treatment process was as follows: In the first session, a comprehensive assessment of both couples was conducted. Demographic information and the erectile function questionnaire for men were completed by couples. Additionally, in this session, information about how psychogenic erectile dysfunction developed and the lack of successful vaginal penetration was provided. The treatment was based on behavioral therapy. Initially, treatment started with relaxation exercises for the woman, Kegel exercises for both the woman and the man, and intimacy with clothing (the presence of underwear for the woman) to ensure that both spouses felt comfortable during intimate experiences without concerns about penetration. In the second and third sessions, vaginal desensitization by the man's fingers during intercourse was taught to be done at home. Additionally, genital contact in positions woman-on-top and man-on-bottom was utilized for desensitization in the woman, allowing both spouses to experience genital contact without concerns about penetration. This method contributed to the psychological well-being of both. In the fourth session, the couple was instructed on the proper way to engage in intimacy. In sessions, occasional psychodynamic interventions were implemented for men to enhance self-confidence. The emphasis was also placed on the role of intimacy and attention to each other's emotional and sexual needs as a couple. Based on the progress of the couple and the response to treatment, the number of sessions increased as necessary. Drug-based treatments such as sildenafil and physical interventions like vacuum devices were not utilized to induce an erection.

The successful response to treatment was reflected in the ability to achieve complete vaginal penetration. Following this success, men completed the erectile function questionnaire once again.

**Evaluations:** The research tools included a Demographic Information Questionnaire for couples, face-to-face interviews with couples, and the questionnaire. Mulhall et al. have shown that the rigidity of the penis, as measured by the International Index of Erectile Function (IIEF- $\bar{E}$ F), has a positive correlation with the number of sufficiently rigid erections for penetration and, consequently, successful intercourse.<sup>(21)</sup> Therefore, this tool

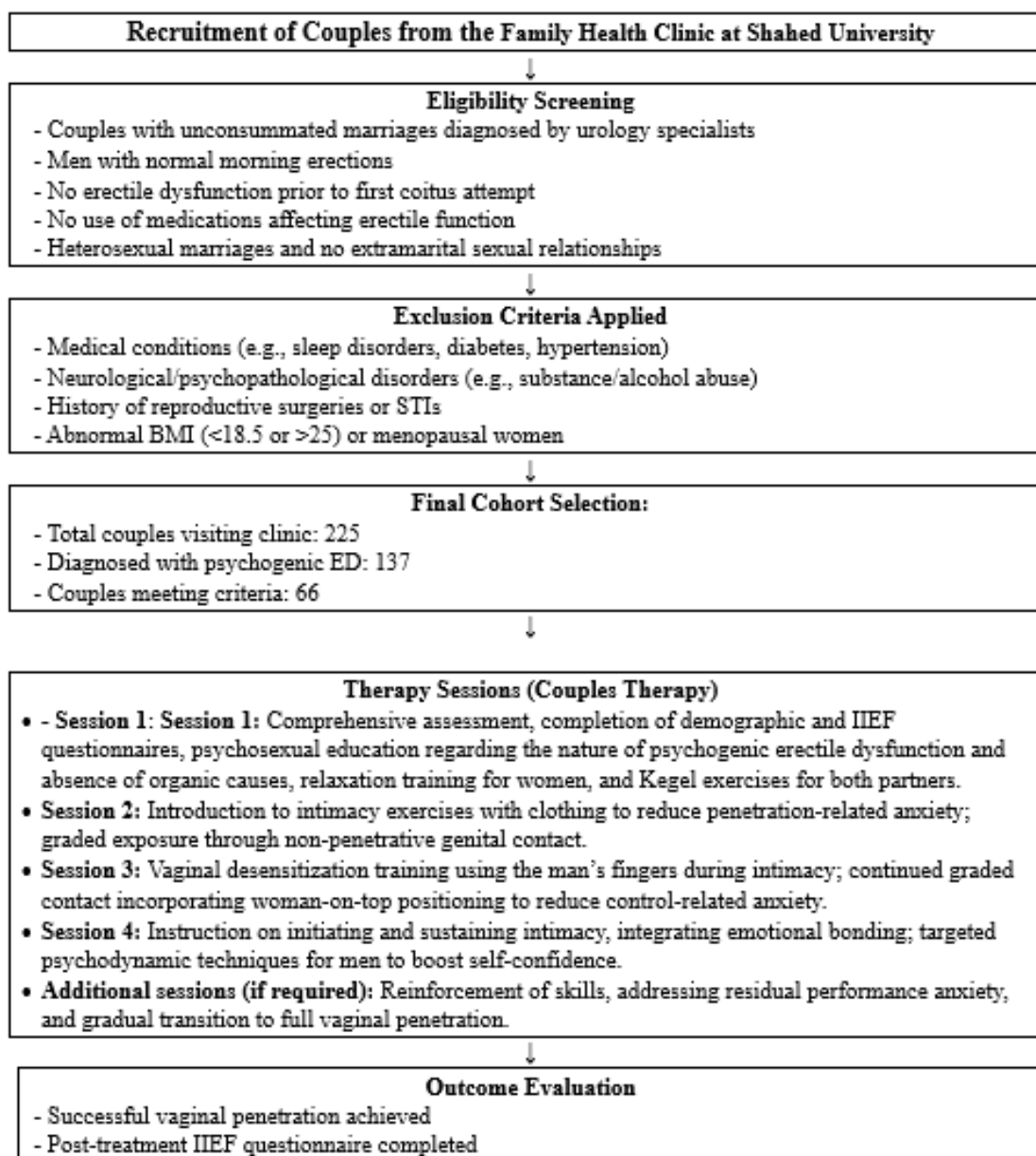


Figure 1: research flow diagram.

was utilized. The full 15-item IIEF was administered, total score range 0–75 (where a score of 75 indicates the absence of erectile dysfunction), with domain-specific ranges: erectile function 0–30, orgasmic function 0–10, sexual desire 0–10, intercourse satisfaction 0–15, and overall satisfaction 0–10. The questionnaire used in many studies in Iran has demonstrated good reliability, with a Cronbach's alpha coefficient of 0.81. Additionally, participants were asked about morning erections, and the presence of this phenomenon confirmed the existence of psychogenic erectile dysfunction.

The current study was done in accordance with the international ethical norms outlined in the Declaration of Helsinki. Prior to their participation in the study, informed consent was obtained from the couples, em-

phasizing the voluntary nature of their involvement. Additionally, assurances regarding the confidentiality of their responses were provided. Participant privacy was maintained through rigorous confidentiality protocols. Each patient was assigned a unique identification code corresponding to their case number, and personal information was securely stored in a restricted-access database. Therapy sessions were conducted in private, confidential settings. To protect participant identities, all data were anonymized prior to analysis. Access to the anonymized dataset was restricted to authorized research team members, and the dataset was encrypted to prevent unauthorized access. Couples were provided with a supportive, culturally sensitive environment. Therapists used empathetic approaches to ensure both

partners felt respected and understood. Couples experiencing high emotional distress were offered additional counseling or referred to mental health specialists as needed. Communication strategies prioritize reassurance and clarity to build trust and reduce anxiety during therapy.

All IIEF questionnaires were fully completed by participants at both stages of assessment; therefore, the dataset contained no missing values, and no imputation methods were required. Figure 1 presents the participant flow diagram.

### Statistical Analysis

The research data were analyzed using SPSS software version 16, employing both descriptive and inferential statistical methods. The alpha level of 0.05 has been considered.

The primary outcome was successful full vaginal penetration. Secondary outcomes included changes in the total IIEF score and in each of its five domains. The IIEF post-treatment assessment was administered immediately after the first successful intercourse and completion of therapy. Normality of baseline, post-treatment, and within-subject difference scores was assessed using the Shapiro–Wilk test. Variables with non-normal difference scores were analyzed using the Wilcoxon signed-rank test. Effect sizes and their 95% confidence intervals were calculated for mean changes and correlations. For skewed distributions, results are reported as median (IQR), and analyses across multiple domains were considered exploratory without formal multiplicity adjustments.

## RESULTS

Shapiro–Wilk tests showed that only women’s age was normally distributed ( $P > .05$ ). All other continuous variables, including men’s age, duration of engagement, duration of marriage, and erectile dysfunction (ED) scores and their domains, deviated from normality ( $P < .05$ ). Therefore, non-normally distributed variables are described as median (IQR), and non-Parametric analyses were used for related comparisons. Parametric tests were applied only to the normally distributed variable (women’s age) when appropriate, and the normality of the pre–post difference scores was assessed to determine whether paired  $t$ -tests or Wilcoxon signed-rank tests were used.

The results on 66 couples with unconsummated marriages with psychogenic erectile dysfunction in their spouses showed that the mean age of men was  $34.03 \pm 5.16$  years, and women’s mean age was  $32.59 \pm 3.89$  years. Most couples had university-level education, with most women being housewives and most men being employees. Forty-one couples (62.2%) were residents of Tehran. Ten percent of men were cigarette smokers.

Mean engagement duration was  $14.71 \pm 11.6$  months, and mean marriage duration was  $37.53 \pm 51.48$  months. The shortest marriage duration was 2 months, while the longest was 17 years (Table 1).

The mean duration of engagement was  $6.11 \pm 7.14$  months, and the mean duration of marriage was  $5.51 \pm 5.37$  months. The shortest marriage duration was 2 months, while the longest was 17 years.

Three couples had a previous marriage, and divorce in their first marriage was also due to sexual disorders.

The remaining couples were in their first marriage at the time of referral. 97% of women during their single period were afraid of intercourse based on peer discussions, internet stories, etc. Only 1.15% (10 women) mentioned a history of hymenectomy. Thirty-seven percent of couples had not received sexual education on how to engage in intimate relations.

Twenty percent of men experienced premature ejaculation while in contact with a woman’s body. Since premature ejaculation did not affect the treatment process, treatment for premature ejaculation was initiated after vaginal penetration.

Three men experienced ejaculation that arose after marriage due to psychological stress. Following vaginal penetration, the issue was resolved. All men reported morning erections, and 68% mentioned ejaculation when exposed to erotic stimulation. None of the men reported pain during the erection. 85% of the patients used medications such as sildenafil and tadalafil, and four cases had experienced papaverine injections as prescribed by previous physicians, with none achieving erection successfully with drug use.

Table 2 presents the Wilcoxon matched-pairs results for erectile dysfunction and its domains in 66 couples with unconsummated marriages, comparing pre- and post-treatment. All six domains show significant improvements after treatment (two-tailed  $p < .001$ ). The effect sizes are large for most domains (approximate  $r$  values: erectile dysfunction = .87; erectile function = .45; orgasmic function = .35; sexual desire = .88; intercourse satisfaction = .88; overall satisfaction = .88). The table also reports the corresponding  $Z$  statistics and medians (with IQR) for pre- and post-treatment.

There was no significant relationship between couple’s education, place of residence, duration of engagement, and marriage with the score of erectile dysfunctions and its domains after treatment. Table 3 presents the Spearman’s rank correlations between age (male and female) and erectile dysfunction (ED) along with its specific domains among 66 men with ED in unconsummated marriages. For male age, there were significant negative correlations with overall ED ( $r = -.314, p = .001$ ), erectile function ( $r = -.361, p = .003$ ), intercourse satisfaction ( $r = -.365, p = .003$ ), and overall satisfaction ( $r = -.266, p = .031$ ). For female age, significant negative correlations were observed with overall ED ( $r = -.371, p = .002$ ), erectile function ( $r = -.354, p = .004$ ), and intercourse satisfaction ( $r = -.344, p = .005$ ). There were also modest but significant associations with overall satisfaction ( $r = -.246, p = .047$ ).

## DISCUSSION

The results showed a significant increase in male erection function after treatment, and all 66 couples had successful vaginal penetration post-treatment. There was a significant increase in four domains, including erectile function, orgasmic function, intercourse satisfaction, and overall satisfaction. However, a significant decrease was observed in the domain of sexual desire. Numerous studies have shown the improvement of erectile dysfunction after behavioral or pharmacological intervention,<sup>(23,24)</sup> supporting the findings of the current research. Furthermore, recent studies published between 2021 and 2023, including Xi et al. (2023) and Tang et al. (2014), have reinforced the evidence that behavioral and culturally sensitive interventions can be

highly effective in improving psychogenic erectile dysfunction.<sup>(10,22)</sup> Xi et al.'s investigation in Chinese couples highlighted the role of socio-cultural factors in the persistence of unconsummated marriages and demonstrated that targeted non-pharmacological interventions yielded significant clinical improvements.<sup>(10)</sup>

As sexual disorders are highly prevalent with a mainly psychological origin, with 90% of young men suffering from psychogenic impotence<sup>(25)</sup>, it is crucial to address psychological causes in men, particularly in their youth and middle age, before any pharmacological or surgical interventions. In the current study, none of the men with erectile dysfunction mentioned experiencing such issues before marriage. The majority reported that their erectile dysfunction occurred specifically during the first attempt at vaginal penetration. This was attributed to anxiety about success or resistance from their spouses, leading to the loss of erection upon contact with the genital area of the woman.

The 100% success rate in achieving vaginal penetration among completers reflects strict adherence to the behavioral couples-therapy protocol, with active participation of both partners. The median number of sessions was five, with no dropouts after the second session. Success was verified through clinician confirmation with both partners' immediately post-event. While no relapses occurred during the immediate post-treatment phase, long-term recurrence was not assessed. The observed decrease in sexual desire domain post-treatment likely reflects the timing of assessment immediately after goal-focused therapeutic intercourse, performance anxiety, and the structured nature of exercises, which may be less pleasure-oriented. Future research should include follow-up assessments at 6–12 months to examine normalization of desire. Given the strict inclusion criteria and the socio-cultural setting of Iranian couples, caution is warranted in generalizing these findings to broader or medically diverse populations.

## CONCLUSIONS

This study confirms that erectile dysfunction in men with unconsummated marriage, who had normal erections before marriage, is predominantly psychogenic, requiring couple-based therapy. Excluding intercourse during initial sessions and focusing on foreplay effectively reduced male anxiety. Younger men showed better outcomes, and active spousal participation, especially in building male self confidence, proved essential. Cultural shyness often delayed treatment for years (up to 17), despite prior medical consultations, underscoring the need for specialized training programs. In Iranian culture, concealing the condition long term is impractical, and some couples resorted to non-medical remedies. Therapists must prioritize psychological causes, involve spouses, and refer complex cases to specialized centers.

**Limitation:** This study had several limitations, including the absence of a control group and the lack of randomization, which necessitates future randomized controlled trials. Selection and attrition biases may have occurred, as the final sample consisted of highly motivated couples who completed therapy, potentially contributing to a high success rate and limiting generalizability. Data was collected solely from a single clinic due to unavailability of external datasets, although exact inferential statistical methods were applied to ensure analytical

rigor. The primary focus was on clinical effectiveness without predictive modeling, and the absence of follow-up IIEF assessment limits conclusions about long-term durability. Additionally, domain-specific statistical comparisons were exploratory and not adjusted for multiple testing, so findings should be interpreted with caution.

## SUMMARY

Couple-based behavioral therapy helped couples with unconsummated marriage related to psychogenic erectile dysfunction achieve vaginal penetration, with improvements in erectile, orgasmic, and satisfaction domains.

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## CONFLICT OF INTEREST

The authors declare that there are no conflicts of interest regarding the publication of this paper.

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