

Awareness of Urologists Regarding Partner Education Following Penile Prosthesis Implantation

Penil Protez İmplantasyonu Sonrasında Partner Eğitiminde Üroloji Uzmanlarının Farkındalığı

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ABSTRACT

Objective: This multicenter study aimed to evaluate postoperative partner education practices among Turkish urologists performing penile prosthesis implantation (PPI) and to assess their attitudes toward combined device training and sexual counseling.

Material and Methods: A cross-sectional electronic survey was distributed to 164 urologists across the seven geographical regions of Türkiye, with 84 responses obtained (response rate: 51.2%). The 10-item questionnaire assessed: (i) demographic and procedural characteristics, (ii) current partner education practices, and (iii) discrepancies between beliefs and practices (using 5-point Likert scales).

Results: The mean professional experience was 16 years (range: 2–35 years). Significant belief–practice gaps were identified: Device training was considered necessary by 81% of respondents but implemented by only 31% (50.6-point gap), while sexual counseling was considered necessary by 83% but implemented by only 19% (64-point gap). Significant associations were observed for device training (OR = 2.1) and sexual counseling (OR = 3.4). Senior surgeons (>10 years of experience) were 3.2 times more likely to prioritize partner education (OR = 3.2, 95% CI: 1.8–5.7).

Conclusion: Although 72% of urologists endorsed partner education as “essential” substantial barriers to implementation remain. Particularly in sexual counseling, only 15% had received formal training. Institutional protocols and standardized training programs are urgently needed to bridge these gaps in postoperative PPI care.

Keywords: belief-practice gap, partner education, patient satisfaction, penile prosthesis, sexual counseling, surgical aftercare

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ÖZET

Özet: Bu çok merkezli çalışmanın amacı, penis protezi implantasyonu (PPI) uygulayan Türk ürologlarının ameliyat sonrası partner eğitimi uygulamalarını değerlendirmek ve cihaz kullanımı ile cinsel danışmanlığı içeren kombine eğitim yaklaşımlarına yönelik tutumlarını incelemektir.

Gereç ve Yöntemler: Türkiye'nin yedi coğrafi bölgesindeki 164 üroloğa elektronik ortamda kesitsel bir anket gönderilmiş, 84 yanıt alınmıştır (yanıt oranı: %51,2). On soruluk anket; (i) demografik ve cerrahi özellikleri, (ii) mevcut partner eğitimi uygulamalarını, (iii) inanç-uygulama farklılıklarını (5'li Likert ölçeği) değerlendirmiştir.

Bulgular: Katılımcıların ortalama mesleki deneyimi 16 yıl (dağılım: 2–35 yıl) olup, inanç ile uygulama arasında belirgin farklılıklar saptanmıştır. Cihaz eğitimi %81 oranında gerekli görülmesine rağmen yalnızca %31 oranında uygulanmaktadır (50,6 puan fark). Cinsel danışmanlık %83 oranında gerekli görülmesine rağmen yalnızca %19 oranında uygulanmaktadır (64 puan fark). Ayrıca cihaz eğitimi için olasılık oranı 2,1, cinsel danışmanlık için ise 3,4 olarak bulunmuştur. Kıdemli cerrahların (>10 yıl deneyim) partner eğitimine öncelik verme olasılığı 3,2 kat daha yüksek bulunmuştur (OR=3,2; %95 GA: 1,8–5,7). Katılımcıların %69'u anket sonrasında klinik uygulamalarını değiştirmeyi planladığını belirtmiştir.

Sonuç: Her ne kadar ürologların %72'si partner eğitimini "olmazsa olmaz" olarak değerlendirirse de, uygulamada ciddi engeller mevcuttur. Özellikle cinsel danışmanlık alanında yalnızca %15'inin resmi eğitim almış olması dikkat çekicidir. Penis protezi implantasyonu sonrası bakımda bu boşluğun giderilebilmesi için kurumsal protokoller ve standart eğitim programlarının geliştirilmesi gerekmektedir.

Anahtar Kelimeler: cerrahi sonrası bakım, cinsel danışmanlık, hasta memnuniyeti, inanç-uygulama farkı, partner eğitimi, penil protez

INTRODUCTION

Erectile Dysfunction (ED) is defined as a man's inability to achieve or maintain a penile erection sufficient for satisfactory sexual intercourse, persisting for at least three months (1). Among male sexual dysfunctions, ED represents the most prevalent condition (2). Penile erection is a complex neurovascular event regulated by an interaction between central and peripheral nervous systems, vascular smooth muscle relaxation, and hormonal influences. Sexual stimulation triggers nitric oxide release from endothelial cells and cavernous nerves, leading to increased cyclic guanosine monophosphate (cGMP) levels and smooth muscle relaxation within the corpora cavernosa. This process allows increased arterial inflow and restricted venous outflow, resulting in penile rigidity. Disruption of any component of this pathway—vascular, neurological, hormonal, or psychological—may lead to erectile dysfunction. When conservative therapies fail to restore this physiological mechanism, penile prosthesis implantation represents a definitive solution by mechanically bypassing impaired erectile pathways.

Epidemiological studies estimate that 10–20% of men aged >20 years worldwide experience varying degrees of ED (4). While aging remains the strongest independent risk factor (5), ED is multifactorial, with etiologies including diabetes mellitus, hypertension, chronic kidney disease, hyperlipidemia, neurological disorders, and psychogenic causes (6).

The diagnostic-therapeutic algorithm for ED follows a stepwise approach. When first-line therapies (oral PDE5 inhibitors, intracavernosal injections, vacuum devices) fail, penile prosthesis implantation (PPI) —an irreversible intervention—is recommended (7). Historically, penile implants were first used in the 16th century for post-amputation urinary function and cosmesis (8). Modern PPI for ED began in the 1930s (9), with subsequent advances yielding more physiological prostheses to improve patient and partner satisfaction (10).

International guidelines (e.g., ISSIR, AUA) mandate partner involvement in ED management (11). Studies show partner participation improves treatment adherence and couple satisfaction (12). Post-PPI, while 80–90% of patients report

satisfaction, partner satisfaction is slightly lower (70–80%) (13). Crucially, most studies omit whether partners received prosthesis-specific education or sexual counseling (14). Our study evaluates urologists' perspectives on partner education (prosthesis use + sexual rehabilitation) and current clinical practices in partner-inclusive care.

MATERIALS AND METHODS

Study Design

This prospective, cross-sectional study was conducted among urologists working in tertiary referral centers and secondary care state hospitals across seven geographical regions of Türkiye (Marmara, Central Anatolia, Mediterranean, Aegean, Black Sea, and Southeastern Anatolia).

Participant Recruitment

We contacted 164 urologists via institutional email using a Google Forms survey link. The final analysis included 84 respondents (response rate: 51.2%).

Inclusion criteria:

- Board-certified urologists
- Active in penile prosthesis implantation (PPI) practice

Recruitment timeline:

- Initial invitation: Week 1
- First reminder: Week 3
- Final reminder: Week 5
- Data collection period: September 1 - November 1, 2024

Survey Instrument

The structured 10-item questionnaire comprised:

1. Demographic Characteristics (2 items):

- Years in practice
- Annual PPI volume

2. Educational Practices (8 items):

- Provider of prosthesis training (urologist/industry representative/other)
- Attitudes toward device training for partners
- Current practice of device training for partners
- Attitudes toward sexual counseling for partners
- Current practice of sexual counseling
- Prior training in sexual counseling
- Perceived importance of partner education (5-point Likert scale: 1=Unnecessary to 5=Essential)
- Future intention to incorporate partner education

Response format: 3-point Likert scale (1=Absolutely unnecessary, 2=Somewhat necessary, 3=Absolutely necessary) Additionally, one survey item asked participants to identify perceived barriers to implementing partner education. The predefined response options included lack of formal training, time constraints, and cultural resistance.

The questionnaire was developed de novo by the authors based on current literature and clinical experience. However, it was not subjected to formal validation or reliability testing prior to deployment, which may limit the internal validity of the findings.

Statistical Analysis

Data were analyzed using IBM SPSS Statistics 28:

- Descriptive statistics:
 - Categorical variables: Frequency (%)
 - Continuous variables: Mean (\pm SD)
- Comparative analyses:
 - Chi-square tests for categorical variables
 - Pearson correlation for continuous variables

As this study was designed as an exploratory nationwide survey, a formal sample size calculation was not performed. Instead, the study aimed to reach the largest feasible number of urologists performing penile prosthesis implantation across all geographical regions of Türkiye to ensure broad geographical representation.

Although an exact number of urologists actively performing penile prosthesis implantation in Türkiye is not available due to the absence of a centralized registry, the survey was distributed to a broad network of surgeons across all seven geographical regions. Therefore, the 84 respondents likely represent a substantial proportion of active implanters nationwide, supporting reasonable national coverage despite the lack of a formal sample size calculation.

Ethical Considerations

The study protocol was approved by Antalya Training and Research Hospital Ethics Committee (Approval no: 2024-19/23, Date: 2024-12-05). Electronic informed consent was obtained via a mandatory "I agree" button on the survey's first page, which detailed the study purpose.

Methodological Considerations

Strengths:

- First national study evaluating urologists' perspectives on partner education
- Nationally representative multicenter design
- A combination of quantitative and qualitative data

Limitations:

- Moderate response rate (51.2%)
- Potential observation bias from self-reported data
- Inter-center variability in technical training standards

RESULTS

Survey Participation and Surgeon Demographics

We successfully distributed our survey to 164 surgeons across multiple regions, with 84 urologists completing the questionnaire (response rate: 51.2%). Participants had a mean professional experience of 16 years (range: 2-35 years), with the following experience distribution: early-career surgeons (<5 years) comprised 15.4% (n=13), mid-career surgeons (5-10 years) represented 45.2% (n=38), and senior surgeons (>10 years) accounted for 39.4% (n=33) of respondents.

Annual Penile Prosthesis Implantation Volume

The mean number of annual penile prosthesis implantation procedures was 8 ± 4.2 (SD). Six percent of respondents (n=5) reported performing no such procedures. A significant positive correlation was observed between surgical experience and procedural volume ($r=0.42$, $p<0.01$), indicating that more experienced urologists tended to perform a greater number of implantations.

Distribution of Prosthesis Training Providers

The provision of prosthesis training was primarily conducted by surgeons or residents (77%), followed by industry representatives (15%), while a combined approach (surgeon + industry representative) accounted for 7% of cases.

Discrepancy Between Perceived Importance and Actual Practice of Partner Education:

Device Training for Partners

- **Belief in necessity:** 81% of surgeons endorsed the importance of providing device training to partners
- **Actual practice:** Only 31% routinely provided such training (50.6 percentage-point gap)

Sexual Counseling for Partners

- **Belief in necessity:** 83% agreed on the importance of sexual counseling
- **Actual practice:** Merely 19% implemented counseling (64 percentage-point gap)
- **Preparedness:** Only 15% of surgeons reported receiving formal training in sexual counseling techniques

Since only 15% of respondents reported receiving formal training in sexual counseling, the remaining 85% lacked structured educational background in this field.

These results reveal substantial gaps between urologists' attitudes and clinical implementation, particularly in sexual counseling, where the belief-practice discrepancy was most pronounced. The low percentage (15%) of surgeons with formal training in sexual counseling may partially explain this implementation gap.

Attitudes Toward Partner Education and Surgical Experience:

Partner Education Perspectives (3-point Likert scale)

The majority of surgeons (72%) strongly believed partner education was "essential," while 20% considered it "somewhat necessary." Only 7% deemed it "completely unnecessary." Following survey participation, 69% of surgeons expressed intent to modify their practice to incorporate partner education.

Experience-Volume Relationship

A statistically significant positive correlation emerged between years of practice and penile prosthesis surgical volume (Pearson's $r = 0.42$, $p = 0.001$), indicating that more experienced urologists performed higher numbers of implant procedures.

Statistical Analysis of Belief-Practice Discrepancies and Experience Effects:

Belief-Practice Discordance

McNemar's test revealed statistically significant discrepancies between surgeons' beliefs and actual practices regarding partner education ($p < 0.001$), confirming substantial implementation gaps in both:

- Prosthesis use training (50.6 percentage-point gap)
- Sexual counseling (64 percentage-point gap)

In addition, significant associations were observed between perceived importance and implementation of partner education. Device training was associated with an odds ratio of 2.1, while sexual counseling demonstrated a stronger association (OR = 3.4), further supporting the presence of a substantial belief-practice gap.

Experience-Dependent Attitudes

Senior surgeons (>10 years experience) were 3.2 times more likely to consider combined partner education "essential" compared to their junior colleagues (OR = 3.2, 95% CI: 1.8-5.7). This dose-dependent relationship demonstrated:

1. Progressive attitude maturation with experience

2. Strongest education advocacy among high-volume implanters
3. Significant odds ratio with tight confidence intervals

DISCUSSION

The primary objective of this nationwide multicenter study was to evaluate Turkish urologists' attitudes toward partner education following penile prosthesis implantation and to assess discrepancies between perceived importance and actual clinical practice. Our findings demonstrate a substantial belief–practice gap, particularly in sexual counseling and partner-inclusive device training. Although more than 80% of respondents acknowledged partner education as essential, fewer than one-third routinely implemented structured educational interventions. These results highlight that technical surgical success alone does not guarantee optimal postoperative outcomes and underscore the need for standardized, partner-inclusive postoperative care strategies.

Penile prosthesis implantation (PPI) remains the most successful and satisfying treatment for erectile dysfunction, with literature reporting satisfaction rates of 80–95% for patients and 70–90% for partners (15). However, most studies have relied on non-validated questionnaires, whereas contemporary validated instruments like SQoL and SQoLSPP now provide more reliable outcomes (16). The typically lower partner satisfaction likely stems from inadequate knowledge about prosthesis use and a lack of sexual rehabilitation guidance. Notably, several studies demonstrate that patient satisfaction directly correlates with female partner satisfaction (17), particularly in stable, monogamous relationships.

Patient and partner satisfaction after penile prosthesis implantation is influenced not only by surgical outcomes but also by sociocultural and geographic factors. In societies where discussions of sexuality remain sensitive, partner participation in postoperative education may be limited. In Türkiye, cultural norms emphasizing privacy, modesty, and gender roles may reduce partners' willingness to engage in sexual counseling sessions, particularly in institutional hospital settings. This cultural context may partially explain why, despite recognizing its importance, many urologists hesitate to actively involve partners in postoperative education. Addressing these barriers requires culturally sensitive counseling models and institutional environments that normalize partner participation in sexual rehabilitation.

This multicenter study represents the first comprehensive evaluation of partner education practices among Turkish urologists performing PPI. Our findings reveal significant belief–practice gaps: while 81–83% of surgeons acknowledged the importance of partner education, only 19–31% actually provided it. This discrepancy starkly contrasts with EAU guidelines advocating partner-inclusive approaches (18).

The 64% implementation gap in sexual counseling exceeds the 45% rate reported in Spain (19), attributable to three key factors: only 15% of surgeons had formal sexual counseling training, clinic time constraints limited education opportunities, and cultural factors reduced partner participation rates. It should be noted that the barrier frequencies summarized in Table 2 are derived from previously published studies and guideline reports rather than from the current survey cohort, and are presented to contextualize our findings within the broader literature. Senior surgeons (>10 years experience) were 3.2 times more likely to prioritize partner education (OR=3.2, $p<0.01$), aligning with Brazilian data showing a 2.7-fold increase (20).

Growing evidence indicates that structured sexual counseling and partner education significantly improve postoperative sexual satisfaction and relationship quality after penile prosthesis implantation. Studies have demonstrated that partner-inclusive counseling enhances device confidence, reduces anxiety related to prosthesis use, and facilitates sexual adaptation in couples. Moreover, validated instruments such as the Sexual Quality of Life Questionnaire (SQoL) and SQoL for Penile Prosthesis (SQoLSPP) emphasize the importance of addressing both patient and partner perspectives. Despite these data, integration of sexual counseling into routine urological practice remains limited, underscoring the need for standardized training programs and multidisciplinary collaboration.

Table 1. Discrepancies Between Beliefs and Practices in Partner Education

| Parameter | Belief (%) | Practice (%) | Gap (pp) | Statistical Significance |
|---------------------------|------------|--------------|----------|--------------------------|
| Device Training | 81 | 31 | 50.6 | p < 0.001, OR = 2.1* |
| Sexual Counseling | 83 | 19 | 64.0 | p < 0.001, OR = 3.4* |
| Senior Surgeons (>10 yrs) | - | 52 | - | OR = 3.2 (1.8-5.7)** |

*Notes: *(APA 7 compliant, grayscale-compatible)*

pp = percentage points; *Adjusted for experience; *Reference: junior surgeons

Table 2. Commonly Reported Barriers to Partner Education in the Literature

| Barrier | Reported Prevalence in Prior Studies | Evidence-Based Solution | Key References |
|-------------------------|--------------------------------------|--|----------------------|
| Lack of formal training | 70–85% | Integration of structured sexual medicine modules into urology residency programs | EAU Guidelines 2023 |
| Time constraints | ~60–75% | Preoperative video-based education and structured counseling protocols | J Sex Med 2022 |
| Cultural resistance | Variable (40–65%) | Clinic-based partner invitation systems and culturally sensitive counseling models | Int J Impot Res 2024 |

The most promising finding was 69% of participants intending to modify their practice, reflecting:

1. Growing adoption of patient-centered care
2. Shifting focus from surgical outcomes to quality of life
3. Alignment with EAU’s holistic sexual health paradigm (21)

Limitations

1. Although the response rate (51.2%) is acceptable for physician-based national surveys, differences between responders and non-responders may have influenced the results and should be considered when interpreting the findings.
2. Potential social desirability bias
3. Lack of qualitative exploration of barriers
4. As the data were based on self-reported practices, social desirability bias may have led to overestimation of adherence to partner education principles
5. The absence of qualitative data limits deeper exploration of underlying barriers; future mixed-method studies incorporating qualitative interviews may provide richer contextual insights
6. The questionnaire used in this study was not formally validated, which may limit the reliability and generalizability of the findings.

CONCLUSIONS

With 72% of surgeons considering partner education essential, our findings signal an impending paradigm shift in post-PPI care. Realizing this potential requires institutional support and structured training programs.

Conflict of Interest: The authors declare to have no conflicts of interest

Funding: No funding was received for conducting this study

Ethical Approval: The study protocol was approved by Antalya Training and Research Hospital Ethics Committee (Approval no: 2024-19/23, Date: 2024-12-05).

Informed Consent: Electronic informed consent was obtained via mandatory “I agree” button on the survey’s first page, which detailed the study purpose.

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