

REVIEW

Sexual outcome of vasectomized patients: A systematic review

Marshal Harvy Wicaksono¹, Ronald Sugianto², Gede Wirya Kusuma Duarsa¹

¹ Department of Urology, Prof. dr. I.G.N.G. Ngoerah General Hospital, Denpasar, Indonesia;

² Department of Urology, Faculty of Medicine, Universitas Airlangga, Indonesia.

Summary

Introduction: Vasectomy is one of the most effective ways of contraception. However, it still has various complications, including post-vasectomy sexual dysfunction. Some studies suggest that one of the sexual performance problems can be linked to psychological factors. However, other studies indicate that vasectomy can have positive effects on patient's sexual lives. Because of these conflicting findings, the purpose of this article is to examine the sexual outcome post-vasectomy using a systematic review of current studies.

Methods: We performed the search using electronic databases MEDLINE, Pub Med, and Science Direct. We used "vasectomy", "vasectomies", and "sexual outcome", and "sexual quality" in the text keywords. Eleven studies, six case-control studies, and five cohorts met the inclusion criteria for this review.

Results: Studies reported a significant improvement in IIEF scores, sexual desire, sexual satisfaction, and orgasm domain after vasectomy. However, a study found that low acceptance of vasectomy can lead to erectile dysfunction, and vasectomized men are slightly more likely to report problems in maintaining their erections.

Conclusions: This systematic review shows that, although rare, there are complications after vasectomy. These complications can be related to decreased sexual function for patients after vasectomy. As a urologist, it is essential to offer adequate counseling to patients before vasectomy.

KEY WORDS: Vasectomy; Sexual function; Erectile function; Sexual satisfaction; Systematic review.

Submitted 18 January 2025; Accepted 6 March 2025

INTRODUCTION

Vasectomy is one of the most effective ways of contraception (1). Vasectomy has been used in 5% of married couples and is more popular in countries such as New Zealand, the United States, the Netherlands, South Korea, Australia, China, and India (2). It is the most common operation performed by a urologist in the US, and its effectiveness is comparable to tubal ligation despite being less invasive (3).

However, although rare, vasectomy still has various complications. A significant concern among men considering the procedure is the potential impact on sexual perform-

ance. Some studies suggest that one of the sexual performance problems can be linked to psychological factors (1). However, other studies indicate that vasectomy can have positive effects on patient's sexual lives (4). Because of these conflicting findings, the purpose of this article is to examine the sexual outcomes post-vasectomy using a systematic review of current studies.

METHODS

This study was designed and reported, adhering to the PRISMA guidelines. We took a proactive approach by prospectively registering our protocol with PROSPERO (CRD42025634993), ensuring transparency and adherence to established standards. Search strategy and selection criteria were following the *Preferred Reporting Items for Systematic Reviews and Meta-Analyses* (PRISMA) Figure 1. For the literature search, we used electronic databases such as MEDLINE, Pub Med, and Science Direct. We also manually reviewed and searched references for any possible information from conferences. The systematic search used the following terms and combinations: "vasectomy", "vasectomies", "sexual outcome", and "sexual quality".

Inclusion criteria

Original research articles were included if they met the following criteria: a) male participants aged 20 and older who underwent vasectomy, b) studies that provided results on sexual function, including but not limited to erectile function, orgasm, sexual desire, satisfaction, and overall sexual quality, c) studies published in English in order to ensure comprehension of the methodologies and outcomes.

Exclusion criteria

We exclude the articles if: a) studies exclusively focused on psychological aspects of vasectomy without assessing sexual function, b) articles were not published in English to avoid translation issues and interpretation errors.

Data extraction and Risk of Bias

Two independent reviewers performed data extraction (MH, RS). Disagreements were resolved in a discussion among all investigators, and if necessary, GW analyzed and clarified them. After discussion, all the study data in

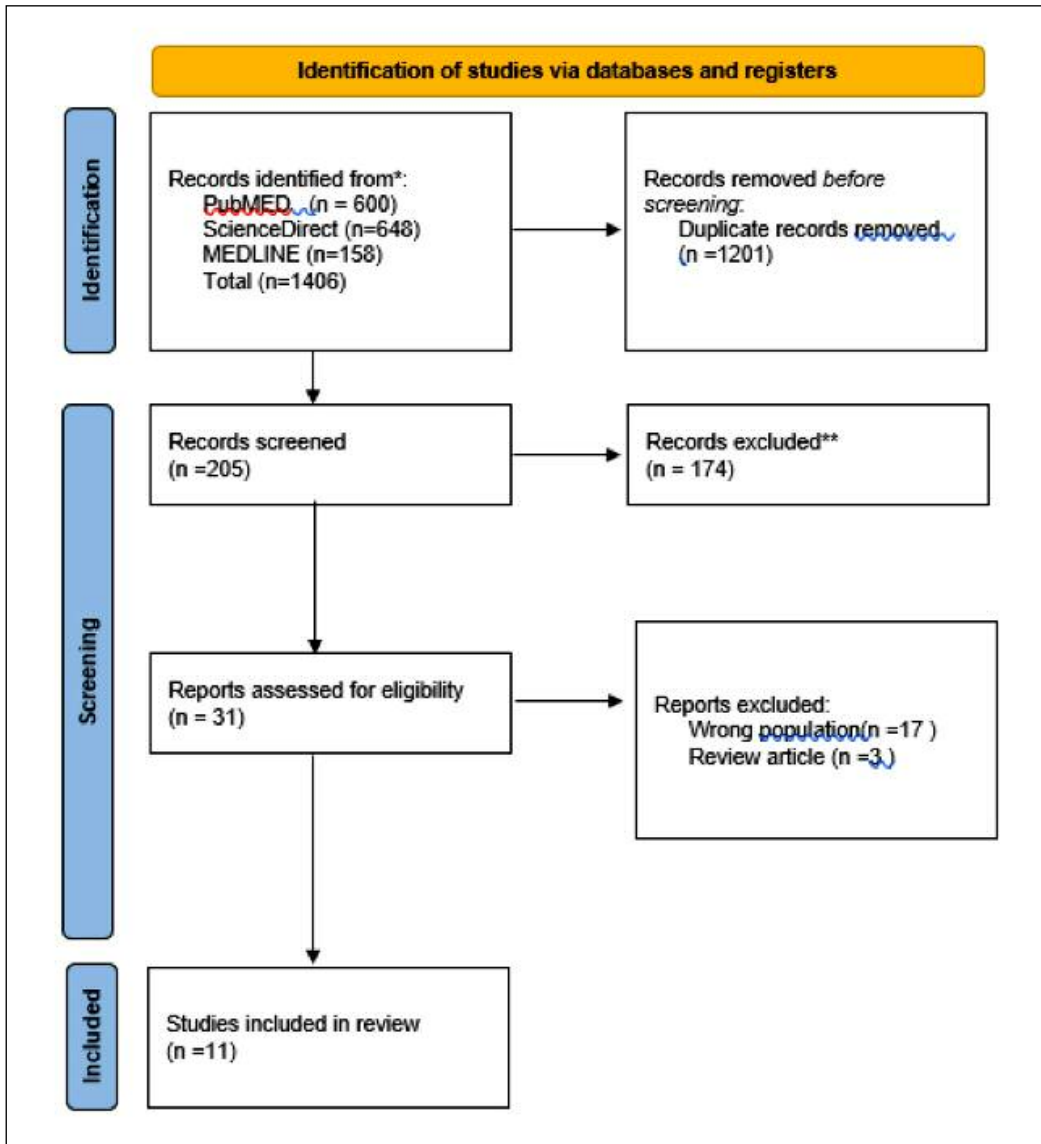


Figure 1. PRISMA flow diagram.

the review were entered into an Excel spreadsheet, including population characteristics, methodology, and the risk of bias assessment. Each included study was assessed for risk of bias using the *Newcastle-Ottawa Scale* (NOS), a tool designed to evaluate the quality of non-randomized studies. If there are any discrepancies in bias assessments or justifications, they were resolved through discussions among the authors until a consensus was reached.

RESULTS

The PRISMA diagram for the entire studies searched is shown in Figure 1. The initial search for the databases yielded 1406 articles of which 1201 articles were excluded because of duplication. After further analysis, 11 studies met our criteria and were included in this systematic review.

The details of included studies characteristics are detailed in Table 1. The studies included in our systematic review are 6 case-control and 5 cohort studies. The combined sample size from our 11 studies is 6,187 patients. Four of

the studies included used the *International Index of Erectile Function* (IIEF-15) and the other seven studies used the combination of their own questionnaires or other tools like *Enriching & Nurturing Relationship Issues, Communications, & Happiness* (ENRICH) questionnaire and the *Index of Sexual Satisfaction* (ISS).

The risk of bias assessment using the *Newcastle-Ottawa Scale* (NOS) results in 5 good-quality studies and 6 moderate-quality studies. The details of the included studies assessment are in Table 2. For the selection aspect, 8 out of 11 articles have 3 stars and the other 3 have 2 stars. The comparability aspects are all 1 star across our 11 included articles and for the outcome aspect, 2 articles have 3 stars, 5 articles are 2 stars, and 4 articles receive 1 star.

Erectile sunction

Seven studies evaluate erectile function in vasectomized men using the IIEF-15 or similar measures. One study by *Engl et al.* (2017) (5) found a significant improvement in the erectile function domain post-vasectomy, while 4 other studies by *Bertero et al.* (2005), (6) *Al-Ali, et al.*

Table 1.
Study characteristics.

Study	Sample	Mean age	Mean child	Indicator	Relevant results
Bertero, et al. (2005) (6)	64	35	3	IIEF-15	- 67% improved IIEF scores after vasectomy - Sexual desire and sexual satisfaction domain show significant improvement
Engl, et al. (2017) (5)	90	Not Stated	Not stated	IIEF-15	- Significant improvement in erectile function, orgasm, sexual desire, and sexual intercourse domain
Santiso, et al. (2010) (11)	500	36	3.9	Sexual drive Sexual Satisfaction Orgasm quality	- Vasectomy has had a positive effect or no effect at all on sex life and marital relations in the majority of cases
Guo, et al. (2015) (1)	353	Not Stated	Not Stated	Sexual frequency	- Vasectomized men had an 81% higher odds of having intercourse at least once a week
Al-Ali, et al. (2014) (4)	76	39	2.6	IIEF-15	- No significant improvement in IIEF domains
Buchholz, et al. (1994) (10)	61	47.7	Not Stated	Reduced libido Weaker erection Decreased orgasm frequency Decreased sexual activity	- Low acceptance for vasectomy might cause erectile dysfunction
Smith, et al. (2009) (9)	3234	43.1	Not Stated	Lacked interest in having sex Unable to reach orgasm Orgasm too quickly or too long Problems maintaining erection Extremely satisfied sexually, and relationship	- Vasectomy was not associated with specific sexual problems - Vasectomized men slightly more likely to report problems maintaining erection - Vasectomized men are significantly more likely to be extremely satisfied with their relationship overall
Jackson, et al. (1982) (13)	1508	Not Stated	Not Stated	Improves physical and mental health Improves physical health only Improve mental health only Regrets	- Improvement in physical, mental health, or both in 371 participants - None regrets in having a vasectomy
Hofmeyr, et al. (2011) (12)	64	33.7		Sexual frequency Sexual satisfaction (ENRICH) Sexual satisfaction (ISS)	- Vasectomy does not negatively influence the sexual satisfaction in men. - Sexual frequency is maintained after vasectomy
Arratia-Maqueo, et al. (2010) (7)	29	Median: 38	3	IIEF-15	- 38% participant shows improvement in IIEF total scores - Significant improvement shows in orgasm domain
Touil, et al. (2024) (8)	208	Not Stated	Not Stated	Libido Sexual activity Quality of erection Ejaculate volume Relationship	- Participant libido remained unchanged at 79% and improved at 13%. - The harmony of the relationship with their partners improves in 33% of participants

(2014) (4), Arratia-Maqueo et al. (2010) (7), and Touil et al. (2024) (8) found no significant improvement in the erectile function post-vasectomy. In contrast, Smith et al. (2009) (9) noted that vasectomized men were slightly

more likely to experience problems maintaining an erection, and Buchholz et al. (1994) (10) found an association between erectile function after vasectomy and low acceptance from the patients towards the procedure.

Table 2.
Risk of bias in the included study using Newcastle Ottawa Scale (NOS).

Study	Newcastle-Ottawa Scale			Total score	Quality of the study
	Selection	Comparability	Outcome		
Bertero, et al. (2005) (6)	***	*	***	7	Good
Engl, et al. (2017) (5)	**	*	***	6	Good
Santiso, et al. (2010) (11)	***	*	**	6	Good
Guo, et al. (2015) (1)	***	*	*	5	Moderate
Al-Ali, et al. (2014) (4)	**	*	**	5	Moderate
Buchholz, et al. (1994) (10)	***	*	**	6	Good
Smith, et al. (2009) (9)	***	*	*	5	Moderate
Jackson, et al. (1982) (13)	***	*	*	5	Moderate
Hofmeyr, et al. (2011) (12)	***	*	**	6	Good
Arratia-Maqueo, et al. (2010) (7)	**	*	**	5	Moderate
Touil, et al. (2024) (8)	***	*	*	5	Moderate

Orgasm quality

The effect of vasectomy on orgasm quality was assessed in some of the included studies, with results showing a generally positive outcome. Articles by Arratia-Maqueo et al. (2010) (7), Engl et al. (2017) (5), and Bertero et al. (2005) (6) found a positive effect on orgasm quality post-vasectomy, although only Arratia-Maqueo et al. (2010) (7) stated a significant improvement in orgasm quality. Another study by Santiso et al. (2010) (11) with 500 participants found that vasectomy had no negative impact on orgasm quality.

Sexual desire

Seven studies assessed sexual desire and reported either no change or improvements in sexual desire after vasectomy. Studies by Engl et al. (2017) (5) and Bertero et al. (2005) (6) reported significant improvement in sexual desire for the participants

after vasectomy. Studies by *Smith et al.* (2009) (9), *Hofmeyr et al.* (2011) (12), and *Al-Ali et al.* (2014) (4) found no significant negative impact on sexual desire post-vasectomy, and studies by *Santiso et al.* (2010) (11) and *Touil et al.* (2024) (8) found that most participants maintained their sexual desires post-vasectomy.

Sexual satisfaction

Results regarding sexual satisfaction were reported in 10 of the included studies, with most studies showing improvements or neutral outcomes post-vasectomy. *Bertero et al.* (2005) (6), and *Arratia-Maqueo et al.* (2010) (7) reported an improvement in sexual satisfaction post-vasectomy. Related to sexual satisfaction, *Touil et al.* (2024) (8) also report a 33% improvement in relationship harmony post-vasectomy, and *Smith et al.* (2009) (9) found that post-vasectomized men are significantly more likely to be satisfied with their relationship overall. Study by *Hofmeyr et al.* (2011) (12), and *Santiso et al.* (2010) (11) reported that vasectomy did not have a negative impact on sexual satisfaction, and most participants maintained their levels of sexual satisfaction. Studies by *Al-Ali et al.* (2014) (4) and *Engl et al.* (2017) (5) found that there was no significant improvements in the sexual satisfaction domain of the IIEF questionnaire. Other related results by *Guo et al.* (2015) (1) found that vasectomized men had a higher chance of having sexual activity at least once a week. In contrast, *Buchholz et al.* (1994) (10) suggested that low acceptance of vasectomy can result in a decrease in sexual satisfaction post-vasectomy.

Overall satisfaction

All studies highlighted a high level of overall satisfaction among vasectomized men, with most reporting either no change or an improvement in their sexual relationship. Studies by *Touil et al.* (2024) (8), *Smith et al.* (2009) (9), and *Jackson et al.* (1982) (13) report that overall satisfaction post-vasectomy was improved with minimal regrets. Other studies by *Bertero et al.* (2005) (6), *Al-Ali et al.* (2014) (4), *Arratia-Maqueo et al.* (2010) (7), and *Engl et al.* (2017) (5) found that overall score on the IIEF questionnaire was improved after vasectomy. In addition, studies by *Santiso et al.* (2010) (11) and *Hofmeyr et al.* (2011) (12) found that over half of their patients have a positive effect or no effects on overall satisfaction post-vasectomy. Related to satisfaction, *Guo et al.* (2015) (1) reported about the sexual frequency of men post-vasectomy who had an 81% chance of having intercourse at least once a week. However, *Buchholz et al.* (1994) (10) concluded that the satisfaction of post-vasectomy patients is related to the psychosocial environment that can cause psychological disturbances and lead to reduced satisfaction.

DISCUSSION

Vasectomy is one of the most effective contraceptive methods for men (1). It is the most common operation performed by urologists. Vasectomy has many benefits to prevent unplanned childbirth. However, vasectomy is not the most commonly used contraception for men (3, 8). Men are concerned that vasectomy might decrease their sexual life quality, including pain, erectile function, and

others. Complications that can happen after vasectomy ranges from chronic pain, recanalization, and post-vasectomy sexual dysfunction (8).

According to our review, we found that, overall, vasectomy does not negatively impact the sexual outcomes of the patients. Studies show an improvement in overall sexual satisfaction (8, 9). Studies that use IIEF also show an improvement in the overall satisfaction domain for vasectomized patients (5, 6). Other domains of IIEF-15, e.g. sexual desire, erectile function, and orgasm domain, also show improvement in various other studies (5, 7). A systematic review shows that the sexual frequency of vasectomized patients is higher than non-vasectomized patients and vasectomized patients had slightly more chance of having difficulty maintaining an erection (1, 12). However, there are some studies reports of minor difficulties in maintaining an erection (9).

According to our review, we found that the sexual dysfunction post-vasectomy is related to low acceptance of vasectomy (10). Therefore, we believe that proper counseling is essential for patients before vasectomy to improve understanding the procedure and its risks as well as the complications. The counseling should also ensure the patient understands that erectile dysfunction after vasectomy has been linked to psychosocial factors and vasectomy does not affect erection, ejaculation, and orgasm (14, 15).

CONCLUSIONS

This systematic review shows that, although rare, there are complications after vasectomy. This complication can be related to decreased sexual function for patients after having vasectomy. As a urologist, it is essential to do counseling for patients before vasectomy. Our study did not include meta-analysis of data retrieved. Hopefully, studies in the future can better represent the picture of vasectomized patients in our country.

DECLARATIONS

Ethical statement: Not applicable.

Availability of data and material: The data utilized and/or analyzed in this study are accessible from the corresponding author upon request.

Competing interests: The authors declare that they have no competing interests.

Funding sources: This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

Authors' contributions: Marshal Harvy W.P (MHWP): Methodology, Data Collection, Data Analysis, Writing - Original Draft. Ronald Sugianto (RS): Methodology, Data Collection, Writing - Review & Editing, and Critical Revisions. Gede Wirya Kusuma Duarsa (GWK): Conceptualization, Supervision, Methodology, Validation, Writing - Review & Editing, and Final Approval of the Manuscript.

Acknowledgments: All authors have read and approved the final version of the manuscript and agree to be accountable for all aspects of the work.

REFERENCES

1. Guo DP, Lamberts RW, Eisenberg ML. Relationship between vasectomy and sexual frequency. *J Sex Med.* 2015; 12:1905-10.
2. Schwingl PJ, Guess HA. Safety and effectiveness of vasectomy. *Fertil Steril.* 2000; 73:923-36.
3. Rogers MD, Kolettis PN. Vasectomy. *Urol Clin North Am.* 2013; 40:559-68.
4. Mohamad Al-Ali B, Shamloul R, Ramsauer J, et al. The Effect of Vasectomy on the Sexual Life of Couples. *J Sex Med.* 2014; 11:2239-42.
5. Engl T, Hallmen S, Beecken WD, et al. Impact of vasectomy on the sexual satisfaction of couples: Experience from a specialized clinic. *Cent European. J Urol.* 2017; 275-9.
6. Bertero E, Hallak J, Gromatzky C, et al. Assessment of sexual function in patients undergoing vasectomy using the international index of erectile function. *Int Braz J Urol.* 2005; 31:452-8.
7. Arratia-Maqueo JA, Cortés-González JR, Garza-Cortés R, Gómez-Guerra LS. Evaluation of male sexual satisfaction after vasectomy. *Actas Urol Esp.* 2010; 34:870-3.
8. Touil W, Delaunay B, Prudhomme T, et al. Sexual and couple outcomes of vasectomy: Results of a French questionnaire survey. *French J Urol.* 2024; 34:102672.
9. Smith A, Lyons A, Ferris J, et al. Are Sexual Problems More Common in Men who have had a Vasectomy? A Population-Based Study of Australian Men. *J Sex Med.* 2010; 7:736-42.
10. Buchholz NP, Weuste R, Mattarelli G, et al. Post-vasectomy erectile dysfunction. *J Psychosom Res.* 1994; 38:759-62.
11. Santiso R, Pineda MA, Marroquín M, Bertrand JT. Vasectomy in Guatemala: A follow-up study of five hundred acceptors. *Biodemography Soc Biol.* 1981; 28:253-64.
12. Hofmeyr DG, Greeff AP. The Influence of a Vasectomy on the Marital Relationship and Sexual Satisfaction of the Married Man. *J Sex Marital Ther.* 2002; 28:339-51.
13. Jackson LN, Avant P. Vasectomy: a follow-up of two thousand men. *J R Coll Gen Pract.* 1982; 32:172-3.
14. Lowe G. Optimizing outcomes in vasectomy: how to ensure sterility and prevent complications. *Transl Androl Urol.* 2016; 5:176-80.
15. Sandler MD, Best JC, Samplaski MK, et al. Snip, Support, and Shared Stories: Exploring Reddit Users' Experiences With Vasectomy. *Cureus.* 2024; 16:e71374.

Correspondence

Marshal Harvy Wicaksono Pantjoro (Corresponding Author)
 marshalharvy@gmail.com
 Department of Urology, Prof. dr. I.G.N.G. Ngoerah General Hospital,
 Denpasar, Indonesia
 Wisata Bukit Mas 2 Palais Du Louvre i1 number 5, Lidah Wetan,
 Lakarsantri, Surabaya, East Java, 60213

Gede Wirya Kusuma Duarsa
 gwkduarsa@gmail.com
 Department of Urology, Faculty of Medicine, Universitas Airlangga,
 Indonesia

Ronald Sugianto
 rsugianto@student.unair.ac.id
 Department of Urology, Prof. dr. I.G.N.G. Ngoerah General Hospital,
 Denpasar, Indonesia