



## Original Article

## A study of physicians' interest in advising (recommending) vasectomy in Egypt

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## ABSTRACT

**Introduction:** Sterilization is a permanent and an effective method of contraception. However, fertility rates increased in Egypt, lately; sterilization is rarely utilized. Psychosocial factors and religious issues are considered in all societies.

**Objective:** To find out physicians' perception of vasectomy as a permanent contraceptive method and factors that might influence recommending vasectomy in Egypt.

**Design:** A cross-sectional questionnaire based study.

**Setting and methods:** The study included 181 physicians practicing, as gynecologist and family planning doctors, in Egypt. The questionnaire was designed to explore the physicians' perception of vasectomy and their attitudes to advise Egyptian men to undergo the procedure.

**Results:** 94/181 (52%) physicians positively perceived vasectomy as the best method of permanent contraception but only 45/181 (24.9%) advised the procedure. Positive perception was associated with advice of vasectomy ( $P = 0.001$ ). The majority, 119/136 (87.5%) physicians, did not recommend vasectomy for: a possible post vasectomy sexual dysfunction, anticipation of non-acceptance of vasectomy by Egyptian men, religious issues and concerns regarding regaining future fertility when needed. The majority, 43/45 (95.5%) physicians recommended vasectomy when female contraception was contraindicated or when couples completed their families.

**Conclusion:** However more than half of physicians had a positive perception of vasectomy, only 24.9% advised Egyptian men to undergo the procedure. Sociocultural factors and religious issues hindered physicians to recommend vasectomy in Egypt. Vasectomy was recommended when it was absolutely needed.

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## 1. Introduction

Overpopulation is a common problem in many developing countries due to lack of awareness and unmet contraceptive facilities [1]. In the period from 1980 to 2003, the contraceptive use rate increased from 24% to 60% in Egypt, and since then the rate is fluctuating between 59% and 60% [2]. Till 2000, the total fertility rate (TFR) had a continuous downward trend in Egypt but this was reversed lately. The TFR increased by 17%, from 3 to 3.5, between 2008 and 2014 [2]. However sterilization is a permanent and an

effective method of contraception, female sterilization and vasectomy are rarely utilized in Egypt [2,3].

Vasectomy is least utilized in blacks and minorities in USA [4]. Sociocultural factors and religious beliefs may restrict the use of sterilization. Keeping the fertility potentials and the integrity of sexual functions are instincts that are essentials in all societies. The psychosocial status of men undergoing vasectomy is the most important factor for acceptance of the procedure. In case a predominating female partner may have demanded the procedure, this may result in post-vasectomy erectile dysfunction [5,6]. For vasectomized men, the American Urological association (AUA), recommended vasectomy reversal and Assisted Reproductive Technology (ART) as options to regain fertility; these expensive options are not always successful [7]. The European Urological Association (EUA) considered vasectomy as an irreversible procedure [8]. In 10 years period, the number of vasectomies performed in England dropped by 64%, from 33 thousands during years

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2004/2005 to 11 thousands during years 2014/2015 [9]. At the same time period there was 46% reduction in female sterilization associated with increased utilization of injectable contraception [9].

This study was set to find out physicians' perception of vasectomy as a permanent contraceptive method and factors influencing recommendation of vasectomy for Egyptian men.

## 2. Methods

This cross-sectional questionnaire based study, included physicians practicing, as gynecologist and family planning doctors, in Egypt. The study was designed to explore physicians' perception of vasectomy and their attitudes to advise the procedure for the Egyptian men. The study was approved by 2 board committee at departments of Andrology and OBGYN and the Ethics Committee at Faculty of Medicine, Cairo University. From October 2015 till June 2016 this study was conducted in hospitals and primary care units in 4 governorates in Egypt; Cairo represented Urban Governorates whereas Aswan, Sohag and Assuit governorates represented Upper Egypt. Using a cluster random sampling technique, physicians consented and answered a paper and pencil approved modified questionnaire [10].

The questionnaire (Table 1) consisted of 4 parts. **Part one (questions 1–6)**: inquired about name, age, gender, religion, level of education (MD, Master, Diploma, MBCh) and governorates where physicians practiced. **Part 2 (question 7)**: included 10 items that indicated the physicians' perception of vasectomy as a method of permanent contraception. Participant physicians answered each question with Yes, No or Not sure. Answers of the questions in section 2 were categorized as with favor or against to advise (recommend) vasectomy as a permanent contraception. Answers of the first and last questions with Yes and answers of the other 8 questions with No were considered as answers in favor to advise (recommend) vasectomy. Any other answer was considered against recommending vasectomy. In this study participant physicians who answered <6 questions and who answered ≥6 questions in favor of vasectomy were considered as having a negative and positive perceptions of vasectomy as the best method of sterilization respectively. **In part 3**: participants were asked a direct question

(question number 8): do you advise vasectomy? And they answered with either Yes or NO. In **question 9 and 10**, each physician was required to give a reason for his/her answer. **In last part** of the questionnaire, **question 11** inquired about the preferred specialty to provide vasectomy.

Data were reviewed and analyzed using Statistical Package for Social Sciences, version 21 (SPSS Inc., Chicago, IL, USA). The categorical data were summarized as numbers and percentages. Comparisons between groups used Chi Square test. Univariate and multivariate logistic regression analysis were used. P-values <0.05 were set as significant.

## 3. Result

This study included 181 participant physicians: 134 (74.0%) were less than forty and 126 (69.6%) were men (table 2). Muslims were 80.1% and Christians were 19.9%. Fifty-one (28.2%) practiced in the Urban Governorate but 131 (71.8%) practiced in Upper Egypt. The majority, 118 (65.1%) had Master degree or higher. Vasectomy was perceived positively, as the best method of sterilization, by 94/181 (52%) doctors but 87/181(48%) had a negative perception (Table 2).

Male physicians, physician working in Upper Egypt and who have higher education had significantly higher positive perception of vasectomy ( $P = 0.03$ ,  $0.008$  and  $0.04$  respectively). Positive perception of vasectomy was the only factor associated with advice of vasectomy ( $P = 0.001$ ) as indicated in Table 3.

The majority, 136/181 (75.1%) participants, did not advise vasectomy; 120/136 (88.2%) physicians did not advise vasectomy for: a possible post vasectomy sexual dysfunction, anticipation of non-acceptance of vasectomy by Egyptian men, religious issues and concerns regarding regaining future fertility (Table 4). Participants who did not advise vasectomy for reasons related to the procedure itself were 16/136 (11.8%). Physicians who advised vasectomies were 45/181 (24.9%); contraindication of females contraception or couples completed families represented 95.5% (43/45) of the reasons (Table 4).

The numbers (%) of participant physicians who chose Andrologist, Surgeon, Urologist and self to provide vasectomy were 104 (57.5%), 39 (21.5%), 37 (20.4%) and 1 (0.6%) respectively.

Univariate and multivariate analyses confirmed that perception of vasectomy is the only factor that significantly ( $P < 0.01$ ) affected the advice of vasectomy. Physicians who answered more than 6 answers in favor of vasectomy advised vasectomy 4 to 20 times more than physicians who answered <6 answers with favor of vasectomy (Table 5).

## 4. Discussion

In this study, 94/181 (52%) physicians perceived vasectomy as the best method for sterilization but only 45/181 (24.9%) advised Egyptian men to undergo vasectomy. It is apparent that some concerns had influenced physicians' perception of vasectomy and other factors hindered them to recommend the procedure. Compared to this, only 57% (102/178) of family planning doctors recommended vasectomy in USA [11] and only 5% of Gynecologist did in Nigeria [10]. However vasectomy is considered a simple procedure with low morbidity, it still lacks popularity in many societies.

In this study, perception of vasectomy was the only factor that significantly affected advice of vasectomy. The majority, 119/136 (87.5%) physicians did not recommend vasectomy for concerns related to Egyptian men who would undergo the procedure. These concern were related to post-vasectomy sexual dysfunctions,

**Table 1**

Questionnaire of physicians' perception of vasectomy as a contraceptive method among Family Practicing Physicians in Egypt.

Part 1(Questions 1–6):

Name, Age, Gender, Religion, Education and Governorate

**Part 2 (Question 7):**

**7. Question regarding; considering vasectomy as a suitable contraceptive method:**

- Vasectomy is the best permanent method of contraception
- The normal function of the testis is altered following vasectomy
- There is reduction or loss of libido in man following vasectomy
- The man may have difficulty in achieving erection following vasectomy
- Ejaculation is impaired following vasectomy
- The procedure require admission of the client routinely
- The procedure is best done under general anesthesia
- Vasectomy is more difficult to perform than bilateral tubal ligation
- Vasectomy increase the risk of prostate cancer
- The chance of regaining male fertility after vasectomy is better than regaining female fertility after bilateral tubal ligation

Part 3 (Questions 8–10):

8. Do you advise vasectomy? Yes or No

9-If Yes, why do you advise vasectomy?

10- If No, why do not you advise vasectomy?

Part 4:

11- If you advice vasectomy, who is the preferred doctor to do it?

a. Yourself b. Surgeon c. Urologist d. Andrologist

**Table 2**

Physicians' perception of vasectomy, in the family planning sector in Egypt, and their counseling patterns.

	Category (Number-%)	Perception of vasectomy		P value	Advised vasectomy		P value
		Negative: number (%)	Positive: number (%)		No: number (%)	Yes: number (%)	
<b>Age</b>	<40 y (134–74.0%)	68 (50.7%)	66 (49.3%)	0.47	100 (74.6%)	34 (25.4%)	0.78
	>40 (47–26.0%)	19 (40.4%)	28 (59.6%)		36 (76.6%)	11 (23.4%)	
<b>Gender</b>	Female (55–30.4%)	28 (50.9%)	27 (49.1%)	0.03	40 (72.7%)	15 (27.3%)	0.62
	Male (126–69.6%)	59 (46.8%)	67 (53.2%)		96 (76.2%)	30 (23.8%)	
<b>Religion</b>	Muslim (145–80.1%)	71 (49%)	74 (51%)	0.30	106 (73.1%)	39 (26.9%)	0.20
	Christian (36–19.9%)	16 (44.4%)	20 (55.6%)		30 (83.3%)	6 (16.7%)	
<b>Province</b>	Urban (51–28.2%)	28 (54.9%)	23 (45.1%)	.008	34 (66.7%)	17 (33.3%)	0.09
	Upper Egypt (130–71.8%)	59 (45.4%)	71 (54.6%)		102 (78.5%)	28 (21.5%)	
<b>Education</b>	Master or higher (118–65.1%)	47 (39.8%)	71 (60.2%)	0.04	83 (70.3%)	35 (29.7%)	0.14
	Practitioner (63–34.8%)	40 (63.5%)	23 (36.5%)		53 (84.1%)	10 (15.9%)	

**Table 3**

Association between perception of vasectomy and advice vasectomy.

		Perception of vasectomy: Number of answers in favor of vasectomy (number of participant doctors)			P value
		<6 (87)	6–8 (87)	9–10 (7)	
<b>Advised vasectomy (number-%)</b>	No (136–75.1%)	78 (57.4%)	56 (41.2%)	2 (1.5%)	0.001
	Yes (45–24.9%)	9 (20.0%)	31 (68.9%)	5 (11.1%)	

**Table 4**

Numbers and percentages of doctors who advised/ did not advise vasectomy in Egypt and their justifications.

<b>9. Do you advise vasectomy?</b>	<b>Number</b>	<b>Percent</b>
No	136	75.1%
Yes	45	24.9%
<b>10. Why did you advise vasectomy?</b>		
Female contraception is contraindicated	38/45	84.4%
Couple completed their family	5/45	11.1%
Others	2/45	4.4%
<b>11. Why did not you advise vasectomy?</b>		
Vasectomy is not appropriate family planning option in Egypt because man may feel less confident about his sexual power	54/136	39.7%
I am convinced the average Egyptian male will not accept vasectomy even when it is the most appropriate option	25/136	18.4%
Religious beliefs (related to patients)	21/136	15.4%
It should not be considered because it prevents the man from regaining future fertility when he needs.	19/136	14.0%
I believe the expertise for safe vasectomy is not available in our environment	12/136	8.8%
I consider bilateral tubal ligation a more appropriate option for permanent contraception in our setting	4/136	2.9%
Others (any complication or sequel of vasectomy)	1/136	0.7%

socio-cultural factors, religious issues and lastly for concerns regarding regaining future fertility.

However many studies denied any post-vasectomy sexual dysfunction, 5% of men reported its occurrence [7,12]. The AUA considered the post-vasectomy sexual dysfunction to be caused by factors not related to the procedure [7]. The AUA consideration should not be generalized, as sycho-social outcomes may vary by geographic location and the nature of the studied population. Moreover, it is impossible to confirm the absence of psychological effects of vasectomy including psychogenic sexual dysfunction [5,13,14].

Sociocultural and religious factors can influence the acceptance of men to undergo vasectomy. In India, among literate men, the acceptance rate for vasectomy was 42%; but it markedly dropped to 11% when men were asked to accept to be the candidates of vasectomy. Fears of failure of the procedure and its bad effects

on the family's name, should the partner gets pregnant, represented 52% of reasons of refusal of the procedure by Indian men [15]. Fear of post-vasectomy impotence was one of the causes to avoid vasectomy among married youth men inhabited slums of Karachi, Pakistan [16]. Vasectomy was considered a sin by 43% of Turkey's men; and 88% of them refused to have vasectomy for its negative effects on marriage, sexual health and even men's health [17]. In this study, similar sociocultural concerns could have hindered physicians to recommend vasectomy in Egypt.

Before counseling for vasectomy, especially where a man is allowed to get a second marriage, physicians should be aware about the chances of post vasectomy regaining of fertility. Studies proved that vasectomy may be complicated by increased testicular oxidative stress, increased testicular apoptosis, marked spermatogenic damage and increased incidence of intra-testicular fibrosis; and a possible epididymal blow out can complicate these effects [18–21]. The AUA considered the possibility of post-vasectomy regaining of fertility to be 50% [7] but this cannot be applied on the individual base. Physicians will be confronted with a person who is caring about regaining his own fertility before caring about the others' fertility; vasectomy is best considered as an irreversible procedure.

The 2 most common situations that urged physicians to recommend vasectomy in Egypt, at the present time, were contraindication of female contraception and completeness of families. These 2 causes represented more than 95% of vasectomy's recommendation. In these 2 situations regaining of fertility is a remote future demand. Physicians recommended other specialties to provide vasectomy and preferred not to provide the procedure by themselves.

With the temporary contraceptive methods use, increased fertility rate was reported in Egypt, lately; vasectomy is badly needed as an effective and permanent method of contraception. Proper information and education of the public about the benefits of vasectomy may alleviate myths and unrealistic cultural concepts; and accordingly, this will certainly ameliorate the post-vasectomy psychological effects. When the public have enough proper information about vasectomy, this will encourage more physicians to counsel more men to undergo vasectomy in Egypt. However, post-vasectomy regaining of fertility is best considered

**Table 5**

Univariate and multivariate logistic regression analysis of factors affecting advice of vasectomy in Egypt.

Factor	Univariate analysis		Multivariate analysis	
	Odds ratio	P value	Odds ratio	P value
<b>Age</b>				
<40 yrs.	1		1	
>40 yrs.	0.90 (0.41–1.96)	0.79	1.18 (0.41–3.43)	0.76
<b>Gender</b>				
Male	1		1	
Female	1.20 (0.58–2.46)	0.62	0.94 (0.38–2.35)	0.91
<b>Religion</b>				
Muslim	1		1	
Christian	0.54 (0.21–1.41)	0.21	0.53 (0.17–1.61)	0.26
<b>Education</b>				
MD	1		1	
Master	1.46 (0.65–3.34)	0.36	1.57 (0.58–4.23)	0.37
Diploma	0.44 (0.13–1.53)	0.20	0.84 (0.21–3.46)	0.81
General practitioner	0.69 (0.23–2.08)	0.51	0.79 (0.20–3.88)	0.73
<b>Governorate</b>				
Urban governorate	1		1	
Upper Egypt	0.55 (0.27–1.12)	0.10	0.60 (0.23–1.57)	0.31
<b>Perception of vasectomy</b>				
<6 with vasectomy	1		1	
6–8 with vasectomy	4.80 (2.12–10.87)	<0.0001	8.63 (3.18–23.41)	0.0001
9–10 with vasectomy	21.67 (3.66–128.36)	0.001	20.56 (2.99–140.92)	0.002

as an irreversible procedure, a larger number of men in Egypt still can get benefit from the procedure.

## 5. Conclusion

However more than half of physicians had a positive perception of vasectomy, only 24.9% advised Egyptian men to undergo the procedure. Sociocultural factors and religious issues hindered physicians to recommend vasectomy in Egypt. Vasectomy was recommended when it was absolutely needed.

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## Conflict of interest

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