



ORIGINAL RESEARCH PAPER

Medicine

SOCIO-DEMOGRAPHIC PROFILE OF PATIENTS AND DETERMINANTS OF SUCCESS OF NO SCALPEL VASECTOMY IN A DISTRICT OF WEST BENGAL

KEY WORDS:

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ABSTRACT

Background: Vasectomy is one of the terminal surgical procedures. Male sexual physiology remains unchanged in vasectomy. Vasectomy is not very uncommon contraceptive method. **Objectives:** This study was conducted to assess the socio-demographic profile of patients of vasectomy, to find out the varieties of complications and the proportion of instruction compliance among patients of vasectomy. **Materials and methods:** District Hospital of North 24 Parganas has been selected as study setting. Record review of the respective patients from the admission cum record register was the study technique. Epi-info software had been utilized to analyze the data. Proportion, tabular presentation, test of significance had been used in statistical analysis. **Results:** Mean age of the population undergone vasectomy was found 40.1 years with the lowest age of 24 years and the highest age of 59 years. Most of the families were found with two children. The most of the clients were found without any formal or non-formal education. Labourers with poor economic status participated in significant high number. All were found addicted to tobacco. Surgical site infection was found. Thirty clients (1.9%) provided semen for analysis. **Conclusion:** Poor and low educated people completing the family came for vasectomy. Success of vasectomy could not be assessed in most of the cases.

Research question: Are patients of vasectomy coming from lower socio-economic class? Are they complying clinician's instruction during follow up?

Background: Patients are attending hospitals for getting relief from medical problems. They are subsequently examined, investigated and treated accordingly in the health care facilities. ¹In family planning issue, people come in health care service centre to accept one of some contraceptive methods to control birth. Family planning allows people to attain their desired number of children and determine the spacing of pregnancies. It is achieved through use of contraceptive methods. ² As a family planning method, sterilisation is being taken by 25% of total couples. ³Worldwide, around 3-6% of couples were seen using vasectomy as a method of contraception. ⁴

Vasectomy is one of the terminal surgical procedures. Small diameter (2 - 3 mm) of the lumen of the vas presents the challenge of NSV reversal and needs micro-surgical technique(s) using 8/0 prolene with either operating microscope or optical loop. Reversal for recanalization cannot be guaranteed. Pre-vasectomy counselling includes local anaesthesia (peri-vasal block by 1-2% xylocaine), operation time (5 - 6 minutes), discharge time (after 30 minutes of close observation), sexual intercourse (3 days after vasectomy) and it is important one to have informed written consent. ⁵

Male sexual physiology remains unchanged in vasectomy. No long term health risks are found associated with the procedure. On the contrary, vasectomy breaks the blood-testes barrier that leads to increased levels of anti-sperm antibodies. So, after successful reversal, presence of antibodies prevents the wanted pregnancy strongly. ³Typical success rate of pregnancy following a vasectomy reversal is around 55% if it is performed within 10 years, around 25% after 10 years. Higher rate of aneuploidy, diploidy in sperm cell may lead to higher rate of congenital defects. ³

Male persons opt for vasectomy which is not very uncommon contraceptive method. During 2012 - 13, West Bengal performed male sterilization and it was 7545 in number (2.24%) out of expected level of achievement (337350) whereas female sterilization was good in number over expectation (62.31%). ⁶

The factors which act as determinants for adoption of vasectomy

are said to be age, number of children, occupation, residence, compliance to physician's instruction, complications followed by operations. These can be treated as predicting and outcome variables. ^{7,8,9,10}

Rationale: Very low numbers of studies were found on vasectomy and its associates in this state of West Bengal. Ethnicity, cultural aspects, educational qualities, attitude etc are different in this population compared with population of developed countries. Findings of this study might be same or different due to these factors and this necessitates the research on vasectomy in this set up.

This study was conducted to assess the socio-demographic profile of patients of vasectomy attended, operated, followed up in records; to find out the varieties of complications, if any, of both immediate and remote in nature; to find out the proportion of instruction compliance among patients of vasectomy.

Materials and methods:

Study Design: The study was cross-sectional in design in the descriptive format. **Study period** was from 15th July 2014 to 31st March 2016. **Settings:** District Hospital of North 24 Parganas has been selected as study setting. Total vasectomy cases came to this hospital either directly or through referral. Only one general surgeon was trained here and he was following a uniform method of vasectomy. **Participants:** Vasectomised patients attending Post-Partum Unit had been selected in this study. All the selected patients fulfilled the inclusion criteria. **Study Technique:** Record review of the respective patients from the admission cum record register was the study technique. **Sample size:** All the patients who underwent no scalpel vasectomy during the past one year have become the size of sample population. Total eligible vasectomised patients were taken in the study and hence complete enumeration was **sampling technique. Variables:** Predicting variables were age, number of children, occupation, residence etc and outcome variables were compliance to physician's instructions, complications followed by operations etc. **Inclusion criteria:** Patients whose data without any flaws were readily available in the register maintained had been included in inclusion area. **Exclusion Criteria:** Patients with faulty data had been excluded from the sampling frame and they were not taken. Wrong or ambiguous records had been rejected. The patients who were taken at hospital but operation was refused were wondering

vagabond, immune-compromised, with large indirect hernia, lunatic, uncontrolled diabetic, gross skin disease, multiple sebaceous cysts in scrotum. **Source of Data:** Record review had been done for elicitation of socio-demographic factors and other issues related to vasectomy already done. Admission register and follow up notations were utilized as source of data. The data contained admission accounts with health status, operative note, per-operative event notes if any, post-operative events note if any, readmission note if required and their management, advice on semen analysis along with other predicting and outcome variables.

Quality Control: A checklist had been formulated by the investigators themselves through point to point discussion. During data collection these guidelines had been strictly followed up.

No deviation had been allowed later on. When some points were found wrongly or ambiguously written in the record during review of the data, those points had been corrected in accordance with discussion of operating surgeons or data had been treated as missing in case of failure of correcting data of the record to eliminate memory bias. That data had been kept aside in the process of data analysis and calculation.

Ethical consideration: Institutional Ethics Committee of College of Medicine and Sagore Dutta Hospital has sanctioned the concerned study. Anonymity and confidentiality had been maintained during data collection, analysis and publication. Pre-vasectomy counselling was done by surgeon and informed written consent was taken.

Statistical analysis: Epi-info software had been utilized to analyze the data. Proportion, tabular presentation, test of significance had been used in statistical analysis.

Results:

A cross-sectional study was conducted during first January to thirty first December 2015 through the record review. Total number of study population was 1573 who have been operated and post-operative care has been given. Follow-up was keenly observed. The people belonging to Islam religion were 7.88%. Others were none but people of Hinduism.

The age distribution of these populations is depicted in **table 1**. Mean age of the population undergone vasectomy was found 40.1 years with the lowest age of 24 years and the highest age of 59 years. 40 – 49 years group of patients were found significantly higher in number ($p < 0.05$).

Table 1: Frequency of distribution of vasectomised patients according to age

Age (Years)	Number (%)	Mean \pm SD	Z, P value
20 – 29	69 (4.4)	40.1 \pm 8.9 years	Z = 32.59, < 0.05
30 – 39	571 (36.3)		
40 -49	763 (48.5)		
50 - 59	170 (10.8)		
Total	1573 (100.0)		

The clients of vasectomy have been categorised according to number of children in their family. Most of the families were found with two children ($p < 0.05$) with the range from one child to five children (Table 2).

Table 2: Distribution of vasectomised patients according to number of living children

Number of living Children	Vasectomised patients (%)	Z, P value
1	530 (33.7%)	Z = 18.35, < 0.05
2	984 (62.6%)	
3	45 (2.8%)	
4	09 (0.6%)	
5	05 (0.3%)	

The most of the clients were found without any formal or non-

formal education. They were illiterate (0.05). Two persons were found with graduate degree (Table 3). From these findings it can be concluded that illiterate or low educated persons opted NSV as family planning and contraceptive method.

Table 3: Distribution of vasectomised patients according to their educational status

Educational qualification.	Number of Vasectomised patients (%)	Z, P value
Illiterate	865 (54.9%)	Z = 13.95, < 0.05
Primary level	493 (31.4%)	
Secondary level	198 (12.7%)	
Higher secondary level	15 (0.9%)	
Graduate onward	2 (0.1%)	

The most of the clients belonged to poor economic class as per Modified B G Prasad scale). Their participation was found statistically significant (Table 4). People (clients) of upper high class came for vasectomy in very much meagre amount (0.1%).

Table 4: Distribution of vasectomised patients according to their family income

Per capita income / month (Class name)	Number of Vasectomised patients (%)	Z, P value
6,277 and above (Upper high)	2 (0.1%)	Z = 9.88, < 0.05
3,139–6,276 (High)	57 (3.6%)	
1,883–3,138 (Upper middle)	50 (3.2%)	
942–1,882 (Lower middle)	593 (37.7%)	
> 942 (Poor)	871 (55.4%)	

Most of the clients of vasectomy were found labour group including beggars (Table 5). Labourers participated in significant high number ($p < 0.05$). Farmers were of good quantity. On the contrary, two government employees with graduation degree came to do vasectomy.

Table 5: Distribution of vasectomised patients according to their occupation

Occupation	Number of Vasectomised patients (%)	Z, P value
Labourer	Total	Z = 46.72, < 0.05
	Industrial worker	
	Agricultural worker	
	Shop worker	
	Farmer	
	Govt. employee	
	Unemployed	
	Bidi Maker	
	Beggar	

Social issue: All were found addicted to tobacco. A sizable number was found with different kinds of addiction combinations. Alcohol, shoe polish, Amrutnjan (an indigenous pain reducing ointment), nitrosun (10 mg/day), valium (10 mg/day), phensydil, corex, grilinctus CD (last three were anti-tussive drugs) etc were incriminating substances to which the patients were addicted in varying degree. Above poverty line people were meagre (6.9%) in number i.e. most people were poor. Most of the patients completed family with \geq two children and this was significantly higher in number. 45.1% clients were illiterate. Two cases (0.13%) were found HIV positive.

Complications and side-effects followed by operations:

Surgical site infection was found (1.84%) and these cases were managed by medical treatment. Per-operative bleeding was seen in very scanty population (0.25%) which was an important concern for No Scalpel Vasectomy. And one case with bleeding required admission and this case was managed by medical measures. No case of genito-urinary infection, haematoma,

chronic orchalgia was observed among vasectomy clients. Non-infectious pain was not seen in this study.

Compliance to physician's instructions: Forty three clients (2.7%) attended hospital for post-operative follow-up care after three months. Thirty clients (1.9%) provided semen for analysis to identify sperm and their semen analysis proved absence of sperm in semen. One thousand one hundred and one clients (70.0%) adopted condom during sexual relation with their partners for one month and others did not turn up for follow up or post-operative care. Written and verbal reminders were given to all of the clients. Most of the clients did not comply physician's instruction in significant level ($p < 0.05$).

Discussion:

On the basis of mean age of the population undergone vasectomy, the clients were sexually active and economically productive population. From physiological point of view it can be declared that this population group is required for vasectomy operation.

Average age structure for a man getting a vasectomy in United States of America was found 38 years and 61% were under age 40.^{11,12} This feature was similar to this study result and some other study.¹³

Vasectomy was found not common practice of sterilization as method of contraception and low in number in comparison with tubectomy. This was the same in this study area and this was a sharp contrast to very few study.⁸

From socio-economic point of view, poor people were found coming for vasectomy in this study. There was no significant association between total family monthly income and acceptance of NSV in some other study.¹⁴

Educational levels of the clients in this study were found that most of them came from illiterate group or very low level of education. This was not seen in some other study.^{11, 13, 15} Two-third of the clients (66.3%) was found with two or more number of living children. This picture was similar to other study.^{12,16}

The most of the clients were found from agriculture industry. This finding was similar to some other study.¹⁵

Surgical wound infection was found not in less number of clients (1.84%). Per-operative bleeding was seen without haematoma. Similar and non-similar findings were observed in some other study.¹⁷ Haematoma, wound and genito-urinary infections and traumatic fistulae were seen in that study. Surgical skill may play the role for these complications. Orchalgia was seen in a very high proportion in that study.¹⁷ Medical consultations for hematoma or infection and were found less frequent (0.5%) in one study in comparison with this current study.¹⁸ Consultation for non-infectious pain was required in that study¹⁷ comparing this one.

Vasectomy is a procedure which did not get popularity in the state of West Bengal where tubectomy is more popular.¹⁸ This might be due to lack of awareness of vasectomy and its benefits and the work disturbance of men in this patriarchal society etc.¹⁹

The clients of No Scalpel Vasectomy gave semen in very meagre level (1.9%). This low level cannot be compared with other studies²⁰ which also found low but not so miserable. This result may demand pre-procedure counselling among clients of No Scalpel Vasectomy.

Success of No Scalpel Vasectomy is determined by semen analysis. This analysis provides information that semen does not contain spermatozoon. This sure success has been observed in this study in very meagre amount (1.9%) and distribution of clients with semen analysis in accordance with their age, number of living children, educational status, economic status, occupational issues was found similar to the general features found in this study. Determinants of success of No Scalpel Vasectomy should be

explored in further study.

Limitation: The chances of pregnancy after reversal operation were not a part of this study. All the clients did not attend for follow up as it was done passively.

Implications of the study: This knowledge will help our health administrators, health care providers, health educators to adopt newer techniques or policies to overcome the problem found if any.

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