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Effectiveness of Awareness Programme (AP) on vasectomy in terms of knowledge and attitude among males residing in community area: A quasi experimental study

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Abstract
Background: The population is rapidly increasing and has become a major issue for many countries of the world with the population growing at an annual rate of 1.2%. India with a population of 1.22 billion people it is predicted that India will have more than 1.53billion people by the end of 2030 with the population growth rate at 1.58%.
Objectives: The current study was undertaken with the objectives to effectiveness of Awareness Programme (AP) on vasectomy in terms of knowledge and attitude among males residing in community area
Method: A quasi experimental: One Group Pretest-Posttest Research Design was adopted in quantitative approach. The study participants comprised of males were selected from Villages Mullana, Sohana, Sarakpur, Barara, Dosarka, Maujgarh, of Ambala Dist, Haryana by convenience sampling technique. The data was collected using selected variables of the males, structured knowledge questionnaire and Structure Attitude scale through paper and pencil (self report)
Findings: SPSS version 20 was used for statistical analysis. The mean post test knowledge scores (19.5 ±0.79) was significantly higher than the mean pre test knowledge score.(7.07±2.49). The mean post test attitude score118.7±10.32was significantly higher than the mean 104± 30.79 pre test attitude score. There was positive relationship between knowledge and attitude and also there was a significant association of post-test knowledge and attitude score with selected variables
Conclusion: The study concluded that knowledge and attitude of males regarding vasectomy improved after awareness programme.

Keywords: awareness programme, knowledge, attitude, males, vasectomy

Introduction

The population is rapidly increasing and has become a major issue for many countries of the world with the population growing at an annual rate of 1.2%. Though China is with over 1.35 billion people and India with a population of 1.22 billion people it is predicted that India will have more than 1.53billion people by the end of 2030 with the population growth rate at 1.58% [1].

Male participation has always been lower in health schemes and the main reason is the mind set of both male and female partner's. Men represent half the world's population, but account for less than one-third of contraceptive use. According to Indian family welfare programme, 56% married women had undergone some method of contraception (NFHS-3 2005-06), while only 2% males had followed sterilization methods.

Vasectomy, male condoms, withdrawal and abstinence are the common contraceptives available to men and vasectomy is a permanent form of contraception for men [2].

Male and female sterilization is used in many countries as a permanent method of contraception. Failure rates for female sterilization are high due to age during tubectomy and the method of tubal occlusion.Failure rates for vasectomy are 10 times lower than those of female sterilization [3].

One way to foster male involvement in family planning was to give couples more contraceptive choices through the promotion of male oriented method such as vasectomy and incentives. The India's Rural Health Mission reports that government provided compensation payments for sterilization for poor couples and Men got Rs.1000/, nearly double the amount received by women. Yet the gender disparity was glaring, as more than 10 million women were sterilized from 2006-2010, while just half a million underwent vasectomy [4].

Acceptance of male permanent family planning method is very poor when compared with female methods. Motivating men to accept permanent family planning technique helps in improving the health of the women (Panigrahi 2010). Awareness of healthy family living habits is woefully lacking in India. With large sections of female population adopting family planning compared to male population, the incidences of female anemia rate arealso increasing. Females also have their own occupation, have to do house management and house work, take care of family, children causing physical weakness [5].

The rate of vasectomy use was low in most developing countries like India and acceptance of vasectomy is limited by several factors is poor awareness and education regarding vasectomy.

Materials and Methods

Quantitative research approach with Quasi experimental: One group Pre-test Post-test Design was used. The study participants comprised of 60 nursing students were selected from Villages Mullana, Sohana, Sarakpur, Barara, Dosarka, Maujgarh, of Ambala Dist, Haryana by convenience sampling technique. The data was collected using selected variables of the males, structured knowledge questionnaire and Structure Attitude scale through paper and pencil (self report). The study included Who were in the age group of 21 to 40 years having 2 or more children, residing in selected villages of Ambala, who are willing to participate in the study, who are alert oriented and comprehend to respond and who are able to read and write in Hindi, excluded who were not available during data collection and also whose wife have undergone permanent sterilization

Validity and Reliability

Content validity of the tool and SIM were obtained by submitting it to seven experts (Preventive and social Medicine- 2, Obstetrics & Gynaecology-3 and Community Health nursing-2) for its accuracy and relevancy and also to obtain their opinion and suggestions Reliability co- efficient for the tool was calculated by using Cronbach's Alpha and it was found to be 0.74 (Acceptable range is 0.7 – 0.9). The tool was found to be valid, reliable and feasible for the purpose of the study.The reliability co- efficient for the structured knowledge questionnaire was calculated by using KR_{20} and it was found to be 0.78 (acceptable range is between 0.7-0.9).

Ethical Consideration

The ethical principles have to be considered before conducting any research is the principle of respect, beneficence and justice that are relevant to the conduct of the study. Ethical approval was taken from the university ethical committee for conducting the study (MMU/IEC/983)**.** The permission was taken from to conduct the study in the villages**.** The consent was taken from the males before data collection. To obtain a free and frank response, the males were assured about their confidentiality of their response Purpose of the study was explained to sample subjects before data collection.

Data Collection Tools and Techniques

Selected Variables was used to collect data and to assess previous knowledge and attitude regarding Vasectomy. A structured knowledge questionnaire was used to assess knowledge of males regarding vasectomy. It contains 20 multiple choice items. Each correct answer was awarded a score of one and each wrong answer was awarded zero score. Thus minimum score was 00 and maximum score was 20. Attitude rating scale was used to assess the attitude of males regarding vasectomy. A total 39 items were developed to assess the attitude of males regarding vasectomy in terms of strongly agree, agree uncertain, disagree and strongly disagree and were scored as 1,2,3,4 and 5.Out of 39 items, 20 items were used to assess the negative attitude of males and scored as 1, 2,3,4,5 while 19 items were used to assess the positive attitude of males and scored as 5, 4,3,2,1.

Results

Table 1: Frequency and Percentage distribution of Males according to Selected Variables N=60

S. No	Selected Variables	f (%)
1. Age in years		
1.1	21-25	27(45)
1.2	26-30	28(46.7)
1.3	31-35	4(6.7)
1.4	36-40	1(1.7)
2. Religion		
2.1	Hindu	51(85)
2.2	Sikh	7(11.7)
2.3	Muslim	2(3.3)
3. Type of family		
3.1	Nuclear	24(40)
3.2	Joint	24(40)
3.3	Extended	12(20)
4. Educational status		
4.1	Primary	12(20)
4.2	Secondary	24(40)
4.3	Senior-secondary	19(31.7)
4.4	Graduate Or More	5(8.3)
5. Occupation		
5.1	Private Job	21(35)
5.2	Government Job	6(10)
5.3	Self Employed	27(45)
5.4	Home Worker	6(10)
6. Family income		
6.1	<5000 per month	32(53.3)
6.2	5,001 to 10,000 per month	14(23.3)
6.3	10,001 to 20,000 per month	6(10)

6.4	>20,000 per month	8(14.3)
7. Socio economic status		
7.1	Upper class	10(16.7)
7.2	Upper middle class	13 (21.7)
7.3	Middle class	1(1.7)
7.4	Upper lower middle class	34 (56.7)
7.5	Lower class	2(3.3)
8. Age at marriage		
8.1	21 -25 years	48(80)
8.2	26-30 years	10(16.7)
8.3	31-35 years	1(1.7)
8.4	36 years 0r above	
9. Duration of marriage		
9.1	1-5 years	1(1.7)
9.2	6-10 years	9(15)
9.3	11-15 years	29(48.3)
9.4	16 years or more	14(23.3)
10. No. Of living children		
10.1	1	8(13.3)
10.2	2	39(65)
10.3	3	11(18.3)
10.4	4 or more	2 (3.3)
11. Have you ever heard about vasectomy?		
11.1	Yes	60(100)
12. Sources of information about vasectomy?		
12.1	Newspaper	2(3.3)
12.2	Television	21(35)
12.3	Street Play	2(3.3)
12.4	Significant Others	31(51.7)

Table 1 shows the Frequency and percentage distribution males according to selected variables. Majority of the males 28(46.7%) were in the age group of 26 to 30yrs, 51(85%) were Hindus, 24(40%) belonged to extended and nuclear family. 12(20%). Education wise, majority of the males 24(40%) studied up to secondary level while only 5(8.3%) had studied up to graduation. Most of the males 27(45%) were self employed and more than half of the males i.e. 32(53.3%) had family monthly income of Rs 5000 and less. More than half of the males 34(56.7%) belonged to upper lower middle class (kuppuswamy's socio economic status. According to marital history, Most of the males 48(80%) were in the age of 21 to 25 at the time of marriage and less than half of the males 29(48.3%) were married for a duration of 6 to 10 years and 39(65%) of the males were having maximum 2 children. Majority of the males have heard about vasectomy 56(93%) and 31(51.7%) had source of information about vasectomy from significant others

Table 2: Frequency and Percentage Distribution in Terms of Level of Knowledge Scores among Males before Administration of Awareness Programme. N=60

Level of knowledge	Range of Score	Pre-test f(%)
Very good	16-20	---
Good	13-15	---
Average	10-12	9(15)
Below average	0-9	51(85)

Minimum score: 00 Maximum score: 20

Table 2 Frequency and percentage distribution in terms of Level of knowledge among males regarding vasectomy before administration of awareness programme. Out of 60 males, majority of them 51(85%) had level of knowledge below average while 9 (15%) had average knowledge.

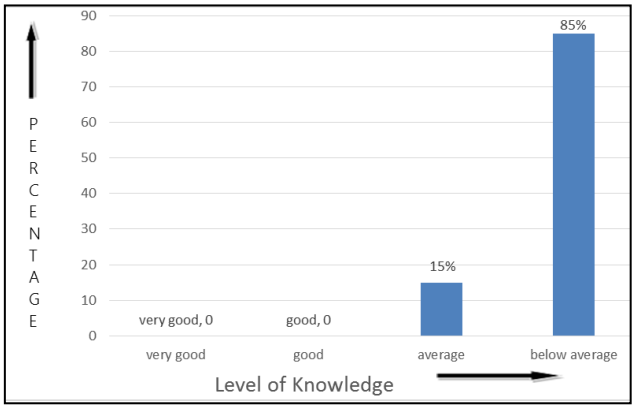

Fig 1: Bar-graph Showing Percentage Distribution in terms of level of Knowledge among Males regarding vasectomy before administration of Awareness Programme

Table 2: Frequency and Percentage distribution in terms of Level of Attitude among males before administration of awareness Programme. N = 60

Level of attitude	Range of scores	Pretest f (%)
Favourable Attitude	156 – 195	8(13.3)
Moderately favourable Attitude	99 – 155	15(25)
Unfavourable Attitude	39 - 98	37(61.7)

Maximum score: 195 Minimum score: 39

Table 2 depicts the Frequency and Percentage distribution in terms of Level of attitude among males before administration of awareness programme. Majority of the males 37 (61.7%) had unfavourable attitude while only 8(13.3%) had favourable attitude and 15(25%) had moderately favourable attitude regarding vasectomy before administration of awareness programme.in figure 2

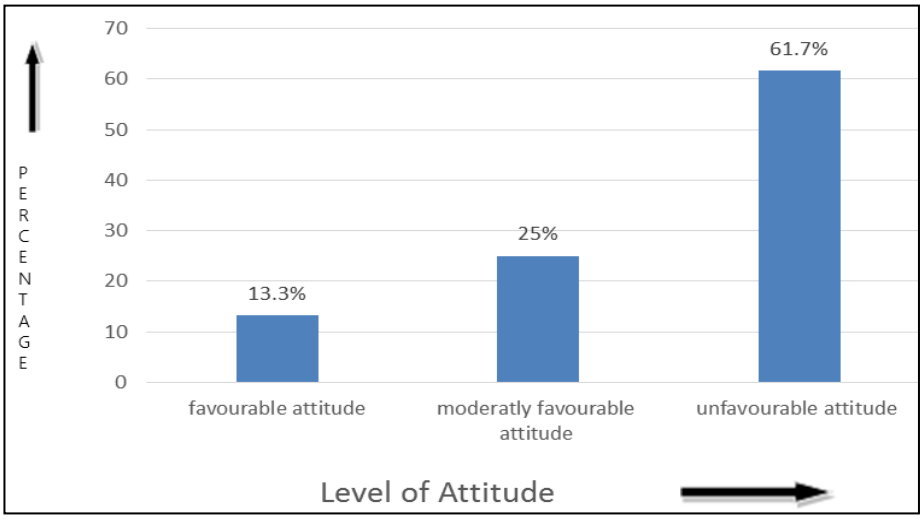

Fig 2: Bar-graph Showing Percentage Distribution in terms of level of attitude Among Males regarding vasectomy before administration of awareness programme

Table 3: Range, Mean, median and standard deviation of pretest knowledge score and attitude scores of males regarding vasectomy N = 60

Variable	Range of scores	Mean±SD	Median
Knowledge	1-12	7.07±2.49	7
Attitude	53-173	118.7± 10.32	118

Maximum score Minimum score Knowledge: 20 Knowledge: 00 Attitude: 195 Attitude: 39

Table 3 shows that the range of pretest knowledge score was from 1-12and pretest attitude score was 53-173**.** The mean pretest knowledge score with standard deviation was 7.07±2.49; with Median were 7, whereas the mean pretest attitude score was 118.7± 10.32 with median as 95.

Table 4: Item wise analysis of male's responses in positive Attitude Rating Scale before implementation of Awareness Programmeregarding vasectomy N=60

S No.	ITEM	SA	S	U	D	SD
4	Vasectomy is an effective form of family planning method	1 (1.7)	9 (15)	23 (38.3)	15 (25)	12 (20)
5	Men should take part in family planning	8 (13.3)	10 (16.7)	20 (33.3)	12 (20)	10 (16.7)
9	Sperm will be ejaculated before sexual intercourse even 8 weeks after a vasectomy	5 (8.3)	13 (21.7)	15 (25)	12 (20)	15 (25)
16	Vasectomy can be discussed in society	6(10)	6 (10)	17 (28.3)	15 (25)	16 (26.7)
17	Vasectomy can be discussed with wife	9 (15)	6 (10)	17 (28.3)	9 (15)	19 (31.7)
20	Vasectomy is safe and effective.	7(11.7)	5 (8.3)	15 (25)	18 (30)	15 (25)
21	Vasectomy is easier and better choice than tubectomy.	9 (15)	7(11.7)	13 (21.7)	16 (26.7)	15 (25)
22	Vasectomy does not lead to any guilt feeling.	7 (11.7)	10(15.7)	15 (25)	11 (18.3)	17 (28.3)
23	Vasectomy does not reduce the man's work strength or output.	23 (38.3)	3 (5)	4 (6.7)	6 (10)	24 (40)
24	Vasectomy does not lead to hospitalization.	11 (18.3)	10(16.7)	13 (21.7)	10 ()16.7	16 (26.7)
25	Vasectomy makes the man sexually weak/diminishes his sexual vigour.	6 (10)	7 (11.7)	8 (13.3)	13 (21.7)	26 (43.3)
27	After vasectomy, they won't be man.	7 (11.7)	8 (13.3)	7 (11.7)	14 (23.3)	24 (40)
30	Vasectomy is condemned by religion.	7 (11.7)	7 (11.7)	7 (11.7)	16 (26.7)	23 (38.3)
31	Vasectomy does not causes social embarrassment.	11 (18.3)	11(18.3)	11 (18.3)	8 (13.3)	19 (31.7)
32	Leads to dry ejaculation.	10 (16.7)	9 (15)	14 (23.3)	9 (15)	18 (30)
35	If ever required, I will adopt vasectomy as permanent method of contraception, if my family would permit.	8 (13.3)	10(16.7)	8 (13.3)	9 (15)	25 (41.7)
37	Vasectomy is imposed by Western countries and also suitable in India	6 (10)	6 (10)	7 (28.3)	5 (8.3)	26 (43.3)
38	If a married couple does not want to have more children, men should be responsible for contraception	4 (6.7)	11 (18.3	12 (20)	10 (16.7)	23 (38.3)
39	Men with a vasectomy does not lose their authority in the family	8 (13.3)	1 (1.7)	8 (13.3)	6 (10)	87 (61.7)

Table 4 depicts the Rank wise positive attitude of the males regarding vasectomy. I[st]rank was given to the highest positiveattitude (43.3%) for males who strongly agreed and agreed "Vasectomy does not reduce the man's work strength or output." likewise 2[nd]rank was given to males with (36.6%) for item no. 24 where males strongly agreed and agreed for "Vasectomy does not lead to hospitalizationand finally 3[rd] rank was given to males (35%) for item no. 31 where males strongly agreed and agreed for "Vasectomy does not causes social embarrassment".

Table 5: Item wise analysis of male's responses in negativeAttitude Rating Scale before implementation of Awareness Programmeregarding vasectomy N=60

S No	Item	SA	S	U	D	SD
1.	It's preferable that permanent sterilization should be only for females	26 (43.3)	15 (25)	6 (10)	9 (15)	4 (6.7)
2.	Vasectomy makes men more immoral	4 (6.7)	10(16.7)	31 (51.7)	10 (16.7)	5 (8.3)
3.	Men should be primarily responsible for decision making on family planning methods to utilize	10 (16.7)	6 (10)	15 (25)	13(21.7)	16(26.7)
6.	It's against my cultural belief for a man to practice vasectomy	5 (8.3)	9 (15)	12 (20)	16(26.7)	18 (30)
7.	Against my religious belief for a man to practice vasectomy	8 (13.3)	13(21.7)	15 (25)	12 (20)	12 (20)
8.	After a vasectomy man is able to impregnate his partner	7 (11.7)	6 (10)	17 (28.3)	17 (28.3)	13(21.7)
10	The tendency for prostate cancer increases in men who have had vasectomy	3 (5)	13(21.7)	17 (28.3)	9 (15)	18 (30)
11	Vasectomy affects sex life	2 (3.3)	12 (20)	19 (31.7)	10(16.7)	17(28.3)
12	After Vasectomy man can't do house hold works	7 (11.7)	12 (20)	11 (18.3)	14(23.3)	16(26.7)
13	After Vasectomy man will be weak	3 (5)	14(23.3)	17 (28.3)	15 (25)	11(18.3)
14	Vasectomy gives harmful affects to the brain of the person	4 (6.7)	6 (10)	14 (23.3)	15 (25)	21 (35)
15	Vasectomy cannot be reversible	9 (15)	10(16.7)	14 (23.3)	14()23.3	13(21.7)
18	After vasectomy person will not be a complete man	5 (8.3)	7(11.7)	8 (13.3)	15 (25)	25(41.7)
19	Use of family planning is a sin	12 (20)	18 (30)	9 (15)	4 (6.7)	17(28.3)
26	Vasectomy does not causes decrease libido.	10 (16.7)	8 (13.3)	18 (30)	8 (13.3)	16(26.7)
28	Vasectomy demands rest and which males cannot afford as they have to work outside.	18 (30)	12 (20)	2 (3.3)	4 (6.7)	24 (40)
29	Vasectomy needs less rest than tubectomy.	7 (11.7)	6 (10)	13 (21.7)	14(23.3)	20(33.3)
33	Only female should adopt permanent method of contraception i.e., tubectomy	11 (18.3)	10(16.7)	12 (20)	11(18.3)	16 26.7)
34	If ever required, I will adopt vasectomy as permanent method of contraception, if my family would permit.	8 (13.3)	10(16.7)	8 (13.3)	9 (15)	25(41.7)
36	If vasectomy fail, and wife become pregnant, it causes major family tension, wife's character is suspected.	8 (13.3)	5 (8.3)	9 (15)	10(16.7)	28(46.7)

Table 5 depicts that rank wise negative attitude of the males regarding vasectomy. I[st]rank was given to the highest negativeattitude (68.3%) for males who strongly agreed and agreed with "It's preferable that permanent sterilization should be only for females." likewise 2[nd] rank was given to males with (50%) for item no. 19 and 28 where males strongly agreed and agreed for "Use of family planning is a sin." and "Vasectomy demands rest and which males cannot afford as they have to work outside" and finally 3[rd] rank was given to males (35%) for item no. 33 where males strongly agreed and agreed for "Only female should adopt permanent method of contraception i.e., tubectomy".

Table 6: Frequency and Percentage distribution in terms of Level of knowledge scores among males after administration of awareness programme N=60

Level of knowledge	Range of Score	F (%)
Very good	16-20	60(100)
Good	13-15	
Average	10-12	
Below average	0-9	

Table 6 depicts the Frequency and Percentage distribution in terms of Level of knowledge among males after administration of awareness programme showing that all the males were having very good knowledge regarding vasectomy i.e. 60 (100%) after administration of awareness programme.

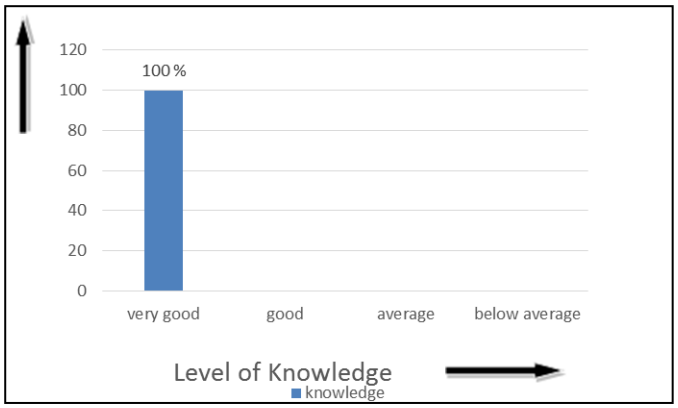

Fig 3: Bar-graph Showing Percentage Distribution in terms of level Of Knowledge among Males regarding vasectomy after administration of awareness programme.

Table 6: Frequency and Percentage distribution in terms of Level of attitude scores among males after administration of awareness programme N = 60

Level of attitude	Range of score	F (%)
Favourable Attitude Moderately	156 – 195	21(35)
favourable Attitude	99 – 155	33(55)
Unfavourable Attitude	39 - 98	6(10)

Maximum score: 195 Minimum score: 39

Table 6 showing Frequency and Percentage distribution in terms of Level of attitude among males after administration of awareness teaching programme. After administration of awareness programme, most of the 33(55%) Males were had moderately favourable Attitude, followed by 21(35%) males in Favourable attitude and 6 (10%) males still had unfavourable attitude regardingvasectomy.

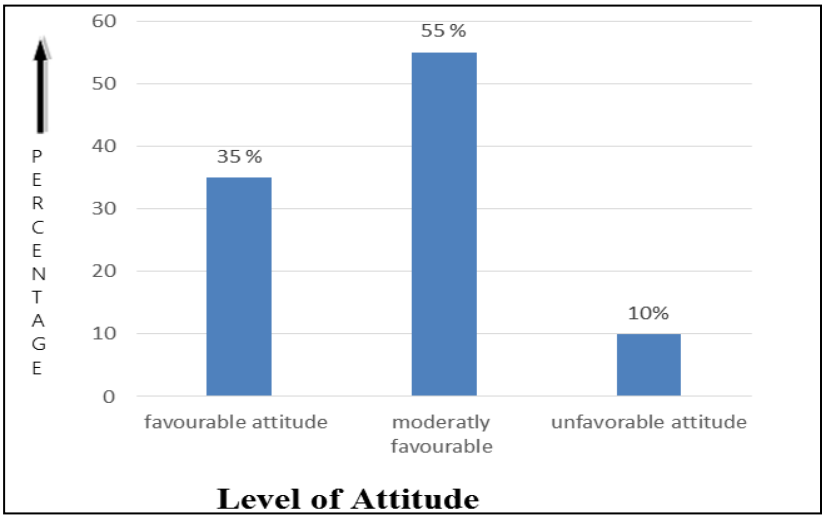

Fig 4: Bar-graph showing percentage distribution in terms of level of attitude among males regarding vasectomy after administration of awareness programme.

Table 7: Range, Mean, median and standard deviation and of knowledge and attitude after administration of awareness programme. N=60

Variable	Range of score	Mean ± S.D.	Median
Knowledge	16-20	19.5 ±0.79	20
Attitude	77-181	118.7±10.32	119

Maximum score Minimum score Knowledge: 20 Knowledge: 00 Attitude: 195 Attitude: 39

Table 7 depicts that Range, Mean, median and standard deviation of knowledge and attitude after administration of awareness programme. The mean score of knowledge was 19.5 ±0.79; Median was 20 with range score of 16 – 20 whereas the mean score of attitude was 118±10.32; median was 119 with obtained range of 77-181 after administration of awareness programme

Table 8: Mean, standard deviation, Mean difference, Standard deviations of difference, Standard error of mean difference and't' value of pre and post test scores of knowledge and attitude of males regarding vasectomy. N = 60

Variable	Group	Mean ± S.D.	M_D	$S.D._{D.}$	$S.E._{M.D.}$	't' value	df	P value
Knowledge	Pre test	7.07±2.49	12.45	2.42	0.31	39.77	59	0.00*
	Post test	19.52±0.79						
Attitude	Pre test	104±30.79	27.23	39.77	5.13	5.30	59	0.00*
	Post test	118.7±10.32						

NS -Not significant (p>0.05) t (59) = 2.00 *- significant (p ≤ 0.05)

Table 8 depicts that Mean, standard deviation, Mean difference, Standard deviations of difference, Standard error of mean difference and't' value of pre and post test scores of knowledge and attitude of males regarding vasectomy. It shows that there was a significant difference between knowledge and attitude score of males after administration of awareness teaching programme as the calculated 't' value of knowledge was 39.77 and p= 0. 00 with mean difference of 12.45 which was significant at 0.05 level of significance and calculated t value of attitude was 5.30 and p = 0.00 mean difference of 27.23 which was significant. Hence, null hypothesis H_{01} and H_{02} was rejected andresearch hypotheses H_1 and H_2 were accepted. So it can be concluded that awareness teaching programme intervention was effective in increasing the knowledge and attitude of males regarding vasectomy.

Table 9: Area wise Mean± standard deviation, Mean difference, Standard deviations of difference, Standard error of mean difference and 't' value of pre and post test scores of Knowledge of males regarding vasectomy N=60

Area	Pre-test Mean ± S.D.	Post-test Mean ± S.D.	M_D	$S.D._{D.}$	$S.E._{M.D.}$	't' value	P value
Concepts and types of vasectomy	2.63±1.19	5.82±0.43	3.18	1.18	0.15	20.79	0.00*
Preliminary assessment for vasectomy	1.28±0.94	4.85±0.36	3.56	0.89	0.11	31.04	0.00*
Post vasectomy care	1.10±0.93	3.97±0.18	2.86	0.94	0.12	23.44	0.00*
Benefits and drawback of vasectomy	2.05±1.12	4.88±0.32	2.83	1.18	0.15	18.57	0.00*

NS -Not significant (p>0.05) t (59) = 2.00 *- significant (p ≤ 0.05)

Table 9 depicts area wise mean, mean difference, Standard error of mean difference and computed t values in areas of knowledge before and after administration of awareness programme. The computed t value in the area of concept of vasectomy was (t=4.67 and p = 0.00), Types of vasectomy was (t = 20.79 and p= 0.00), Preliminary assessment for vasectomy (t= 31.04 p=0.00), benefits and drawback for vasectomy (t= 18.57 p=0.00), were found to be significant at 0.05 level of significance there was a significant difference between pre test and post test score in the areas of knowledge among males regarding vasectomy.

Table 10: Area wise mean, Mean percentage, Actual Gain, Possible Gain and Modified Gain of pre test and post test knowledge score of Males regarding vasectomy N=60

Area	Max. Score	Pre test Mean (%)	Posttest Mean (%)	Actual Gain (%)	Possible Gain	Modified Gain %
Concepts and types of vasectomy	6	2.63 (43.83)	5.82(97)	3.19 (53)	3.37	94
Preliminary assessment for vasectomy	5	1.28 (25.6)	4.85 (97)	3.57 (71)	3.72	95
Post vasectomy care	4	1.1 (27.5)	3.97 (99)	2.87 (71)	2.90	98
Benefits and drawback of vasectomy	5	2.05 (41)	4.88 (97)	2.83 (56)	2.95	95

Table 10 depicts that area wise mean, mean percentage, Actual gain, possible gain and modified gain of males regarding vasectomy. It shows that majority of males were having highest pre test mean percentage in the area Concepts and types of vasectomy i.e. 43.83% and in post test mean percentage the highest mean percentage is 99% i.e. 'Post vasectomy care.

Table 11: Item wise analysis of male's responses in positive Attitude Rating Scale after implementation of Awareness Programme regarding vasectomy N=60

S No	Item	SA	S	U	D	SD
4	Vasectomy is an effective form of family planning method	4 (6.7)	11(18.3)	20(33.3)	15 (25)	10(16.7)
5	Men should take part in family planning	7 (11.7)	11 (18.3)	17 (28.3)	15(25)	10(16.7)
9	Sperm will be ejaculated before sexual intercourse even 8 weeks after a vasectomy	12(20)	14(23.3)	14(23.3)	11(18.3)	9(15)
16	Vasectomy can be discussed in society	12(20)	5(8.3)	12(20)	19(31.7)	12(20)
17	Vasectomy can be discussed with wife	13(21.7)	11(18.3)	17 (28.3)	8(13.3)	11(18.3)
20	Vasectomy is safe and effective.	15(25)	7(11.7)	20(33.3)	8(13.3)	10(16.7)
21	Vasectomy is easier and better choice than tubectomy.	16(26.7)	12(20)	10(16.7)	9(15)	13(21.7)
22	Vasectomy does not lead to any guilt feeling.	11(18.3)	11(18.3)	20(33.3)	8(13.3)	10(16.7)
23	Vasectomy does not lead to heart disease	22(36.7)	10(16.7)	16(26.7)	9(15)	3(5)
24	Vasectomy does not reduce the man's work strength or output.	14(23.3)	10(16.7)	21(35)	5(8.3)	10(16.7)
25	Vasectomy does not lead to hospitalization.	20(33.3)	13(21.7)	18(30)	1(1.7)	8(13.3)
27	Vasectomy does not causes decrease libido.	27(45)	12(20)	14(23.3)	3(5)	4(6.7)
30	Vasectomy needs less rest than tubectomy.	18(30)	13(21.7)	17(28.3)	5(8.3)	7(11.7)
32	Vasectomy does not causes social embarrassment.	20(33.3)	17(28.3)	13(21.7)	5(8.3)	5(8.3)
35	If ever required, I will adopt vasectomy as permanent method of contraception, if my family would permit.	22(36.7)	15(25)	12(20)	7(11.7)	4(6.7)
37	Vasectomy is imposed by Western countries and also suitable in India	22(36.7)	7(11.7)	18(30)	3(5)	10(16.7)
38	If a married couple does not want to have more children, men should be responsible for contraception	28(46.7)	7(11.7)	9(15)	5(8.3)	11(18.3)
39	Men with a vasectomy does not lose their authority in the family	23(38.3)	9(15)	5(8.3)	6(10)	17(28.3)

Table 11 depicts that rank wise positive attitude of the males regarding vasectomy. Ist rank was given to the highest positive attitude (69.4%) for males who strongly agreed and agreed "if a married couple does not want to have more children, man should be responsible for contraception" likewise 2nd rank was given to males with (65%) for question no. 27 where males strongly agreed and agreed for "vasectomy does not cause decrease in libido and finally 3rd rank was given to males (61.7%) for question no. 35 where males strongly agreed and agreed for if ever required. I will adopt vasectomy as permanent method of contraception.

Table 12: Item wise analysis of male's responses in negative Attitude Rating Scale after implementation of Awareness Programmeregarding vasectomy N=60

S No	Item	SA	S	U	D	SD
1	It's preferable that permanent sterilization should be only for females	25 (41.7)	15(25)	7 (11.7)	10 (16.7)	3 (5)
2	Vasectomy makes men more immoral	6 (10)	10(16.7)	27 (45)	12 (20)	5(8.3)
3	Men should be primarily responsible for decision making on family planning methods to utilize	12(20)	9(15)	17(28.3)	16(26.7)	6(10)
6	It's against my cultural belief for a man to practice vasectomy	11(18.3)	10(16.7)	19(31.7)	16(26.7)	4(6.7)

7	Against my religious belief for a man to practice vasectomy	14(23.3)	14(23.3)	13(21.7)	13(21.7)	6(10)
8	After a vasectomy man is able to impregnate his partner	11(18.3)	12(20)	18 (30)	10 (16.7)	9(15)
10	The tendency for prostate cancer increases in men who have had vasectomy	10(16.7)	19()31.7	13(21.7)	10(16.7)	8(13.3)
11	Vasectomy affects sex life	8(13.3)	22(36.7)	13(21.7)	13(21.7)	4(6.7)
12	After Vasectomy man can't do house hold works	10(16.7)	5(8.3)	12(20)	8(13.3)	25(41.7)
13	After Vasectomy man will be weak	15(25)	14(33.3)	15(25)	11(18.3)	5(8.3)
14	Vasectomy gives harmful affects to the brain of the person	12(20)	12(20)	18(30)	15(25)	3(5)
15	Vasectomy cannot be reversible	13(21.7)	8(13.3)	18(30)	12(20)	9(15)
18	After vasectomy person will not be a complete man	19(31.7)	7(11.7)	15(25)	11(18.3)	8(13.3)
19	Use of family planning is a sin	13(21.7)	9(15)	18(30)	12(20)	8(13.3)
26	Vasectomy makes the man sexually weak/diminishes his sexual vigour.	13(21.7)	17(28.3)	14(23.3)	8(13.3)	8(13.3)
28	After vasectomy, they won't be man.	22(36.7)	14(23.3)	5(8.3)	6(10)	13(21.7)
29	Vasectomy demands rest and which males cannot afford as they have to work outside.	30(50)	15(25)	3(5)	3(5)	9(15)
31	Vasectomy is condemned by religion.	25(41.7)	11(18.3)	9(15)	12(20)	3(5)
33	Leads to dry ejaculation.	31(51.7)	11(18.3)	10(16.7)	4(6.7)	4(6.7)
34	Only female should adopt permanent method of contraception i.e., tubectomy	26(43.3)	9(15)	12(20)	10(16.7)	3(5)
36	If vasectomy fail, and wife become pregnant, it causes major family tension, wife's character is suspected	25(41.7)	11(18.3)	12(20)	8(13.3)	4(6.7)

Table 12 depicts that rank wise negative attitude of the males regarding vasectomy. Ist rank was given to the highest negative attitude (75%) for males who strongly agreed and agreed "Vasectomy demands rest and which males cannot afford as they have to work outside." likewise 2nd rank was given to males with (70%) for question no. 33 where males strongly agreed and agreed for "Leads to dry ejaculation and finally 3rd rank was given to males (58.3%) for question no. 34 where males strongly agreed and agreed for Only female should adopt permanent method of contraception i.e., tubectomy.

Table 13: Correlation between post test knowledge and attitude scores of males regarding vasectomy N = 60

Group	Knowledge r (p value)	Attitude scores r (p value)
Knowledge	-	0.04(0.07))^{NS}

R (58) = 0.250 NS -Not significant (p>0.05)

Table 13 depicts that r value 0.04 and p value 0.07 which was found to be significant at 0.05 level of significant. Thus there was positive relationship between knowledge and attitude among males regarding vasectomy.

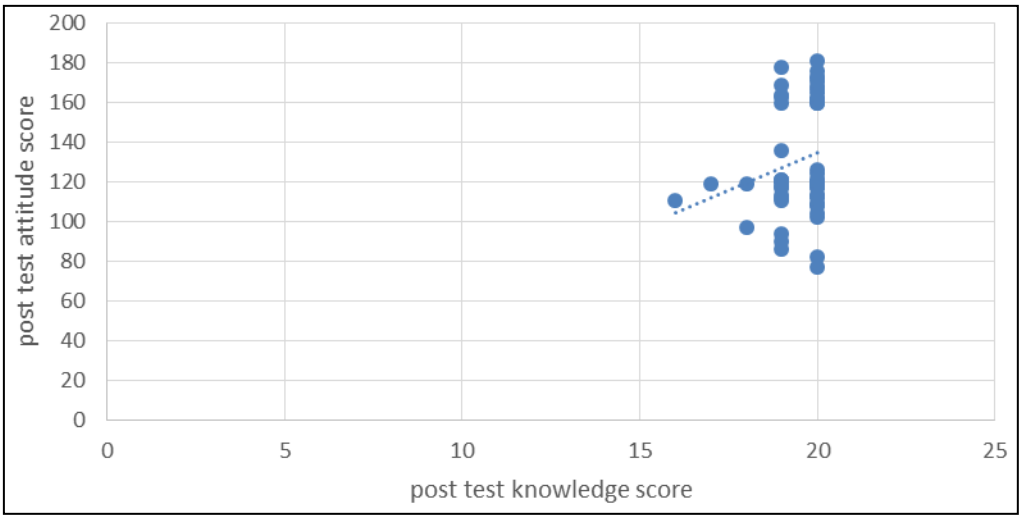

Fig 5: Scatter diagram showing positive correlation between knowledge and attitude scores of males regarding vasectomy

Table 14: ANOVA and t test value showing association between posttest knowledge score of males regarding vasectomy with selected variables N = 60

S.no	Selected variables	Mean	df	F /t	pvalue
1.	Age in Years				
	1.1. 21 – 25	19.67	3/56	0.81$_F$	0.48 ^{NS}
	1.2.26 – 30	19.36			
	1.3.31- 35	19.5			
	1.4.36 – 40	20			
2.	Religion				
	2.1.Hindu	19.59	2/57	7 1.74$_F$	0.18^{NS}
	2.2.Sikh	19			

	2.3.Muslim	19.5			
3.	Type of family				
	3.1. Nuclear	19.54	2/57	2.65_F	0.07^{NS}
	3.2. Joint	19.71			
	3.3. extended	19.08			
4.	Educational status				
	4.1.Primary	19.5	3/56	0.37_F	0.77^{NS}
	4.2.Secondary education	19.42			
	4.3.Senior secondary	19.58			
	4.4.Graduate or more	19.8			
5.	Occupation				
	5.1.Private Job	19.57	3/56	0.51_F	0.67^{NS}
	5.2.Government Job	19.83			
	5.3.Self employed	19.41			
	5.4.Home-maker	19.5			
6.	Family income				
	6.1. <5000 per month	19.41	3/56	2.52_F	0.06^{NS}
	6.2. 5,001 to 10,000 per month	19.71			
	6.3. 10,001 to 20,000 per month	19			
	6.4. >20,000 per month	20			
7.	Socio economic status: kuppuswamys scale				
	7.1.upper class	19.70	4/55	0.48_F	0.74^{NS}
	7.2. upper middle class	19.46			
	7.3.Lower middle class	20			
	7.4.Upper lower middle class	19.44			
	7.5.Lower class	20			
8.	Age at marriage				
	8.1. 21 -25	19.60	3/56	1.95_F	0.13^{NS}
	8.2. 26-30	19			
	8.3. 31-35	20			
	8.4. 36 0r above	20			
9.	Duration of marriage				
	9.1. 1-5	19.56	3/56	0.07_F	0.97^{NS}
	9.2. 6-10	19.48			
	9.3. 11-15	19.5			
	9.4. >16	19.62			
10	No. Of living children				
	10.1. 1	19.62	3/56	1.50_F	0.22^{NS}
	10.2. 2	19.41			
	10.3. 3	19.91			
	10.4. >3	19			
11.	Sources of information about vasectomy?				
	11.1.Newspaper	20	4/55	4.42_F	0.004^{*}
	11.2.Television	19.57			
	11.3.Street play	17.5			
	11.4.Health worker	19.67			
	11.5.Significant others	19.55			

NS -Not significant ($p>0.05$) *- significant ($p \leq 0.05$)

Table 14 ANOVA and t test value shows the ANOVA and t test value for association of knowledge post test scores with demographic variables**.**The findings reveals that computed 'F/t' value of males with all demographic variables found to be non significantexcept source of information about vasectomy i.e. p = 0.004 which was found to be highly significant at 0.05 level of significant hence knowledge of males regarding vasectomy was dependant on source of information.

Table 15: Post hoc test showing mean difference for association of knowledge regarding vasectomy with selected variable N = 60

S.No	Selected Variables	Category	Mean Difference	Standard Error	p value
1.	Source of knowledge	Newspaper vs. television	0.42	0.44	0.86^{NS}
		Newspaper vs. street play	2.5	0.65	0.003**
		Newspaper vs. health workers	.33	0.58	0.97^{NS}
		Newspaper vs. significant others	0.45	0.43	0.83^{NS}
		TV vs. street play	2.07	0.52	0.002**
		TV vs. health workers	-0.09	0.44	0.99^{NS}
		TV vs. significant others	0.023	0.20	1.00^{NS}
		Street play vs. health workers	-2.16	0.65	0.01*
		Street play vs. significant others	-2.04	0.52	0.002**
		Healthworkersvs. significant others	0.11	0.43	0.99^{NS}

NS -Not significant (p>0.05) *- significant ($p \leq 0.05$)

Table 15 depicts Post hoc test that shows association between knowledge and demographic variables (source of information). It shows that there was significant difference between newspaper and street play (p = 0.003), tv and street play (p = 0.002), street play and health worker (p = 0.01) and street play and significant others (p = 0.002). This significant difference resulted in significant association between knowledge score and source of information that was significant at the level of 0.05. The data shows that males whose source of information was Newspaper having better knowledge than whose source of information was street play due to their mean difference of 2.5; males whose source of information was TV having better knowledge than whose source of information was street play due to their mean difference of 2.07; males whose source of information was health workers having better knowledge than whose source of information was street play due to their mean difference of -2.16 ; males whose source of information was significant others having better knowledge than whose source of information was street play due to their mean difference of -2.04.

Table 16: ANOVA and t test value showing association between post test attitude score of males regarding vasectomy with selected demographic variables N = 60

S.No	Selected Variables	Mean	df	f/t	p value
1. Age in Years					
1.1	21 – 25	130.04	3/56	0.43_F	0.73^{NS}
1.2	26 – 30	133.96			
1.3	31- 35	127			
1.4	36 – 40	104			
2. Religion					
2.1	Hindu	131.39	2/57	7 0.08_F	0.91^{NS}
2.2	Sikh	132.43			
2.3	Muslim	123			
3. Type of family					
3.1	Nuclear	138.29	2/57	1.94_F	0.15^{NS}
3.2	Joint	130.52			
3.3	extended	119.46			
4. Educational status					
4.1	Primary	133.92	3/56	0.19_F	0.90^{NS}
4.2	Secondary education	130.62			
4.3	Senior secondary	132.53			
4.4	Graduate or more	122.8			
5. Occupation					
5.1	Private Job	144.24	3/56	2.76_F	0.05^{*}
5.2	Government Job	118			
5.3	Self employed	123.19			
5.4	Home-maker	142.17			
6. Family income per month					
6.1	<5000	126.84	3/56	0.80_F	0.49^{NS}
6.2	5,001 to 10,000	139.93			
6.3	. 10,001 to 20,000	127.83			
6.4	. >20,000	136.12			
7. Socio economic status: kuppuswamys scale					

7.1	upper class	129.80	4/55	0.64_F	0.62^{NS}
7.2	upper middle class	138.46			
7.3	Lower middle class	160			
7.4	Upper lower middle class	128.88			
7.5	Lower class	117			
8. Age at marriage					
8.1	21 -25	131.48	3/56	0.22_F	0.88^{NS}
8.2	26-30	133.20			
8.3	31-35	113			
8.4	36 0r above	118			
9. Duration of marriage					
9.1	1-5	136.11	3/56	0.21_F	0.88^{NS}
9.2	6-10	130.76			
9.3	11-15	127.21			
9.4	>16	134.50			
10. No. Of living children					
10.1	1	133.50	3/56	0.40_F	0.75^{NS}
10.2	2	129.23			
10.3	3	138.55			
10.4	>3	121			
11. Sources of information about vasectomy?					
11.1.	Newspaper	130.67	4/55	0.35_F	0.83^{NS}
11.2	Television	133.2			
11.3.	Street play	108			
11.4.	Health personnel	128.67			
11.5.	Significant others	131.68			

NS -Not significant (p>0.05) *- significant (p ≤ 0.05)

Table 16 ANOVA and t test value shows the ANOVA and t test value for association of attitude post test scores with demographic variables**.** The findings reveals that computed 'F/t' value of males with all demographic variables found to be non-significant accept occupation (p = 0.05) which was found to be significant at o.o5 level of significant hence attitude of males regarding vasectomy was dependant on occupation.

Table 17: Post hoc test showing mean difference for association of Attitude among males regarding vasectomy with selected variable N=60

S. no.	Demographic variables	Category	Mean difference	Standard error	P value
1.	Occupation	private job vs govt. job	24.23	12.52	**0.05***
		Private job vs self employed	19.05	7.87	0.01^{*}
		Private job vs home maker	0.071	12.52	0.99^{NS}
		Govt. job vs self employed	-5.18	12.20	0.67^{NS}
		Govt. job vs homemaker	-24.16	15.62	0.12^{NS}
		Self employedvs home maker	-18.98	12.20	0.12^{NS}

Table 17 depicts Post hoc test that shows association between Attitude and demographic variables (Occupation). It shows that there was significant difference private job vs govt. job (p = 0.05) and Private Job v sself employed (p = 0.01). This significant difference resulted in significant association between attitude score and occupation that was significant at the level of 0.05. The data shows that males whose occupation was private job having better attitude than whose occupation was government job due to their mean difference of 24.23; males whose occupation was private job having better attitude than whose occupation was self-employed due to their mean difference of 19.05.

Discussion

In the present study, Majority of the males 28(46.7%) were in the age group of 26 to 30yrs, 51(85%) were Hindus, 24(40%) belonged to extended and nuclear family. 12(20%). Education wise, majority of the males 24(40%) studied up to secondary level while only 5(8.3%) had studied up to graduation. Most of the males 27(45%) were self-employed and more than half of the males i.e. 32(53.3%) had family monthly income of Rs 5000 and less. More than half of the males 34(56.7%) belonged to upper lower middle class (kuppuswamy's socio economic status. According to marital history, Most of the males 48(80%) were in the age of 21 to 25 at the time of marriage and less than half of the males 29(48.3%) were married for a duration of 6 to 10 years and 39(65%) of the males were having maximum 2 children. Majority of the males have heard about vasectomy 56(93%) and 31(51.7%) had source of information about vasectomy from significant others the findings are partially similar to the study conducted by Owopetu Christiana *et al* (2015) [6]. Findings revealed that majority (42.7%) of the males were between the ages of 31 to 40 years, Christians (97.3%), of the Yoruba tribe (55.3%), had a bachelor's degree (46%) and were non-academic staff (53.3%). Majority (38%) of males had adequate knowledge and 62.7% had positive attitude towards vasectomy.

In the present study, before the administration of awareness

programme, out of 60 males majority of them 51(85%) had level of knowledge below average while 9 (15%) had average knowledge. Majority of the males 37 (61.7%) had unfavorable attitude while only 8(13.3%) had favorable attitude regarding vasectomy. The mean pretest knowledge score with standard deviation was 7.07±2.49; Median was 7 with obtained range of 1 – 12 whereas the mean pretest attitude score was 104± 30.79; median was 95 with obtained range of 53 – 17.

After administration of awareness programme all the males were having very good level of knowledge regarding vasectomy i.e. 60 (100%). while most of the 33(55%) males were had moderately favorable level of Attitude and 21(35%) males in Favourable attitude and 6 (10%) males still had unfavorable attitude regarding vasectomy. These findings was consistent with findings of study conducted by Choudhary (2013) [7] on knowledge, attitude, and practice regarding vasectomy among males. The study showed that (44.6%) and (35%) males had low level of knowledge and attitude respectively.

In the present study r value 0.04 and p value 0.07 which was found to be statistically significant at 0.05 level of significance. Thus there was positive relationship between knowledge and attitude among males regarding vasectomyas the computed r value was 0.05 and p=0.07. These findings were consistent with the findings of the study conducted by Owopetu Christiana *et al* (2015) [8] who found that there was a statistically significant relationship between participant knowledge level and attitude towards vasectomy ($\chi^2$53.89, p<0.05).

The findings reveals that computed 'F/t' value of males with all demographic variables was found to be non significant except source of information about vasectomy i.e. p = 0.004 which was found to be highly significant at 0.05 level of significant hence knowledge of males regarding vasectomy was dependant on source of information. These findings were consistent with the findings of Humaira Zareen *et al*. (2016) [11] show significant association between the education of men, income of men, media as a source of knowledge of vasectomy, friends/colleagues as source of motivation for vasectomy and relatives/friends as source of decision making for vasectomy and knowledge of men regarding vasectomy. While another study also contradictory to the findings of Arhoni Tungoe (2016) which showed that there was a significant association between the educational level, socio economic status, and occupation with pre-test knowledge scores of the males at p<0.05

The findings in the present study reveals that computed 'F/t' value of attitude of males with all demographic variables was found to be non significant except for occupation ($p \leq 0.05$) which was found to be significant at 0.05 level of significant, hence the attitude of males regarding vasectomy was dependant on occupation. These findings were contradictory with the findings of the study conducted by Humaira Zareen *et al*. (2016) [10] who found that that there significant association between education of men, income of men, media as a source of knowledge of vasectomy.

Conclusion

The awareness programme was effective in improving knowledge and attitude males regarding vasectomy. There was weak positive correlation between knowledge and attitude of males regarding vasectomy also there was significant association of attitude post test with selected variable "occupation"

Recommendations

- The study can be conducted to determine strategies for overcoming sociocultural barriers by raising awareness and increasing the utilization of vasectomy.
- Couple-specific family planning programs can make an important contribution toward proving awareness of the benefits of vasectomy.
- There is a need to design and develop a need-based IEC strategy to bridge the existing information gap among the eligible couples regarding NSV to improve its adoption.

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Conflict of Interest

The authors declare no conflict of interest.

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