

A study to evaluate the relationship between socio-economic, demographic characteristics and complications of acceptors in double puncture laparoscopic and conventional tubal ligation procedures

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ABSTRACT

Background: To discover the relationship between the socio-economic, demographic characteristics and complications for acceptors following Double puncture laparoscopic (DPL) and conventional tubal ligation (CTL) procedures in rural and urban communities and additionally, we also sought to study the occurrence of post tubal ligation syndrome.

Methods: A follow up study on 1000 women over a period of two years was conducted. The study was divided into 2 groups: 500 women undergone double puncture laparoscopic (DPL) sterilization and another 500 women underwent conventional tubal ligation (CTL). The acceptors were personally interviewed as per the guide lines in the proforma in the field at their door steps with help of multipurpose health workers (ANM) of the area concerned in the rural areas.

Results: The mean age of DPL and CTL groups were 24.4 years and 23.8 years, respectively. The acceptance of type of procedure was almost equal in all religious groups. As the level of education increases there is clear correlation with DPL acceptance. The overall acceptance of tubectomy was higher in house wives (61%) than the working women (39%). However house wives preferred to undergo conventional tubectomy more (63%) than the DPL (59%). The DPL acceptors were more of higher economic status (49%) whereas CTL acceptors were more of lower economic status (54.4%). The overall complications of DPL acceptors were lower than CTL acceptors. Moreover, these complications didn't influence with socio-economic, demographic characteristics.

Conclusions: Age, religion, literacy status, economic status & occupation of acceptors didn't influence the occurrence of complications and post tubal ligation syndrome does exist in both groups.

Keywords: Socio-economic status, DPL, Post tubal ligation syndrome

INTRODUCTION

The most serious problem India is facing today is the rapid growth of its population. The current population of India in 2012 is estimated to be 1.22 billion. Over populated countries like India depend mainly on sterilization to control population explosion. Female sterilization is a relatively simple procedure that involves permanently blocking the fallopian tubes to prevent fertilization. The procedure was first used in the early 19th century by James Blundell, and the first published report of this procedure was in 1881. By the mid-20th century, female sterilization had begun to gain popularity. Many modifications and new techniques have been

developed since, to improve effectiveness, safety, and reversibility. Today, greatly simplified procedures performed under local anesthesia and in ambulatory settings have helped minimize the complications associated with general anesthesia and have permitted the expansion of services to lower levels of the health service system in many countries. Serious complications are rare and occur in fewer than 2% of all female sterilization procedures.^{1,2}

The development of laparoscopy and minilaparotomy has made the procedure readily available even in developing countries. Complications are rare and occur in fewer than 1% of all female sterilization procedures (Stewart & Carignan, 1998).³ The World Health Organization

(WHO) definition for complications following female sterilization is: "problems directly related to the surgery or the anesthesia that occur within 42 days and that require intervention and management beyond what would be normally provided." Examples include infection, bleeding, unintended injury to internal organs, and depressed respiration or blood pressure due to anesthesia (WHO, 1992).⁴

Complications can be categorized as minor or major. Major complications require unintended hospitalization or surgery, blood transfusion, or treatment of life-threatening events or events that result in death (WHO, 1992).⁴ Minor complications are those that require intervention and management beyond what would normally be provided, but do not progress to any of the five events mentioned above.^{1,4} One of the delayed complication is post tubal sterilization syndrome, it consists of irregular menstrual cycles, dysmenorrhea, menorrhagia, and midcycle bleeding. Some scientists speculate that interference with the utero-ovarian blood supply and subsequent disturbance of ovarian function bring about post tubal ligation syndrome changes.⁵

There are limited studies on the assessment of socio-economic, demographic characteristics with relation to complications following the double puncture laparoscopic (DPL) and conventional tubal ligation (CTL) procedures. So the objective of this study was to find out relationship between socio-economic, demographic characteristics and complications for acceptors following the double puncture laparoscopic (DPL) & conventional tubal ligation (CTL) sterilization procedures and also to evaluate the occurrence of post tubal ligation syndrome.

METHODS

A 2 years follow-up prospective study of laparoscopic sterilization (DPL) and conventional tubectomy (CTL) in Family Planning Unit, Government Maternity hospital, Tirupati, A.P., India was undertaken (January 2001-March 2003). 500 voluntary conventional tubectomy acceptors and 500 Voluntary DPL acceptors are selected and operated. The selection criteria was strictly followed, so as not to interfere with the interpretation of results as most of the morbidity or complications could arise because of preexisting conditions like MTP, Hysterotomy, LSCS, menstrual disorders etc. The cases were personally attended during the procedure and followed up post operatively and complications noted as per the guidelines in the proforma.

All cases were personally interviewed at their door steps with the guidance of multipurpose health workers of the area concerned in the rural areas and in urban areas with the help of ANM's welfare workers of post-partum unit in Government Maternity Hospital, Tirupati, AP, India.

Questionnaires were originally prepared in English and were translated into local language. The interviewers' selected were ANMs of post partum unit and were trained to the level of satisfaction and allowed to conduct the survey. Collected data were statistically analyzed by chi-square test.

RESULTS

The mean age of acceptors in DPL group was 24.4 & conventional tubectomy group was 23.8. The overall mean age of both groups was 24.1 years (Table 1).

In DPL acceptors, Hindus, Muslims and Christians were 87.80%, 7.80% and 4.40%, respectively. Whereas in CTL acceptors, Hindus, Muslims and Christians were 87.60%, 7.20%, and 4.40%, respectively. The religion wise distribution was found to be almost equal in both groups (Table 2).

As per Table 3, literacy status was below primary education in conventional tubectomy acceptors, which was more than DPL (78.80%). But literacy status was above secondary education in DPL selected women, which more than conventional tubectomy (40.80%).

House wives preferred the conventional tubectomy procedure (63%) while the working women preferred DPL (41%) (Table 4).

As evident from table 5, The DPL acceptors were more from higher economic status group (4.9%) while conventional tubectomy acceptors were of lower economic status group (54.40%).

With reference to complications, only 2 patients required hospital admission, both were of ectopic pregnancy. The major morbidity for both groups was 0.2% and was almost equal. Most of the complications were evenly placed with little difference in different age groups. The acceptors above 30 years had specific complications like PID, Dyspareunia & scar tenderness and these complications were more seen in conventional tubectomy group. The other complications were comparatively same in both acceptors in all age groups (Table 6 and 7).

Most of the complications were evenly observed in all groups. PID & Dyspareunia seemed to be more in Muslim acceptors (Table 8 and 9).

Most of the complications with reference to literacy status were evenly seen in both groups. Specific complications like PID and Dyspareunia were more in acceptors whose education was below primary level (Table 10 and 11).

Table 1: Distribution of DPL and conventional tubectomy acceptors according to age.

Age	DPL		CTL		Total	
	No. of Cases	%	No. of Cases	%	No. of Cases	%
Below 20 Years	64	12.80	71	14.20	135	13.50
21 – 25 Years	286	57.20	265	53.00	551	55.10
26 -30 Years	131	26.20	140	28.00	271	27.10
30 - 35 Years	16	3.20	20	4.00	36	3.60
35 - 40 Years	3	0.60	4	0.80	7	0.70
Total No. of Cases & %	500	100	500	100	1000	100
Chi-Square=2.050, df=4						

Table 2: Distribution of DPL and CTL acceptors according to religion.

Religion	DPL		CTL		Total	
	No. of Cases	%	No. of Cases	%	No. of Cases	%
Hindu	439	87.80	438	87.60	877	87.70
Muslim	39	7.80	36	7.20	75	7.50
Christian	22	4.40	26	5.20	48	4.80
Total No. of Cases & %	500	100	500	100	1000	100
Chi-Square=0.454, df=2						

Table 3: Distribution of DPL and conventional tubectomy acceptors literacy status.

Education	DPL		CTL		Total	
	No. of Cases	%	No. of Cases	%	No. of Cases	%
Illiterate	92	18.40	208	41.60	300	30.00
Primary	204	40.80	186	37.20	390	39.00
Secondary	120	24.00	93	18.60	213	21.30
Inter and Above	84	16.80	13	2.60	97	9.70
35 - 40 Years	3	0.60	4	0.80	7	0.70
Total No. of Cases & %	500	100	500	100	1000	100
Chi-Square=101.076, df=3						

Table 4: Distribution of DPL and conventional tubectomy acceptors occupation-wise.

Occupation	DPL		Con Tubectomy		Total	
	No. of Cases	%	No. of Cases	%	No. of Cases	%
House wives	295	59.00	315	63.00	610	61.00
Working Women	205	41.00	185	37.00	390	39.00
Total No. of Cases & %	500	100	500	100	1000	100
Chi-Square=1.681, df=1						

Table 5: Distribution of DPL and conventional tubectomy acceptors regarding economic status.

Economic Status	DPL		Con Tubectomy		Total	
	No. of Cases	%	No. of Cases	%	No. of Cases	%
Below 12000 Rs	180	36.00	272	54.40	452	45.20
12000- 36000 Rs	245	49.00	173	34.60	418	41.80
Above 36000 Rs	75	15.00	55	11.00	130	13.00
Total No. of Cases & %	500	100	500	100	1000	100
Chi-Square=34.204, df=2						

Table 6: Complications of CTL according to age.

Complications	< 20		21 – 25		26 – 30		31 – 35		36 – 40		Total	
	No. C	%	No. C	%	No. C	%	No. C	%	No. C	%	No. C	%
No complications	39	27.27	146	27.09	77	27.30	11	25.00	2	28.57	275	27.09
Menstrual irregularities	13	9.09	50	9.28	26	9.22	4	9.09	1	14.29	94	9.26
White discharge	18	12.59	67	12.43	35	12.41	5	11.36	1	14.29	126	12.41
Low back ache	23	16.08	89	16.51	47	16.67	1	15.91	1	14.29	67	16.45
Lower abdominal pain	11	7.69	38	7.05	20	7.09	3	6.82	0	0.00	72	7.09
General weakness	11	7.69	40	7.42	21	7.45	3	6.82	0	0.00	63	6.21
Easy fatigability	9	6.29	33	6.12	18	6.38	3	6.82	0	0.00	63	6.21
PID	1	0.70	3	0.56	2	0.71	0	0.00	0	0.00	6	0.59
Ectopic	0	0.00	1	0.19	0	0.00	0	0.00	0	0.00	1	0.10
Dyspareunia	2	1.40	14	2.60	8	2.84	3	6.82	1	14.29	28	2.76
Weight gain	4	2.80	18	3.34	6	2.13	0	0.00	0	0.00	28	2.76
Weight loss	1	0.70	7	1.30	4	1.42	2	4.55	0	0.00	14	1.38
Scar Tenderness	2	1.40	3	0.56	2	0.71	1	2.27	0	0.00	8	0.79
Miscellaneous	9	6.29	30	5.57	16	5.67	2	4.55	0	0.00	57	5.62
Total No. of Cases & %	143	100	539	100	282	100	44	100	7	100	1015	100
Chi-Square=19.457, df= 52												

Table 7: Complications of DPL according to age.

Complications	< 20		21 – 25		26 – 30		31 – 35		36 – 40		Total	
	No. C	%	No. C	%	No. C	%	No. C	%	No. C	%	No. C	%
No complications	42	37.50	191	38.43	86	36.91	10	32.26	1	10.00	330	37.37

Menstrual Irregularities	9	8.04	38	7.65	17	7.30	2	6.45	0	0.00	66	7.47
White discharge	17	15.18	73	14.69	34	14.59	4	12.90	0	0.00	128	14.50
Low back ache	16	14.29	70	14.08	32	13.73	3	9.68	1	10.00	122	13.82
Lower abdominal pain	5	4.46	4	4.83	12	5.15	1	3.23	0	0.00	48	5.44
General weakness	6	5.36	27	5.43	14	6.01	1	3.23	0	0.00	48	5.44
Easy fatigability	6	5.36	29	5.84	13	5.58	2	6.45	2	20.00	52	5.89
PID	0	0.00	1	0.20	0	0.00	0	0.00	0	0.00	4	0.45
Ectopic	0	0.00	1	0.20	0	0.00	0	0.00	0	0.00	1	0.11
Dyspareunia	0	0.00	11	2.21	6	2.58	2	6.45	1	10.00	20	2.27
Weight gain	2	1.79	12	2.41	4	1.72	1	3.23	0	0.00	19	2.15
Weight loss	1	0.89	8	1.61	4	1.72	1	3.23	0	0.00	14	1.59
Scar Tenderness	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
Miscellaneous	8	7.14	11	2.21	9	3.86	4	12.90	5	50.00	37	4.19
Total No. of Cases & %	112	100	497	100	233	100	31	100	10	100	883	100
Chi-Square=85.141, df= 52												

Table 8: Complications of CTL according to religion.

Complications	Hindu		Christians		Muslims		Total	
	No. C	%	No. C	%	No. C	%	No. C	%
No complications	241	27.26	14	25.45	20	26.67	275	27.12
Menstrual irregularities	82	9.28	5	9.09	7	9.33	94	9.27
White discharge	110	12.44	7	12.73	9	12.00	126	12.43
Low back ache	146	6.52	9	16.36	12	16.00	167	16.47
Lower abdominal pain	63	7.13	4	7.27	5	6.67	72	7.10
General weakness	67	7.58	4	7.27	5	6.67	76	7.50
Easy fatigability	55	6.22	3	5.45	5	6.67	63	6.21
PID	4	0.45	1	1.82	1	1.33	6	0.59
Ectopic	1	0.11	0	0.00	0	0.00	1	0.10
Dyspareunia	23	2.60	3	5.45	3	4.00	29	2.86
Weight gain	21	2.38	1	1.82	1	1.33	23	2.27
Weight loss	14	1.58	1	1.82	1	1.33	16	1.58
Scar Tenderness	7	0.79	0	0.00	2	2.67	9	0.89
Miscellaneous	50	5.66	3	5.45	4	5.33	57	5.62
Total No. of Cases & %	884	100	55	100	75	100	1014	100
Chi-Square=8.352, df= 26								

Table 9: Complications of DPL according to religion.

Complications	Hindu		Christians		Muslims		Total	
	No. C	%	No. C	%	No. C	%	No. C	%
No complications	290	37.71	16	38.10	24	33.33	330	37.37
Menstrual irregularities	58	7.54	3	7.14	5	6.94	66	7.47
White discharge	112	14.56	6	14.29	10	13.89	128	14.50
Low back ache	108	14.04	5	11.90	9	12.50	122	13.82
Lower abdominal pain	37	4.81	2	4.76	3	4.17	42	4.76
General weakness	42	5.46	2	4.76	3	4.17	42	4.76
Easy fatigability	46	5.98	2	4.76	4	5.56	52	5.89
PID	3	0.39	0	0.00	1	1.39	4	0.45
Ectopic	1	0.13	0	0.00	0	0.00	1	0.11
Dyspareunia	3	1.69	2	4.76	5	6.94	20	2.27
Weight gain	15	1.95	2	4.76	2	2.78	19	2.15
Weight loss	11	1.43	1	2.38	2	2.78	14	1.59
Scar Tenderness	0	0.00	0	0.00	0	0.00	0	0.00
Miscellaneous	33	4.29	1	2.38	3	4.17	37	4.19
Total No. of Cases & %	769	100	42	100	72	100	883	100
Chi-Square=14.763 (Significant), df=26								

Table 10: Complications of CTL according to literacy status.

Complications	Illiterate		Primary		Secondary		Inter & Above		Total	
	No. C	%	No. C	%	No. C	%	No. C	%	No. C	%
No complications	114	27.14	102	26.91	51	27.57	8	26.67	275	27.12
Menstrual irregularities	39	9.29	35	9.23	17	9.19	3	10.00	94	9.27
White discharge	52	12.38	47	12.40	23	12.43	4	13.33	126	12.43
Low back ache	69	16.43	63	16.62	31	16.76	4	13.33	167	16.47
Lower abdominal pain	30	7.14	27	7.12	13	7.03	2	6.67	72	7.10
General weakness	32	7.62	28	7.39	14	7.57	2	6.67	76	7.50
Easy fatigability	26	6.19	23	6.07	12	6.49	2	6.67	63	6.21
PID	3	0.71	2	0.53	1	0.54	0	0.00	6	0.59
Ectopic	1	0.24	0	0.00	0	0.00	0	0.00	1	0.10
Dyspareunia	9	2.14	11	2.90	7	3.78	2	6.67	29	2.86
Weight gain	11	2.62	10	2.64	1	0.54	1	3.33	23	2.27

Weight loss	8	1.90	6	1.58	1	0.54	1	3.33	16	1.58
Scar Tenderness	2	0.48	3	0.79	3	1.62	1	3.33	9	0.89
Miscellaneous	24	5.71	22	5.80	11	5.95	0	0.00	57	5.62
Total No. of Cases & %	420	100	379	100	185	100	30	100	1014	100
Chi-Square=15.827, df=39										

Table 11: Complications of DPL according to literacy status.

Complications	Illiterate		Primary		Secondary		Intermediate & above		Total	
	No. C	%	No. C	%	No. C	%	No. C	%	No. C	%
No complications	61	35.88	135	37.92	79	37.09	55	38.19	330	37.37
Menstrual irregularities	12	7.06	27	7.58	16	7.51	11	7.64	66	7.47
White discharge	24	14.12	52	14.61	31	14.55	21	14.58	128	14.50
Low back ache	23	13.53	50	14.04	29	13.62	20	13.89	122	13.82
Lower abdominal pain	7	4.12	18	5.06	10	4.69	7	4.86	42	4.76
General weakness	9	5.29	19	5.34	12	5.63	8	5.56	52	5.89
Easy fatigability	10	5.88	21	5.90	13	6.10	8	5.56	48	5.44
PID	2	1.18	1	0.28	0	0.00	0	0.00	1	0.11
Ectopic	0	0.00	1	0.28	0	0.00	0	0.00	4	0.45
Dyspareunia	4	2.35	7	1.97	8	3.76	1	0.69	20	2.27
Weight gain	9	5.29	6	1.69	3	1.41	1	0.69	19	2.15
Weight loss	2	1.18	4	1.12	2	0.94	6	4.17	14	1.59
Scar Tenderness	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
Miscellaneous	7	4.12	15	4.21	9	4.23	6	4.17	37	4.19
Total No. of Cases & %	170	100	356	100	213	100	144	100	83	100
Chi-Square=26.096, df=39										

The complications were more noticed in housewives when compared to working women in both groups (Table 12 and 13).

With reference to Table 14 and 15, the complications in both acceptors were more in low socio economic status group. The leading complications in higher socioeconomic groups were PID and dyspareunia.

As evident from table 16, the overall menstrual irregularities were 16% in both groups. This was more in conventional tubectomy group (18.8%) compared to 13.2% in DPL group. Overall occurrence of lactational

amenorrhoea was 3.1% which was more in conventional tubectomy acceptors (3.6%) than that of 2.6% in DPL group. The leading menstrual disorder was menorrhagia in both acceptors with overall rate of 4.2%. Menorrhagia was more common in conventional tubectomy acceptors (4.6%) compared to 3.6% of DPL group. The second leading menstrual disorder was dysmenorrhoea in both acceptors with overall rate of 3.4%. It was more in conventional tubectomy acceptors (3.2%) that of 3.2% in DPL group. The other menstrual disorders were irregular periods, polymenorrhoea, oligomenorrhoea and scanty menstruation and these were more in conventional tubectomy acceptors compared with DPL group.

Table 12: Complications of CTL group with relation to occupation.

Complications	House Wife		Working Women		Total	
	No. of Cases	%	No. of Cases	%	No. of Cases	%
No complications	173	27.37	102	26.70	275	27.12
Menstrual irregularities	59	9.34	35	9.16	94	9.27
White discharge	79	12.50	47	12.30	126	12.43
Low back ache	105	16.61	62	16.23	167	16.47
Lower abdominal pain	45	7.12	27	7.07	72	7.10
General weakness	48	7.59	28	7.33	76	7.50
Easy Fatigability	40	6.33	23	6.02	63	6.21
PID	2	0.32	4	1.05	6	0.59
Ectopic	1	0.16	0	0.00	1	0.10
Dyspareunia	15	2.37	14	3.66	29	2.86
Weight gain	13	2.06	10	2.62	23	2.27
Weight loss	10	1.58	6	1.57	16	1.58
Scar Tenderness	6	0.95	3	0.79	9	0.89
Miscellaneous	36	5.70	21	5.50	57	5.62
Total No. of Cases & %	632	100	682	100	1014	100
Chi-Square = 4.696, df = 13						

Table 13: Complications of DPL group with relation to occupation.

Complications	House Wife		Working Women		Total	
	No. of Cases	%	No. of Cases	%	No. of Cases	%
No complications	195	37.43	135	37.29	330	37.37
Menstrual irregularities	39	7.49	27	7.46	66	7.47
White discharge	76	14.59	52	14.36	128	14.50
Low back ache	72	13.82	50	14.36	122	13.82
Lower abdominal pain	25	4.80	17	4.70	42	4.76
General weakness	28	5.37	20	5.52	48	4.76
Easy Fatigability	31	5.95	21	5.80	52	5.59
PID	2	0.38	2	0.55	4	0.45
Ectopic	0	0.00	1	0.28	1	0.11
Dyspareunia	13	2.50	7	1.93	20	2.27
Weight gain	6	1.15	13	3.59	19	2.15
Weight loss	12	2.30	2	0.55	14	1.59
Scar Tenderness	0	0.00	0	0.00	0	0.00
Miscellaneous	22	4.22	15	4.14	37	4.19
Total No. of Cases & %	521	100	362	100	883	100
Chi-Square =11.941, df =13						

Table 14: Complications of CTL based on economic status.

Complications	< 12000 RS		12000– 36000 RS		>36000 RS		Total	
	No. of Cases	%	No. of Cases	%	No. of Cases	%	No. of Cases	%
No complications	149	27.39	96	27.43	30	25.00	275	27.12
Menstrual irregularities	51	9.38	33	9.43	10	8.33	94	9.27
White discharge	69	12.68	44	12.57	13	10.83	126	12.43
Low back ache	91	16.73	58	16.57	18	15.00	167	16.47
Lower abdominal pain	39	7.17	25	7.14	8	6.67	72	7.10
General weakness	41	7.54	26	7.43	9	7.50	76	7.50
Easy Fatigability	34	6.25	22	6.29	7	5.83	63	6.21
PID	3	0.55	2	0.57	1	0.83	6	0.59
Ectopic	0	0.00	1	0.29	0	0.00	1	0.10
Dyspareunia	16	2.94	9	2.57	4	3.333	29	2.86
Weight gain	13	2.39	7	2.00	3	2.50	23	2.27
Weight loss	3	0.55	4	1.14	9	7.50	16	1.58
Scar Tenderness	4	0.74	3	0.86	2	1.67	9	0.89
Miscellaneous	31	5.70	20	5.71	6	5.00	57	5.62
Total No. of Cases & %	544	100	350	100	120	100	1014	100
Chi-Square = 35.088, df = 26								

Table 15: Complications of DPL based on economic status.

Complications	< 12000 RS		12000– 36000 RS		>36000 RS		Total	
	No. of Cases	%	No. of Cases	%	No. of Cases	%	No. of Cases	%
No complications	119	36.39	162	38.12	49	37.40	330	37.37
Menstrual irregularities	24	7.34	32	7.53	10	7.63	66	7.47
White discharge	46	14.07	63	14.82	19	14.50	128	14.50
Low back ache	44	13.46	60	14.12	18	13.74	122	13.82
Lower abdominal pain	15	4.59	21	4.94	6	4.58	42	4.76
General weakness	17	5.20	24	5.65	7	5.34	48	5.44
Easy Fatigability	19	5.81	26	6.12	7	5.34	52	5.89
PID	2	0.61	1	0.24	1	0.76	4	0.45
Ectopic	0	0.00	1	0.24	0	0.00	1	0.11
Dyspareunia	13	3.98	6	1.41	1	0.76	20	2.27
Weight gain	12	3.67	7	1.65	0	0.00	19	2.15
Weight loss	3	0.92	4	0.94	7	5.34	14	1.59
Scar Tenderness	0	0.00	0	0.00	0	0.00	0	0.00
Miscellaneous	13	3.98	18	4.24	6	4.58	37	4.19
Total No. of Cases & %	327	100	425	100	131	100	883	100
Chi-Square = 30.019, df = 26								

Table 16: Menstrual characteristics in both groups.

Complication	DPL		Con Tubectomy		Total	
	No. of Cases	%	No. of Cases	%	No. of Cases	%
Lactational Amenorrhea	13	2.6	18	3.6	31	3.1
Menorrhagia	18	3.6	24	4.8	42	4.2
Irregular Periods	10	2.0	17	3.4	27	2.7
Polymenorrhoea	3	0.6	7	1.4	10	1.0
Oligo Menorrhoea	4	0.8	6	1.2	10	1.0
Scanty Menstruation	2	0.4	4	0.8	6	0.6
Dysmenorrhoea	16	3.2	18	3.6	34	3.4
No complaints	434	86.8	406	81.2	840	84
Total No. of Cases & %	66 (13.2%)	100	94 (18.8%)	100	160 (16%)	100
Chi-Square = 1.406, df = 6						

DISCUSSION

In this study 1000 acceptors were divided into two groups: DPL acceptors & CTL acceptors. Various factors like age, literacy, occupation, socioeconomic status were evaluated and compared with the complications.

Maximum numbers of acceptors (82.2%) were between 21-30 years of age. The average age at which the acceptors were operated in 24.1%, in DPL group (24.4%) and the conventional tubectomy group was 23.8%. Acceptance of sterilization among Hindus was 87.7% against their population 82%. The Muslim acceptors were 7.5% against their population 13%, whereas Christian acceptors were 4.8% against their population of 5%. It shows Hindus fare better in terms of acceptance compared to Muslims & Christians. Illiterates and acceptors having education below primary education constitute 69% of total acceptors showing that literacy status did not influence much on the acceptance of tubectomy. There was slight preponderance of DPL acceptance in high literacy group. Previous studies have demonstrated that the mortality rate for the procedures ranged from 0.40–16%.^{7,8} However this study did not exhibit mortality and showed that complications were more in conventional tubectomy group compared to DPL group.

Williams et al⁶ have demonstrated that there are a higher frequency of gynecological diseases in a sterilized population than expected in the general female population. In their series of 200 patients, 24% developed clinically significant gynecologic disorders following the operation. According to Haynes DM & Wolfe WM⁹,

incidence of gynaecologic problems were 31% in tubally sterilized women.

The overall incidence of post ligation menorrhagia was 42% (Stock RJ, 1978)¹⁰ and “post tubal ligation syndrome” variably characterized by pelvic discomfort, ovarian cyst formation and menorrhagia which were assumed to happen owing to uterovarian circulatory disturbance (Williams, 1951).⁶

Post-tubal ligation syndrome includes pain during intercourse, aching lower back, premenstrual tension syndrome, difficulty in menstruating, uterine hemorrhage, and absence of menstruation. The syndrome is caused by blood circulation problems in and around the Fallopian tubes and ovaries, pressure on nerves, and intrapelvic adhesion.¹¹

Our study showed that delayed complications like low back ache, menstrual disturbances, scan tenderness, lower abdominal pain etc were more in CTL group when to compared to DPL group. The various menstrual disturbances were more in conventional tubectomy group compared to DPL group. Psychological upsets of minor nature are present in 2.5% of cases in the study. Even though there were delayed complications in both groups, the results were not significant. The present study clearly revealed that age, religion, literacy & socioeconomic status do not have a major role in occurrence of complications and symptoms of post ligation syndrome doesn't exist in both groups.

CONCLUSIONS

Age, religion, literacy status, economic status & occupation of acceptors did not influence much the occurrence of complications. Post tubal ligation syndrome does exist in both groups. Nevertheless, much more population studies are needed in order to confirm this finding.

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