Chapter V

DISCUSSION

This chapter deals with the discussion of the findings of the study based on the objectives, appropriate literatures reviewed and statistical analysis.

In 1976, India formed its first National Population Policy and the same was modified in 1977 and changed the program title to “National Family Welfare Program” which reiterated the importance of small family norm to achieve NRR = 1 (Suryakantha, 2010).

Currently with regard to family planning services, over 97 percent of sterilization in India are performed on women. Public family health strategies both at national and state levels have acknowledged the need to correct this manifestation of gender imbalance.

“You don’t have conservative policy unless you have a population policy”
- David Brower

According to the National Population Policy, the special needs of men include re-popularising vasectomies in particular No Scalpel Vasectomy (NSV) as a safe and simple procedure, and focusing on men in the information and education campaigns to promote the small family norm.

The nurse researcher acknowledged the various factors that contributed to men’s involvement in reproductive health and
focussed on educating male population on small family and male sterilization in the present study. The statement of the problem was “A Comparative Study to assess the Effectiveness of Structured Teaching Programme and Interaction with Support Group on Knowledge and Attitude towards Male Sterilization for a Small Family Norm and Promotion of No Scalpel Vasectomy (NSV) among Men in Selected Communities in Coimbatore District, Tamilnadu, India”.

**The study was conducted in three phases**

**Phase - I**: The researcher conducted a general survey among 1000 subjects to assess their knowledge on small family and male sterilization in the Out Patient Department of Govindaswamy Kuppuswamy Naidu Memorial (GKNM) Hospital. A quantitative research approach with a descriptive cross sectional survey design was adopted. Thousand married men who fulfilled the inclusion criteria were selected using convenience sampling technique.

**Phase - II**: The researcher adopted a quantitative research approach with a descriptive cross sectional survey design and twenty men who underwent NSV, who fulfilled the inclusion criteria were selected by convenience sampling technique, and interviewed to find out their experience after NSV.

**Phase - III**: Men’s knowledge and attitude on small family and male sterilization were assessed in the experimental group-I, experimental group-II and in the control groups.
A quantitative research approach using quasi experimental design with three group pretest post design was adopted. The study was conducted in 3 different setting situated in Coimbatore city, namely Central Reserve Police Force (CRPF), Southern Railways and I-T. park. Married men who fulfilled the inclusion criteria were selected by convenience sampling technique. Out of 150 subjects in each setting the 1st fifty samples were allotted to the control group. The 2nd fifty samples were assigned to the structured teaching programme. The 3rd fifty sample were allotted to interaction with support group to each group that is (n = 450) 150 samples in experimental group-I, 150 sample in experimental group-II and 150 samples in the control group were allotted for the study.

The subjects in the experimental group-I were subjected to structured teaching programme via video assisted teaching on small family and male sterilization. The experimental group-II had interaction with support group on small family and male sterilization. Interaction with support group refers to NSV candidatures who volunteered to share their No Scalpel Vasectomy (NSV) experience, were the spokesman or role model to interact with the subjects in the experimental group-II. The control group had no intervention.

The PRECEDE PROCEED model was conceptualized to assist the nurse researcher to popularize and promote NSV for the subject to adopt a small family with enhanced knowledge and attitude on small family and male sterilization.
The data collected in phase-I, phase-II and phase-III were grouped, analysed, organised and presented based on the objective of the study using description and inferential statistical.

**Objectives**

**Phase - I**

1. To assess the level of knowledge of men on small family and male sterilization.

2. To find out the association between the level of knowledge of men on small family and male sterilization with selected demographic variables.

**Phase - II**

3. To assess the experience of men who had undergone NSV.

**Phase - III**

4. To evaluate the level of knowledge of the subjects on small family and male sterilization before and after structured teaching programme in the experimental group-I.

5. To evaluate the level of knowledge of the subjects on small family and male sterilization before and after interaction with support group in the experimental group-II.

6. To evaluate the level of knowledge and attitude of the subjects on small family and male sterilization in the control group before and after 1 month.

7. To evaluate the level of attitude of the subjects on small family and male sterilization before and after structured teaching programme in the experimental group-I.
8. To evaluate the level of attitude of the subjects on small family and male sterilization before and after interaction with support group in the experimental group-II.

9. To evaluate the effectiveness of interventions in the experimental groups and control group towards No Scalpel Vasectomy in terms of knowledge and attitude on promotion of NSV.

**Demographic Characteristics of the Subjects in Phase-I of the Study**

The present study in Table 1 revealed that out of 1000 samples, related to age 419(41.9%) of the subjects were above 40-50 years of age. Khalifa (1988) did a similar survey among 1500 urban Sudanese men, in the age group of 18-29 years, 34% were found, 27% were 30-39 and 35% above 40 years.

The duration of married life of more than 5-10 years was found among 232(23.2%) and duration of married life more than 10 to 20 years was found among 262(26.2%) of the subjects in phase-I. The study findings are similar to the survey done among 763 men in rural central India, where the average duration of married life was 20 years (Char, Saavale and Kulamal, 2009).

Nearly 476(47.9%) of the subjects had two children and only 72(7.2%) had more than 2 children. This study is further supported by the finding of Char, Saavale and Kulamal (2009) where 52% reported having a family that consisted of two or more children.
where as in the survey of 400 couples by Dutta, Kapilashrami and Tiwari (2004) more than 18% had five or more children.

Predominant number of subjects 826(82.6%) belonged to Hindu religion in this study which is similar to the finding of (Char, Saavale and Kulamal, 2009; Dutta Kapilashrami and Tiwari, 2004), the majority of the subjects were Hindus 94% and 78.5% respectively in their survey.

Illiterates were only 24(2.4%) of them and 354(35.4%) of them were educated upto middle school level. Among 1000 subjects only 106(10.6%) were professionals. The study findings of (Char, Saavale and Kulamal, 2009), was not similar to the present study as 50% of the men surveyed in their study had less than a secondary level of education where as the findings were similar with Dutta, Kapilashrami and Tiwari (2004) as 83(20.6%), had education upto secondary level. Khalifa (1988) reported 12.8% did not receive formal education, 19.7% attended primary school, 44.1% had secondary education and 23% had university education.

In the present study in terms of income, 335(33.5%) of the subjects earned less than or equal to Rs. 5000 per month. Only 12(1.2%) of the subjects earned more than Rs. 50,000 per month. Khalifa (1988) reported the average monthly income was less than 100 pounds for 22%, between 100 and 300 pounds and between 300 and 500 pounds for 20% of the subjects. Dutta Kapilashrami
and Tiwari (2004) reported the average monthly income was Rs. 3,373/-.

In the present study 270(27%) were skilled and 221(22.1%) were executive and 339(33.9%) were unskilled. The findings are not similar with that of (Char, Saavala and Kulmala, 2009) as 50% of the samples were agriculturist. Khalifa (1988) reported that 3.5% of the men were unemployed. One fourth worked as labourers, 14% had managerial job, 18% were professionals, 11% were pursuing higher studies and 25% were merchants.

Subjects living in joint family were 612(61.2%) and 388(38.8%) were living in nuclear family which is similar to the findings of (Char, Saavala and Kulmala, 2009).

Temporary family planning methods were adopted by 464(46.4%) of the subjects only. In the study findings of (Char, Saavala and Kulmala (2009) 98% had heard of contraceptives and only 29% used temporary methods. The use of temporary family planning method among married couples are supported by the findings of (Caldwell, et al., 1987; Keller, 1979 and Marshall, 1977). The most prevalent temporary family methods among men namely condom had a wide disparity between the knowledge of condoms and their uses in the research studies of (Kirumira, 1991; Sekadde-Kigondu, et al., 1991; Mbizvo and Adam Chak, 1989; Lamptey et al., 1978).
The first objective of the study was to assess the level of knowledge of men on small family and male sterilization.

Table 2, among the 1000 samples surveyed, only 312(31.2%) of the subject were able to state that family planning is a method for both spacing the child birth and preventing pregnancy as the meaning of family planning correctly. The findings of (Char, Saavala and Kulmala, 2009 and Khalifa, 1988) reported the knowledge on family planning around 62% gave no response and 94.2% stated they heard or knew about family planning.

In the present study it was noted that 814(81.4) of the subjects stated that both the couples ought to take collective decision to decide the family size. Regarding the meaning of small family 697(69.7%) of the subjects were well comprehended. The study of (Char, Saavala and Kulmala, 2009) contradicts the present study findings as 31% of the survey respondents reported that they themselves were the main decision makers.

Around 592(59.2%) subjects were aware of male sterilization but were unaware of the facts pertaining to male sterilization such as the minimum age for male sterilization was answered correctly only by 57(5.7%) of the subjects. Like wise the maximum age required for male sterilization was cited by 334(33.4%) of the subjects. The body part involved in male sterilization was identified correctly by 399(39.9%) of the subjects.
Among 1000 samples only 380 (38%) were aware of the fact that male sterilization was an outpatient procedure which doesn’t require admission in the hospital. Only 323 (32.3%) of the subjects were aware of the fact that male sterilization had lesser complications than female sterilization. It was surprising to note that only 207 (20.7%) of the subjects were aware that the man has the ability to produce sperms even after male sterilization. Out of 1000 samples only 215 (21.5%) of the subjects stated that tubectomy was a permanent family planning method, 80 (8.0%) of the subjects stated vasectomy as a permanent method for men and only 46 (4.6%) of them stated that No Scalpel Vasectomy (NSV) as one of the permanent family planning method for men.

Narang and Singhal’s (2013) study results support the present study findings, that 75.7% of the men thought that an ideal family size comprises of two children. Further this study indicated that only 36.2% of the men knew that male sterilization was safer than female sterilization.

Char, Saavala and Kulmala (2009) conducted a survey among 793 men, 81% reported 3 methods of contraception, out of which 97% mentioned condom, 85% mentioned the pill and only 83% stated female sterilization.

Mullany and Becker (2007), Mullay (2006), and Singh et al., (1998) conducted similar studies and reported that the
knowledge of the men on male sterilization is not adequate as predicted.

Dutta MC., (2004) quoted that out of 400 samples of male, all of them (100%) in rural slum of Delhi knew about female sterilization while only 77% knew about male sterilization.

Tizta et al., (2002) the concept of family planning was well known to respondents: 760 (94%) women and 795 (98%) men responded ever having heard of it. The median number of methods of contraception that were known among men was 5.

It was found in Table 3 that 738(73.8%) of the subjects had an inadequate knowledge on small family and male sterilization. Moderately adequate knowledge was found only in 250(25%) of the subjects. A negligible number of subjects 12(1.2%) of them only had adequate knowledge on small family and male sterilization.

Ismail (1998) in a cross-sectional study assessed the perceptions and practices of 832 men on family planning in North Gondar, Ethiopia, in June 1995. Sixty one percent of men knew at least one method of Family Planning (FP) and 64.3% of them approved the use of family planning. Forty one percent of them said that only women should use contraception. Involvement of couples on the choice of family planning methods and desired number of children in the family was approved by 58.3% of men. The mean +/- SD desired life-time children was 6.7 (standard deviation = 3.5).
Educational status was positively associated with higher awareness, favourable attitude and practice of family planning \( (p < 0.001) \).

A comparative study of the demographic and health surveyed data pointed out that in 15 out of the 21 countries more than 90% of men recall of knowing at least one contraceptive method \( (\text{Drennen, 1998}) \).

Oni and McCarthy \( (1991) \) conducted a household survey in Ilorin, Nigeria of 1,022 men. The data revealed that the majority of men in Ilorin are aware of the concept of fertility regulations, but only a smaller proportion have detailed knowledge of specific methods of contraceptions. Similar findings were reported by \( (\text{McGinn, Bomba and Balma, 1989}) \).

The second objective of the study was to associate the level of knowledge of men on small family and male sterilization with selected demographic variables

The age of the subjects was associated with mean knowledge score using ANOVA \( (F=11.47; p <0.001 \text{ level}) \). The Scheffe’s multiple comparison showed that subjects aged above 50 years had better knowledge than the subject belonging to lower age limit which was statistically significant at \( p <0.001 \text{ level} \) \( (\text{Table 4 and 4a}) \) which is not in agreement with the findings of \( (\text{Mridha, et al., 1979 and Rajoura, 1995}) \) as the lower mean age was observed in their study.

Religion was significantly associated with the mean knowledge score calculated using ANOVA \( (F = 3.78; p <0.05 \text{ level}) \). Further
Scheffe’s multiple comparison showed that Christians had better knowledge when compared to Hindus and Muslims which was statistically significant at $p < 0.05$ level (Table 4 and 4a). *Bunce et al., (2001)* in a similar study done in Tanzania reported that the Seventh Day Adventist church believers have better knowledge on small family where as the study done by *(Khalifa, 1982)* stated that religious beliefs have no concern on family size.

Educational status had significant (ANOVA) association with mean knowledge score ($F = 2.95; p < 0.01$ level) which was found to be statistically significant. The Scheffe’s multiple comparison showed that subjects with professional educations had better knowledge than the others which was statistically significant at $p < 0.01$ level (Table 4 and 4b), which is similar to the findings of *(Valsangkar et al., 2013 and Khokar et al., 2005)*.

Income was found significantly associated with the mean knowledge score ANOVA ($F = 4.28; p < 0.002$). Further Scheffe’s multiple comparison score showed that subjects who earned an income of Rs. 10,001 – 20,000 had better knowledge on small family and male sterilization, when compared with subjects with lower income and higher income at $p < 0.01$ level. The study findings of *(Valsangkar et al., 2013)* were not similar to this finding that the income of the subjects were non significant with mean knowledge score.
The duration of married life was associated with mean knowledge score ANVOA (F = 10.01; p <0.001). The Scheffe’s multiple comparison showed that subject who were married for more than 20 years have better knowledge than the subjects who had lesser duration of married life which was statistically significant at p <0.001 level (Table 5 and 5a). The chi-square value and p value of (Valsangkar et al., 2013) was similar to the present study findings.

The number of children was associated with mean knowledge score using ANVOA (F = 29.29; p <0.001). The Scheffe’s multiple comparison showed that subjects with a small family of 2 children had better knowledge than subjects with 1 child or more than 2 children which was highly significant at p <0.001 level (Table 5 and 5a). Kalifa (1988) who surveyed 1500 urban Sudanese men stated the desired family size was found to be the highest among low income and high income groups and lowest among middle class.

The student ‘t’ test (Table 6) proved that subjects living in joint family comparatively had better knowledge on small family and male sterilization, (‘t’ = 2.57) which was statistically significant at p <0.01 level.

The student ‘t’ test result indicated that subjects who had not adopted temporary family planning method had better knowledge than those subjects who had adopted some form of family planning method which had a ‘t’ value of -4.91 which was statistically
significant p value of <0.001 level. The study findings of (Gbolahan and McCarthy, 2000) revealed that 43% of men had used condom.

According to the survey report of (Murthy, 2002; Collumbien and Hawkes, 2000 and Khan & Patel, 1997) males often dominant on the decisions concerning family size and contraceptive use.

Figure 7 Correlational and Regression Tree (CART) model, identified the influence of mean knowledge score most significant demographic variables. It showed that those subjects with 2 children and who earned an income of Rs. 4200 to Rs. 8000 per month and living in a joint family had better knowledge than subjects living in nuclear family. The model also indicated that those subjects with 2 children and who earned an income above Rs. 8000 per month and with more than 12 years of married life had better knowledge on small family and male sterilization than subjects with lesser than 12 years of married life. The model further interpreted that those subjects with no child or one child and adopted temporary family planning methods had better knowledge than subjects who had 2 or more children and had not adopted temporary family planning methods.

The third objective of the study was to assess the experience of the men who had undergone NSV

Out of 20 samples interviewed, the subjects who were within the age group of 29-35 were 10(50%). Valsangkar et al., (2012) study among the 116 NSV acceptors at Karimnagar district, Andhra
Pradesh and a (Dacosta, et al., 2010) survey of NSV men at the University of the West Indies revealed the age of the subjects was $39 \pm 5.8$. Bhuyan, All and Baruna (2012) study of 649 acceptors at NSV centre in 16 different districts of Assam, the mean age of the acceptors was 35 years, which was similar to earlier studies of (Rajoura, 2003; Elvy, 2003 and Khokhar, 2005). The present study did not correlate with the findings of (Khokar, et al., 2005) in which the study results indicated men to undergo NSV above 40 years. Unskilled workers were 6(30%) of them. Skilled workers and subjects working in the category of supervisors were 4(20%) subjects each. Again 3(15%) of the subjects were equally distributed among the executives and professionals. The findings contradicts the findings of (Nagarajappa, 2005) where 50% of the 200 samples interviewed were businessmen. Subjects who had high school education were 6(30%) of them. Only 2(10%) of the subjects were illiterates and educated upto primary school level. An equal distribution of 3(15%) of the subjects were either diploma or graduates and professionally educated respectively. Only 1 of the subject had higher secondary education.

A minimum income of Rs. 10,000-25,000 was earned by 12(60%) of the subjects and the remaining subjects belonged to higher income group. Ricalde, Ramirez and Munoz (2010) conducted a study of 596 NSV candidatures, the socio-economic status was 25% (medium), 20.1% middle high and 24.7% were high.
Valsangkar et al., (2012) study reported duration of married life ($\chi^2 = 14.23$, p value = 0.008), the number of children ($\chi^2 = 10.45$, p value = 0.01). In the present study subjects with a duration of 3 years and above had choosen to undergo NSV. In the study of (Khokhar, et al., 2005) only 4 men were in their 10-15 years of marriage duration and 6 had get married more than 25 years back. Similar to (Mridha, et al., 1979 and Rajoura, 1995).

In the present study nearly 15(75%) of the them had non consanguineous marriage and again 14(70%) lived in a nuclear family. Khokhar, et al., (2005) in the study report of 124 males who attended NSV clinic of Safdarjang hospital stated similar findings 44.3% of the samples had nuclear family and the remaining 55.6% had joint families. Based on religion 10(50%) of the subject belonged to Hindu, 6(30%) of them belonged to Christians and only 4(20%) of them were Muslims. Khokhar, et al., (2005) study also found that most of the acceptors were Hindus by religion and reported vasectomy is still not popular method among Muslims.

No significant past health history was reported among 18(90%) of the subjects. In the present study 4(20%) of them had one child, 10(50%) had two children and 6(30%) had more than two children. The findings of are not similar with Khokhar, et al., (2005) the study reported that none of the respondents adopted vasectomy without having atleast two male children. In the study of Da Costa et al., (2010) the maximum number of children in the study
subjects was seven. Subjects who had a small family were 10(50%) of them with 2 children who had undergone NSV. Subjects with a single child were 4(20%) of them and only 6 (30%) of them had a large family and therefore decided to undergo NSV. Similar findings were found in the study of (Barge, et al., 2007).

Table 9 shows the temporary family planning methods adopted by the couples before undergoing NSV. Almost 16(80%) of the subjects used temporary family planning methods and only 4(20%) had not used. While 9(45%) of the subjects used condom and 3(15%) of the subjects used oral pills and 4(20%) used a combination of male and female temporary family planning methods. Valsangkar et al., (2012) study reported the predominant among the NSV acceptor was barrier method (n = 54, 22.88%) and the same was reported by (Barge, et al., 2007 and Murthy, et al., 2005).

Table 10 showed about 9(45%) of the subjects were informed about NSV by doctors and 6(30%) of then were motivated by nurses. Motivation from the wives was the encouragement for 3(15%) of the subjects. Some subjects 1(5%) of them were encouraged by their relatives and friends. Whereas Valsangakar et al., (2012), study reported the predominant source of information regarding NSV where from previous acceptors (n = 86, 74.13%).

The source of information and encouragement may be varied but the ultimate reason for the subjects to undergo NSV differed. Wife’s ill health / weakness prompted 8(40%) of the subjects to
undergo NSV. Two (10%) of the subjects feared failure of temporary family planning methods and had knowledge on the complication of female sterilization. Only 5(25%) of the subjects stated it was the men’s responsibility to control family size. In the study report of (Barge, et al., 2007) for almost all the respondents, the public sector had been the main source of information which included ANM/LHV/nurses.

Table 11 showed the subjects experiences after undergoing NSV. 2(10%) of the subject had undergone NSV more than 10 years ago. In the last 1 to 3 years 12(60%) of them had undergone NSV. NSV unlike conventional vasectomy does not have post operative pain and 15(75%) of the subjects complained of no pain. Only 5(25%) of them had negligible pain. These findings are supporting by the following studies (Pun, 2007; Alqidi, 2002 and Sokal, et al., 1999). Valsangkar, et al., (2012) report of 116, NSV acceptors, commonest post operative complications was pain (n=12, 10.34%). Similar findings are reported by (Lara, 2010 and Pant, 2007).

In the present study 20(100%) of the subjects were well aware of using condom post operatively and they had followed the instructions given by the doctors and used condoms for 3 months. In the study results of Barge et al., (2007) 72% of the NSV candidature used a spacing contraceptive for an average of 24 days only.
Though all the subjects 20(100%) were well aware of the semen examination for 3 months after surgery, only 15(75%) of them had their semen examined after 3 months and 5(25%) of them had never been for semen analysis. Even in the study of (Valsangkar, et al., 2012), reported that most of the respondents out 116 NSV acceptors, (n=111, 95.69%) did not undergo post operative semen examination.

It was reported by 17(85%) of the subjects that they had the same pleasure of sex which they experienced before undergoing NSV and 3(15%) of them experienced increased pleasure in their sexual life due to lack of fear impregnating their spouses. Nearly 16(80%) of them resumed work within 2 days after NSV and 3(15%) of them resumed their routine activities within a week. Only 1(5%) of the subjects resumed the routine activities after a week. De Costa, et al., (2010) study result also showed 92.6% reported the experience was good and not associated with any significant pain. Most men 81(98.7%) reported an improved libido except for one sample. Kumar (1999), in the findings of the study reported NSV in consistently associated with faster recovery and a shorter duration of hospital stay due to lack of use of sutures.

The fourth objective of the study in Phase-III was to evaluate the level of knowledge of the subject on small family and male sterilization before and after structure teaching programme in the experimental group-i

Table 20 showed the pretest level of knowledge of the subjects on small family and male sterilization of the experimental group-I
before structured teaching programme. 46(30.7%) of them had inadequate knowledge, 103(68.7%) of them had moderately adequate knowledge and only 1(0.6%) of the subject had adequate knowledge on small family and male sterilization. But after structure teaching programme in the experimental group-I (table 40), majority 110(73.3%) of the subjects had adequate knowledge and only 40(26.7%) of the subjects had moderately adequate knowledge. Inadequate knowledge persisted among 14(9.3%) of the subjects. Sharma (2006) stated the best vehicle to spread the message effectively on family planning is TV, audio visual CDs, slides or clippings pertaining to family planning. McGinn et al., (1989); Posner and Moody, (1989); Davidson, et al., (1985) and Keith, et al., (1974) in their study findings stated that majority of the men have expressed the belief that men should assume or share the responsibility for birth control but only a smaller proportion of men are doing so.

Table 21 on the pretest knowledge on vasectomy in the experimental group-I, 124(82.7%) of the subjects had inadequate knowledge, 26(17.3%) of them had moderately adequate knowledge and none of the subjects had adequate knowledge on vasectomy. Where as in the posttest level of knowledge on vasectomy among the subjects in the experimental group-I (Table 41), 14(9.3%) of the subjects had inadequate knowledge even after structured teaching programme 85(56.7%) of them had moderately adequate knowledge and 51(34%) of the subjects had adequate knowledge (Table 41).
The subjects showed an improvement in their knowledge on vasectomy after structured teaching programme. The following studies reported the acceptance of vasectomy in countries such as Europe, Africa, Latin America and Asia is low due to the lack of awareness on vasectomy (Vernon, et al., 1989 and 1991; Huber, 1985, Ross and Huber, 1983; Atkins and Jezowski, 1983; Knon et al., 1979).

Table 22 on the pretest level of knowledge on NSV in the experimental group-I, all the 150(100%) of the subjects had absolutely no knowledge on NSV. In the experimental group-I, 33(22%) of the subjects had moderately adequate knowledge, 29(19.3%) of them had adequate knowledge and only 33(22%) had inadequate knowledge (Table 42). Subjects showed a marked improvement in their knowledge on No Scalpel Vasectomy after structured teaching programme. The acceptability of vasectomy through improved development of No Scalpel Vasectomy still remains an obstacle to those wishing to stop their child due to lack of awareness of the procedure and its irreversibility (Martinez-Manautou, et al., 1991; Nirapathpongport, et al., 1990; Li & Liu, 1990; Senanayake, 1984; Fathalla, 1978 and Ahmed, 1976).

Table 61 showed Paired ‘t’ test was used to compare the pretest and posttest knowledge on small family and male sterilization (‘t’ value = -24.83), vasectomy (‘t’ value = -21.05), and NSV (‘t’ value = -26.90, which was statistically significant a p value
<0.001 level. In conclusion the subjects in the experimental group who had the structured teaching programme via video teaching programme on small family, male sterilization, vasectomy and NSV had a positive impact on their knowledge score of the subjects in the posttest.

**Massey (1984)** conducted an evaluative study to determine the effectiveness of a teaching programme on knowledge about No Scalpel Vasectomy among 126 married in Nepal. The instruments used for that study were demographic questionnaire and knowledge questionnaire. The result revealed that the pretest score was 34.51% and posttest score was 76.83%. This clearly indicated the effectiveness of structured teaching programme.

**McMahon (1992)** conducted a study to assess the effectiveness of structured teaching programme on married men regarding No Scalpel Vasectomy in Baswada, Rajasthan Family Welfare centre and hospital through experimental design, among married men. The pretest results showed that out of 100 men, 64% had inadequate knowledge, 32% had moderate, and none of them had adequate knowledge. The posttest result showed that, the knowledge of the men had increased through structured teaching programme, compared with the pretest knowledge. The knowledge of the men had been markedly improved.

The fifth objective of the study was to evaluate the level of knowledge of the subjects on small family and male sterilization
before and after interaction with support group in the experimental group-II

Table 20 in the pretest level of knowledge on small family and male sterilization of the subjects in the experimental group-II who had interaction with support group, 52(34.7%) of the them had inadequate knowledge, 96(64.0%) of them had moderately adequate knowledge and only 2(1.3%) of them had adequate knowledge on small family and male sterilization. After interaction with support, the posttest knowledge of the subjects in the experimental group-II, 40(26.7%) of them had moderately adequate knowledge and majority 110(73.3%) of them had adequate knowledge (Table 42). None of the subjects indicated inadequate knowledge. In the study findings of Char et al., (2009) stated focus group discussion on varied social aspects of fertility had broaden the understanding of the male. Similar findings are also supported by (Greenhelgh, 1990) and Da Costa, 2010). The interactive with support group had a positive impact on the knowledge score of small family and male sterilization among the subjects in the experimental group-II.

Table 21 showed the pretest level of knowledge on vasectomy among the subjects in the experimental group-II, 130(86.7%) of the subjects had inadequate knowledge, 17(11.3%) of them had moderately adequate knowledge and only 3(2%) of them had adequate knowledge where as in the posttest level of knowledge on vasectomy 20(13.3%) of the subjects had inadequate knowledge,
86 (57.4%) of them had moderately adequate knowledge and 44 (29.3%) of the subjects had adequate knowledge on vasectomy.

Table 22 showed the pretest level of knowledge on NSV among the subjects in the experimental group-II, only 1 (0.7%) subjects indicated having moderately adequate knowledge, the rest of the subjects 149 (99.3%) of them had inadequate knowledge on NSV. In the posttest (Table 42) the subjects in the experimental group-II majority 90 (60%) of them had moderately adequate knowledge and only 15 (10%) had adequate knowledge. There were 45 (30%) of the subjects who existed with inadequate knowledge even after interaction with support group. The study is supported by (De Silva et al., 1998; Aldermand and Gee, 1990).

Table 62 showed the paired ‘t’ test was used to compare the pretest and posttest knowledge on small family and male sterilization (‘t’ value = -23.01), vasectomy (‘t’ value = -22.08) and NSV (‘t’ value = -26.27), which were statistically significant with a p value <0.001 level. In the experimental group-II, the subjects who had interaction with support group on small family, male sterilization, vasectomy and NSV had a positive impact on the knowledge score of the subjects in the posttest. In countries where vasectomy in widely accepted is a contraceptive, men who have undergone the procedure are frequently called upon by service providers to counsel potential acceptors (Huber, 1985 and Mumford, 1983).
The sixth objective of the study was to evaluate the level of knowledge and attitude of the subjects on small family and male sterilization in the control group.

Table 21 showed the distribution of pretest level of knowledge on small family and male sterilization among the subjects in the control group, 112 (74.7%) of the subjects had moderately adequate knowledge and 34 (22.7%) of them had inadequate knowledge. Only 4 (2.6%) of them had adequate knowledge. In the posttest (Table 40) when compared to the pretest knowledge, only negligible number of subjects showed marked difference in their knowledge gain after a duration of one month with no intervention. Inadequate knowledge still prevailed among 26 (17.3%) of the subjects. Moderately adequate knowledge was found in 117 (78%) of the subjects and only 7 (4.7%) of them had adequate knowledge.

Table 22, 120 (80%) of the subjects had inadequate knowledge on vasectomy and 28 (18.7%) of them had moderately adequate knowledge. Only 2 (1.3%) had adequate knowledge on vasectomy and the reassessment after a month with no educational intervention showed that 102 (68%) of the subjects had inadequate knowledge and 44 (29.3%) of them had moderately adequate knowledge. Only 4 (2.7%) of them had adequate knowledge.

Table 23 showed in the control group all the 150 (100%) of the subjects had inadequate knowledge on NSV and after a month with no educational intervention 102 (68%) of the subjects had inadequate
knowledge, 44(29.3%) of them had moderately adequate knowledge and 4(2.7%) of the subjects proved to have adequate knowledge.

Table 60 showed Paired ‘t’ test was used to compare the pretest and posttest knowledge on small family and male sterilization (‘t’ value = -4.99), vasectomy (‘t’ value = -3.60) and NSV (‘t’ value = -4.12) which was found to be statistically significant at p value <.001 level.

In the control group, the subjects showed an improvement in their knowledge level on small family, male sterilization, vasectomy and NSV from pretest to posttest. The reason for the significant findings was contributed to their inquisitiveness and curiosity to know more as it directly involved the man himself. The availability of smart phone, internet, peers, etc. are the source of knowledge for the subjects in the control group.

The present family planning policy has a direct effect on the knowledge of the public as stated by (Wolf, 1986; Warwick, 1986 and Mauldin, 1984).

Table 43, subjects in the control group 126(84%) of them had favourable attitude, 13(8.7%) of them had most favourable attitude and only 11(7.3%) of them had unfavourable attitude during the pretest assessment.

Table 52 after one month duration the control group subjects who did not have any form of education intervention were again
reassessed and it was found that 127(84.7%) of them had favourable attitude and 21(14.4%) of them had most favourable attitude. Only 2(1.3%) of them had unfavourable attitude.

The paired ‘t’ level was used to compare the pretest and posttest attitude score. The ‘t’ value was -10.14 which was found to be statistically significant at p <0.001 level.

**Barge, et al., (2007)** stated in the study findings sharing positive NSV experience by clients who are satisfied with NSV could motivate others also to accept the method. Two third (67%) of 120 samples reported that they had talked about their experience. They shared their experiences with friends (55%) rather than their relative (10%) or neighbour (8%). On an average, each respondent had contacted around six persons.

In control group the subjects showed a change towards favourable attitude from the pretest to posttest which may be as the result of peer discussion and thoughtful analysis of the questionnaire issued by the nurse researcher. In the late 1960s two dozen family planning attitude surveys were done in India the survey had an uniform response on the number of children desired, the desirable interval between the child birth and the desire to learn methods **(Pothi, Malakar and Chakravarthi, 1959).**

**The seventh objective of the study was to evaluate the level of attitude of the subjects on small family and male sterilization**
among men before and after structured teaching programme in the experimental group-I

Table 40 showed the pretest attitude of the subjects in the experimental group-I, majority of the subjects 104(69.4%) of them had favourable attitude. Most favourable attitude prevailed among 39(26%) of the subjects. Only 7(4.6%) of the subjects had unfavourable attitude. Table 52 showed the posttest attitude of the subjects in the experimental group-I, 95(63.3%) of the subjects had favourable attitude and 55(36.7%) of them had most favourable attitude. Unfavourable attitude was not found among the subjects.

The study findings of Khalifa (1988) stated that the male attitudes towards contraception affect on the success on failure of family planning programme. The sample of 1500, 91% of the men said they would approve of contraceptive use of the wife’s health would be jeopardized by another pregnancy. The need to delay the next pregnancy or child spacing, was considered a valid reason to practice family planning and desire to terminate child bearing was approved by 71%.

The paired ‘t’ test was used to compare the pretest and posttest attitude score which had a ‘t’ value of -10.14 and which was statistically significant a p value <0.001 level.

In the experimental group-I, the subjects as a result of structured teaching programme via video assisted teaching on small family, male sterilization, vasectomy and NSV had very favourable
attitude. Men expressed concern for their wives and often perceived that their wives experienced side effects from sterilization (Char, et al., 2009) and similar responses were reported in rural India (Saavala, 1999).

Khalifa (1988), the urban Sudanese men surveyed stated family size ‘was up to God’. The reason for more children are related to happiness and strength more children are related to happiness and strength associated with large family, present and future economic benefits and parents old age security.

The eighth objective of the study was to evaluate the level of attitude of the subjects on small family and male sterilization before and after interaction with support group in the experimental group-II. Table 43 showed the pretest attitude of the subjects in the experimental group-II, majority of the subjects 118(78.6%) had favourable attitude. Most favourable attitude was found among 22(14.76%) of the subjects. Only 10(6.7%) of the subjects had unfavourable attitude. Table 52 showed after the interaction with support group, the subjects in the experimental group-II, 102(68%) had favourable attitude. Most favourable attitude was found among 48(32%) of the subjects. None of the subjects had unfavourable attitude.

The paired ‘t’ test was used to compare the pretest and posttest attitude score which had a ‘t’ value of -13.44 and was found to be highly statistically significant at p <0.001 level (Table 54).
In the experimental group-II, the subjects as the result of interaction with support group on small family, male sterilization, vasectomy and No Scalpel Vasectomy had very favourable attitude.

_Borge, et al., (2007)_ enquired among the 120 NSV candidatures if any one had contacted them to know about their experience. Eight percent did mention that they were contacted. Among the ten clients who were contacted seven of them reported have accepted NSV.

_Da Costa, et al., (2010)_ stated research needs to done to determine the optimum method of preparing men for their vasectomy experiences.

_Khokhar (2005)_ conducted a study among 124 males who attended NSV clinic at Safdarjang hospital, New Delhi. Among the subjects 30.3% of them mentioned self-motivation as the reason for spacing the birth, 77.4% of them switched over to a permanent method to limit the family size of the 124 males, 70.2% of them stated that it was their own preference to undergo NSV. Men with a family size of three or more children preferred to be sterilized.

_Khokhar (2005)_ sated in the article Public Health Nurses (PHNs) at the NSV clinic had played a vital role in motivating the males to adopt NSV, (42%) followed by the social worker at the NSV clinic (31.4%) and PHNs at the family clinic (23.4%), doctor’s role or motivating the males to adopt NSV was minimum (113.%). Most of
the men who underwent NSV (106) had heard of NSV through mass media and others (18) had come to know through other sources. Though all of them knew that NSV was a permanent method, most of them had not heard of any other person who had undergone NSV.

The ninth objective of the study was to evaluate the effectiveness of interventions in the experimental groups and control group in terms of knowledge and attitude on promotion of No Scalpel Vasectomy (NSV).

Table 23, 24, 25 compared the mean pretest knowledge score of the experimental group-I, experimental group-II and control group. The calculated ANOVA for small family and male sterilization (F = 3.38, p = 0.03), vasectomy (F = 2.22, p = 0.110) and NSV (F = 0.68, p = 0.05). As only the mean score of small family was significant, Scheffe’s multiple comparison was applied and it showed that the in the pretest knowledge on small family and male sterilization control group had better knowledge than experimental group-I and experimental group-II which was statistically significant at p < 0.05 level.

Table 57, 58, 59 compared the mean posttest knowledge score of the experimental group-I, experimental group-II and control group. The calculate ANOVA for small family and male sterilization (F = 141.52, p = <0.001), vasectomy (F = 140.97, p = <0.001) and NSV (F = 227.36, p = <0.001). As the mean knowledge score was statically significant at p < 0.001, Scheffe’s multiple comparison was applied. Based on the mean knowledge score on small family and
male sterilization. In the experimental group-I, experimental group-II and control group there was significant difference among the three groups.

Table 44 compared the mean pre attitude score on small family and male sterilization of the experimental group-I, experimental group-II and the control group which had on F ratio of 8.30 with a statistically significant p value <0.001 level. The Scheffe’s multiple comparison proved that experimental group-I when compared with control group was highly significant at p <0.001 level and when compared with experimental group-II it was significant at p <0.01 level. Experimental group-I had better attitude than experimental group-II and control group.

Table 60 compared the mean post attitude score on small family and male sterilization of the experimental group-I, experimental group-II and the control group which had an F ratio of 18.33 with a statistically significant p value of <0.001 level. The Scheffe’s multiple comparison proved that experimental group-I had better attitude than the control group at p <0.001 level. There was no significant difference between experimental group-I and experimental group-II.

The comparison of the subjects mean pretest knowledge score with the following demographic variables which was statistically significant are Table 26, age (F ratio = 4.96, p = 0.001), Table 27, duration of married life (F ratio = 0.80, p = 0.52), Table 28, type of
family (F ratio = 6.94, p = 0.009), Table 30, occupation (F ratio = 1.78, p = 0.018), Table 31, income (F ratio = 2.68, p = 0.069), Table 32, source of information (F ratio = 1.92, p = 0.124). Only age of the subjects and type of family was statistically significantly at p <0.001 level and p <0.01 level respectively.

Table 26a the Scheffe’s multiple comparison test showed that subjects who were less than 25 years of age were statistically significant with subjects who were 31-35 years at p <0.001 level. Likewise the subjects of 26-30 years of age had better knowledge than subjects who were 31-35 years at p <0.05 level. Subjects in joint family with a mean score of 8.15 and standard deviation of 2.23 had better knowledge than subjects in nuclear family who a mean value of 7.56 with a standard deviation of 2.41.

The demographic variables were compared with the mean pretest attitude with ANOVA, Table 45, age (F ratio = 2.56, p = 0.038), Table 46, duration of married life (F ratio = 5.74, p = 0.001), Table 47, type of family (F ratio = 0.890 p = 0.346), Table 48, number of children (F ratio = 0.30, p = 0.821), Table 49, occupation (F ratio = 3.28, p = 0.007), Table 50, income (F ratio = 3.94, p = 0.20), Table 51, source of information (F ratio = 2.404, p = 0.007).

Age was statistically significant at p <0.05 level in Table 45a Scheffe’s multiple comparison was applied and the results indicated that subjects above 41 years of age had better attitude than the subjects aged below 41 age limit at p <0.05 level. Duration of married
life was statistically significant at $p < 0.001$ level. The Scheffe’s multiple comparison test in table 46a showed that the subjects above 16 years had better attitude than other at $p < 0.001$ level. While subjects 11-15 years of duration significant at $p < 0.01$ level.

Table 62 showed the comparison of selected demographic variable with posttest knowledge among the subjects in the three groups.

To compare the effect of selected variables such as age, occupation, income, type of family, health history and source of information among the subjects in the three groups with posttest knowledge score ANCOVA ($F$ ratio = 206.65) was calculated which had a significant $p$ value of $<0.001$. To confirm the significant value Bonferroni multiple comparison test was applied and it proved that experimental group-I had more knowledge than the experimental group-II and control group at $p < 0.001$ level.

The selected demographic variables had no influence on the knowledge of the subjects in all the three groups. The improvement on increase in knowledge in posttest was due to education by structured teaching programme in the experimental group-I and interaction with support group experimental group-II.

Table 65 showed the comparison of selected demographic variable with posttest attitude among the subjects in the three groups.
To compare the effect of selected variables such as age, occupation, income, type of family, health history and source of information among the subjects in the three groups with posttest knowledge score ANCOVA (F ratio = 14.31) was calculated which had a significant p value of <0.001. To confirm the significant value Bonferroni multiple comparison test as applied and it proved that experimental group-I had better attitude than experimental group-II and control group at p <0.001 level.

The selected demographic variables had no influence on the attitude of the subjects in all the three groups. The improvement on increase in knowledge in posttest was due to education by structured teaching programme and interaction with support group.

Supporting studies are

Sharma (2006) in the article cited, that even after a decade of introduction of NSV in India the male participation is only 3%. The materials prepared through hoardings, wall writings, distribution of pamphlets, audiovisual clips, face to face counselling, etc., These methods have not proved effective enough to carry the message to grass root level. The author further stated only 30-3% of the men are attracted to hoarding and well writings, therefore it was decided to old tradition concept of male by organizing NSV mega camps.

Santhya (2003) quoted in the changing family planning scenario, in India the use of no-scalpel vasectomy was approved by 78.9% of the men, but it was actually applied by only 65.6%.
Whereas 27.6% of the married men who are graduates had 5 or more children, as many as 67.4% of the men with a lesser educational level had such a large offspring nearly 60% of the men had been given information about Non-Scalpel Vasectomy by health care professionals. Of the men, 53.7% had positive views about Non-Scalpel Vasectomy and 66.2% of men stressed the need to improve the acceptance of Non-Scalpel Vasectomy by providing knowledge and information through sources such as radio, TV, door-to-door campaigning and interpersonal communication. Now men above the age of 35 years were showing their interest in Non-Scalpel Vasectomy in Punjab.

*Borge, et al., (2001)* study samples opinion of disseminating NSV information via health work education was 71%, publicity through video/TV by 48% and 11% suggested pamphlet distribution.

*Rajagopal, et al., (2000)* conducted a study about knowledge and attitudes towards male and female sterilization over a period of one year in 2 districts of Uttar Pradesh, Gorakhpur and Almora. Through the quantitative and qualitative data and results revealed that there are significant misconceptions in the mind of both the community and health service providers. Both men and women mistakenly believe that female sterilization is easier to perform than male sterilization and believe that vasectomy causes weakness and loss of virility. 62% of the men in both the district favoured vasectomy only 43% of the women favoured it. The author concluded
that it is the women who are averse to exposing their men folk to surgical travails.

The acceptance of vasectomy is due to the failure of information, education and accessibility (Bailey, et al., 1991 and Vernon et al., 1991).

The Structured Teaching Programmes (STP) via video assisted teaching is statistically proved to have better knowledge gain and change towards positive attitude than the interaction with support group, as the study material in structured teaching programme is well organized and follows the principles of teaching from simple to complex.

The significant finding in the control group is because of the curiosity and inquisitiveness about NSV and the availability of smartphone, internet facilities and NSV campaigns which contributes to the knowledge gain and change of attitude among the subject sin the control group.