CHAPTER VI

SUMMARY, CONCLUSIONS, IMPLICATIONS AND RECOMMENDATIONS

6.1 Summary

Cervicovaginal infections, a global burden hampers the quality of life of women. It may lead to adverse health outcomes such as pelvic inflammatory disease, infertility, ectopic pregnancy, concurrent infections, cervical dysplasia and increased vulnerability to transmission of the HIV.

Though the detected rates of cervical dysplasia are lesser, untreated cases may progress to cervical cancer. Even after screening and identification, women may not comply with treatment and follow up. Moreover, specific treatment of infections may produce short time cure, as certain behavioural practices and repeated exposure to host factors can result in persistence or relapse of infection. Interventions including cognitive, behavioural and affective domains were considered the most effective in improving adherence and patient outcomes. Hence, the investigator intended to determine the effectiveness of Educative Supportive Nursing Interventions on clinical indicators and behavioural adherence among women with abnormal cervical smears.

The objectives of the study were to:

- Evaluate the effectiveness of Educative Supportive nursing interventions on clinical indicators among women with abnormal cervical smears.
- Assess the effectiveness of Educative Supportive Nursing Interventions on behavioural adherence among women with abnormal cervical smears.
- Determine the relationship between behavioural adherence and clinical indicators among women with abnormal cervical smears
- Associate selected background variables with clinical indicators and behavioural adherence among women with abnormal cervical smears.

The formulated study hypotheses were:

**H1:** There is a significant difference in clinical indicators of women with abnormal cervical smears who participate in Educative Supportive Nursing Interventions than who do not.

**H2:** There is a significant difference in behavioural adherence among women with abnormal cervical smears who participate in Educative Supportive Nursing Interventions than who do not.

**H3:** There is a significant relationship between behavioral adherence and clinical indicators among women with abnormal cervical smears who participate in Educative Supportive Nursing Interventions than who do not.

Related literatures were reviewed and grouped. Conceptual framework was based on Nola J. Pender’s Health Promotion Model.

The research design adopted was Randomized Control Trial. Manipulation included the Educative intervention that imparted knowledge on cervical dysplasia, cervicovaginal infections and tips for healthy living using a structured booklet along with two reinforcement sessions and supportive interventions included demonstration and distribution of male condoms, reminder calls prior to four follow-up visits, tailored messages to suit individual needs and queries. The women in the control
group received tips for healthy living along with reinforcement and telephonic reminders. Women were divided into two strata: women with cervical dysplasia were assigned randomly using lottery method and women with cervicovaginal infections were assigned to study and control group using randomized block technique.

The study was conducted in the Gynaecological Outpatient Department of Sri Ramachandra Hospital, Chennai. The population included women with cervicovaginal discharge. Women were screened clinically, microbiologically and cytologically for cervical dysplasia and for the following cervicovaginal infections - Trichomonas, Candidiasis and Bacterial vaginosis. Women diagnosed with the mentioned cervical smear abnormalities and those who fulfilled the inclusion criteria during the period of study were selected as samples. Estimated sample size was 300, with 150 subjects in each of the groups.

The instrument used had 3 parts:

**Par I-** Demographic, Obstetric and gynaecological variables and record data

**Part II - Clinical Indicators:** Cervical visual examination checklist (WHO standardized form), Cervical abnormalities symptom inventory checklist and Cervical smear analysis report.

**Part III- Behavioural Adherence:** Questionnaire to assess knowledge on cervical abnormalities, Healthy behavioural practice checklist and Follow up adherence details on reminders given, lapse days and missed visits and Barriers for adherence checklist.

The instruments developed by the investigator were validated by experts and reliability was checked using test- retest and interrater observation methods. The data
were collected twice; baseline and after 12 weeks, expect the knowledge assessment on cervical abnormalities that was estimated at the end of 8 weeks.

A pilot test conducted with 10% of the proposed sample size helped to assess the reliability and feasibility of instruments. Modifications were done based on the pilot study results and experts recommendations.

**Findings of the study**

**Comparison of clinical indicators**

Cytological and microbiological smear analysis detected 94.7% with cervicovaginal infections and 5.3% with cervical dysplasia in both the groups. Of eight women with dysplasia, 1.3% had Atypical squamous cells 2% had high grade squamous intraepithelial lesion, 0.7% had Atypical squamous intraepithelial lesion, cannot exclude high grade lesion and 0.7% Atypical endocervical cells in both the groups. Baseline microbiological analysis detected Trichomonas (4%, 3.3%), yeast (34%, 35.3%) and clue cells (56.6%, 58%) among women in the study and the control group. Post microbiological smear analysis showed 102(71.3%) women in the study group and 79(59%) in the control group had normal vaginal flora with statistical significance between the groups at p<0.05. In the study group, 25 (17.5%) had persistent infection (1.4% Trichomonas, 4.2% yeast cells, 11.9% clue cells) whereas in the control group 46 (34.4%) had persistent infections (1.5% Trichomonas, 14.2% yeast, 18.7% clue cells).

Baseline cervical examination revealed that 91.3% and 90.6% women had white discharge in the study and control group. 44.7% in the study and 37.3% in the control group had an abnormal cervix. Comparison of post cervical visual parameters
represented a significant difference at p<0.05 in the discharge aspect. 63.7% had normal discharge in the study group versus 50.7% in the control group.

Baseline mean symptom score was 7.78 and 7.92 for the study and control group women with no significant difference between the groups. The post symptoms score was 2.85 and 3.63 in the study and the control group. Comparison between groups showed reduction of symptoms at p<0.01.

**Comparison of behavioural adherence:**

Baseline mean knowledge scores were 11.17 ±5.63 for the study group and 10.78±5.61 for the control group women. No significant difference was observed. Post mean difference of knowledge scores in the study group was 19.87 compared to 4.94 for the control group with t =25.38 and p=0.000. In the study group, 25.9%, 58.7% and 15.4% had highly adequate, moderately adequate and inadequate knowledge whereas 6% and 94% had moderately adequate and inadequate knowledge in the control group.

Overall baseline mean healthy behavioural practice was 36.25 ± 4.33 for the study group and 36.66 ± 5.58 for the control group, with t and p value 0.68 and 0.496. In the study group, 53.1% used condoms during sexual contacts as against 4.4% in the control group. The post healthy behavioural practice mean scores were 47.21 versus 35.9 for the study and the control group with t= 20.65 and p=0.000. Positive correlation existed between post knowledge and healthy behavioural practice among the study group women with r value 0.526 (p<0.001).
Overall mean reminder for the follow-up visits was 1.44 for the study and 1.97 for the control group (p<0.001). Overall lapse days between follow-up visits were lesser for the study group than the control group at p< 0.001. Overall mean barriers for follow-up adherence score was 1.23 for the study and 4.84 for the control group.

Relationship between clinical indicators and behavioural adherence

A statistical significant relationship existed between post microbiological smear analysis and post healthy behavioural practice at p<0.001 among both the groups. Relationship at p<0.001 was found between post knowledge and post microbiological smear analysis in the study group. Post knowledge scores indicated a negative correlation with post symptoms, with r value of -0.298 (p<0.001) for the study group.

Association between selected background and study variables

Post healthy behavioural practice had association with age, education, occupation, years of sexual life and extramarital contact for spouse at p<0.001 and with family income, extramarital contact for self at p<0.01, and with diabetes at p<0.05 level among the study group.

Significant association existed for post healthy behavioural practice with age, education family income, parity, years of sexual life at p<0.001 level and with age of sexual initiation at p<0.01 and extramarital contact for spouse, self and diabetes at p<0.05 among women in the control group.

Significant association for place of residence at p<0.01 and distance from residence to hospital at p<0.001 level with barriers of adherence existed among
women in both the groups. Regression analysis confirmed that distance between residence to hospital had a strong influence on the barriers of adherence.

Regression analysis of post healthy behavioural practice with background variables indicated that age was the most powerful predictor for both the groups. Combined demographic variables accounted for 37.3% of variance in the post healthy behavioural practice among women in the study group and for 45.9% variance in the control group.

6.2 Conclusion

Integrated program of cytological and microbiological cervical smear analysis help in identifying not only precancer but also cervicovaginal infections. Along with screening, effective treatment and follow-up will prevent complications. Adherence to recommended treatment and behaviour continues to be a significant problem. The multiple component behavioural approach used in this study appears to more effective than single behavioural strategy interventions to improve clinical indicators and behavioural adherence among women with abnormal cervical smears. Providing education alone is not sufficient to change behavioural adherence over time. Education and other supportive strategies such as demonstration of condom use, reminders for appropriate follow-up, along with tailored messages based on the individual needs shows promise to improve the outcome measures.

The study results indicate that women with abnormal cervical smears obtained an overall positive influence from Educative Supportive Nursing Interventions. The symptoms of cervical abnormalities experienced by women reduced significantly post
intervention. The visual inspection of the cervix revealed a significant improvement in the discharge component. Microbiological smear analysis indicated an improvement in the maintenance of normal vaginal flora post intervention among women in the study group than the women in the control group. The persistence of infections was lesser among women in the study group than the women in the control group. Further study is required to determine the effects of the intervention on recurrence and persistence of infections over a longer period of time.

The modifiable factors, knowledge and healthy behavioural practices advanced significantly following educative supportive nursing interventions. The results also indicate a positive relationship between behavioural adherence and reduction in symptoms experienced by women. A significant positive relationship existed between knowledge and healthy behavioural practice. Though the reminders were given for women in both the groups, improved knowledge facilitated follow-up adherence among women in the study group. Hence, lesser reminders, fewer lapse days between visits and minimal missed visits were witnessed among women in the study group. The barriers for adherence reflected that lack of knowledge lead to undesirable attitude development and deterred the follow-up adherence among women in the control group. Future research with more subjects with cervical dysplasia will help to establish the positive effect of the interventions and establish an identity for this stratum of patients alone.

Educative Supportive Nursing Interventions for women with abnormal cervical smears can be implemented in the outpatient units of various hospitals or community centers to effectively create a change in the three domains of knowledge,
attitude and practice among women with abnormal cervical smears, without any changes or addition in the staffing patterns.

6.3 Implications for Nursing

6.3.1 Implications for Nursing Practice

Nurses posted in the hospitals or primary health centers can utilize the instructional booklet prepared by the investigator to educate and counsel women on prevention of cervical cancer and cervical infections and promotion of safer sexual, menstrual and hygienic practices. Many women with problems feel shy to approach the health care personnel and discuss their problems pertaining to reproductive tract. A voluntary demonstration on the use of male condoms will encourage these shy women to utilize condoms and also empower them with appropriate skill needed for its insertion. Even, use of female condoms can be emphasized for better empowerment.

A tracking system can be established with the help of technology and through this system, nurses can provide reminders to help women have appropriate follow-up. Hence, primary focus of nurses should not only be screening of abnormalities but also provision of adequate follow-up to overcome these abnormalities and thereby promote health. Nurse specialist with appropriate training can detect various infections. The study calls for a routine inclusion of screening for reproductive tract infections in antenatal and other gynaecology clinics, and improved quality of peripheral diagnostic tests to detect cervicovaginal infections.
6.3.2 Implications for Nursing Education

Student nurses can utilize the booklet during the health teaching sessions. Undergraduate nursing curriculum should include cervical screening methods such as visual inspection, visual inspection with acetic acid/ Lugol’s iodine solution / magnification. Even simple tests, such as whiff tests to identify Bacterial vaginosis and wet mount test to identify Trichomonas and Bacterial vaginosis can be included in the microbiology practical sessions. Visual inspection of the cervix may be incorporated as a routine procedure to be performed by students during the clinical experience in Gynaecology outpatient department. With the skill development in visual examination of the cervix, students can be involved in conducting camps to screen women for cervical cancer in community settings.

Nurse educators can target the nurses and multipurpose health workers in the community areas. Continuing Nursing Education programs along with Training of trainers programs can be organized to help impart education on early detection of cervical dysplasia / cervicovaginal infections and for further management of these conditions. Even simple teaching and learning modules can be developed to carry the message equally to all learners.

6.3.3 Implications for Nursing Administration

Nursing administrators can help in dissemination of research based knowledge through organization of in-service education program. Nurses should be posted in the gynecological out patient units to educate and counsel women. Nursing Administrators can be a liaison between patients and hospital administration in creating a directory of all women with abnormal smear results especially with cervical
dysplasia, to check whether they have received the smear results and had been adequately followed up. Defaulters need to be identified, and efforts should be taken to bring these defaulters for further care to overcome future complications.

Policies and protocols can be established for effective utilization of the educative supportive intervention programs. Arrangements can be made to procure and place a microscope in the gynaecological out patient department for instant detection of organisms, so as to save time and initiate early treatment.

6.3.4 Implications for Nursing Research

The research work by the investigator helps to define the unique role a nurse plays in the health care arena. The findings of the present study will help the professional nurses and students to develop inquiry by providing a base for further research. Generalization of the study results can be made by further replication in various settings. A study using factorial design can be used to assess the effectiveness of cognitive interventions, behavioural interventions or both in the future. Large scale screening programs along with community based education in the underprivileged areas along with appropriate follow-up abnormalities looks a distant dream. Adequate funds and grants along with humanistic and materialistic support provided to researchers willing to inquire further in this aspect can help in implementation of this dream into reality.

6.4 Recommendations for further study

- A similar study can be conducted with the use of video assisted or computer assisted teaching.
• Studies may be replicated in other settings especially community areas.
• A study to explore the knowledge, attitude and behaviour of men about cervicovaginal infections and reproductive health of women can be conducted.
• The effectiveness of video-based interventions in promoting behaviour and condom acquisition among women with recurrent vaginitis can be performed.
• The study can be replicated with high risk women like commercial sex workers as samples.
• Lived in Experiences of women with abnormal cervical smears can be determined through qualitative research approach.
• Psychological variables such as anxiety, patient satisfaction, psychological well being, perceived benefits, perceived self efficacy and quality of life can be assessed.
• Long term follow up studies for a period of 1 – 3 years can be conducted.
• Long term studies involving women with cervical dysplasia as samples can be considered.
• Educative supportive interventions can be initiated to adolescents with a focus on reproductive health.
• Educative supportive interventions can be extended to women with cancer cervix.