Chapter III

METHODOLOGY

Science is systematic and evidence based. Methodology chapter gives an idea for the researcher in a systematic way to proceed with the research, and it is completely evidence based. Based on the concrete idea of evidence based nursing practice, the present chapter deals with the description of methodology, gives an account of the different steps which were undertaken for gathering and organizing the data for the investigation. The chapter also includes description of research approach, research design, the setting, the study population, the sampling technique, development and description of data collection instrument, the pilot study, the procedure followed for data collection and plan for data analysis.

Research Approach

The research approach serves as a basic procedure to conduct and proceed the research study. To accomplish the objectives of the study quantitative research was chosen as an appropriate research approach.
Research Design

The research design spells out the basic strategies that the researcher adopts to develop information that is accurate and interpretable. It is a researcher’s overall plan for obtaining answer to the research questions or for testing the research hypothesis (Polit, F.D & Hungler, P.B 1999).

A pre experimental one-group pre and posttest design was adopted for this study.

Diagrammatic representation of the design:

\[ E \quad O_1 \quad X \quad O_2 \]

E - Subjects selected for the study
O1 - Pretest
O2 - Posttest
X - Teaching Module using Life Skill approaches through participatory activity module package.

<table>
<thead>
<tr>
<th>S.No.</th>
<th>Group</th>
<th>Pretest (O1)</th>
<th>Intervention (X)</th>
<th>Posttest (O2)</th>
</tr>
</thead>
</table>
| 1     | Subjects selected for the study | -Knowledge on Reproductive Health
-Attitude towards Reproductive Health
-Self-esteem on following domains Personal, Family, Social and Self-concept Self-esteem | Teaching Module using Life Skill Approaches on Reproductive Health and Self-Esteem Through participatory activity module. | -Knowledge on Reproductive Health
-Attitude towards Reproductive Health
-Self-esteem on following domains Personal, Family, Social and Self-concept Self-esteem |
FIGURE 2: SCHEMATIC REPRESENTATION OF THE RESEARCH METHODOLOGY

Research Approach
(Quantitative Approach)

Research Design
One group – Pre and Posttest O1 x O2

Setting of the Study
Eight Schools at Puducherry Four Government and four Private Schools

Target population
Adolescent girls studying 9th Standard at Government and Private schools

Sampling frame List of Schools of Puducherry Government-Private

Government (N = 67)

Private (N = 15)

Sampling Technique Stratified and Simple Random Technique
1. Annai Sivagami Government Girls Higher Secondary school
3. Thiruvalluvar Government Higher Secondary School

1. Jothi Vallalar Girls Higher Secondary School
2. Vivekananda Higher Secondary School
3. Sankara Vidayala Higher Secondary School
4. Little Flower Higher Secondary School

**Accessible Population**
Adolescent girls fulfilling inclusion criteria studying 9th Standard from Government and Private schools of Puducherry.

**Randomization**

**Sample Size**
Government (n = 175)

**Sample Size**
Private (n = 183)

**Data Collection Plan**
Questionnaire and Interview Technique

**Data to be Collected**
1. Socio-demographic Variables
2. Knowledge and Attitude on Menstrual Hygiene
3. Assessment of Self-Esteem
Intervention (Participatory activity module 6-sessions on reproductive health and 6 sessions on self-esteem)

Post test on Menstrual Health and Self-Esteem

Statistical Analysis

Result

Dissemination of Study Findings
Independent Variables

The variable that is believed to cause or influence the dependent variable in experimental research. It is the manipulated (treatment) variable of the study \((\text{Polit, F.D & Hungler, P.B 1999})\).

The independent variable in this study was Teaching Module on (self-awareness) Reproductive Health and Self-esteem using life skill approaches.

Dependent Variable

The outcome variable of interest; the variable that is hypothesized to depend on or be caused by another variable \((\text{Polit, F.D & Hungler, P.B 1999})\).

The dependent variables in this study were knowledge on reproductive health, attitude towards reproductive health, and self-esteem in various domains such as Personal, Family, Social and Self-concept.

Extraneous Variable

A variable that confounds the relationship between the independent and dependent variables and that needs to be controlled either in the research design or through statistical procedure \((\text{Polit,F.D & Hungler,P.B 1999})\).
In this study, the extraneous variables were Mother’s education, type of the school and the medium of instruction.

**Setting of the Study**

The selected schools at Puducherry were the setting of the study. Puducherry is one of the Union Territories situated in South India. The Pondicherry Government runs Government and private schools to educate the children. It follows the Sarva Siksha Abhiyan (SSA) i.e. education to all children giving emphasis to adolescent girls. The schools are situated in and around rural and urban areas of Puducherry within the radius of 10 to 13 K.M. There are separate schools for girls and boys and co-education schools. The medium of instruction in the schools is English and Tamil, containing separate sections in the same schools. There are 67 Government Girls’ High Schools. There are 15 schools run by the management sector.

Eight schools were selected for this study, four from government set up and four from private setup. The schools come under the control of Educational Department.

The study was conducted in the schools on adolescent girls studying in 9th standard.
The Study Population

The population refers to the entire set of individuals or subjects having some common characteristics. The study population includes school going adolescent girls studying at 9th standard in Government and private schools at Puducherry. Only girls were selected from co-education schools.

Samples

The total strength of the girls studying in 9th standard run by all management schools and Government school at Puducherry is 8181. The adolescent period is the right time to impart knowledge on self-awareness i.e. the developmental tasks of the adolescent period.

The sample consists of 358 students who were fulfilling inclusion and exclusion criteria from the selected Government and Private schools. The subjects were selected from the co-education and girls’ high schools, and the higher secondary schools.

Sample Size

The sample selected for the study was 358 adolescent girls.

Sampling Technique

Randomization was done to select the schools and the subjects.
Stratified sampling technique was used to select the schools. The school list was obtained from the educational department. Sampling frame was made with the school list. Simple random (lottery method) technique was used to select the schools from the list. Four Government schools were selected from the list of Government schools. Similar method was adopted for selecting the four private schools from the list of private schools.

From the list of schools, the list of students studying 9th standard was collected from the attendance. Separate preliminary interview was conducted. Sampling frame was made with the list of students. Based on the inclusion and exclusion criteria subjects were selected by simple random (lottery method) technique.

**Ethical Consideration**

Ethical clearance was obtained from The Mother Teresa Institute of Post Graduate and Research Institute of Health Sciences. In order to proceed further with the study, ethical clearance was also obtained from the Education Department. It was stated by the Education Department that, “the student would not be put into any invasive procedure, student would get benefits from the study, no students would be deprived of the interventional programmes. At the end of the study the teachers would be taught to identify the change in the behaviour of the
adolescent girls, and parents would be given tips to take care of the adolescent girls (daughter) at home”.

Criteria for selection of sample

Inclusion Criteria

1. The school going adolescent girls in the age group of 13-15 years, studying in 9th standard.

2. The school going adolescent girls studying in private and Government school.

3. The school going adolescent girls from English and Tamil medium schools.

4. The school going adolescent girls willing to participate.

Exclusion criteria

1. The school going adolescent girls with disabilities.

2. The school going adolescent already received knowledge from similar such programme.

3. The school going adolescent girls not willing to participate.

Data Collection Instrument

Development of the Data Collection Instrument

Two different types of tools were used in the study to collect the data. To assess the self-esteem Rajini’s Scale, a standardized tool was adopted. Based on the extensive literature review the tool
on Knowledge and attitude towards reproductive health was developed by the researcher.

**Description of the data collection instrument**

The data collection tool consisted of three parts.

**Part - I**

**Part I** consists of socio-demographic variables of the school going adolescent girls such as the name, age, school type administration (Government and Private school), medium of instruction (English and Tamil), parental education, occupation, income, school related aspects as sports, subjects, academic performance etc,

**Part-II: Reproductive Health Assessment**

**Part IIa** - consists of 30 multiple-choice questions related to Knowledge on reproductive health. The questions were grouped under three categories. i.e.

<table>
<thead>
<tr>
<th>S.No</th>
<th><strong>Area of Knowledge</strong></th>
<th>Noons</th>
<th>Score</th>
<th>Total Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Knowledge regarding reproductive organs.</td>
<td>16</td>
<td>16</td>
<td>16</td>
</tr>
<tr>
<td>2</td>
<td>Knowledge related to hygienic practices;</td>
<td>09</td>
<td>09</td>
<td>09</td>
</tr>
<tr>
<td>3</td>
<td>Knowledge on nutrition</td>
<td>05</td>
<td>05</td>
<td>05</td>
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</table>
Each correct answer was awarded “1” mark and the wrong answer was awarded “0” thus the total number of 30 questions gives a score of 30 marks.

**Part II b-** consisted of Attitude towards reproductive health. The questionnaire consisted of 30 in 5-point rating system as strongly agree, agree, undecided, disagree and strongly disagree. The rating of the scale was strongly agree – 5, agree - 4, undecided - 3, disagree - 2 and strongly disagree -1. There were 15 positive items and 15 negative items. The negative items had reversed scoring.

<table>
<thead>
<tr>
<th>Sl.No.</th>
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<th>Positive Items</th>
<th>Negative Items</th>
</tr>
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<tbody>
<tr>
<td>1</td>
<td>Strongly Agree</td>
<td>5</td>
<td>1</td>
</tr>
<tr>
<td>2</td>
<td>Agree</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td>3</td>
<td>Undecided</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>4</td>
<td>Strongly Disagree</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>5</td>
<td>Disagree</td>
<td>1</td>
<td>5</td>
</tr>
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</table>

**Part-III**

The part III consists of Rajini’s scale. The scale was a standardized one used by many research scholars at many Indian settings to measure the self-esteem.
The scale consisted of 80 statements in a five-point rating scale system. It is as strongly agree, agree, undecided, disagree, and strongly disagree. There are 41 positive items and 39 negative items. The positive items were scored as strongly agree as - 5, agree - 4, undecided - 3, disagree - 2 and strongly disagree - 1. The reverse scoring was made for the remaining 39 negative items i.e. as strongly agree as - 1, agree - 2, undecided - 3, disagree - 4 and strongly disagree - 5. The total score was 400 for positive items the score was 205 and for negative 195.

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<td>4</td>
</tr>
<tr>
<td>5</td>
<td>Disagree</td>
<td>1</td>
<td>5</td>
</tr>
</tbody>
</table>

The scale was categorized into four domains as

- **Personal self-esteem** - It measures the individual’s self worth, her feelings of adequacy as person and his evaluation of personality.

- **Family self-esteem** - It measures the feelings of adequacy, worth and values as a family member. It
measures the individual’s perception of self in reference to her closest and next immediate circle of associates

- **Social self-esteem** - It measures self as perceived in relation to others, but in more general way, it reflects the personal sense of adequacy and worth social interaction with others in general.

- **Self-concept self-esteem** - Individuals perceived ability to act effectively in situations, to overcome obstacles and to act it.

In the **personal self-esteem**, domain 11 statements were positively scored and 9 as negatively scored. The scoring was 55 and 45 and the total was 100.

The **family self-esteem** domain consisted of 10 statements as positively scored and 10 negatively scored with the scoring of 50 each and the total of 100.

In the **social self-esteem domain** 11 statements were positively scored and 9 were negatively scored with the score of 55 and 45. The total score was 100

In the **self-concept** domain, 9 statements were positively scored and 11 were negatively scored. The scoring was 45 and 55 respectively. The total score was 100.
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</tr>
<tr>
<td>5</td>
<td>Disagree</td>
<td>1</td>
<td>5</td>
</tr>
</tbody>
</table>

### Validation of the Data Collection Instrument

Content validity of the tool was obtained from the experts in the fields of psychology, nursing and Medicine.

The developed tool and the standardized tool were given to three professors in psychology, three professors in nursing and two medical professors. Based on their guidance and their opinions, modifications were made in the questionnaires.
The final form of the tool was given to the language expert. It was translated into the regional language. The translated tool was again given for retranslation from Tamil to English.

The translated version was found to be logically matching with the originally developed tool. [Appendix-1]

**Development of the intervention: [Teaching Activity Module]**

The research scholar developed the participatory activity teaching module by using the Life Skill approaches module book (developed by Dr.Srikala Bharath and Dr.Kishore NIMHANS).

It contains Self Awareness programme. In self-awareness, the activity module consisted of physical health awareness, i.e. the biological changes, physical changes related growth and development, expected social changes during adolescent period. The psychological self-awareness consisted of enhancement of self-esteem. The instruction given in the activity module (the NIMHANS module developed by Dr.Srikala Bharath and Dr.Kishore) was incorporated for the intervention.

**Validation of the intervention [Health Promotion Intervention module]**

Validity of the intervention was obtained from the same content experts. Opinion and guidance provided by the experts
were incorporated. The Health Education module was translated into Tamil. It was again retranslated into English for its accuracy [Appendix]. The translated version was found to be logically matching with the original intervention.

**Pilot Study**

Permission was obtained from the principals of the schools. A pilot study was conducted on 60 adolescent girls (30 from Government and 30 from Private schools) studying in 8th and 9th std. in order to check the feasibility of the tool. Informed consent was obtained from the adolescent girls and from the parents. Using the tool a pretest was conducted.

The participatory activity Teaching module in series (six sessions on reproductive health and six session on self-esteem) was administered for the adolescent girls. Mothers were met after the third intervention and instructions (tips) to handle the adolescent daughters were given. Handouts in the local language (Tamil) regarding the adolescent rearing were distributed to the parents directly. After 10 days posttest was conducted. The results were analyzed. The result showed the feasibility of the instrument and the interventional module. Based on the pilot study, a few modifications were also incorporated.
Description of the Intervention

The intervention was given in six sessions as participatory activity module using life skill approaches for two days (first day regarding self-esteem and the second day regarding reproductive health). After the preliminary interview, the pretest data were collected on Reproductive Health and Self-esteem using the questionnaire.

Intervention-I

Self-esteem - Introduction was given related to the self-esteem in detail. It comprises of the meaning of self-esteem, the characteristics of the high and low self-esteem persons, the effects of the high and low self-esteem.

Reproductive Health - The details of growth and development of an adolescent girl was given. The changes that took place during the adolescent period was clearly explained.

The subjects participated eagerly to know the self.

Intervention - II

Self-Esteem - After 15 days of the first intervention participatory activity based second intervention was given. Subjects were explained about the awareness wheel. The five senses of self-awareness was clearly stated with the help of the
awareness wheel. Subjects were instructed to draw the wheel and to mark their perceptions in the wheel.

**Reproductive Health** - Developmental pictures were given. The changes that took place during the adolescent period were asked to identify and mark it in a separate sheet. It was discussed in detail at the end of the session.

The subjects participated actively with interest.

**Intervention - III**

**Self-esteem** - In the III session Johari Window was explained. The blind spot was explained. The effect of the blind spot on self-esteem was explained to the subjects. The unknown self was brought out to enhance the self-esteem. The subjects were asked to draw a box and to write “how you describe you?; how you describe your friends?; and how your friend describes you?”. Brainstorming was done at the end of the session.

**Reproductive Health** - Developmental pictures related social, physical and other changes were given. Subjects were asked to write down the changes that they underwent. The subjects carried out brainstorming exercise. At the end, doubts were clarified and discussed in detail.

The subjects participated actively with enthusiasm.
Intervention IV

**Self-Esteem** - Play-ground activity were given to know the strength and the weakness of the self. The adolescent girls were asked to appraise the self and in turn to get the opinion of their partner. Necessary assistance and explanation was given by the investigator.

**Reproductive Health** - Pubertal changes were explained in detail. At the end of the session the doubts were clarified.

The subjects participated actively with interest.

Intervention V

**Self-Esteem** - The subjects were asked to draw a tree. Parents were asked to write their daughter’s potentials/ talents/ qualities in the root of the tree. Teachers were asked to write motivating factors in the branches of the tree. Their achievement and success were their fruits. The subjects were asked to draw the smiling face in the trunk showing the high self-esteem. They were asked to stick the (chart) tree in their room so that they could see it daily to enhance their self-esteem.

**Reproductive Health**: Reproductive Cycle and physiological changes during that period were explained.
**Intervention: VI**

**Self-Esteem**: Picture of the faces was given. The subjects were asked to point out the face they feel. The subjects were asked to brainstorm. At the end of the session, it was related to self-esteem. Positive/high perceived self-esteem always will have smiling face. In-turn ever smiling face enhances the perceived self-esteem.

**Reproductive Health**: The importance of hygienic practices and nutrition was discussed.

For the teaching session different types of audio-visual aids such as black-board, models, charts, projective videos and related live models were used.

**Concluding Session**

Different types of faces were explained related to self-esteem. Every day in the morning and in the evening the subjects were asked to draw their own faces and stick it in their rooms/hall and to compare it with their previous faces.

An interval of 15 days gap was given in between each sessions.

After the third session got over, the mothers were called for an informal meeting. Mothers were allowed to discuss about the
problems that they face in rearing them. Handouts (tips) were given related to parenting adolescent girls in the local (Tamil) language. All the doubts related to handling of the adolescent girls was clarified.

Posttest was conducted after 15 days of the last intervention.

Throughout all the sessions the subjects participated actively and with interest

Reliability

The reliability of the questionnaire was obtained from test retest method. The obtained reliability score was.

Knowledge on reproductive health 0.91  
Knowledge on reproductive hygiene 0.89  
Knowledge on Nutrition. 0.89  
Attitude towards reproductive health 0.92

Self-Esteem

Personal self-esteem- 0.90  
Family self-esteem-0.89  
Social self-esteem- 0.91  
Self confidence- 0.89
Procedure for Data Collection

The data was collected for the main study from June 2009 to March 2010 from the subjects. Permission was obtained from the Directorate of Educations. With the permission of Education Department, permission from the respective school Principals was also obtained subsequently.

In Puducherry, there are 67 Government higher secondary schools and 35 High schools. The sampling frame was made with list of the school names. A separate name list was prepared for private schools and the Government schools. Simple random (lottery method) technique was adopted to select the schools. Four schools were selected from the Government school list and four schools were selected from the private school list. After selecting the schools through stratified sampling technique, the subjects were selected through simple random sampling technique.

From each school the total name list of the students studying 9th standard were obtained. The sampling frame was made with the list of students obtained from the attendance with the help of the class teacher. Simple random technique (lottery method) was adopted to select the 40 students from each school. Identical procedure was followed to select the subjects from the four Government and four Private schools. The total subjects
selected for the study was 358 from both Government and Private schools.

Data for knowledge and Attitude towards reproductive Health and Self-esteem were collected using the questionnaire. After four days intervention on Health Promotion on participatory activity based life skills was given. Subsequent intervention on Knowledge and Attitude towards reproductive health and self-esteem was given with an interval of 15 days. Six such interventions were given. Instructions were given in simple local language (Tamil) to enhance self-esteem and to improve the knowledge on reproductive Health and positive attitude towards reproductive Health. Subjects were asked to maintain diary related to self-esteem and their emotional reactions by drawing faces, with facial expressions indicating their day-to-day’s emotional expression.

After the third session a mother’s meet was called for, and a transactional session was conducted. Adolescent child rearing practice and problems that the mother come across were discussed. After the session, tips were given to the mothers as hand outs. Mothers were motivated and encouraged to provide positive regards to their adolescent girl child to boost up their self-esteem and provide knowledge related to reproductive health. They were asked to be supportive towards their adolescent girls to pave
the way for their personality development since adolescent period is the transitional period from inter-dependency to independency. They were asked to facilitate their daughter’s growth and development especially to enhance the self-esteem. They were also asked to help their daughters to fill the self-esteem tree, draw the emotional faces, and to be supportive during their reproductive period by providing correct information, thus helping them to gain knowledge on reproductive health, develop a positive attitude towards reproductive health, and enhance their self-esteem. Teachers were also given important tips related to the girl’s academic achievement, study skills, communication and to identify high risk adolescent girls.

The data collection period lasted for six months for each school including the mother’s tips and the training of the teachers on life skills and to identify the problems of the students.

All the subjects were very much co-operative throughout the intervention to enhance their self-esteem. Initially during the first session adolescent girls were reserved while discussing their problems related to self-esteem. They were given enough encouragement and motivation, to come forward to discuss the issues. They also volunteered and gave some suggestions stating the method they should be treated by their parents. Throughout
the study, they showed sustained interest and maintained their enthusiasm.

**Plan for Data Analysis**

The statistical tests of both descriptive and inferential statistics were used for analyzing the data.

The descriptive statistics like mean, standard deviation and percentage were used to express the data. Inferential statistics such as paired ‘t’, Kruskal Wallis were used for the data analysis.