Methodology
CHAPTER-III

Research Methodology

3.1 Method

This chapter deals with the description of methodology and different steps which were undertaken for gathering and organizing data for the investigation. It includes description of research approach, research design, setting, population, sample and sampling technique, variables, sampling criteria, development of tool and structured teaching programme, pilot study, data collection procedure and plan for data analysis.

3.2 Research approach

The selection of research approach is the basic procedure for the conduct of research enquiry. A research approach tells the researcher what data to collect and how to analyse it. It will also suggest possible conclusions to be drawn from the data in view of the nature of the problem selected for the study and the objectives to be accomplished. An evaluative approach was considered as appropriate for the present study.

According to Polit Hungler (1995) the evaluation research consists of four broad phases. They are:
• Delineating the programme goals.
• Developing the instrument to measure the attainment of these goals.
• Collecting the relevant data.
• Interpreting the data in terms of programme objectives.

An evaluative approach seemed to be the most appropriate method in assessing the gain of knowledge, change of attitude & behaviour in positive direction as a result of structured teaching programme on AIDS and its prevention for the Pre-university students.

3.4 Setting of the study.

Polit and Hungler (1995) states that a research design incorporates the most important methodological decisions that a researcher makes in conducting a research study. It depicts the overall plan for organization of scientific investigation. The selection of design depends upon the purpose of the study, research approach and variables under study.

The research design selected for the present study was quasi experimental: pre-test post-test design with experimental group and control group. The schematic representation of the design is depicted in figure-4.
<table>
<thead>
<tr>
<th>Group</th>
<th>Pre-test (day-1)</th>
<th>Intervention</th>
<th>Post-test (day-8)</th>
<th>Post post test (day-30)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Experimental Group</strong></td>
<td>Knowledge, attitude and behaviour test</td>
<td>Structured teaching programme</td>
<td>Knowledge, attitude and behaviour test</td>
<td>Knowledge, attitude and behaviour test (20% of the respondents)</td>
</tr>
<tr>
<td>A1</td>
<td></td>
<td>“X”</td>
<td>A2</td>
<td>A3</td>
</tr>
<tr>
<td><strong>Control Group</strong></td>
<td>Knowledge attitude and behaviour test</td>
<td>--</td>
<td>Knowledge, attitude and behaviour test</td>
<td>--</td>
</tr>
<tr>
<td>B1</td>
<td></td>
<td></td>
<td>B2</td>
<td></td>
</tr>
<tr>
<td><strong>Key:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A1-</td>
<td>Pre test (Experimental Group)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A2-</td>
<td>Post test (Experimental Group)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A3-</td>
<td>Post post– test (Experimental Group)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>B1-</td>
<td>Pre test (Control Group)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>B2-</td>
<td>Post test (Control Group)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

‘X’ – Structured teaching programme.
### Pre-University Students

<table>
<thead>
<tr>
<th>Accessible Population</th>
<th>Samples</th>
<th>Tools Used</th>
<th>Dependent variables</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Pre-University students of Sree Siddaganga Pre University Colleges</td>
<td>Pre-University students studying in 1st year Pre-university course <strong>Experimental Group-300</strong> (30 students/10 batches) <strong>Control Group-300</strong> (30 students/10 batches) Total-600 students</td>
<td>Self administered knowledge questionnaire, attitude scale and behavioural checklist.</td>
<td>Pre-test scores of knowledge, attitude and behaviour both experimental group and control group “A”, “B”</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Independent variables</th>
<th>Dependent variables</th>
<th>Out Come</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
</tbody>
</table>
| Structured teaching programme **Development**  
  - Draft preparation  
  - Content validity  
  - Pre-test  
  **Topic:** AIDS and its Prevention  
  **Methods and media of teaching**  
  - Lecture cum discussion method  
  - English  
  **AV. Aids:** Black board, transparencies, charts **Administered:** Only to experimental group “N” | Post-test scores of Knowledge, attitude and behaviour both experimental group and control group “A”, “B”  
  Post post-test scores of Knowledge, attitude and behaviour experimental group (20% of the samples) “A” | **Teaching effectiveness**  
  - Improve in knowledge on AIDS and its prevention as measured by knowledge questionnaire.  
  - Desirable changes in attitude and behaviour as measured by attitude scale and behavioural checklist.  
  **Hypothesis testing** |

**Figure:** 5 schematic representation of the study
Setting of the study.

The study was conducted in selected Pre-university colleges running under Sree Siddaganga Education Society. There were total of 11 Pre-University Colleges in and around Tumkur District, out of which eight colleges were selected. (Annexure-A) With a total strength of 2876 students, out of which 300 from four colleges for experimental group and 300 from other four colleges for control group were selected for the study.

The study included only II year pre-university students from Arts and Science group and total of 600 (300 for experimental group and 300 for control group). The reason for selecting this group of students was that the investigator's interest in imparting knowledge to the prospective students whose behavioural modification in a desirable way is fostered.

The selection of these colleges was done on the basis of:-

- Geographical proximity.
- Feasibility of conducting the study.
- Availability of sample.
- The familiarity with setting.
3.5 Population

The target population for the study was II year Pre University students in selected Siddaganga Pre-University colleges. The total number of students in II year Pre-University course were 2876.

3.6 Sample

The Sample of the study comprised of II year pre-university students from Siddaganga Pre-University colleges.

3.7 Sample Size

The Sample size was 600 pre-university students with 300 each in experimental group and control group.

3.8 Sampling Criteria

Inclusion criteria.

Students

- Studying in II year pre-university course only.
- Who are willing to participate in the study.
- II year pre-university students from Siddaganga Pre-University colleges only.
- From Arts and Science group only.

Exclusion criteria
**Students**

- Studying in I year Pre-university course.
- Students on leave or absent or dropouts.

### 3.9 Selection of colleges.

There were total of 11 colleges running under Sree Siddaganga Education Society out of which Eight colleges were selected in and around Tumkur within the radius of 50 kilometers for the study. Three colleges were excluded from the study as one college had only I year pre-university course and the other two were situated in other districts and with more than 100 kilo-meters radius.

Among eight colleges, four colleges were selected for experimental group and four colleges for control group. Out of four colleges of both the groups two colleges were with Arts group and two colleges were of Science group respectively.

### 3.10 Sampling Technique

Probability sampling-simple random sampling by using simple random table was adopted to select the sample for the study. Initially the entire list of students studying in II year Pre-university course was selected. The list containing the names of the students both from the Arts and Science group was prepared. 300 students were selected randomly to form experimental group and equal number of 300 students were selected to form control group.
3.11 Variables.

**Independent variable (I.V)**

- Structured teaching programme.

**Dependent Variables (D.V)**

- Knowledge
- Attitude
- Behaviour

**Attribute Variables: (A.V)**

Age, gender, course of study, family size, place of residence, family income, education level and occupational status of respondents parents, leisure time activities, reading habits, history of illness, personal habit, pocket money received.

3.12 Selection and development of the tool

**Selection of the tool**

A Self-administered structured knowledge questionnaire, attitude scale and behavioural checklist were selected for the study. These were considered to be the most appropriate instruments to elicit the response from the literate respondents.
Development of tool

A self-administered knowledge questionnaire, attitude scale and behavioural checklist were used for pre-university students with regard to AIDS and its prevention. The tools were developed after the review of available literature from books, journals, periodicals, and published and unpublished research studies.

Description of the tool

The tool comprised of four sections.

Section:-“A” Socio-Demographic data consists of 15 items seeking information related to course of study, age group, gender, ordinal position, number of siblings, type of family, family size, place of residence, family income/month, educational level and occupational status of respondent’s parents, leisure time activities, reading habits, response on history of illness, pocket money received/month and personal habits.

Section: “B” Structured knowledge questionnaire which consists of 31 items on AIDS its prevention. All items in section “B” are given scores, one score for each correct answer and zero score for wrong answer. The items are based on various aspects of AIDS and its prevention which includes introduction to HIV/AIDS seven items (22.5%), causative organism – two items (6.45%) signs and symptoms–five items (16.12%) transmission – five items (16.12%) diagnosis—one item (3.22%) management and prevention-11 items (35.48%).
Section “C” Attitude scale consists of 25 items on social and emotional aspects related to HIV/AIDS. It is a 5 point scale which includes 15 negative statements (60%) and 10 positive statements (40%). The items are scored as follows:

<table>
<thead>
<tr>
<th>Category</th>
<th>Negative Statements</th>
<th>Positive Statements</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly disagree  (SDA)</td>
<td>5</td>
<td>1</td>
</tr>
<tr>
<td>Disagree           (DA)</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td>Undecided          (UD)</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Agree              (A)</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>Strongly agree     (SA)</td>
<td>1</td>
<td>5</td>
</tr>
</tbody>
</table>

Section “D” Behavioural checklist consists of 17 items on behavioural aspects of an individual. All items in section “D” are given scores, one score for each non-risk prone behaviour and zero score for risk prone behaviour. There are eight positive statements (47%) and nine negative statements (53%) (Annexure-B).

3.13 Validity and Reliability of the tool

Content validity of the tool was established by 16 experts comprising of three educationists, three health educationists, two psychologists, one psychiatrist, two psychiatric social workers, two statisticians, one Neurovirologist and two nurse educators.
The experts were requested to give their opinion and suggestions regarding the relevance of the tool for further modification of items, to improve the clarity and content of the items. Initially the tool developed consisted of 15 items on socio-demographic data out of which 14 had 100% agreement for item number 14 it was suggested to modify the item with columns and to separate the habit of reading from leisure time activities.

In section B, there were 33 knowledge questions on AIDS and its prevention and experts suggested to delete the question number 17 and 29. Accordingly the question number 17 and 29 was deleted. Finally there were 31 knowledge items. It was suggested to rearrange the questions in a sequential order, it was arranged accordingly.

Section C was the attitude scale consisting of 25 items and all items had 100% agreement.

Section D was the checklist which consists of 17 items on behavioural aspects of an individual and all the items had 100% agreement. It was found that it took 70 to 75 minutes to complete the questionnaire, the attitude scale and the behavioural checklist and the items were found clear.

After the validity of the tool by 16 experts the Reliability was established by split-half technique developed by Brown’s prophecy formula, correlation coefficient test Based on the $r$ value i.e. Knowledge $r=0.8890$ (p<0.01), Attitude $r=0.8419$ (p<0.01), Behaviour $r=0.927$, (p<0.01), the tool was found to be reliable for
conducting the main study. Thus the validity and reliability were established.

### 3.14 Pre-testing of the tool

Pre-testing of the tool was done to check the clarity of the items, their feasibility and practicability. It was administered to ten pre-university students of Sapthagiri Pre-university College. The sample chosen were similar in characteristics to those of the respondents under study. The tool was found to be feasible to answer by the Pre-university students.

### 3.15 Development of structured teaching programme.

The structured teaching programme was developed based on the review of the related research/non-research literature and the objectives stated in the blueprint.

The following steps were adopted to develop the structured teaching programme.

I. Development of content blueprint.

II. Development of criteria checklist

III. Preparation of structured teaching programme

IV. Establishment of content validity of structured teaching programme.

V. Preparation of final draft of structured teaching programme.
I. Development of Content blueprint:

A blue print of the objectives and content items pertaining to AIDS and its prevention was prepared. Objectives were distributed under the following learning areas.

- Meaning of HIV/AIDS.
- Causative organism
- Stages of HIV infection.
- Predisposing factors of HIV/AIDS.
- Sources of infection of HIV/AIDS.
- Incidence of HIV/AIDS.
- Signs and symptoms of HIV/AIDS.
- Routes of HIV transmission.
- Route by which HIV is not transmitted.
- Diagnosis of HIV/AIDS.
- Social/emotional aspects of having HIV/AIDS.
- Management and prevention of HIV/AIDS.
- Risk prone behaviour towards HIV/AIDS.
- Non-risk prone behaviour towards HIV/AIDS.

The same blue print was considered for the construction of structured teaching programme.

II. Development of criteria checklist:

A criteria checklist was prepared to develop structured teaching programme based on the literature review and the opinion of experts. The criteria checklist consisted of 40 criteria statements under the broad headings of:
- Objectives
- Content (Selection, organization, presentation)
- Language
- Feasibility and practicability.

The draft of criteria checklist and structured teaching programme was given to 16 experts for validation.

III Preparation of structured teaching programme was done as follows:

A first draft of structured teaching programme was developed on the basis of objectives, criteria checklist, literature reviewed and the opinion of the experts. The main factors that were considered while preparing structured teaching programme were.

- Literacy level of the respondents.
- Methods of teaching to be adopted.
- Simplicity of language.
- Relevance of teaching.

IV Establishment of Content validity of the structured teaching programme.

The initial draft of structured teaching programme was given to 16 experts along with criteria checklist. The experts were requested to validate the structured teaching programme based on criteria checklist and to give suggestion on the adequacy and relevance of content.

There was 98% agreement on “meeting the criteria” and 2% agreement on “partially meeting the criteria” of the content
computed by the experts with a suggestion to summarize and to proceed to the next topic. The suggestions were incorporated and this ensured the clarity and the validity of the structured teaching programme.

V Preparation of final draft of structured teaching programme

The final draft of structured teaching programme was prepared by incorporating experts suggestions.

3.16 Description of structured teaching programme.


The structured teaching programme was planned for four sessions which was prepared to enhance the knowledge and for change of attitude and behaviour in positive direction of pre-university students regarding AIDS (Annexure-C).
3.17 Ethical procedure

- Written permission was obtained from the concerned principals of the pre-university colleges under study.

- Verbal permission was obtained from the concerned class teachers of pre-university colleges under study.

- Pre-university students were informed and explained regarding the purpose of the study and their verbal permission was obtained.

3.18 Pilot study.

A pilot study was conducted during the month of October-2006 at Sapathagiri Pre-University College. An administrative approval was obtained from the principal to conduct the pilot study.

The purpose of conducting the pilot study was to,

- Evaluate the effectiveness of structured teaching programme.

- Find out the feasibility of conducting the final study.

- Determine the method of statistical analysis.

About 120 students were selected randomly and divided them into two groups; 60 students for control group and 60 students for experimental group. It included both the boys and girls from Arts and Science group.
On Day one, pretest was administered to both the experimental group and control group separately. For the experimental group the structured teaching programme was administered in four sessions for a period of four days. On the eighth day of the last session, the post-test was administered separately for both the control group and experimental group.

The analysis and interpretation of data of the pilot study was based on data collected through self-administered knowledge questionnaire, attitude scale and behavioural checklist on AIDS and its prevention for Pre-University students. The results were analysed using descriptive and inferential statistics based on the objectives of the study.

The result revealed that the structured teaching programme on AIDS and its prevention was effective in gain of knowledge, changing attitude and behaviour of the respondents on AIDS and its prevention towards positive side in experimental group compared to control group and reveals that study is feasible to conduct.

3.19 Procedure for data collection:

The data collection procedure for the main study was carried out from January 10th 2007 to 7th May 2007. The students were made into 10 batches consisting of 30 students in each batch separately for experimental group and control group respectively. The self-administered knowledge questionnaire, attitude scale and the behavioural checklist were administered to the batch of control group. On 8th day, the same tools were administered without any
intervention. The same procedure was repeated for other nine batches of respondents.

The experimental group was also divided into 10 batches of 30 students each and total of 300 students. On day one, the pre-test was administrated to the first batch of students and the structured-teaching programme in four sessions for a period of four days and on the eighth day of the last session the post-test was administrated. The same procedure was repeated for other nine batches of experimental group. A post post-test was administrated to 60 students (20% of the sample) of experimental group on the 30th day of the last session. The details of the study are depicted in a schematic diagram in Figure-5.

3.20 Data Analysis Plan.

The data obtained were analysed in terms of the objectives of the study using descriptive and inferential statistics. The plan of data analysis was as follows.

- Organize the data in master data sheet/computer form.
- Frequencies and percentage for the analysis of socio-demographic data, knowledge, Attitude and behaviour scores
- Mean, mean percentage and standard deviation of knowledge, Attitude and behaviour scores.
- Level of knowledge.
- Level of attitude.
- Level of Behaviour.
• Paired “t’ test to compare the pre-test and post – test scores of experimental group.

• Student “t” test to compare the scores of experimental group and control group.

• Correlation co-efficient to study the relationship between knowledge, attitude and behaviour scores.

• Chi-square test to study the association of knowledge, attitude and behaviour with selected socio-demographic variables.

This chapter has dealt with research approach, research design which was pre-test and post-test design with experimental group and control group. The chapter also describes the setting of the study the population, tool, structured teaching programme. The chapter ends with the description of data collection, data collection procedure and plan for data analysis.