CHAPTER - III

3. RESEARCH METHODOLOGY

This chapter deals with complete plan for answering the research question, the steps, procedures and strategies for gathering and analysing data in research investigation. This research study was conducted to assess the health effects and coping strategies among children of alcohol dependent parents residing in selected villages of Kirumambakkam Primary Health Centre, Pondicherry. The aspects included in this chapter are Research approach, Research design, Variables in the study, Setting, Population, Sample, criteria for sample selection, Sampling technique, Sample size and its calculation, Development and Description of Tool and scoring interpretation, translation and back translation of the tool, Validity of the tool, Reliability, Ethical consideration, Pilot study, Method of data collection and plan for Data analysis.

3.1 RESEARCH APPROACH

A non-experimental, quantitative research approach was adopted in order to accomplish the objectives of the study.

3.2 RESEARCH DESIGN

The cross sectional, descriptive exploratory research design was implied for the study.

3.3 VARIABLES UNDER STUDY

3.3.1. Socio-Demographic Variables

(i). Socio-Demographic variables pertaining to parents: It constitutes age, gender, education, occupation and monthly income of the parents.
(ii). Clinical variables pertaining to parents: It includes parent dependent to alcohol, duration of consuming alcohol, health effects of alcohol addiction, and information about de-addiction treatment.

(iii). Socio-Demographic variables of the children of alcohol dependent parents: It constitute gender, age, education, religion, number of children in the family, birth order, and type of family.

3.3.2. Research variables:

The research variables were health effects and coping strategies of children of alcohol dependent parents. Health effects are physical effects including Body Mass Index (BMI), Haemoglobin (Hb) and Clinical Health assessment check list and Psychological health effects including perceived stress and Self-esteem.

3.4. SETTING

The research study was conducted in selected villages of Kirumambakkam Primary Health Centre, Pondicherry. The primary health Centre is located in Kirumambakkam panchayat and there are 27 villages covered under the Primary Health Centre. It covers a population of 25,613. There were nearly 6185 families with 12701 males and 12912 females living in this area. It was estimated recently that there were 1081 girls and 1049 boys belonging to the age group of 10-14 years and 1052 girls and 1121 boys belonging to the age group of 15-19 years were living in Kirumambakkam. Adolescent Health Clinics are regularly conducted in the four sub centres on weekly basis especially on Saturdays. Health monitoring including general physical examination, periodic assessment of Haemoglobin for all, supply of Iron and folic acid tablets along with sanitary napkins to female children and referral services are also provided. All the children were dewormed regularly. The adolescent were ensured the entire benefits of Adolescent Reproductive and Sexual Health scheme. Most of the residents in Kirumambakkam Primary Health Centre area were coolies, farmers and working in private companies. Majority of them belongs to Hindu religion. There are Government primary, Middle, High and Higher secondary schools available in the area.
3.5.  POPULATION

3.5.1.  Target population

The target population for this study was all children of alcohol dependent parents in the age group between 12 and 18 years about whom the investigator would like to generalize the findings of the study.

3.5.2.  Accessible population

The accessible population for this study was all children of alcohol dependent parents in the age group between 12 and 18 years residing in selected villages covered under Kirumambakkam Primary Health Centre and confirms to designate study criteria.

3.6.  SAMPLE

The samples selected for this study was 400 children of alcohol dependent parents in the age between 12 and 18 years, residing at selected villages of Kirumambakkam Primary Health Centre and fulfilled the inclusion criteria.

3.7.  CRITERIA FOR SAMPLE SELECTION

3.7.1.  Inclusion criteria

1. Children whose parents get the minimum score of 8 and more in AUDIT screening.
2. Both male and female children belong to the age group of 12-18 years.
3. Children living with both parents for last one year.
4. Only the elder child was included.
5. Children who were studying in school or college.
6. Children available at the time of study.
7. Children who are permitted by either one of their parents to participate in the study.
3.7.2. **Exclusion criteria**

1. Children whose parents with history of poly substance abuse like pan, drugs etc.

2. Children with the history of smoking and consuming alcohol.

3. Children with Major medical and psychiatric illnesses.

3.8. **SAMPLING TECHNIQUE**

Non probability, purposive sampling technique was followed for this study. All children of alcohol dependent parents confirming to the study criteria were recruited for this study.

3.9. **SAMPLE SIZE AND CALCULATION**

The sample size of this study was calculated based on the prevalence rate of alcohol dependence in Puducherry Union Territory which was estimated by the recent study [45] as 59.6 and at 5% error level the sample size was derived as 385 and it is rounded as 400 children of alcohol dependent parents in the age between 12 years and 18 years. The sample size was achieved by the investigator based on the following calculation.

<table>
<thead>
<tr>
<th>Prevalence rate</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-p</td>
<td>q</td>
</tr>
</tbody>
</table>

\[ \text{Level of Error} = \ell \]

\[ n = \frac{4pq}{\ell^2} \]

\[ p = 59.6\% = 0.596 \]

\[ q = 1 - p = 0.404 \]

\[ \ell = 5\% = 0.05 \]

\[ n = \frac{4 (0.596) (0.404)}{(0.05)^2} = 385.25 \]

\[ \approx 400 \]
3.10. DEVELOPMENT AND DESCRIPTION OF THE TOOL

The investigator constructed a Semi-structured interview schedule to assess the research variables, physiological health effects and problems among children of alcohol dependent parents. The instruments were developed based on the knowledge and experience of investigator, extensive literature review and consultation with experts from community medicine, psychiatry, paediatrics, community health nursing, mental health nursing and biostatistics departments. The tools were finalized based on participants’ response during pilot study and suggestions from experts.

Apart from semi-structured interview schedule the investigator adopted standardized tools to assess other research variables like psychological health effects such as stress and self-esteem and coping strategies of children of alcohol dependent parents.

3.10.1. Description of the tools:

The Tool consisted of five sections;

3.10.1.1 Section I: Alcohol Use Disorder Identification Test (AUDIT)

The AUDIT was developed by the World Health Organization (WHO) as a simple method of screening for excessive drinking. There are ten items related to alcohol use disorder rated on a scale score ranged from 0 to 4 with a total score of 40 and minimum score is 0. Those parents who score 8 or more will be considered as dependent to alcohol. The international reliability of the scale was 0.86. In the present study also test retest method found the same reliability value.

Section II: Demographic Variables

- Demographic variables pertaining to alcohol dependent parents; it consists of five items each for father and mother which includes Age, Gender, Education, Occupation and monthly income.
- Clinical variables pertaining to alcohol dependent parents: It included 4 items such as Parent dependent to alcohol, Duration of alcohol
dependency, health effects of alcohol addiction and De-addiction treatment.

- Demographic variables pertaining to children: It consisted of 7 items including Age, Gender, Education, Religion, Number of children in the family, Birth order of the child and type of the family.

2.10.1.2. Section III- Health Effects Assessment

The Health Effects Assessment has 2 parts, Physical health assessment checklist and psychological health assessment.

Physical health assessment includes the bio physiologic measures including weight, height, haemoglobin and Body Mass Index. Weight was measured by ISO certified standard weighing scale by the investigator. Body weight was measured (to the nearest 0.5 Kg) with the subject standing motionless on the weighing scale, feet about apart and weight equally distributed on foot wear while their weight being measured. The weighing machine was calibrated by the bio medical experts.

Height was measured by inch tape. The subjects were instructed to stand straight along a flat surface with the head, back, buttocks, calves and heels should be touching the smooth wall, and feet together. Subjects were also advised to look straight. BMI was calculated using the standard formula, weight in Kilogram divided by height in meter square.

The readings of haemoglobin of the children of alcohol dependent parents were collected from their adolescent health records which were maintained for every children belonging to the Primary Health Centre area under the scheme of Adolescent Reproductive and Sexual Health. This health scheme was launched by the Government of India and implemented in Puducherry Union Territory from the year 2013 onwards. Adolescent Reproductive and Sexual Health programme (ARSH) focuses on the reproductive and sexual health in order to influence the health seeking behaviour of adolescents. Interventions are designed to meet the service needs of adolescents through public health systems. The programme focuses on counselling services and routine check-up at primary, secondary and tertiary levels of care and is provided on fixed days and fixed time to married and unmarried
adolescent girls and boys through Stand Alone and fixed day clinics. For those children who were not having adolescent health records were newly registered and the record was created.

Physical health assessment checklist also had 9 items including commonly identified physical symptoms of the children of alcohol dependent parents like head ache, stomach ache, back pain, sleeplessness, Physical and Sexual abuse and general health problems of adolescents like Worm infestation and infections. There was an open ended item asking for any other significant health problems experienced by the children and the diagnoses were confirmed by medical records. The reliability of the test was obtained as 0.76. Children presenting with symptoms were brought to the primary health centre for conformation of diagnoses by the medical officer and are referred for further management.

B. Psychological health: It has two parts.

Part I The standardized Cohen’s Perceived Stress Scale.

A scale developed by Sheldon Cohen (1988), which is a five point rating scale with 10 statements which are scored as Never-0, Seldom-1, Sometimes-2, Often-3, Very often-4. The items 4, 5, 7 and 8 are reverse items. Maximum obtainable score is 40. The scoring key is as follows:

- Very low Stress - 0 – 18%
- Low Stress - 19%– 28%
- Average Stress - 29-36%
- High Stress - 37%-50%
- Very high Stress - >50%

The reliability of the scale was obtained through test re-test method and it was 0.82 and found to be reliable. The international reliability of the tool was .79

Part II standardized Rosenberg’s self-esteem scale is a standardized scale developed in 1965 with 10 items rated on 4 point rating scale ranging from 1-4. For the items 1,2,4,6 and 7 the scores are as follows; strongly agree-4, Agree-3,
Disagree-2, Strongly Disagree-1 and for items 3, 5, 8, 9 and 10 the scores are reversed. The maximum score for the tool is 40 and the minimum score is 10. Scores were interpreted as follows

<table>
<thead>
<tr>
<th>Level</th>
<th>Score</th>
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<tbody>
<tr>
<td>High</td>
<td>&gt; 25</td>
</tr>
<tr>
<td>Normal</td>
<td>15 -25</td>
</tr>
<tr>
<td>Low</td>
<td>&lt;15</td>
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The international reliability of the tool was very high and it is .92. Through test re-test method the reliability of the scale was obtained for the study as 0.70 and found reliable.

**Section IV: Standardized Frydenberg’s Adolescent Coping Scale II**

The Adolescent coping scale II (ACS II) is a 60–items inventory tool was developed by Erica Frydenberg and Ramon Lewis. It categorizes these strategies into three distinct coping styles namely productive coping, non-productive and other coping styles which has 10, 8 and 2 dimensions respectively.

The scale is a five point likert scale which was scored as Never(0), seldom(1), sometimes(2), often(3), Very often(4). Among the 60 items 1, 3, 4, 6, 7, 8, 13, 14, 15, 17, 23, 24, 26, 27, 28, 34, 37, 40, 43, 44, 47, 48, 54, 55, 56, 57 and 60 are reversed items. The minimum score is 0 and the maximum score is 240. The international reliability of the tool range from .63 to .86 and for the current study reliability of the scale was obtained through test retest method and it is 0.76 and found to be reliable.

**Section V: Problem Assessment Checklist**

It consisted of 3 categories namely academic problems, family problems and social problems which had 9, 7 and 8 items respectively. Each item had a score of 0 when the problem was present, score of 1 when the problem was present and a score of 2 when the problems were severe. The maximum score was 48. The reliability of the tools was established after test re -test method and it was 0.87 and found reliable.
3.11 TRANSLATION AND BACK TRANSLATION OF THE TOOL

The above said tools were translated into Tamil by experts and this Tamil instrument was back translated into English by experts to improve validity of the tool and again the tool was given to experts for content validity. Based on their valid suggestions the tool was prepared and administered.

3.12 CONTENT VALIDITY OF THE TOOL

The content of the tool was validated by panel of experts from the field of Nursing (community and Mental Health), Paediatricians, community Medicine, Bio statistician and research experts by the content validity Index which was prepared by the investigator. The suggestions and modifications given by the experts were incorporated in the tool.

3.13 RELIABILITY OF THE TOOL

Reliability of the tools was assessed by test-retest method. Reliability Correlation coefficient value was 0.78 for Physiological Health Effects assessment, 0.82 for Perceived Stress Scale, 0.70 for Self-esteem Scale, 0.76 for coping Scale and 0.87 for Problem Checklist. The Correlation coefficient values were very high enough to use these tools for the study.

3.14 ETHICAL CONSIDERATION

The investigator considered and followed the ethical principles preceding the investigation. The investigator adhered to the following actions in order to protect the ethical rights of the children and their alcohol dependent parents.

Human rights

1. Formal approval was obtained from the Institutional review board and Institutional ethical committee of SRM University, Kattankulathur, Chennai, Tamilnadu, India.
2. To execute the study, the investigator obtained official written permission from Director of Health and family welfare Services, Puducherry and Village Heads from concerned villages.

3. Content validity was received from various experts in the field of Nursing (Community Health Nursing and Mental Health Nursing), Community Medicine, Paediatricians, Psychiatrist and Research experts.

**Dignity**

4. Informed consent was obtained from the parents and the children related to the study purpose, type of data and participation

5. Pilot study was executed to check the feasibility and time requirement of the study

6. Parent and children have the rights to withdraw /withhold the information which was enforced before data collection.

7. Investigator’s contact information was disseminated to all parents and children those who have participated in the study

**Confidentiality**

8. Confidentiality and anonymity pledge was ensured.

### 3.15 PILOT STUDY

The pilot study was carried out in two villages from Bahour Primary Health Centre, namely Kuruvinatham and Parikalpet. The permission was obtained from concerned village leaders. Pilot study was conducted in the month of January 2013 to identify the feasibility of the tools developed and adopted by the investigator for the main study. The total number of samples included for pilot study was 25 children of alcohol dependent parents. The samples between the age 12 and 18 years were selected after identifying their alcohol dependent parents using AUDIT scale. The non-probability purposive sampling technique followed for the pilot study. Written
consent was received from children of alcohol dependent parents after giving detailed explanation about the nature and purpose of the study. Following which the samples were administered structured interview schedules like demographic and physical health effects assessment scales. After that standardized adolescent coping scale was administered followed by structured problem assessment checklist to the children. It took an hour to complete the entire tool for each child. The data was analysed using statistical package (SPSS). It was found feasible and effective to administer the set of scales and found accepted by the participants. The investigator did not encounter any practical difficulties hence she decided to follow the same tool for the main study. Suggestions given by the experts at the end of the pilot study were

- Separate concern form to be developed for parents and children

3.16 METHOD OF DATA COLLECTION

There was a community based cross sectional study carried out in the villages of Kirumambakkam Primary Health Centre, Puducherry for the period of one year from May 2013 to April 2014. The investigator had obtained prior permission from Director of Health and Family Welfare Services, Government of Puducherry. Permission was also received for data collection from the Medical Officer In-charge of Kirumambakkam Primary Health Centre.

Then sub-centres Moorthikuppam and Koravellimedu were randomly selected among the four sub-centres covered under Kirumambakkam Primary Health Centre. The permission was also obtained from the village leaders of the selected sub-centres. House to house survey was done to identity alcohol dependent parents with children in the age group between 12 and 18 years. A brief introduction of the study was given to the parents and children separately and the verbal consent followed by written consent was obtained from the alcohol dependent parents and then from their children. Confidentiality of their response was assured.

The data collection procedure was as follows:
First phase:

- Initially the investigator identified parents having children in the age group between 12 to 18 years in the community.

- The investigator has explained adequately to the parents with the history of alcohol consumption about the nature of AUDIT scale then administered the scale to the parents to identify their dependence to alcohol.

- The investigator collected demographic information of the parents through applying structured interview schedule to them. The investigator spent approximately 10 minutes with the parents in each family to collect the required data.

Second phase:

- After identifying alcohol dependent parents with children in the age group between 12 and 18 years, the investigator explained the need of the study to their children.

- Bio Physical measures of the children were collected as follows:
  - Inch tape to determine the height of the samples.
  - An ISO certified weighing machine to determine the weight of the samples. Standard formulae (Weight in Kg ÷ height in m)² to determine Body Mass index.

- The investigator then collected reading of their haemoglobin level from their health record which was maintained by Primary Health Centre. Following which the clinical symptoms assessment checklist was administered to the children.

- The psychological effects were assessed by administering Perceived Stress scale (PSS) and Rosenberg Self-esteem scale to the children.
• The child was then administered the Adolescent coping scale followed by problem assessment checklist.

• Special care was given to administer the questionnaires separately for the parents and their children. Each child was taught about the effective coping strategies at the end of data collection and the pamphlet was issued to them.

• The investigator gave special attention to children with learning difficulties.

• It took an hour and 30 minutes to complete the entire questionnaires with a child.

3.17. PLAN FOR DATA ANALYSIS

The data was collected from 400 children of alcohol dependent parents to assess the health effects and coping strategies adopted by them. The information collected from study participants were scored and tabulated. The data was entered in the Excel master coding sheet and was analysed based on the objectives using descriptive and inferential statistics.

Descriptive statistics

• Demographic variables of parents and children were analyzed in terms of frequency and percentage

• Distribution of the scores of stress, self-esteem, coping and problems were analyzed in terms of frequency, percentage, mean and standard deviation.

Inferential statistics

• The significance of mean scores of stress, Self-esteem and coping among the children of alcohol dependent parents was computed using t-test

• Karl Pearson Correlation was used to correlate between Health effects, coping and problem
• The demographic variables of parents and children were associated with stress, Self-esteem, coping and problem scores using the chi-square test.

• Association between level of Health effects/ coping / problem and age were analyzed using ANOVA and post hoc (scheffe test).

• Simple bar diagram, Multiple bar diagram, were used to represent the data.

P<0.05 was considered statistically significant.

CHAPTERIZATION

Chapter-3 was dealt with the methodology which includes aspects like Research approach, Research design, Variables in the study, Setting, Population, Sample and Sample size and its calculation, Sampling technique, Criteria for sample selection, Development and description of the tool and its scoring procedure, Pilot study, Validity of the tool, Reliability, Ethical consideration, Data collection procedure, and Plan for data analysis.

Chapter-4: Presents the analysis and interpretations of data which was collected during the study.
**Research approach and Research design**

Non experimental quantitative research approach,
Descriptive, exploratory research design

**Population**
Children of Alcohol dependent parents in the age group between 12 and 18 years

**Setting**
Kirumambakkam Primary Heath Centre area

**Samples**
Children of Alcohol dependent parents in the age group between 12 and 18 years who fulfil the Inclusion criteria

**Sampling Technique**
Non – Probability purposive sampling technique

**Sample Size**
400 samples (Universal Sampling)

**Data collection**
1. Application of AUDIT to the parents.
2. Assessment of :
   * Health Effects [physical Health (Height, weight, BMI, Haemoglobin and symptoms assessment), Psychological health (Stress and self-esteem)]
   * Coping strategies adopted and
   * problems (Academic, Family, and Social) of the children

**Plan for Data analysis (Descriptive and Inferential statistics)**

**FIG- SCHEMATIC REPRESENTATION OF RESEARCH METHODOLOGY**