METHODOLOGY

Nutrition and Health education is a tool to enhance the level of awareness of individuals and thereby bring about a change in their behaviour for the protection and promotion of their health and wellbeing. It has been well accepted that increase in the health and nutrition knowledge of the community is an effective strategy to prevent malnutrition. Nutrition education is a prerequisite for improving the nutritional status of any group. The major focus of nutrition education is the development of permanent behavioural changes. The primary aim of nutrition education is the establishment of good habits through acquisition of knowledge and changes in eating habits, attitudes and values with regard to food (Rajammal P.Devadas 1982).

This chapter consist of various aspects covered to meet the objectives framed in order to carry out the study as indicated in the following subsections.

3.1. Research Design

3.2. Universe of the study

3.3. Sample technique and size

3.4. Tools and Techniques for data collection

3.5. Pilot study

3.6. Quantitative Data

3.6.1 Socio economic and Demographic profile

3.6.2 Reproductive Health status

3.6.3 Nutritional Anthropometry

3.6.4 Clinical Assessment

3.6.5 Dietary Assessment
3.7. Qualitative Data

3.7.1 Focus Group Discussions

3.7.2 Focused Ethnographic Study

3.8. Knowledge Attitude and Practices

3.9. Nutrition education intervention programme

3.10. Target groups

3.11. Implementation

3.12. Statistical Analysis

3.13. Limitations of the study

3.1. RESEARCH DESIGN

Research design is defined as a plan, structure and strategy of investigation conceived so as to obtain answers to research problems. The research design for the present study is experimental one which aims to assess the effects of particular variables on a phenomenon by keeping the other variables constant or controlled.

The research investigation is carried out in six phases. The frame work of the study is illustrated in fig: 1

In phase-I of the study Warangal district was selected as the universe of the study. The preliminary data was collected from the statistical officer of Integrated Tribal Development Agency warangal, 500 young tribal women were selected randomly in the age group of 20-25 years. The interview schedule was administered in two different segments i.e part A and part B. Part A consists of individual and socio economic profile, standard of living index and awareness on government programmes on health and employment. Part B consists of anthropometry, Clinical, Dietary and reproductive health assessment.

The data collected was pooled in phase II of the study and aimed at screening the subjects for intervention. Intense data was collected administering
the qualitative tools as focus group discussion, Focus ethnographic studies. Knowledge attitude and practices schedule used to assess their awareness on nutrition and health.

**Fig.1: Study Design**

1. **Phase- I**
   - (N=500)
   - 25 subjects from each village (Quantitative data collection)

2. **Phase- II**
   - (N=200)
   - Sub sample (Qualitative data collection)

3. **Phase- III**
   - (N=200)
   - Pre testing of the sample (with KAP Schedule)

4. **Phase- IV**
   - Experimental group (N=100)
   - Nutrition Education Intervention

5. **Phase- V**
   - Control group (N=100)
   - No Intervention

6. **Phase- VI**
   - Post test
   - Analysis of data
   - Report writing
Phase III of the study endeavoured to plan a nutrition education intervention. Qualitative data facilitated to develop a programme according to the acceptable language and awareness of the subjects.

Implementation of the developed programme to the selected subjects in the experimental group (n=100) was initiated in phase IV keeping the other group (n=100) constant. Knowledge Attitude and Practices questionnaire was administered before and after intervention.

Phase V instigated the Post test on the awareness created through intervention. Data pooling, statistical analysis and documentation was accomplished in the phase VI.

3.2. UNIVERSE OF THE STUDY

Andhra Pradesh is a heterogenous state which is the fifth largest state in India both in terms of area and population. The state has 3 distinctly developed geographical and ecological regions. Andhra, Telangana and Rayalaseema regions specially over 23 districts. Among the three regions the Coastal Andhra is well developed economically compared to other two regions, Rayalaseema moderately developed and largest part of Telangana region is the most backward region in the state. Coastal Andhra is distinguished with huge tribal population followed by Telangana and Rayalaseema. From Telangana region Warangal district was purposively selected firstly as the investigator belongs to that district and is readily accessible and the resources available could be of great advantage and secondly warangal stands in 5th place with its tribal population and very less studies have conduct in this regard.

3.2.1. Topography

The district lies between the latitude of 17-19 and 18-36 North and Longitudes of 78-49 and 80-43 east, and is above mid sea level by 870 feet. It is bounded on the North by Karimnagar district on east and South east. The Geographical area of the district is 12846 Sq.Kms. The Soil of the District comprise of sandy loams with parches of hallow black cotton soils and at places

The maximum temperature has been recorded as 50.5 and 13.5 centigrade respectively. The rainy season in the District sets with the onset of south west monsoon in the later part of june month and ends with the months of September with the closure of the south west monsoon. The normal annual rainfall of the district is 994.001mm.

The principal cereal crops grown in the district are rice and maize in its production of rice the district occupies 4th place in Telangana region and 11th place in Andhra Pradesh. According to the consumption of food grains the 90 percent of the population of the district are rice eaters.

3.2.2. Demography

The District occupies 13th place in the state of Andhra Pradesh with a Total Population of 32.46 Lacks 2011 (census) and 12th place in regard to its area.

The percentage of literacy in the district is 49.26 percent as against the state figure of 61.58 only 19.5percent of the female population of the district is literate as against the 26.10 percent of the state.

The schedule caste population in the district is 5.51 lakhs and Schedule tribe population is 4.5 lakhs which forces 16.9 percent and 14.07 percent respectively of district population.

Out of 1098 revenue villages of district 1003 villages are inhabited and the rest of the villages are deserted. The total rural population of the district is 26.3 lakhs. There are 5 towns in the district. Warangal, Kadipikonda, Jangoan, Mahabubabad and Dornakal. The Total Population of the District is 26.32 Lakhs and the Urban Population is 6.2Lakhs.

3.2.3. Development Activities

Warangal district has large number of small and medium size industries like Tanning, Light Engineering, Rice Mills, Wood Works etc. Besides the granite
industry A.P.Rayons at Kamalapur and Singareni collieries at Bhoopalpally are employing a major portion of working population in industrial sector.

Next to Hyderabad in Telangana region, Warangal occupies importance in Trade. The entire district is covered with regulated markets and Enamamula market yard with 30 platforms and 172 shops in 112.06 acres considered to be biggest market yard to cater the facilities of Warangal and Karimnagar district.

Once in two years for two days in the month of February sammakka saralamma jathara will be celebrated by tribes for which lakhs of people will offer prayers and the same was recognised as state festival vide G.O Ms.No.127 Dt 1996.

3.2.4. Natural Resources:

The district possess extensive forests and come under the category of tropical dry deciduous and tropical forest types, the valuable species found are teak, Bijasal, Nallamaddi, Boja, channagi, Turuwaram, Shisham, Station Bandar Bamboo and Abnus varieties and is abundant with many varieties of animal, Iron Ore, Coal, Copper, Limestone, Granite form the main minerals of the district.

3.3. SAMPLE SIZE AND TECHNIQUE

The district is divided in to five revenue divisions namely Warangal, Narsampet, Mulug, Jangaon, and Mahabubabad and comprise of 51 mandals, out of 51 mandals, 10 densely populated tribal mandals were selected which encompass Integrated Tribal Development Agency and Modified Area Development Authority project area. A multi stage random sampling was adopted, the three staged random sampling include, mandal the first stage (10 mandals) Village the second stage (20 villages) and subjects the third stage (500 subjects). A random sample of 500 young adult married women in the age group of 20-25 years with at least one child were selected from each village (25 from each village). The sub sample of 10 subjects from each village (N=200) were selected randomly for the intervention programme both for Experimental (N=100) and Control group (N=100). The sub sample was treated with quantitative analysis to know the inner perspectives and to understand their pattern in detail which could
Fig. 2: Sample Design

ANDHRA PRADESH

Coastal Andhra

Telangana

Rayalaseema

Warangal

Warangal

Narasampet

Mahabubabad

Jangaon

Mulug

Mandals

1 2 3 4 5 6 7 8 9 10

Villages

1 2 3 4 5 6 7 8 9 10

(N=500)

25 from each village
help in developing an intense intervention on nutrition and health. Knowledge Attitude and Practices interview schedule was administered Pre and Post intervention to the sub sample (N=200).

3.4. TOOLS AND TECHNIQUES OF DATA COLLECTION

The data was collected in two different segments with an interview schedule and structured and standardised procedures in part A and part B. Part A consists of individual and socio economic profile, standard of living index, Reproductive health and awareness on government programmes on nutrition and health. Part B consists of Anthropometry, Clinical, Dietary and assessment Knowledge, Attitude and practices Schedule.

3.5. PILOT STUDY

The pilot study was of immense use not only for pre-testing the tools of investigation but also for identifying the other important variables of the problem under study keeping in view the major objectives of the present study a comprehensive interview schedule was developed for pre testing. The reliability and the validity of the interview schedule was tested. After pre testing, the final interview schedules were developed to gather the information from the respondents. Based on the objectives, the questions were structured which were prepared in relation to demographic, socio economic, nutrition and health profiles. The interview schedule was administered on fifty mothers. The objectives of the pilot study were followed by experimental approach. Some of the vague questions found extraneous were deleted in the final schedule. Only perfect questions, which were found to be reliable meaningful and practically applicable were kept in the tool and used for the final study. The sample considered for the pilot study was not included for original study.
Fig. 3: Map showing the location of the selected Mandals.
3.5.1. Informed consent

Oral informed consent was obtained from the selected village heads and the subjects to collect the data. Utmost support has been extended from the project officer ITDA.

3.5.2. Training of Investigator

The investigator has undergone training and attended many workshops conducted on Methodology of Nutrition Assessment initiated by National institute of Nutrition.

3.6. QUANTITATIVE DATA

Quantitative research refers to the systematic empirical investigation of social phenomena via statistical, mathematical or computational techniques. The process of measurement is central to quantitative research because it provides the fundamental connection between empirical observation and mathematical expression of quantitative relationships. Quantitative data is any data that is in numerical form such as statistics, percentages, etc. The researcher analyzes the data with the help of statistics. The researcher is hoping the numbers will yield an unbiased result that can be generalized to some larger population.

3.6.1. Socio economic and Demographic profile:

a. Age

All indices used to assess nutritional status are age dependent. Information on age was obtained through government identification cards or through anganwadi centres or directly from the women.

b. Income

There are various standardised tools developed to assess the socio economic status of the rural groups and the NHFS standards were used to assess the income levels and their standard of living subsequently the income have direct impact on the nutritional status of individuals and families. The various sources of
income as earning members of the family, income from land, live stock, and any other secondary sources were also considered.

c. Menarche status

The age at menarche and their status during menarche was obtained during the interview.

d. Age at Marriage

The subjects age at marriage has a direct influence on all the reproductive health aspects so it is considered as an independent variable and recorded during the interview.

e. Family size

The information related to number of family members in a family was recorded as the number in a family does influence the nutritional and health status.

f. Educational level:

The information related to education level was recorded depending on the formal education received by the subject in the school or in adult education schemes or atleast to sign through mahila mandals.

g. Expenditure

The amount spent on each and every aspect on a house hold level i.e on food, clothing, shelter, education and health were recorded.

h. Standard of living Index

The questions related to households amenities and possession of some selected households items were asked in order to develop standard of living index and scores were given related to response categories for each question. (Adopted from RCH 1999 survey).
3.6.2 Reproductive Health status

The reproductive health status of the young adult women as antenatal and post natal care along with family planning and other health ailments were recorded.

3.6.3. Nutritional anthropometry

It is the science of measuring the size weight and proportions of human body at various ages and levels of nutritional status. Selected body measurements can give valuable information concerning certain type of malnutrition in which body size and gross body composition are affected (Jelliffe 1996) which are not easily obtainable from other methods and is also known as an non-invasive method

a. Body weight

Weight is most widely used anthropometric measurement and is used as a basic indicator in the evaluation of nutritional status. Weight is a measure of total body mass and a direct indicator of health and is sensitive to even small changes in nutritional status.

Method

Digital bathroom scale was used to measure the weights of the subjects which read nearly to 100 kg with 100gm increments

- The zero error of weighing scale was checked before taking the weight and corrected as and when required.

- The subjects were assessed to wear the minimum clothing provided by the investigator or the cloth weight was removed before recording.

- The measurements were taken under basal conditions preferably in the early morning, and it was the only time of their (subjects) availability.
b. Height

Height is a measure of linear growth of the body and reflects the degree of skeletal development. The maximum growth potential of an individual is decided by hereditary factors while the environmental factors like nutrition and ill health determine the extent till which the genetic potential can be attained.

Method

- Anthropometric rod was used to measure height. The subjects were made to stand erect on bare foot on the even floor with both heels together, the hands hanging on the sides held comfortably erect, with the lower border of the orbit in the same horizontal plane as the external auditory meatus.
- The head piece is gently lowered crushing the hair and making contact with the top of the head.
- The measurement were recorded to 0.1 cm

c. Body mass index

Body mass index is the parameter used to study the body composition of the young tribal women which is also known as Quetlets index.

Method

It is used to indicate the magnitude of energy deficiency and malnutrition status. This is calculated using the formulae given below.

\[
BMI = \frac{Weight(kg)}{Height(M^2)}
\]

3.6.4. Clinical assessment

Clinical examination is the oldest and the most practical and relatively cheaper method of assessing the nutritional status of individuals. In this the subjects body from head to toe is examined visually. Changes in the superficial tissues especially skin, Eyes, Hair, Gums, Nails and in the organs near the surface
of the body such as thyroid gland are observed. The WHO designed structured schedule was used to assess the subjects physically from head to toe.

3.6.5. Dietary assessment

Diet surveys are one of the earliest methods of assessing the nutritional status of any population. Diet survey are of two types one concentrate on the qualitative aspects of foods i.e frequency of foods eaten which gives an idea about food behaviour and possible nutritional problems. The other types of diet survey attempts to estimate the amounts of foods consumed in quantitative terms i.e how much food is eaten, which helps in estimating the amount of different nutrients that are consumed by individuals on daily basis both the methods were used in the present study for accuracy and reliability, as use of one methods has some advantages and disadvantages.

Dietary recall method

In this method the subject is asked to recall in as much detail as possible, the food intake for the previous day at each meal and in between meal the individual is probed to recall what and how much food was eaten. Quantities are mostly recorded in households units such as glass and katories, spoons. The nutrient values for these amounts are calculated using ICMR Nutrient composition tables. The day’s total intake of different nutrient can be thus assessed and compared with the RDA.

Estimating portion size

The raw ingredients used for the each of the preparations were obtained. Information on the total cooked amount of the each preparation was noted in terms of standardised cups. The intake of each food item by the selected sample was assessed using cups. The standardised cups were mainly to aid the respondents to recall the quantities prepared and consumed. In addition to the recipies the intake of any other foods such as fruits coffee/Tea were also calculated.
3.7. QUALITATIVE DATA

It gives an opportunity to spend more time in a community, there by developing rapport and creates an interview environment in which respondents feel most comfortable and it allowed to reduce contextual bias, generally associated with survey. The qualitative procedures such as Focus Group Discussion and Focussed ethnographic studies were employed.

3.7.1. Focus Group Discussion:

FGDs are an excellent method for obtaining information about the target audience’s, perceptions, beliefs and language regarding a particular topic. It probes into the reasons that people feel and act the way they do. FGD is not a way to measure precisely the amount of some behaviour in a population. But, it is excellent for getting an indication of how pervasive an idea, value or behaviour is likely to be in a population and for understanding how deeply feelings run about products, issues or public figures (Russel and Bernard 1988). Market researchers used FGDs in 1950s as a way of stimulating the consumer group .Process of decision making in order to gather more accurate information about consumer preferences. Recently, health professionals have began to use them successfully as a rapid, efficient and accurate research method applicable to many areas of public health (Abundis et al., 1990)

Procedure:

In each experimental area, 4-5 FGD’s were conducted. The procedure to conduct the FGDs was adopted from Jim Meyers Guidelines for conducting a focus group. The steps involved in the procedure were:

1. Preparing for the FGD

Developing the discussion guide: Based on the objectives of the study, the discussion guide was prepared containing following topics, which were discussed with the participants during the sessions
Food consumption and how it relates to health

Food consumption pattern during pregnancy, lactation and Preschool age.

Breast feeding practices.

Signs and symptoms of common illnesses-emphasis given on nutrient deficiencies and health problems to understand the ways of recognition of the disease local beliefs practices and preventive measures.

Sources of nutrient rich foods and other associated foods, which influence its absorption their consumption and reasons in the case of its avoidance and preparation methods.

Health related government programmes with special reference to anaemia, sanitation and hygiene channels of communication available in that area and their preferences.

2. Reserve a time and place:

Place and time to conduct the discussion was reserved well in advance to avoid the waste of time in selecting location and gathering of the participants.

3. Provide an incentive for participation.

All the individuals, who participated in the discussion, were encouraged to take part in the discussion.

4. Determine the equipment needed

Equipment needed includes a field note book to write the discussion and an audio tape to record the discussions which were arranged.

5. Size of the group.

A good size for focus group is between 8-10 participants for session was followed it helped to ensure that all individuals participated and that each participant has enough time to speak. It also helped to reduce relationships of
dominance with in group and reduce the tendency for side conversation between respondents.

6. Composition of the group

Focus groups were composed of homogenous members of the respondents. The Primary group young tribal women the main target group subjected for a behavioural change. Secondary group include the other family members like husbands and mother in laws who facilitate and support in the changes. Tertiary group include the Anganwadi workers and the ANM, Ward members who are the immediate source of information at village level post intervention.

7. Room configuration and seating arrangements

The participants of FGDs were seated in a semicircular fashion so that they were equidistant from the moderator and audio equipment was arranged at the centre to record the discussion clearly

8. Conducting the focus group discussions

Initiating the session: The session was initiated in a friendly manner by explaining the purpose of the session. They were also informed to speak one at a time so that entire discussion would be recorded clearly in the audio tape.

Warm up: A warm up period was allowed before introducing the topics of the discussion guide to provide them an opportunity to interact with each other for few minutes the discussion was held on casual topics such as their occupation, crops grown in their fields, Number of children etc. Then the discussion was gently lead to the actual topics

In depth discussion: Discussion was lead on topics in the discussion guide by putting open ended questions to the participants. The important points and few terms used in their local language, which has to be clarified, were noted down in the field notes without interrupting the respondents.

The respondents were probed were ever the in depth information was needed towards a particular topic. Whenever the participants get a head of the
issue being discussed. The discussion was pulled back by focusing the interest of the respondents to the key topic. In few sessions, one or two participants were dominating the group, asked the other participants if they agreed or not and encouraged them to explain.

**Closure of the session:** After the discussion was completed regarding all the key topics using the discussion, the session was concluded by summarising the proceedings and by thanking the participants.

**9. Length of the discussion:**

The time limit was fixed as one hour before starting the session. However, the discussion sessions lasted from forty-five minutes or fifty minutes to one hour each depending upon the degree of participation of the respondents. Extra time was allowed as the participants were enthusiastically generating the information base.

**10. Review the notes and audio tape:**

After a discussion session was complete, reviewed the field notes and audio tape to pick out the important findings and coded, which were used to develop intervention programme.

**3.7.2. Focused ethnographic studies**

Ethnographic research study attempts to understand human beliefs and behaviour from the point of view of the people being studied. It goes further than merely describing peoples behaviour, by seeking to understand why people do what they do. Ethnographic research is a flexible and iterative approach. Thus allows identifying areas that need further investigation during the field investigations. Ethnographic research using multiple techniques to investigate the same research question is form of triangulation, which helps to ensure the validity of qualitative data. (Uma Nayak 1999).
The protocol used to investigate answers to the research questions related are:

- Identifying the basic food groups.
- Food acquisition, preparation and storage.
- Cultural attitudes, Beliefs regarding the key foods.

Answering these questions provides the database to develop culturally appropriate interventions to improve Nutrition and Health status through the following schedules.

**a. Pile sorting:**

Pile sort is a technique aimed at studying the relations among foods with in a domain. The purpose of this module is to better understand people perceptions regarding relationships between staple food, nutrient and mineral rich foods which influence the nutritional status. It collects systematic information about people’s idea systems that were enable to identify classifications and dimensions or the food items included on the key food list. It gets information on a systematic sorting of foods, Identifying local practices and concepts that broaden the understanding of the basic meal plan. It is useful for discovering informant’s perceptions of the similarities and differences among foods and to look at the variation in how the subjects define them.

**Preparation of materials:**

More than fifty samples were selected through observation and during primary data collection (FFQ). Each food was assigned a number from one to fifty. The actual samples of the key foods were used for this exercise, as most of the samples were illiterates, so that they can easily identify them correctly. The key foods were packed in small plastic sachets; milk curd and oil were carried in bottles. The perishable foods such as greens, meat, egg, milk were changed every day.
**Administering Pilesort:**

The purpose of the pile sort was explained to the respondents. The foods were placed on flat surface, so that they were clearly visible. After recognising all the key foods, the respondents were asked to group the foods in the way she wish to. The assurity was given to the respondents that they were no right or wrong answers specially those who have a difficulty in understanding. Once the module was completed, each respondent was asked to explain why the foods were placed into these particular piles. A separate proforma was used to record their perceptions related to food.

**b. Rating food attributes:**

**Purpose:** structured rating techniques are useful to explore further how people assign attributes to food which will enable to gain a clear picture of the relative value people assign to a specific food items in relation to culturally assigned attributes. This rating process also helps to identify differences in patterns within groups in the study area.

**Preparation of materials:** few attributes both positive and negative elicited from previous modules were selected.

The selected attributes were found to be important to the food culture of the community and most frequently associated with Basic food groups vitamins and minerals. The selected attributes for this module are

- Healthy foods/ Good for health
- Strongy foods
- Expensive foods
- Blood improving foods
- Hot and cold foods
The concept of the attributes was used in the local language that has emic perspective. The same set of food items were packed in sachets that were used for pile sorting, were used to conduct this module. A separate proforma was prepared for the purpose and administered to collect the information. (Anexure-7)

**Administering the task:**

The food items were once again placed on flat surface and explained the task to the respondents by pointing an end, which was the most or the best then pointed to the other end as least or lowest. Then pointed to the middle which was the intermediate. Then the respondent was asked to rate the foods on a three point scale by separating the foods fitting at the extreme ends on the scale i.e., most or least then they were asked to place intermediate foods in the middle. A separate proforma for each attribute was used.

**Analysing the data:**

The number of times the food items was mentioned under a specific range for each attribute was added and the responses were calculated.

c. **Food frequency**

This method was used to assess the frequency of consumption of different foods daily, weekly, Monthly/Occasionally. The food frequency consists of a list of foods which are important contributors to population intakes of energy and other nutrients and the availability of foods locally.

d. **Traditional health practices**

Tribes are well known for their indigenous health practices but a lot of change has been occurred over a period of years. They are also trying to adopt the modern and allopathic medicine but the traditional medicine is still in force due to their culture and its costs. A structured schedule was framed which consists of name of indigenous material used for different ailments its method of preparation and diet restrictions.
3.8. KNOWLEDGE ATTITUDE AND PRACTICES (PRE AND POST TEST)

Awareness about the existing nutrition knowledge, Attitude and practices of the community members is essential for nutritional educators as well as planners as this data is valuable for planning programmes and interventions to improve their nutritional and health status of the community. A KAP schedule was specially designed, pre tested and administered which consists a series of closed ended questions to determine what people in a community think believe or do.

3.9. NUTRITION EDUCATION INTERVENTION PROGRAMME

Nutrition Intervention programme in the present study, is a tool to help participants in increased understanding of their situation which ultimately leads to further improvement in approach.

During the Focus group Discussions the primary information on the knowledge of basic food groups, Availability, Accessibility, Affordability cooking methods were known and the necessary changes were noted. The list of items to be discussed during session were listed for Nutrition education intervention and were educated using the following Aids in the table-1.

Table -1: List of Messages and AIDS used

<table>
<thead>
<tr>
<th>Message</th>
<th>AIDS used</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Basic food groups</td>
<td>• Lesson plans</td>
</tr>
<tr>
<td>• Balanced diet</td>
<td>• Food piles</td>
</tr>
<tr>
<td>• Vitamin and minerals</td>
<td>• Chats and posters</td>
</tr>
<tr>
<td>• Health and hygiene</td>
<td>• Through charts posters and with the help of health professional.</td>
</tr>
<tr>
<td>• Affordability</td>
<td>• Promoting home gardening through distribution of seeds and raising nutrient dense plants and used in daily cooking.</td>
</tr>
<tr>
<td>• Dietary diversification</td>
<td>• Food and Cooking demonstrations.</td>
</tr>
</tbody>
</table>
3.10. TARGET GROUPS

An effective communication strategy not only targeted the selected group alone rather have a multiple target audiences which usually include the selected group and other individual or groups which influence the selected group.

**Primary group** are the selected young tribal women the main target group subjected for a behavioural change.

**Secondary group** include the other family members like husbands and mother in laws who facilitate and support in the changes.

**Tertiary group** include the Anganwadi workers and the ANM, Ward members who are the immediate source of information at village level post intervention

3.11. IMPLEMENTATION

After initial contact to collect the baseline information, and the development of communication programme, it was put into effort in the community. The following approaches were implemented in the study area as

**Experimental area:** In this community along with the government intervention the interpersonal and group communications, the actions or the activities were focussed to create an environment that supports the change.

**Control area:** After initial contact to collect baseline information no intervention in these communities was made till post test. The regular government interventions were carried out as usual.

3.12. STATISTICAL ANALYSIS

The data collected during baseline and the end of the intervention period was scrutinised, processed and analysed enduring the statistical package for social sciences (SPSS).The differences between the pre and post intervention and between study areas were compared. The differences were tested for statistical significance at 1 and 5 percent level. Analysis was carried out using statistical
tools like percentages, Means, Standard deviations, paired t test, Chi square test and Analysis of variance (ANOVA) and statistical graphs.

3.13. LIMITATIONS

1. The study is confined to rural women, who are currently married and are having at least one under five living child.

2. The universe of study is limited to the tribal women residing in Warangal district of Andhra Pradesh.

3. Verbal statements of rural women regarding Nutrition and Health were considered for analysis.