CHAPTER 1

INTRODUCTION
The level of development achieved by a society is often determined on the basis of the status of health and the system of health, prevalent in the society. It is well known that health care is only one of the several factors, which influence the health status of the population. The health of a nation is maintained through the health of its individual citizen. Optimum nutrition is an important factor in healthy health and should be the ultimate goal. A person may be well nourished even though he is not getting the highest peak. Nutrition is one of the many interrelated determinants of health, and perform in a wide spectra of social-economical and cultural factors. It influences productivity, stamina and working capacity. So on the whole it influences all aspects of the life and national economy.

Health can be defined as experiences of success of a man in its efforts to respond adaptively to environmental challenges. The health of a society is intimately related to its value system, its philosophical and cultural tradition and its social and political organization. Health and disease are related to biological and cultural resources of a community in a specific environment. (Behra, 1995).

The quality of life of the society greatly depends on the health status of its members. A society can never program with high morbidity rate and spreading of communicable diseases. The declaration of health for all by 2000 AD by WHO spurred the governments of all nations for the reconstruction of their health system, to introduce new programs and take effort to promote the health condition of the people. It was presumed at that time that all the developed nations will achieve the goal by 2000 AD while the developing countries might requires another ten years from 2000 AD to reach it. (Nalini, 2000).

Health is the most important of all the social services, the sector that is directly co-related to the welfare for the human beings. The main objectives of the national health policy (NHP) is to achieve an acceptable standard of good health among the general population of the country and to approach the public health system by establishing new infrastructure in the deficient area while strengthening the existing health instruments at various levels. Although the
overall health scenario has improved significantly and at fore sent compared favorably with international level, but still with high economic growth, where a certain section of Indians are obviously benefiting from the health care access, most of the poorer sections of society are being left far behind. Infant deaths in India remains high, women still die in childbirth and half our children are malnourished. This is further compounded by a dysfunctional public health system that provides health care to only a small portion of the population, the rest of the population is forced to sack healthcare from the private sector and pay out of pocket at the time of ill health. 80% of our health care is met through individual household expenditure one of the highest internationally (Devdasan, 2006).

Many Government and Non-Government agencies and Institutions are working on health and nutritional aspect as well as on family welfare since long period. The Bohre Committee Report (1946) laid down the foundation for health in India, gave high priority to provision of maternal and child health services and improving their nutritional and health status. Under the Constitution of India elimination of ill health is one of the important goal. In 1951 India initiated the first five-year development. The plan planners after analyzing the Census of 1951 realized the threat of population explosion and need to manage and take essential action to overcome. (Ninth five year plan, 1997-2002).

After independence available health services were urban based and curative. Morbidity and mortality rates were high. Antenatal, intrapartum, postnatal and contraceptive care were not readily available. In fifties postpartum tubal sterilization becoming popular in couples who had completed their family. In this period good quality integrated maternal and child health care and family planning services were available to those who were aware and could afford the services of physicians. In rural areas efforts were made to improve the health services. India is the first country in the world to formulate a National Family planning Programme in 1952, with the objective of "reducing birth rate to extent necessary to stabilize the population at a level consistent with requirement of national economy". Right from the independence; women children and provision of contraceptives services have been the focus of health services. (Ninth five year plan, 1997-2002).
In sixties government made availability of safe effective vaccines for many communicable diseases and effective contraceptives. Rapid growth of population in fifties as found in 1961 Census, government form a Department of Family Planning with a sufficient budget. National family planning programme focus on sterilization in 1960. Extension education approach to improve awareness and increase acceptance of family planning methods were also included. Rural population was approached through camp for spacing method like Lippes loop that was already popular among urban clinics (Ninth five year plan, 1997-2002).

In the seventies health and nutritional status of women and children were the priority of all health based programme. Medical termination of pregnancy act 1971 was enacted with the objective to reduce maternal morbidity and mortality due to unsafe abortions. National Programme for control of blindness (NPCB) was launched in the year 1976. Massive dose of vitamin A and anemia prophylaxis programme aimed at reducing anaemia and associated ill health. Food supplementation to pregnant and lactating women and children below five years, were major initiatives. Government gave top priorities to the family planning programme and provided sufficient funds. Sterilisation, Intra uterine device (IUD) and condoms were made available through primary health centers. The massive sterilisation drive of 1976 did result in eight million persons undergoing sterilisation, but this did not have any perceptible impact on the birth rate. People started rejecting the family planning, as a result the next year showed a steep fall in acceptance of family planning. In 1979 Hon’able health minister Shri Rajnarayanji renamed the programme as Family Welfare Programme. Family planning programme was dealing with only birth control, Tubectomy and Vasectomy, while Family planning programme (FWP), included mother and child health welfare and nutrition. The basic objective of Family planning programme (FWP) is population control as well as good health of population. In 1983 India formulated the National Health Policy. Major initiative was taken during the seventh plan to provide facilities and services nearer to the doorstep of population. Universal Immunization Programme was launched in 1985. (Ninth five year plan, 1997-2002, India, 2006).
During ninth decade health problems of women and child were well recognized and government attempted to integrate Mother and Child Health (MCH) and family planning as part of Family Welfare services at all level. National Development Committee approved modified Gadgil Mukharjee's formula, which for the first time gave equal weightage to performance of Mother and Child Health (MCH) sector (Infant Mortality Rate reduction) and Family Planning (FP) sector (Crude Birth Rate reduction). Implementation of Child Survival and Safe motherhood Programme was initiated in the very first year of eighth plan Child Survival and Safe motherhood (CSSM) was initiated in 1992, and Pulse Polio was initiated in 1996. International conference on Population and Development (IPCD) was held in Cairo in 1994, recommended reproductive health care should be available at primary health care system. Infant mortality rate should be reduced. In ninth plan attempts were made to improve the quality and coverage of health care to women, children and adolescents. In additional efforts were made to improve the participation of men in the planned parenthood. Prevention and control of Sexual Transmitted Disease (STD) and Reproductive Tract Infection (RTI) including emerging problem of HIV/AIDS (Ninth five year plan, 1997-2002).

In new millennium the most threatening crisis is imbalance of sex ratio. In order to foeticides the Prenatal Diagnostic Techniques Act (1994) was enacted and brought into operation from January 1996. The Act prohibits determination and disclosure of sex of foetus. Analysing the 2001 census report the act previously made has been amended (wef.14 February 2003) to ban selection of sex before or after conception and to remove difficulties in the implementation of the Act. (India,2006).

Government has launched the National Rural Health Care Mission (NRHM) on 12 April 2005. The main aim of NRHM is to provide accessible, affordable, accountable, effective and reliable primary health care facilities, especially, to the poor and vulnerable segment of the population. The NRHM further aims to provide over arching umbrella to the existing programme of Health and Family Welfare including RCH-II, Malaria, Blindness, Iron deficiency, Leprosy and others. The allocation for the Department of Health and Family Welfare for 2005-2006 has been increased by 30 percent over the
previous year. It is proposed to increase the expenditure in health sector from the current level of 0.9 percent of Gross Domestic Production (GDP) to 2-3 percent of Gross Domestic Production (GDP) over the next five years, with main focus on primary health care (India, 2006).

The National Institute of Health and Family Welfare, New Delhi has done tremendous research in the field of maternal and child health, family welfare, health care services, health economics, health manpower, food and nutrition, population and demography.

The Indian Council of Medical Research is the nodal research agency for operational research in health, nutrition and family welfare. Basic clinical applied and operational research studies relevant to major health and population problems in the country have been the focus of research programme during last fifty years.

India in one of the pioneers in nutrition research not only in the Asian region but also in the world. Several research institutions and universities are carrying out the research studies with assistance from ministries and research studies funding agencies such as ICAR, ICMR, CSIR, etc. Basic, Clinical, Applied and Operational research studies have been carried out in the country have identified major nutritional problems in the country, their aetiology appropriate remedial and preventive measures to tackle the problem and the modalities of effectively operationalising the intervention programme at the regional and national level.

The National Institute of Nutrition, Hyderabad is doing researches in nutrition related field. The major thrust areas of research includes existing problems of nutritional deficiency diseases, improvement of health and nutritional status of women and children, preparation of nutritional enriched and low cost recopies. The institute has successfully completed 3 years of operational research on horticultural intervention for promoting vitamin nutrition on rural area. The National Nutrition Monitoring Bureau has been conducting surveys in 10 states since 1972 and carrying evaluation of ongoing nutrition programmes.
Diet and nutrition are important factors in the promotion and maintenance of good health throughout the entire life course. Their role as determinants of chronic nutritional diseases is well established and therefore they occupy prominent position in prevention activities. Diet has been known for many years to play a key role as a risk factor for diseases what is apparent at the global level is that great changes have swept the entire world since the second half of the twentieth century, inducing major modifications in diet, first in industrial regions and more recently in developing countries. Majority of humanity is currently suffering from one or more of the multiple form of malnutrition. The tragic consequences of malnutrition include death, disability, stunned mental and physical growth, and as a result, retarded national socio-economic development.

Every year over half a million women die during pregnancy and childbirth. Acting on today's knowledge about the importance of planning pregnancies stated in "Fact for life" by UNICEF, WHO and UNESCO jointly could prevent most of the death. Family planning as only the safe measure in improving the health of both women and children is still controversial. Births which are "too many or too close" of to women who are" too old or too young" account for approximately one third of all infants deaths worldwide. If today's knowledge about the timing of birth is fulfill its potential for saving lives and improving health, then family planning service will have to be made available to all mother, especially in our country not very familiar about this fact that the risk of death of young children is increased if the space between births is less. There are many safe and acceptable ways of avoiding pregnancy, family welfare service not only provide couples the knowledge regarding planning of family but also provides contraceptives for both husband and wife, free of cost. Family planning is the responsibility of men as well as women. Parents of two children can give them the basic care and attention they need.

Adolescents and youth under going rapid growth and development age one of the nutritionally vulnerable groups, who have not received the attention they deserve. Early marriage and pregnancy perpetuates both maternal and child ill health and under nutrition. Study of maternal health and nutritional aspect has already occupied very prominent position in the field of medical
science all over the world. Most authorities agree that the nutritional status of the mother before conception is important. The physical impact of any heavy workload assigned to women, is compounded by gender differences in access to nutrition. While both sexes may be disadvantaged by poor nutrition, women are specially more vulnerable, largely because of their special needs associated with the biological processes of reproduction, which increases women's need for regular intake of protein, vitamins and minerals.

Availability of food, illiteracy and lack of nutrition and health education are found basic problems, which stand at the grass root of all development especially that of rural and tribal population of our country. Not merely poverty but ignorance is perhaps the most important single factor underlying poverty and malnutrition in our country. To improve the nutritional status of the people it is essential that mothers should have sound nutritional knowledge, favourable attitudes and healthy dietary practices. The role of mothers in combating malnutrition through changing the socio-cultural barriers for good nutrition is vital and unique. Mothers alone are responsible for the methods adopted for preparation and seeking food. They play a major part in influencing the dietary habits of the family members. The critical element in the control of childhood nutritional disorders is a better understanding on the part of parents especially the mother, of the nutritional needs of the family particularly the young child and how to use existing food resources. Therefore for the awareness in the community, Mothers can play a vital role to prevent illness and for better access of health care system.

Proper human growth and development are two of the major determinants of health, which are influenced by again two factors i.e. heredity and environment. Heredity is the factor which normally one cannot modify by own for betterment of health. The environmental factor which includes various elements like food, nutrition, sanitation and hygiene, education and awareness, sociocultural practices, availability of health services etc are definitely responsible for the genetic or inherited potential to find full expression. Modification in these environmental factors can improve the health status of society.
Health of youth no longer requires justification. More than half the world's population is below 25 years (Sen, 2004). In India adolescent and youth girls receive the least attention of all even though preparing for taking up marriage responsibility and in short span of time to motherhood for rearing the family. In this whole process they primarily face problems like high rates of anaemia, early pregnancy, unwanted pregnancy, unsafe deliveries, frequent Reproductive Tract Infection (RTI) and vulnerability of Human immunodeficiency virus/Acquired immunodeficiency syndrome (HIV/AIDS). It is mainly their lack or no access to information that makes them more vulnerable. Globally, WHO estimates that reproductive ill health account for 36.6% of the total disease burden in women as compared to men 12.3% of the same age. NFHS – 2 has also reported that 39.2% women in India have one or more reproductive health problems (Paul et al., 2003) Analysis of Public Health Policy in India, shows that state policy has thus for applied itself only to a section of health issues. (Datta, 2003), Areas thus for targeted by policy are not those affective women's health in a major way even within the reproductive of groups (Rao, 2000).

Health of women remains a challenge as the majority of women go through life in a state of nutritional stress, as they are anemic and malnourished. Girls and women face nutrition discrimination within the family, eating last and least. This results in chronic nutrition deficiency. The average Indian woman bears her first child before the age of 22, and has little control over has own fertility and reproductive health (Ashrit, 2006).

Health and disease are a continuous process and are linked the health seeking behaviour of a community. A number of factors have been reported to influence the health seeking behaviour of individuals among which the socio-cultural pattern on the community is most important (Rosenstock, 1960; Pandey et al., 1999).

Nutrition is the science of foods, the nutrients and other substances therein; then action, interaction, and balance in relationship to health and disease; the process by which the organism ingests, digests, absorbs, transports, and utilizes nutrients and disposes of thin end products. In addition,
nutrition must be concerned with social, economic cultural, and psychological imploration of foods and eatings (Robinson, 1966).

Nutrition is the combination of processes by which the living organisms receives and utilizes the materials (food) necessary for the maintenance of its functions and for the growth and renewal of its components (Turner, 1970).

Nutritional care is the application of the science and art of human nutrition in helping people select and obtain food for the primary purpose of nourishing their bodies in health or in disease throughout the life cycle. This participation may be in single or combined function in feeding groups involving food selection and management; in extending knowledge of food and nutrition principles in teaching these principles for application according to particular situations and in dietary counseling (Dietetic Internship Council, 1969).

Nutritional status is the condition of heath of the individual as influenced by the utilization of the nutrients. It can be determined only by the co-relation of information obtained through a careful medical and dietary history, a thorough physical examination, and appropriate laboratory investigations (Robinson 1966).

Protein caloric malnutrition; the worlds most serious nutritional problem, to some degree affects up to 70 percent of infants and preschool children in the developing countries of central and South America, Africa, the Middle east, and Southeastern Asia (Coursin, 1968).

Malnutrition has emerged as a major health problem of our country. Assessment of nutritional status is one of the most important health indicators of a population group. Various studies have confirmed that malnutrition exists among the poorest section of our country in which children are victims and women in reproductive period appear to be the worst sufferers (ICMR, 1984).

When a diet is nutritionally inadequate but the sanitation is good and infections are minimal, the onset of deficiency symptoms are gradual in some countries the mortality from meseals is 400 times greater than in the United States not because of increase in virulence but because of coexisting malnutrition (Gordon, 1969).
As early as 1950 or so the work on nutritional assessment started in India independently since then a number of government and non-government agencies were making efforts in this direction. Anthropometry is commonly used to assess nutritional status in emergency setting and in on-going feeding programme. Anthropometry as a technique of taking measurements has been used for a long time in the research of child growth and nutrition. The national and international agencies have recommended a list of measurements from time to time (Kulkarni, 2005).

The principle of using anthropometric measurements as the basis for determining the nutritional status of the community has been derived from that fact that physical dimension of the body are much influenced by nutrition, particularly in rapidly growing periods of childhood (especially, and up to adulthood). Nutritional concern body measurements can therefore give valuable information concerning certain types of malnutrition in which body size and gross body composition are affected. Nutritional Anthropometry is still considered as the most practical and useful means for the assessment of Nutritional status. Various aspects of nutritional status and nutritional anthropometry have been studied by Rao (1970, 1971, 1975, 1980, 1986, 1990, 1995, 1998, 2000). Increasing concern over infant and maternal health in developing countries has focused new attention and its impact on health and nutrition (Buchanan, 1975).

Nutritional status of the mother is the result of her lifetime dietary habits, had a greater influence on the out come of pregnancy than her diet during pregnancy (Baired, 1965). It may even be that the nutritional status of her own mother will influence the outcome of her pregnancy (Zamehoffs et al. 1971).

Rao et al., (1998) found that the deterioration in nutritional status with higher durations of lactation was more revealing in those of low income groups than in better in come groups. Deterioration in nutritional status in seen during 4-6 months of lactation in middle-income groups and beyond six months in low-income group.

Saim and Busi (1995) in the paper entitled the effect of physiological state on the nutritional status of women, inferred that among the various
physiological states which influenced the nutrition status of women the period of lactation seem to be the most burdening and hence affecting the nutritional status as observed by all parameters, among lactating women those experiencing post partum amenorrhea are the worst affected.

Study on milk for infants of HIV- infected women was carried by Couttsoudis (2002) there is vigorous controversy around whether HIV- Infected women is developing countries should choose formula or breast-feeding for their infants. Formula eliminates HIV transmission but incurs risk of increased mortality, where as breast-feeding has multiple benefits but entails risk of HIV transmission, international guidelines are available but need to be strengthened. This commentary summarized data on the scale and rate of mother to child transmission (MTCT) of HIV through breastfeeding, and the hazard and benefits of breast and formula feeding.

Acharya (2003) in his paper entitled “Maternal factors and nutritional status of preschool children” reported, Nutritional status of the children deteriorates with mother’s low nutritional status and poor nutritional knowledge, adherences to food taboos and beliefs and low educational status. He has suggested that any programme to improve the nutritional status of the preschool slum children should have strategies to improve the nutritional status, educational status and nutritional knowledge of the mothers.

The mother especially sets the pattern for the food habits that will be developed by the children, for she is the one who plans the meals, purchases the food, prepares it, and serves it. Her values have been developed in the environment in which she grew up and they are based upon income geographic region from which she came, level of education, superstitions, and taboos. The mother who creates with in the home is atmosphere of security and contentment reinforces the positive values of food (Brutch, 1970).

Greater evidence of complications, owing largely to a higher percentage of toxemia among women with poor diets (Burke, 1949). NFHS 92 – 93 shows that in India 19% of maternal deaths are due to anaemia, 22% due to bleeding during pregnancy and 13% due to toxemia (Ninth Five year plan Government
Maternal diseases and educational status are two risk factor which has strong association with anaemia during pregnancy. (Nagraj, 2003).

Maternal nutrition is an important determinant of the course and outcomes of pregnancy and seventy five percent of fetal growth is related to maternal nutritional status (Warthington, 1993).

Data from National Nutrition Monitoring Bureau (NNMB) shows that a significant percentage of adult Indian women in the reproduction period are at high risk due to low body weight (below 38kg) and low height (below 45cm). Such women fall into the high risk category with increased likelihood of obstetric complications and low birth weight offspring. Compounded with these problems is one of teenage pregnancies resulting from early marriage, which prevails in the lower socio-economic group. Though the problem is large in rural access urban one cannot be excluded, in cities a large proportion of women are employed showing an increasing trend for late marriages and pregnancies (NFHS-1992-1993).

Anaemia is one of the leading causes of maternal morality in India. It is the most wide spread yet most neglected micronutrient deficiency disorder. Iron and folic acid deficiency due to inadequate in take of green leafy vegetable and other iron folate rich foodstuffs is the most common cause of anemia. Anemia is associated with reeducation in work capacity and increased susceptibility to infection. Association between anemia and low birth weight are well documented. Prevalence of anemia among pregnant women is Mild-40%, Normal-13%, Severe-13%, and Moderate-34% (ICMR,1989).

Iodine deficiency disorders (IDD) have been recognized as a public health problem in India. Since mid twenties initially, IDD was thought to be a problem in sub-Himalayan region, however survey carried out subsequently showed that iodine deficiency disorders (IDD) exists, even riveriene and coastal areas. It in estimated that 61 million are suffering from endemic goiter and about 8.8 million people have mental/ motor handicap due to iodine deficiency it is well recognized that the pregnant and lactating women from one of the most vulnerable segments of the population from nutritional point of view; the ill effect of maternal under nutrition affect no only of the mothers but also her
offspring. Adverse nutrition and health consequences of too early, too close too many and too late" pregnancies on the mother and child both were recognized early in our country. Iodine deficiency is the greatest single preventable cause of brain damage and mental retardation worldwide and is estimated to affect more than 700 million people most of them located in the less developed countries. Over 2000 million people have iron deficiency anemia, Vitamin A deficiency remains the single greatest preventable cause of needless childhood blindness and increased risk of premature childhood mortality from infectious diseases. With 250 million children under five years of age suffering from sub clinical deficiency. Intrauterine growth retardation, defined as birth weight below the 10th percentile of the birth weight for gestational age reference curves, affects 23.8% or approximately 30 million newborn babies per year, profoundly influencing growth, survival, and physical and mental capacity in childhood (SAR-Economist, 2004).

Priyadharsini et al., (2000) conducted a study in which Chennai was sub divided geographically into four Zones and convenient sampling was adopted to draw 500 samples. Knowledge, attitude and practice (KAP) of iodized salt amongst the 500 sample so drawn were studied under two main routes of the “exposed” (consisting doctors, nurses, hospital attendees) and ‘unexposed’ (Consisting of officers, clerical staff and attendees) of the society. The statistical analysis revealed that the attitude toward the use of iodized salt was very good among 51% of hospital attendees and was poor among 83% of office attendees,

Research studies during the sixties and seventies documented the magnitude and health hazard associated with chronic energy deficiency iron, folate, iodine and VITA (Five-year plan, 1997-2002).

An investigation was conducted by Gupta et al. (2000), to evaluate the service provided under the Integrated Child Development Scheme (ICDS) to assess the nutritional status and prevalence of anemia in selected non-pregnant and non-lactating women (age 20-35 years) of low socio-economic group and to determine the impact of supplementation with iron and folate on their hemoglobin levels. Children 0-6 years, pregnant and lactating women received regular food supplement, immunization, and growth monitoring and
health checkup and referral service. Nutrition and health education was the weakest component of the programme. The knowledge, attitude and practice (KAP) of anganwadi worker were found to be inadequate. The mean daily intake of energy, protein, calcium, iron, vitamin A, vitamin C and riboflavin fell short of the recommended dietary allowances by 8.6%, 5.8%, 5.0%, 44.0%, 38.6% 34.7%, and 31.8% respectively while that of thiamine and niacin was more than adequate. The mean weight and height of the subject showed a deficit of 12.4% and 2.5% when compared with National Nutrition Monitoring Bureau data on urban women of high socio-economic group.

Prevalence rates of malnutrition are higher in female’s children than in male children (p<0.05) the factors explaining the variation were parent’s literacy, percapita resource possessions, percapita income family size and maternal occupation. The gender differentials are decreased significantly with better grades of maternal literacy and occupation followed by paternal literacy and percapita income. The differences between sexes are more revealing in middle or low income groups, in urban elite children, the difference are not significant (Rao et al., 2000).

Bagchi (1994) in the paper entitled Health Food habits and Nutritional scenario of the tribal community in the island of India, stated that 50% females were anemic and 16.7% have T.B., 66% female have poor to weak body build and they are not nutritionally well off.

A positive correlation between health and economic prosperity has been widely documented. Observational studies shows, that determinants of nutritional status, such as height and body mass index are significant predictors of economic success, Their interpretation is confounded by the fact that they reflect influences from early childhood and family background (Thomas et al., 2002).

Taiwar ' (1995) showed in her study that Meitei girls show distinctly more subcutaneous fat at all ages than boys. Mohapatra et al. (1990) found that the mean in takes of calorie protein, iron, folic acid and calcium by the pregnant women was much below the recommended dosages of ICMR. The attributable cause for a low intake of food ingredient was found to be the lower
literacy rate of the villages particularly that of women as well as ignorance of food and nutrient requirements during pregnancy (Rao et al. 1990.)

Rao et al. (1990) in the paper entitled indices and critical limits of malnutrition for use among adults revealed that weight for height found good, well correlated with weight / Height \(^2\). Anthropometrical indices were found different in male and female between income groups weight/ Height was positively correlated with all measurements. Some anthropocentric related study regarding nutritional aspect was carried by Rao (1970, 1980).

The Nutrition Foundation of India (NFI) has investigated the growth of Indian adolescent girls drawn from the most affluent section of population free from obvious dietary and environmental growth constraints. The study showed that the heights attained by the Indian Girls at their 12\(^{th}\) year were almost identical to those represented by the National Centre for Health and Statistics (NCHS) standard. However between the 12\(^{th}\) and 18\(^{th}\) years there was a divergence between the NCHS and Indian Growth Pattern. Thus the entire difference in the final heights attained in adulthood as between Indian girls and the NCHS subjects had acquired between their 12\(^{th}\) and 17\(^{th}\) years (Gopal, 1992).

Mayuri & Madhvilata (2000) found that the rural adolescents constantly measured lesser than both ICMR well to do and as well as NCHS standards for their respective ages. However they were found to be in satisfactory nutritional status according to Body Mass Index (BMI). Correlation results pointed out that age, class and over all socio economic status scores were significantly related to both weight and stature of adolescents.

Birth weight and fundal height increments during later pregnancy are low in under nourished pregnant women. Fundal height, (24.5) cm at 28 weeks of gestation identified women with higher risk for low birth weight infants. (Agarwal, 2002).

Khatri et al. (2000) did a study on 300 adolescent girls (13-14 years) of Bikaner city, comprising 100 from each economic group; (low, middle and high) to find out the prevalence of nutritional anaemia. The result of study revealed that mean height, weight and hemoglobin levels of all the subjects were below
the standard level for all three-income groups. Only 3% in Middle Income Group and 6% in High Income Group subjects had normal haemoglobin levels. Varying degree of anaemia was noticed in all the subjects.

A significant positive correlation was found between iron, folic acid, vitamin C and protein content of diets consumed by the subjects and their haemoglobin levels.

Sharma et al. (2000) carried out a study in Delhi Public School catering to the children of affluent families. A total sample size of 500 children was expected to be covered between the ages 4 and 17 years. Each age group with an interval of one-year had at least 200 boys and 200 girls. Parameters recorded for subjects included weight, height, mid arm circumference, skin fold thickness and blood pressure. The data showed that 26% of adolescents were over weight and 3.9% were obese.

Various studies have been carried out in field of malnutrition and nutritional status of girls studies shows, majority of women or female child or adolescents girls found malnourished (Pant, 2003; Karmarkar et al. 1995).

Growth, development and nutritional studies have always been carried out for betterment of society. Marked emphasis has been placed on the nutritional profile and health, how they can be altered by the nutrition, socio-economic status, climate, geography, biological factor etc. are of immense interest of different scholars because of their applied nature. (Phadke et al. 1971; McLance, 1971; Gurney and Jellife, 1972; Friscancho, 1978; 1974; Rao and Rao, 1975; Choudhary, 1975; Seth et al., 1975; Reddy et al., 1976; Gowrinath et al., 1976 Gupta, 1978; Seth, 1981; Rao et al., 1984; Kundu, 1984; Sighrol et al., 1984; Sharma, 1984; Gupta et al., 1985; Bhalla et al., 1986).

The adolescent and Youth years are marked by the psychodynamics of change interpersonal, interpersonal, and extra personal. Sexual awakening among young girls is a time of confusion when they are unable to express and articulate their sexual needs and desires (Jamshedjii & Sharma, 2003).

Jaishree et al. (2001) assessed nutritional status of 300 adolescents girl on the basis of Body Mass Index (BMI) at Parbhani (Maharastra) and found
that 89.0% of them were undernourished and 11.0% of them were of normal body weight. 60.3% of them were severely undernourished, 13.0% moderately and 15.6% mildly undernourished. None of them was obsess having BMI more than 25. Anaemia and vitamin A deficiency were the two nutritional deficiency disorders found in more number of adolescent girls of 13 years of age, while protein energy mal nutrition was noticed in more number of adolescent girls of 14 years of age and deficiency of B complex and vitamin C were found in more number of adolescent girls of 15 years.

**Bulliyya (2003)** has found 55.6% infants as malnourished in his study in certain block of Orrisa district. **Mahapatra (1990)** found the mean intake of calorie, protein and other nutrient by the pregnant women was much below the recommended ICMR allowances. It is due to lower literacy rate of the villages.

**Bains et al (2000)** conducted energy balance study on a group of 150 college girls comprising of equal number of hostlers and day scholars in the age group of 18 to 23 years from Punjab Agriculture University, Ludhiana and found that their mean height and weight were 160.2 ± 0.5cm and 51.9 ± 0.6 kg respectively. The average weight for height was below Life Insurance Corporation (LIC) standards (1965). Body Mass Index (BMI) classification indicated that 50 % subjects were normal, 21 % low weight normal and 21 % mild energy deficient. Very few subjects had moderate to sever energy deficiency while number of obese was negligible.

**Kurtz(1996)** has reported a stunting of 32% in Indian adolescents. The prevalence of under nutrition in them was 53%. Twice as many boys as girls were found to be undernourished.

**Parveen et al. (2000)** studied one thousand girls between 10 to 18 years belonging to various socio-economic status. They were assessed for height, weight, mid upper arm circumference (MUAC) and skin fold thickness (SFT) in Dhaka city, Bangladesh. Results indicated that, mean height at 10 years was 135.5±5.1 cm and increased linearly till 19 years (154.0 ± 5.9cm). A similar trend was observed with weight, the mean weight at 10 years was 32.1±5.1kg, increased to 44.1±5.5 kg at 19. MUAC and SFT also exhibited linearity. The mean height and weight for different ages was below the 50th
percentile of National Canter Of Health & Statistics (NCHS). The peak height velocity occurred at 13 years with a mean increment of $5.2 \pm 1.7$ cm, while the peak velocity of weight occurred at 14 years. The mean increase was $4.0 \pm 1.1$ kg.

Patwardhan et al. (1992), found in their study "Growth trends and nutritional status of school going children at Wardha" that Nutritional status of an individual depends on a number of nutritional and non-nutritional factors. A nutrition survey was carried out on 348 girls and 22 boys from rural and urban schools to assess their nutritional status and associated factors. Body mass index (BMI) for 10-19 years old children ranged from 13-18 as compared to 15-20 reported by National Institute of Nutrition (NIN). The weight of the children was 2-8 kgs lesser than those reported by the National Institute of Nutrition (NIN).

Wang et al. (1998) studied on 2079 and 1858 Chinese adolescents aged 10-18 years in the 1991 and 1993 surveys respectively found that prevalence of stunting declined from 23% to 19 % form 1991 to 1993. The prevalence of under nutrition was 12-13% among the participants during 1991-1993.

Tara Gopaldas (1981), Pushpamma (1982) carried out study on Nutritional status and Nutrient adequacy in Gujrat and Andhra Pradesh respectively.

Nagaraj (2003) has pointed out the risk factors of severe anaemia among pregnant women. 98.5% women were found to have anaemia. Maternal Disease and husband’s educational status were the two risk factors, which had strong association with anaemia during pregnancy. Height and weight of college students in Central India (1957-58) was surveyed by Berry (1965). Bhandari et al. (1972) has surveyed rural preschool children for nutritional anthropometry.

Girls found to be shorter and lighter at all ages when compare the United States urban Chinese and well nourished Indian children of Himalayan region. Majority of women were found malnourished in the study of Pant (2003).
Dietz (1998), examined the long term effects of childhood obesity on adult disease and found that obesity present in childhood or adolescence seems to increase the likelihood of adult morbidity and mortality.

Steven et al. (1990) have found an increased prevalence of obesity among adolescents without a change in energy intake, due to reduced activity and a resultant reduced lean body mass. They analyzed that among sedentary youth body fat could increase at a constant weight if lean body mass declines. Therefore maintenance of a dietary pattern can still be seen as a chief cause of obesity if energy requirements have been lowered.

In a small survey of effect of treatment of 15 selective eaters found that more boys than girls and more normal weight than other adolescents persisted to be selective eaters despite of counseling. The most common foods eaten by them were bread, chips, milk, breakfast cereal, chocolate, peanut butter, sausages or burgers. The average number of foods eaten was 7.4 (range 4-13 items). Brand specificity was high (Christie et al. 1999).

In a study of eating habits food and health related attitudes and beliefs of 400 male and 400 females in 18-30 years age range found that only 6-4% of their sample was under weight. Most of them were females and 1.8% of them were obsess. More men (65%) than women (56%) considered themselves to be right, slightly more men considered themselves it be under weight (19%) than over weight (16%) by contrast 38% women considered their selves as over weight. Women gave more importance to sleep time and control of body weight. Most of them consumed three meals a day and no more snack per day. Mo Monneuse, et al. (1997).

Wanda et al. (1996), in a study of factors influencing food consumption behavior and nutritional adequacy of college women found that 48% of their sample population was having recommended intake of 50% to 60% of energy from carbohydrates, 38% of them were having fat intake greater than 30% of energy. Mean intakes of all nutrients were above Recommended Daily Allowance except for energy, calcium and iron. Where as, Wolf et al. (1993), reported that 40% of students did not eat vegetables, except for potatoes or tomato sauce; 20% did not eat fruit; 36% ate at least four different types of
snack foods and 16 % of fifth grade did not eat break fast. Children who ate a school lunch ate significantly more dairy foods, fruits, vegetables and less snack food than those who brought lunch from home. Fifth graders ate significantly more snack foods and were more likely to skip breakfast than second graders boys had lower food group pattern scores than girls.

Levis et al. (1988), examined changes in food choice behavior, nutrition knowledge and attitudes of junior and senior high school students in a three-year national study of nutrition education. They found that participant's knowledge improved, their attitude towards nutrition became more positive, and their intention to include more healthy foods in their diet increased significantly.

Moore Dan (1988), in a study of adolescent girls and young women aged 12 through 23 years found that 67% of them were dissatisfied with their weight and 54% were dissatisfied with their body shape. Dissatisfaction with weight and body shape varied positively with increasing body weight but not with increasing age.

The United National World Food Programme (UNWFP) commissioned a project for improvement of tribal adolescent girls in Integrated Child Development Scheme (ICDS) of Madhya Pradesh The project was implemented in Dhar district of Madhya Pradesh in four In Integrated Child Development Scheme (ICDS) block named Gandhwani, Nalcha, Sardarpur and Tirla from December 1994 to January 1996. The study included functioning of Anganwari workers in the area. Nutrition and health education was found to be a week component in service delivery. A third to the Anganwri workers expressed their inability to organize nutrition and health education programme. because they were unable to meet the mothers during home visits, as they were busy in the farms. The most important reason for the poor implementation of the component could be attributed to the lack of basic information on the right message.

In a four state study on Integrated Child Development Scheme (ICDS) performance appraisal by Sharma (1993) was observed that the proportion of expectant or lactating women who had received health and nutrition education service was higher in Integrated Child Development Scheme (ICDS) area (38
to 65%) when compared to non ICDS (4 to 14%). In both the area, interpersonal communication was the most commonly used method for education.

Reproductive health concerns every one and is an integral part of normal human growth and development. Although National Family Planning Programme has been implemented in India since 1952, it is only in the late 1980s attention has been given to improve women's reproductive health and the Eight Five Year Plan has incorporated a Safe Motherhood Programme for lowering maternal mortality. However, these government programmes were vertically organized primarily concerned with demographic objectives of reducing fertility and mortality (Dey, 2005).

Reproductive and Child health (RHS-RCH) 1998-99 reveals alarming truth on the age of marriage for girls. 37% of the girls in India are getting married before attaining 18 years of age. National Health Family Health Survey (NFHS) II 1998-99 show that only 10% of the married adolescents of age 15-19 years use any method of contraception (Sen Shrabarti, 2004).

Grover et al. (2003) studied about knowledge of sex, sexual behaviours, sexual diseases among early adolescents in Delhi. Shah et al. (2003) studied the awareness among adolescent girls regarding childcare practices belonging to different socio-economic status.

In India 25-30% of the young women begin child bearing as early as 17 years (UNPF, 2000). In this context reproductive rights for women are significant. Reproductive rights have been defined to include not only a women's freedom to enjoy sexual relations and reproduction, namely when and how many children she wishes to have but also includes the recognition of the basic right of all couples and individual to decide freely and responsibly the number, amount of spacing.

National Family Health Survey (1992-93) pointed out the cause of maternal deaths are 22% bleeding during pregnancy, 19% anemia, 12% abortion, 13% toxemia, 13% puerperal sepsis, 6% mel position of child, 15% not classifiable. Studies have estimated about one sixth of all pregnant women seek abortion because they do not want contribution of pregnancy. Illegal induced abortion continues to be a major cause of maternal morbidity and
mortality. The major achievements of family welfare programme are: reductions in Crude Birth Rate (CBR) from 40.8 (1951) to 27.4 in (1996) Reduction in infant mortality rate (IMR) from 46 in 1951 to 72 in 1996 Increases in couple protection Rate (CPR) from 10.4% (1970-71) to 45.4% (1997).

In 1983, India formulated the National Health Policy, which provided comprehensive framework for planning, implementation and monitoring of health care services successive plans have evolved and implemented intervention programmes to achieve the goals set in the National Health Policy.

Reproductive health encompasses a range of health concerns, as indicated in the consensus definition emerging from the 1994, International conference on population and Development at Cairo, In this Reproductive health is defined as a scale of complete physical mental and social well being and not merely the absence of disease of infirmity in all matters to the reproductive system and to its function and process.

Bhattacharya et al. (1991) found the age of menarche among the Mahar ranges from 11 to 15 years. The mean menarcheal age is found to 13.98 ±0.12 years whereas mean age for menopause 43.03 ±0.50 years.

Several scholars studied about menarche and menopause. Nutrition socio-economic condition and state of health effect the monarchial age and menopause and in turn determine the reproductive span of women. (Clegg and Harrison, 1971; Baker and Dutta, 1972).

Windham et al. (2004) investigated the potential effects of commonly early life exposure on age at menarche. They examined data collected in a follow-up study of pregnancies that occurred during the 1960s in California. Among 994 females offspring interviewed an adolescents 98% has started thin menstrual period at a mean age of 12.96 years. Girls with both high prenatal and childhood passive smoke exposure had an adjusted mean age at menarche about 4 months earlier than those unexposed. The daughters mean age at menarche varied little by maternal prenatal alcohol consumption. Daughter of tea consumers had a later mean age but daughters of coffee consumers did not.
Knowledge level of pre-adolescent girls regarding menstrual hygiene is independent of the socio-economic status, education status of the mother and exposure to mass media. Studies show that the failure to adequately educate girls about their own anatomy and physiology has serious implication, studies also support the need for the menstrual education as a long term, continuous process, beginning well before menarche (George et al., 2003).

Global burden of disease study estimated that 27.4% of disability adjusted life years lost in to reproductive ill health (Bhatia, 2001).

Currently reproductive health has five major challenging issues of (A^6) i.e. Aids, Abortions (unsafe) Adolescents (their health), Advocacy (To make youth aware for health rights) and Availability and Accessibility of health services. Reproductive health should focus on sexual health beyond pregnancy contraception and abortion. Treatment of reproductive tract infections, gynecological services and child health care, that is they should encompass services for women of all ages including adolescents and women beyond the reproductive ages. The rationale for providing these services is to achieve a mutually caring, respectful and responsible relationship.


In India it is estimated that about 6 million abortion take place every year, out of which 2 million are spontaneous and 4 million are induced, of the induced abortions nearly 5-6 lack are legal and the rest are estimated to be illegal (ICMR, 1989). The proportion of maternal deaths due to unsafe abortions is 13 percent in less developed region of the world (WHO, 1998). Although unsafe abortions are a public health problem at all ages it is particularly so in case of young woman unsafe abortion is one of the most neglected areas of health.
The attack of sexual infection like AIDS, or unwanted pregnancy is purely the consequences of the behaviour of young ones. Young boys and girls get easily tempted towards experiencing sex. Youth by nature ignore the risk of getting infected and attempt self-experimentation (Berwal, 2005). Therefore it is necessary to advocate the rationalize social healthy atmosphere for young people. In which they can feel free to discuss their very personal issues and can perceive proper guidance and counseling which can very well cater their needs.

The multiplicity of health problems associated with specific type of behaviour include the consequences of unprotected sex, which increases the risk of early and unwanted pregnancy and child birth, unsafe abortion and sexually transmitted disease. Young people are of high risk and ratio of Sexually Transmitted Disease (STD) and the incidence among adolescent has been increasing noticeable in recent years. Recent data shows that the Acquired Immuno Deficiency Syndrome (AIDS) epidemic continue to shift towards women and young people with 28.72 percent of all HIV estimates to be women and 88.68 percent of AIDS cases are in the age group of 15-49 years (Berwal, 2005).

The trend of data clearly points out the lack of knowledge about Sexually Transmitted Disease (STD) and how to prevent them among youth, high sexual behaviour patterns and low levels of contraceptive use, unprotected sexual behaviour among adolescent and youth can have severe consequences particularly for girls, through unwanted pregnancy maternal mortality, abortions and HIV/AIDS (Kapasi, 2004).

Women's education and accessibility to mass media were major determinates of hearing / knowing about Acquired Immuno Deficiency Syndrome (AIDS) as well as prevention of the disease (Aryal, 2000) In Egyptian study using Abdalla - Burchett Acquired Immuno Deficiency Syndrome (AIDS) Awareness Inventory (ABAAI) revealed a significant relationship between socio-economic status and Acquired Immuno Deficiency Syndrome (AIDS) awareness indicating that whether the individual know the more details in his/her knowledge of relationships between the intravenous drugs use, unsafe sex practices and HIV transmission (Abdalla, 1999).
Awareness regarding Reproductive Tract Infection (RTI), Sexually Transmitted Infection (STI) and HIV- Acquired Immuno Deficiency Syndrome (AIDS) is very marginal (41 percent among female and 57 percent among males) in India. There is significant degree of variation in interest levels of awareness, Awareness of HIV/AIDS is 97.1% and 91% for males and female respectively in Kerala which is highest compared to other states. Where as in Bihar of is only 39% for males and 13% females (Krishnaiah et al., 2001).

Balk and Lahirı (1997) using National Family Health Survey NFHS-I data found that major states of India, only 17% of the women had heard of Acquired Immuno Deficiency Syndrome (AIDS) and among those women level of knowledge about HIV transmission and prevention is very poor.

The report based on analysis and the 5321 cases screened in the year 2000 at Post Graduate Institute of Medical and Research (PGIMER), state that 346 were Human immuno deficiency virus (HIV) positive (Positivity rate 6.3-7 per 1000) including (65.89%) males and 34.1% females. Maximum number (52%) belonged to the state of Punjab while other northern state Viz-Haryana Himachal pradesh, Uttar pradesh, Jammu and Kashmir and few from other state also contributed. Most of the cases (70%) were from the highly reproduction age group of 20-40 years. The major route of transmission in heterosexual exposure similar to the national estimate of 85.35% made. This study warrants serious efforts on the part of Acquired Immuno Deficiency Syndrome (AIDS) control agencies in intra with respect to planning control measures and generating awareness among masses so that this trend could be stopped (Datta et al., 2002).

A community based, analytical study carried out among 13-19 years children of school, intermediate and graduate class and in Maharashtra indicated that the general awareness about Acquired Immuno Deficiency Syndrome (AIDS) AIDS is very high, with more than 90% of the respondents having heard of Acquired Immuno Deficiency Syndrome (AIDS) and also identifying it as an important health problem in our country less than 50% knew correctly about the etiology of Acquired Immuno Deficiency Syndrome (AIDS), or the difference between Human immuno deficiency virus (HIV) and Acquired Immuno Deficiency Syndrome (AIDS), A very high proportion of the subjects
knew about the modes of transmission though a much lesser proposition head
the knowledge about the role of improperly sterilized syringe and needles. There is a general lack of awareness was found about other sexually
transmitted diseases. Lacunae in knowledge also existed as regards
knowledge about high-risk groups, like commercial sex workers, intravenous
drug abusers and professional donors. A very large majority of the subject had
a very positive and healthy attitude about sex, and did not accept pre or extra
marital sex, as well as were desirous of obtaining Acquired Immuno Deficiency
Syndrome (AIDS) education as a part of school / college curriculum.
(Bhalwar et al., 2003).

Study of Kaur et al. (2001) highlight the issue of spread of Human
immuno deficiency virus (HIV) and cultural influence, socio-cultural factors
make more differ cult to prevent Human immuno deficiency virus (HIV) from
spreading. Poverty in addition complicates further situation.

Study has been carried out to develop a dynamic simulation model for
Botswana and India, to identify the best strategies for preventing spread of
Human immuno deficiency virus (HIV) and Acquired Immuno Deficiency
Syndrome (AIDS). Finding suggests that in India a sex worker intervention
would drive the epidemic to extinction. Mother to child transmission
programmes could reduce Human immuno deficiency virus (HIV) infection. In
long run, intervention targeting sexual transmission would be even more
effective in reducing the number of Human immuno deficiency virus (HIV)
infected children than mother to child transmission programmes.
(Negelkerke et al., 2002).

Philpott (2002) studied the relation of research finding and policy for
Human immuno deficiency virus (HIV) and Acquired Immuno Deficiency
Syndrome (AIDS) with the help of some case study, the major finding of the
policy analysis case study were that policy shift was a cumulative but linear
process. Researchers and policy makers had similar views and political
environment. Key moments of communication tended to involve personal
contact the case study illustrates the need to take a contextual view of the inter
action between research policy, and understand how changing political
contexts affect receptivity to research out comes.
Some 40 Million women in India have an unmet need for contraception. (National commission on population, 2002).

In the study of Venkalesh et al., (2005) it is revealed that there was a better awareness of health promotion availability of existing health services leading to better utilization of the same by the educated mothers where as, it was otherwise amongst, illiterate women who were bound by cultural and superstitious beliefs. Marriages are early and almost universal in India in the study mean age at marriage was 17.0 years which is less than the legal age of marriage.

In most of the world, family planning programs, have had great success in slowing population growth, yet in many countries, these programmes tend to reach older woman often after they had desired number of children, even as family planners encourage woman to plan this family size and adequately space births, the youngest married couples are often over looked. (Allaudin et al., 1999).

As many as 40% of all young women (aged 15-19 years) in India are already married. 17% of all adolescent females (aged 13-19 years) are already mothers or are pregnant with their first child. (Jejeebhoy, 1996).

Research in diverse settings has shown that condoms are often regarded as more appropriate for non marital than marital relationships. Although couples have knowledge of condoms and where to obtain then was very high, only 15% of man and 19% of women reported consistent or occasional use, the level of use was 8% and 11% among man and women, respectively. A majority of urban women had favorable attitudes towards condoms. (Maharaj et al., 2005).

Data from National Family Health Survey (NFHS)-II show that 21% of births in the three years preceding the survey were unplanned. Of these- 12% were mistimed and 9% were definitely unwanted (IIPS, 2000).

Various studies based on National Family Health Survey NFHS-I data show that even after controlling for the effects of other factors, education remained a key factor influencing contraceptive use (Rutherford et al., 1996).
Preventing pregnancies among recently married may have a long-term
demographic impact (Singh, 1998).

Mothers want their daughters to be educated and professionally sound,
because they feel that they themselves could not get such an opportunity.
Further study reveals that majority (94%) of the mothers want to have son as
their first issue. 52% of mothers want their daughters educational level to be up
to graduation (Sharma, 1999).

Study of Pathak et al. (2001) shows that there is a strong positive
relationship between the utilization of antenatal services and the socio-
economic background of mothers in terms of literary, place of residence and
standard of living. It has also been found that women utilizing antenatal care
services have a rather longer birth interval. The use of antenatal care (ANC)
service motivates pregnant women to deliver in a hospital or at home attended
by health professionals.

Saraswathi and Gupta (1985) made a study of fertility, family planning
and status of woman taking a sample village of Gujrat. They have presented
the findings related to the health care including pregnancy, childbirth and
fertility control.

Das (2002) made a query of acceptors and non-acceptors of family
planning methods and found marginal difference between acceptor and non-
acceptors.

Empirical studies have shown that the estimated negative co-relation
between the use of family planning and infant mortality is extremely high
(Ahmad et al., 2002).

Nair (1970) has studied the factors influencing desired family size. He
found younger people (20-24 yrs old) to be more positive towards small family
than older people. Those who had knowledge of contraceptives preferred small
family size. Education of the respondent has an inverse relationship with
desired family size.

Reddy (1984) has analysed the influence of socio-economic and
demographic factors on family planning behaviour among non-adopters. Gupta
(1991) has analysed the possible implication of family planning programme.
A survey that was aimed at obtaining information for use in designing programs to reduce the incidence of adolescent pregnancy in Liberia. Result of study indicate that a substantial unmet need on the part of liberation among adolescent with respect to reproductive health knowledge, information and access to contraceptive methods (Nicholas, 1987).

Whereas Gairola et al. (1986) had studied about modern contraceptive practice in rural Appalacnia. They found wide spread use of modern contraceptives and sterilization among all educational and income groups.

Khan (1987) review the relationship between employment of women and fertility, and found this relationship is mainly situational and non fixed, it is evident that whenever it exists, it is inverse, he also studied the role of women in the process of decision making in family found, women who is main actor in all the stages of family building process, plays marginal or no role in this area.

Rajusiva (1987) studied the husband wife communication regarding contraceptive behaviour ,the study has been undertaken among family planning adopters and non-adopters belonging to two extreme regions in Andhra Pradesh.

Association between the socio-economic variables and adoption of contraception is found highly significant. Association is more pronounced among the Hindu than the schedule caste (Raju, 1987).

Higher literacy and high rate of acceptance of family planning methods has been observed among three tribes studied by Mutharayappa et al. (1995).

Dwivedi (1993) studied the family planning attitudes in employees of Banaras Hindu University (BHU), the employees of Banaras Hindu University (BHU) expressed their attitude towards approval of family planning in majority (86.1%) among the factor affecting attitude designation and education emerged as significant.

Family planning programme started in India in 1952. Since its inception, several studies have been conducted on different aspects of family planning programme in India.
Gopalrao (1974) has taken over 550 studies from 1951 to May 1974 and reviewed the literature in her book. These studies indicate the trends and differentials, policy and implementation methods and their uses, and knowledge, attitude and practices of the people with regard to family planning. The trends and differentials were studied by estimating fertility of the population contraceptive use and acceptance studies were generally follow-up. Studies of users of various contraceptives and concentrated primarily on the demographic and socio-economic characteristic, fertility status, experience and use satisfaction. The studies of the communication system in family planning programme covered media evaluation, interpersonal communication and its effect on mass publicity campaigns and integrated media approach. The knowledge, attitude and practice studies (KAP) have been the most popular studies at all points of time and they continue to be basic regardless of charges in the programme emphasis. In the late fifties and sixties these studies were purely descriptive but after seventies they were mainly evaluative.

The programme evaluation, organization planning commission of India, carried out a study of 16 states of India with a view to studying the extent of availability of services and their utilization examining the approach and effectiveness of mass education and community programmes, assessing knowledge, attitude and practice of the adopting and non-adopting groups finding out the popularity of different methods advocated and reasons for non-adaptation, reviewing arrangements for training staff and studying problem of implementation of programme of different levels.


The level of Education of father and mother also play important role in child bearing age of mother (Nayer, 1974). Education of mother has great impact on reducing the size of family (Singh, 1989; Arora, 1990 and Vashisht et al., 1991). Reproductive patterns and behaviour age at marriage, birth interval, size of family depends upon viability of young children and the probability of their survival (Ruzicka and Kane, 1987). Wadia (1984) has
given a detailed account of the progress of family planning programme in India. He has also analysed the role of non governmental sector in this respect. **Naik and Sharma (1985)** have made a study of two hilly Bhuiyan tribal villages of Orissa. In this study they have analysed the relationships between social structure and family planning. **Swaminathan et al. (1986)** have made an attempt to find out the nature and extent of adaptation of family planning in agriculturally developed and less developed region of Tamilnadu.

Infection and disease due to microbe, which spreads through casual human contact is determined by the presence of the agent in a community and its incidence has predictable frequency. Examples are polio, meseals, diptheria, hepatitis etc. Diseases due to infections transmitted through an intermediate vehicle, such as vectors, faecal contamination of food water, animal bite etc can be prevented by environmental hygiene and by immunization. It is well known fact that malnutrition and infection are interrelated. Infections are more serious in malnourished children and may lead to prolonged ill health, loss of weight and even death. Immunization protects children against some of the most dangerous diseases of childhood. A child is immunized by vaccines, which are injected or given by mouth. The vaccines work by building up child defenses.

**Angelillo et al., (1999)** evaluated knowledge attitude and behaviour of mother regarding the immunization of 841 infants who attended public kindergarten in Cassion and Crotone (Italy). Overall 57.8% of mother aware about all four mandatory vaccinations for infants (Poliomyelitis, tetanus diphtheris, hepatitis B). The result of a multiple logistic regression analysis showed that this knowledge was significantly greater among mother with a higher education level and among those who were older at the time of child birth. Respondent’s attitude towards the utility of vaccination for preventing infectious diseases were very favorable. Almost all children (94.4%) were vaccinated with all three does of diphtheria tetanus (DT), oral poliovirus vaccine (OPV) and hepatitis-B the proportion of children vaccinated who received all three doses of oral poliovirus vaccine (OPV), diphtheria tetanus (DT) or dipheria-pertusis-tetanus vaccine (DPT), and hepatitis B vaccines within 1 month of becoming age eligible ranged from 56.6% for the third doses of
hepatitis B to 95.7% for the first dose of OPV. Results of the regression analysis performed on the responses of mother who had adhered to the schedule for all mandatory vaccination indicated that birth order significant predicated vaccinated non – adherence since children who had at least one older sibling in the household were significant less likely to be age appropriately vaccinated. The coverage for the optional vaccines was only 22.5% and 31% for measles, mumps, and rubella and for all three doses against pertussis respectively. Education programmes promoting pediatric immunization, accessibility and follow-up should be targeted to the entire population.

Findings of Singh (1997) study in rural and urban areas of Uttar Pradesh reveals a high dropout rate between the first and third dose of DPT/oral poliovirus vaccine (OPV) of 27%. Children of scheduled castes and schedule tribes and children of illiterate mothers had lower immunization coverage than others.

Pulse polio immunization study in Gujarat shows that the coverage of children for Pulse polio immunization (PPI) was positively associated with the education of the their mother/father. Education of parents play a role in enrolling relatively higher proportion of children for immunization against childhood diseases. Castes also influenced immunization coverage level Gangdotra et al. (1997).

National Family Health Survey 1992-93 results indicate that the universal immunization programme has met with only limited success in MP, which is one of the backward states in India (Dey, 2005).

A report that estimates the effects of selected demographic and socio-economic characteristics on immunization coverage shows that children are more likely to be fully immunized if their mothers are more educated. If their mother received antenatal care, or if their mothers are at least 20 years old. More over children living in non crowded houses, and boys are more likely to be fully immunized than other children (Munshi, 2000). Some studies show that severe stunning and immunization are serious health problems among rural Indian children (Pandey, 2000).
The Madhya pradesh government aims to achieve total immunization of 70 % by 2005 and 90 %by 2009 (State Population Policy, 2000).

The effectiveness of an IEC (Information education and communication) package on improving the knowledge and attitude regarding sex education, Sexually Transmitted Diseases (STDs) and Acquired Immuno Deficiency Syndrome (AIDS) and nutrition of non-school going adolescent girls has been studied by Shetty et al. (2001).

Goel et al. (1998) studied effect of media combination on child nutrition related knowledge and attitude of rural mothers. The impact of nutrition education imparted through a combination of media to rural mothers in Pantnagar labor colonies was studied. Message on child nutrition was emphasized. Knowledge again at post - exposure stage was significant, however knowledge retention by the 45th day declined by 17.7% significant positive correlation existed between knowledge and attitude. Education level (schooling) of mother positively influenced their attitude towards correct nutritional practices.

Paramjit et al. (1995) studied sixty-six pregnant women belonging to low socio-economic group who were divided equally into nutrition education and control group at 20± 2 weeks gestation. Sixty-one subjects could be followed up till delivery. Nutrition Education group was imparted nutrition education for 13 weeks about additional nutrition needs during pregnancy. Dietary survey conducted at 20 ± 2 weeks and 86 ±2 weeks of gestation revealed that diets were inadequate in cereals, pulses, and green leafy vegetables and marginally adequate in fats and oils and sugar and jaggery. However it was adequate in milk and milk products, other vegetables and roots and tubers.

Sumana et al. (2001) assessed the impact of nutrition education on anaemic adolescent girls from college and slum areas of Anantpur town, Andhra Pradesh, India. The primary survey indicated poor nutritional and iron status of adolescent girls with haemoglobin status less than 11gm / dl. Examination of pretest scores of the selected subjects revealed less knowledge, improper and poor dietary attitudes and practices regarding iron
nutrient. The nutrition education resulted in significant increased in the subject's knowledge attitudes and practices.

**Vidya et al. (2000)** studied the role of information education and communication (IEC) in control of iron deficiency anemia among the rural pregnant and lactating women. The impact of information education and communication (IEC) on rural subjects was assessed and the retention of message imparted assessed immediately and one month later to assess the effectiveness of information education and communication (IEC). Analysis of somatic status and hemoglobin status indicated that the population was inadequately nourished which was evident by their low somatic status. The mean height weight and skin fold of the pregnant and lactating women (149.8 cm 47 kg, 11.25 mm and 152.1 cm, 45.5 kg 11.2 mm respectively) indicated that the weight of the pregnant and lactating women was much below the Indian council of Medical Research (ICMR) standard and skin fold was also below National center for Health and Statistics (NCHS) standard. The adequacy of iron intake was around 65.3 percent and 82.9 percent for pregnant and lactating women respectively.

**Bhattacharya et al. (1997)** conducted to evaluate the impact of different methods of health education on rural mother regarding oral rehydration therapy to find out associated between changes of Knowledge Attitude & Practices KAP through different method of health education.

**Deshpande et al. (2001)** carried out a study to impart nutrition education to rural women in order to improve their nutritional status and know the effect of various education /training programmes. They offered a training and education programme to 160 rural women to popularize soy food. The results indicated that nutrition education programme brought about a marked improvement in their dietary pattern.

**Hemalata et al. (2000)** in a study of impact of an awareness creation programme for women of nutrition through green leafy vegetables found a remarkable increase in the frequency of consumption of greens after five months follow up period.
Girls are the core of human resource only healthy female can make socio-economic upliftment of the country. College girls are in reproductive age and are future mothers, their attitude and awareness towards family welfare programme is significant. Improvement in the health status of the population has been one of the major thrust areas of the social development programme of the country. This is to be achieved through improving, accessing, and utilization of health and family welfare services with special focus to reproductive health. Therefore it is necessary to have health concern information for the understanding of dimensions and magnitude of awareness towards health and family welfare programme among reproductive age group.

Death due to complication related to pregnancy and childbirth are the leading cause of mortality of women in the reproductive ages in developing countries. Health status of Madhya Pradesh Shows (Infant mortality Rate) IMR/1000 live births is 90 and < 5 mortality / 1000 is 137.6. (National Health Family Health Survey) NFHS – II, National Health Policy (2002). India is among "slow progressing nation" in child and maternal care. In spite of various efforts the current health status of mothers and children is poor and needs considerable improvement in Madhya Pradesh. Madhya Pradesh is one of the states where maternal mortality rates are as high as 700 or more (WHO, 2005). The report points out that these deaths can be reduced through wider use of key intervention and a "Continuum of care " approach for mother and child, beginning before pregnancy. Therefore, It is necessary to educate the youth and make them aware regarding role of health and nutrition before conception during pregnancy and later in lactation period for mother and child keeping them healthy.

Every five minutes an Indian woman dies from complication related to pregnancy and childbirth, adding up to approximately 1,30000 women deaths per year. These are the findings of latest report by UNICEF on maternal health in India. Maternal Mortality Ratio of India has been seen to be as high as 407 maternal death per 1,00000 live birth, four times higher than the National Population Policy (NPP) 2010 goal of 100 per 1,00000 live birth. According to report state like Madhya pradesh and Uttar pradesh the Maternal Mortality Ratio (MMR) is as high 700 or more. Marriage and childbirth at an early age
has been found to be the leading reason for the problem. The other important reason, which finds prominent place in the report, is the "lack of access to emergency obstetric care". Inadequate nutrition short birth interval, lack of support from the family members is the other important reasons for the high Maternal Mortality Ratio (MMR) in India. NFHS III reported in Madhya Pradesh, the number of under nourished children has gone up from 54% to 60%. The survey has reported a rise in number of severely undernourished children to 33% from 20% eight years ago (World Health Report 2005).

A critical review of previous studies clearly indicate that hardly any study concerning nutrition and awareness has been carried out specially among college going youth of different categories i.e. General, other backward class, schedule caste and schedule tribe especially in Central India including Madhya pradesh, which is essential and important for the effective planning of health education and effective health care programme aimed at improving health status of women.

Keeping this in view the objectives of the study are:

- To assess the nutritional status, with the help of nutritional anthropometry.
- To study extent of awareness towards family welfare programme.

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