

**CHAPTER - V**

**DISCUSSIONS**

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Early childhood constitutes the foundation of adult productivity and nutrition is a major determinant of the quality or strength of this foundation. Infancy is perhaps the most critical and vulnerable period. Hence sound health of children means more to any nation or society. Nutritional status is one of the critical indicators of health, therefore, regular nutritional assessment is important to monitor the health of the children .

The results of the study were discussed under the following headings.

### 5.1 Socio-demographic profile of study families

Early childhood constitutes the foundation of adult productivity and nutrition is a major determinant of the quality or strength of this foundation. In the vast biological strength of early childhood, infancy is perhaps the most critical and vulnerable period. Nutritional status is one of the critical indicators of health, therefore, regular nutritional assessment is important to monitor the health of the children.

Out of 102 children registered, 57 (55.9 %) were male and 45 (44.1 %) were female children. In the present study, the observed sex ratio at birth

was 739 female per 1000 male. The result showed that 88.2 % children understudy belonged to joint families as against 11.8 % to nuclear families. It evidenced that joint family system is still quite prevalent in the population under study . All registered children belonged to Hindu religion only. Lowest number of children belong to schedule tribe (5.9 %) as against 23.5 % schedule caste and 70.6 % to other caste category. However, it depends upon the proportion of different caste groups in the community. Maximum number of families belonged to low socio-economic status (58.8 %) where as only 34.3 % were of middle and 6.9 % of high socio-economic status.

## 5.2 Maternal factors

The mean age of mothers in the study was  $27.7 \pm 4.3$  years. Maximum number of mothers (48.0 %) were in the age group of 26 - 30 years which was followed by mother of 21-25 years of age (22.6 %). Young mothers between 15-20 years of age constituted 4.9 % of total strength, where as 9.8 % of mothers were 35 years of old which indicated that, pregnancies of later age was existing in the study community. Literacy status of mother was found to be satisfactory (80.4 %) which was high in comparison to state female literacy rate (34.7 %) and district female literacy rate (44.9 %). Out of 102 mothers, 67.7 % were housewives followed by 28.4 % daily labourer and only 3.9 % were service holder. In the present study, the percentage of female workers were high as compared to the state figure (20.79 %) (the progress of Indian states, 1995), 90.2 % mothers received antenatal care and only 9.8 % mothers not received the same. Among the receiptant of antenatal care, 38.2 % have received adequately

while 52.0 % received inadequately. The coverage so achieved was due to door-to-door services of the Anganwadi Workers of the ICDS scheme.

Among the various parameter of intranatal care, the extent of normal, prolonged and instrumental delivery cases were in the order of 67.7, 24.5 and 7.8 % respectively.

Similar trends have also been reported by Singh *et al* (1993) and Sokhey *et al.* (1993) who also opined good coverage of antenatal care services.

Again for the Table 4, it was observed that maximum delivery cases have been attended at home (64.7 %) and minimum being at nursing home (6.9 %) while at PHC and hospital 15.7 % and 12.7 % of cases have been attended, respectively.

Similar finding was reported by Singh *et al* (1993) that deliveries were mostly conducted at home 38 % and rest were in nursing home and hospitals.

Khare *et al* (1993) reported that the delivery at home by skilled or unskilled women was common in most families in UP (61.5 %), Bihar (60.0 %), M.P.(62.2 %), Assam (61.4 %), Maharashtra (52.8 %), Rajasthan (51.8 %) and Punjab (51.6 %) which was significantly higher ( $p < 0.001$ ) as compared to families in H.P. (48.2 %), Gujarat (32.1 %) and Kerala (16.1 %).

In the community studied, 43.1 % of delivery was done by untrained persons like untrained Dhai (38.2 %) and family members (4.9 %). Among the trained persons maximum cases were attended by nurse (30.4 %) followed by doctors (17.7 %), only 8.8 % of delivery was done by ANM. Even some deliveries were attended by trained personnel like ANM (8.8 %) and nurses (30.4 %). Thus around 57 % birth were attended by trained personnel which is a good sign for better MCH care in the community.

Singh *et al* (1993) reported in their study that in ICDS areas the person conducting deliveries were dhai in 81 % cases, health worker in 9 % and doctor in 8 % cases.

The association between maternal age and birth weight of children as depicted in Table 5 indicated that maximum children have normal birth weight (63.7 %) and 36.7 % have low birth weight. Highest cases of children with low birth weight (90.0 %) were observed in the mother age group of above 35 years where such cases were low 13 % in mothers in the age group of 21-25 years. The difference thus observed in the above cases was significant statistically.

Singh *et al.*(1993) indicated that 8 % of pregnant mothers were aged above 35 years thereby the need of intensification of family planning programme in the area is suggested.

Table 6 indicated that in the community maximum families under study belonged to low socio-economic group (58.8 %) while a minimum of 6.9 % belonged higher socio-economic group. In case of higher socio-economic group birth order was restricted to 3rd order in contrast to middle and low socio-economic group where the birth order increased beyond 3rd order. The birth weight of children decreased in case of middle and low socio-economic group. This may be due to lack of care and food of the pregnant mother. Maximum children (84.2 %) having low birth weight were of above fourth birth order where as, children (82.4 %). Children of first birth order showed mostly normal weight at birth. It was observed that, two of them had 9th para and 18th para who were both male children because of the late pregnancy in mothers for getting male child in the community. Such tradition affected family planning programme.

### **5.3 Feeding practices**

WHO (1978) code for breast feeding and marketing for infant weaning foods, the breast feeding practices have gained considerable importance (UNICEF,1979). It is well known that breast fed infants have lower morbidity and mortality in different countries.

Nutritional status of infants depends on feeding practices that prevailed in the community. The present study showed that in 36.3 % cases breast feeding was started in between 6-24 hours which was closely followed by 25.5 % cases where such feeding began within 6 hours of birth. However, only

in 1 % case, the breast feeding was started 7 days after birth due to breast problem. As a whole 61.8 % children received breast milk within 24 hours of birth.

Jena (1997) reported that most mothers (40 %) started breast feeding within 24 hours of delivery which corroborates with the present findings.

Sunita *et al.* (1997) reported that in Cuttack district, the use of breast milk as the first feed was less common though giving colostrums was common practices by mothers of the study area.

From the Table 9 showed that majority of mothers(74.5%) preferred to give prelacteal feeding with boiled and cooled water (56.6 %), honey water (25.0 %) and sugar water (18.4 %) where as 25.5 % of mothers gave exclusively breast milk to their children after birth.

Similar finding was observed by Khare *et al* (1993) in the states like Kerala, Bihar, Maharastra, Rajasthan and Punjab. The maximum (51.3 %) families of HP were found to use honey as first feed. The use of diluted or pure milk was mainly observed in UP (35.4 %), Maharastra (23.4 %) and Bihar (13.2 %). The families using breast milk as first feed was found 42.2 % in M.P.

Khare *et al* (1993) again reported that the breast-feeding within first day was observed mainly in Kerela, Punjab, H.P., Assam and only 27.8 - 46.9 % in other states. The practice of 1st feed in the second day was also mainly prevalent in Assam, Bihar, U.P., M.P., Maharastra, Gujarat and Rajasthan while M.P. and H.P., after 3<sup>rd</sup> day 12.1 % families were found to give breast milk first.

Table 10 indicated that 97.1 % children were breast feed alone at the age of 1 month where as, 2.9 % children have received top feeding along with breast feeding which was due to insufficient supply of the mothers milk. At 4 months of age, 37.3 % of children were introduced with supplementary feeding. At the age of 7 months, 58.7 % children have received supplementary feeding along with BF in contrast to 37.3 % continued BF alone, with some quantity of boiled and cooled water. At the age of 1 year, 5.9 % of children still continued BF alone incase of SC and ST families. After 15 months of age no body was observed to continue breast feeding alone. But 62.7 % had continued along with supplementary feeding. Prevalence of only breast feeding by 4 (3.9 %) number of children at the age of 12-15 months was of much concern. Martine (1989) has shown in the study 41.0 % of infants were on BF at 6 months of age among them 2.2 % infants were only breast fed which is very similar to the present study.

Kalra *et al* (1982) reported that all the mothers preferred to breast fed their babies at birth. By 6 months, 28.8 % urban and 7.6 % Rural mothers, respectively stopped BF which was similar to our present findings.

Rajammal *et al.* (1999) reported that prevalence of exclusive breast feeding dropped off to 41, 33, 35 and 39 per cent respectively for the four income groups after three months. Only 10 per cent of the high income group had continued to breast feed their infants inclusively after three months.

Mothers introduced multiple substances as supplementation. Cow's milk was used most frequently(42.2%) by the mothers of the study area. Commercial milk formula, Sogo water and Chuda powder (rice flakes) were used by 26.5 %, 15.7 % and 10.8 % by them respectively. A few mothers(1.9%) in ST families used cooked rice water whereas in SC families (2.9 %)mothers used to give sugar water as prelacteal feeding.

Use of fresh animal milk as a feed by majority have been reported from several early investigators (Gupta *et al.*, 1975, Katiyar *et al.* 1981 and Gayatri *et al.*, 1997). Use of honey and sugar water as first feed which was reported from various part of the country as the usual first feed was used only 2.9 % of the mothers in the study. Buffalo milk was mainly used in Punjab (64.9 %) and by 30-40 % families of Rajasthan, Gujarat, Maharastra, UP and MP (Khare *et al.*, 1993).

The reason of starting of early supplementation with breast feeding at 4 months of age was assessed from the mothers. Most of the mother (40.2 %) have opined that, they have supplemented food on the advice of AWWs and 21.6 % of mothers supplemented as they were working outside. A few mothers

(7.5 %) have started supplementary feeding earlier because of another pregnancy. However, only 2 % mothers started such feeding owing to the reason of breast problems to stop breast feeding and initiated artificial feeding.

## **5.4 Immunization status**

The present study focused only 35.3 % children as completely immunized with 3 doses of DPT and 3 doses of OPV each, one dose of BCG and one dose of measles. Majority of the children (82.4 %) in the community have not received Vit-A prophylaxis where as 2 % children have not received DPT and OPV. These dose schedule is recommended because it provides immunity to almost all the children(Ghai *et al.*,1980) 64.7 % of children have not received the doses of measles vaccine though it is a common disease in early childhood and 21.6 % of children have not received BCG vaccine . According to Chadha *et al* (1997), BCG vaccination coverage was higher in Bangalore city.

Similar trends was also reported by Jena (1997) in her M.D Thesis.

## **5.5 Morbidity and source of treatment**

The risk of death from common childhood diseases is doubled for a mildly malnourished child, tripled for a moderately malnourished child and may be as high as eight times for a severely malnourished child (Gupta, 1983).

The morbidity status of study children were observed in monthly intervals .Out of total 1676 episodes of illness upto 2 years of age, 47.8 % diarrhoea, 32.3 % common cold, 6.5 % skin disease., 2.6 % ear discharge, 1.0 % measles and 9.3 % other diseases like malaria, vomiting, stomach pain etc. were observed. The average episodes rate per sick child was found to be 16.4 %. Minimum morbidity rate 2.4 % was observed during 0 to 6 months of age and maximum during 13 to 18 months of age in general. Morbidity rate increased with increasing age from 6 to 18 months and then its rate declined towards 24 months of age. The rate of morbidity from birth to two years of age was higher in male (16.80 %) than female (16.0%). The peak period of spell was between 7 months to 18 months of age, irrespective of sex and it decreased subsequently. But incase of fever, stomach pain and vomiting was more prevalent in male than in female children.

The observations from Table 16 indicate that maximum treatment during illness were from homeopathic doctors and practitioners (40.2 %) followed by AWWs (26.1 %) and allopathic doctors (13.0 %), while minimum treatment was accorded from Ayurvedic sources (5.0 %) and home remedies (8.6 %). It was observed that, preference for the homeopathic treatment by the mothers of the study community was due to its low cost, low residual effect and further they think that it was safe specially for children. In case of measles, more than 50 % mothers preferred home remedies while 28.5 % preferred homeopathic despite of availability of other facilities like MOs, AWW, Auyurvedic etc. Though

some medicines were available with AWWs, the mother did not prefer them as they were uncovered and without specification of expiry date.

## **5.6 Growth pattern of children**

Growth monitoring is an essential tool of child health, surveillance and supervision.

The overall mean weight of male children were slightly higher than that of female children during the longitudinal study from 0 to 24 months. Though the children doubled their birth weight at 5 months irrespective of sex, did not show trebling at one year and 4 times at the age of 2 years, in case of male children only. However, in case of female children, although trebling at one year was noticed, but did not show 4 times at the age of 2 years. It was found that growth faltering started after 6 months of age in both the sex. In the present study, both male and female children, the mean weight was lower than the WHO standard weight during 0 to 24 months of age. But the mean weight in 3, 6, 9, 12 and 24 months of age of both male and female children were higher side in comparison to ICMR standard (1984). The percentage deficit of weight in comparison to WHO standard varied from 19.0 - 24.0 % and 14.3 - 15.3 % respectively for male and female children from 6 months to 24 months of age. However, the percentage deficit was higher in male than in female children. These findings pointed out that there is no gender bias in infant feeding and rearing practices.

Growth of the child starts to falter and the process of becoming malnourished tends to start at around 4-6 months of age. The age at which the child needs to be introduced to semi-solid foods in addition to breast feeding (Gupta,1983).

Similar trend was also observed by Leela *et al.* (1990) that beyond five month, there was a faltering in the weight curve while the infants doubled their birth weight at fourth month, they did not show a trebling even at the age of one year.

The mean height of both male and female children have lower value as compared to WHO standard height at all stages of growth from 0 to 24 months of age . The over all mean height of male children were slightly higher than female children during 0 to 24 months. The maximum deficit of 9.7 % and 7.3 % at six months of age were observed in case of male and female children respectively and at 24 months of age the deficit declined to 8.4 % and 6.7 % in case of male and female children respectively. The overall percentage deficit of standard height in case of male was more than female children which may be due to chronic malnutrition , morbidity and faulty supplementary feeding.

Jayalakshmi *et al.* (1992) reported similar findings in ICDS area that higher percentage of male children were malnourished than females.

## 5.7 Nutritional status

In nutritional status of children aged from 0 to 24 months as per the ICDS growth chart it was observed that, the malnutrition among the children increased with advancement of age. It was further noticed that among the malnourished children, majority cases belong to Group 1 followed by Group-II. The difference between normal and malnutrition was significant statistically. The increasing rate of malnutrition with the advancement of age was probably due to more exposure to morbidity, poor sanitary environment, delayed supplementary feeding, pregnancy at later age (above 35 years of age) for want of male child.

Malnutrition prevailed worldwide ranging from 14.5 % in developing countries to 50.0 % in least developed countries (World Health Report, 1996). In India, it is around 30 % and the present studies also revealed 18.6 % to 46.1 % cases of malnutrition in children from 3 months to 24 months of age. Nanda (1991) in her study, among infants of urban slum and rural areas found the prevalence of PEM as 42.8 % as per IAP classification. While Kumar *et al.* (1975) observed that prevalence of 64.3 % among the infants during their studies on nutrition monitoring of pre school children in Chandigarh.

Prevalence of malnutrition up to an extent of 82 % was reported by Agarwal *et al* (1980) in the age group of 0 to 12 months. Ravinder *et al.* (1995) that, none of the study infants were able to cross the 60<sup>th</sup> percentile for the indices of weight for age and length for age where as 15 per cent were distributed above the 70<sup>th</sup> percentile of weight for length.

Various studies demonstrated that ICDS has a positive impact on the nutritional status of children (Tandon *et al*, 1981 and Patel *et al.*, ( 1982 ). The overall growth pattern of infants in the ICDS block remained unsatisfactory, particularly in the later part of infancy(Kumar *et al.*, 1997). Limited impact of ICDS on the nutritional status of infants was evidenced in the present investigations. Unlike preschool children, there is no provision of appropriate weaning foods for infants in the ICDS. Therefore, these infants remain largely excluded from the scope of nutrition intervention programme.

The “Road to Health” charts adopted to local needs are being used in India by ICDS network. The drawback of those currently in use in India is that only a simple weight record for children as graph, marked with line indicating nutritional status, is needed.

Children coming under nutrition category enumerated as percentage of height for age according to Waterlow’s classification indicated that (Table 22) the percentage of children having short height than normal at 6, 12, 18 and 24 months of age was significantly higher. The percentage of severe malnutrition varied from 1.9 % to 2.9 % as against 55.9 % to 60.8 % of marginal malnutrition at all stage of growth studied. As a whole male children suffered more malnutrition than female counterparts. Gutha *et al.* (2002) reported that a high incidence of malnutrition and morbidity among children, the recorded values of height and weight were lower than the values suggested by NCHS for these age groups.

### **5.7.1 Weight for height**

Significantly higher variation was observed in respect of normal and malnourished children irrespective of age according to Waterlow's classification. Both marginal and moderate malnutrition increased with increase in the age upto 18 months and then it decreased towards 24 months of age and severe malnutrition increased after 18 months of age. This might be due to early and late supplementary feeding, frequent attack of diseases (diarrhoeal diseases) and delayed treatment against diseases.

Mishra (1984) reported that prevalence of 71.7 % of wasting (weight for height) of infants which was much higher than the present observation. (25.1 %). Prasad *et al* (1975) also reported severe malnutrition in male children than that of female children. Thus the present results corroborates with the findings of the above workers.

### **5.8 Milestones of developments**

Different milestone of developments were presented in Table 26. Only 20.6 % children have been found showing delay in some or the other developmental milestone. However, in the present study more than 70.0% children showed normal development. Out of 102 children understudy, three of them by-passed crawling besides 4th grade malnourished children, others were having normal motor development.

## 5.9 Factors affecting growth and development

Distribution of caste and morbidity pattern of the children were presented in Table 27 and 28 . It has been observed that the number of children suffering from different diseases were high among the ST and followed by SC families than other castes. Similar trend was observed for episode (spell) rate of diseases among other children. Maximum 4.1 times per year from diarrhoea followed by 3.3 from common cold of ST group and maximum 3.8 diarrhoea and 475.0 % common cold of other caste group of children were recorded. High prevalence of diarrhoea and common cold (100 %) both and low prevalence of ear discharge and measles (14.3 % each) were recorded irrespective of SES. As a whole, high prevalence of diseases among low and middle socio-economic group children may be due to the prevalence of various risk factors. Similar findings were also reported by several workers (Dutta Banik *et al*; 1969 and Jena, 1997).

Young (1995) reported that there is no difference in illness in different SES.

In general, the episode (spell) rate was higher with the maximum being 4.4 in lower socio-economic and was of minimum in diseases like ear discharge (0.14) and measles (0.07) per year of high socio-economic group children.

The incidence of both diarrhoea and common cold was highest (100 %) irrespective of maternal occupation (Table 31, 32). Significantly higher

incidence of skin disease and ear discharge was observed among the children of daily labour followed by service holder than that of children of housewives. The increased incidence of different diseases among the children of daily labour is probably due to lack of education. Less health care and attention to their baby. Brush (1993) in his study shown that infants of housewives have less illness due to more time available to them for children than others with job.

Diarrhoeal diseases with respect to feeding practices revealed that there is difference in the prevalence of diarrhoeal disease in relation to feeding practice from birth to 24 months of age. But the episode (spell) rate of diarrhoeal disease was higher in both early (2.69) and late weaning (4.03) times per year, respectively. Similar findings were reported by Khan *et al.* (1986). According to his, earlier onset of diarrhoeal episode, which is a major detriment to infant growth in poor communities was reported to be due to early supplementation.

The prevalence of diseases increased with increase in the birth order, except in cases of diarrhoea and common cold. However, only significant difference was observed only for skin diseases. Maximum prevalence of 100 % disease incidence was noticed in case of diarrhoea as well as common cold. On the other hand, measles with minimum incidence of 11.4 % and 11.8 % was noticed in 3rd and 1st birth order respectively. In the case of first order children the incidence was relatively higher than 2nd and 3rd birth order for all the diseases. The reason may be due to inexperienced mother in child rearing.

Devdas *et al.* (1991) reported that, the children in the birth order below three had lower incidence of morbidity as against the children in the birth order above three.

Mattoo *et al* (1995) observed that, birth order showed a significant association with malnutrition being minimum among the first order children and maximum 70 per cent among those with birth order of above three. Similar findings was also reported by Jena (1997) who stated that morbidity rate was directly proportional to birth order . With regards to incidence (spell) rate , it was observed that maximum episode (spell) rate was 4.85 times of 1st ordered child and 4.68 times per year of above 4th birth order in diarrhoeal diseases where as minimum of 0.06 times in measles of 2nd birth order children.

Table. 37- 38, indicated that children with low birth weight suffered much higher from different diseases than the normal birth weight children. However, the difference was significant statistically. Maximum of 100 % incidence of diarrhoea and common cold was noticed irrespective of birth weight episode (spell) rate was maximum in children of low birth weight. Out of 3.9 episodes of diarrhoeal diseases, 4.11 numbers were recorded from low birth weight babies. Bhargav *et al* (1984) in his study in South Delhi reported an inverse relationship between infant morbidity and birth weight shown prevalence of malnutrition in subsequent growth.

In general, the prevalence of diseases was higher among malnourished children (Table 39). Both diarrhoea and common cold was maximum (100 %) irrespective of maternal status of the children. Significant difference between the normal and total malnourished children with respect to skin diseases, measles and other diseases were observed. As a whole, the prevalence of diseases increased with decrease in the nutritional status of the children and vice-versa. Again among the malnourished children, Gr-III and Grade -IV children suffered more from diseases than others.

The incidence (spell) rate increased with increase in prevalence of malnutrition of the children (Table 40). In the present study, maximum episode (spell) rate per year of 4.6 in diarrhoea followed by 3.1 in common cold was observed in children with grade IV malnutrition followed by grade-III (4.5), G-II(4.5) and G-I(4.3). The episode rate of measles found to be lowest in case of G-III than other malnourished group. Other disease like fever, vomiting and constipation etc. were found to be 0.7 in case of normal children where as increase rate was observed in case of malnourished.

Milestones of development and morbidity pattern of the children upto two years of age are presented in Table 41 and 42. It was observed that, increase in morbidity rate in general delayed the motor development of children under study. All children were suffering from diarrhoea and common cold at least once upto the attainment of two years. But in case of other diseases like skin disease and ear discharge, the single milestones of development was found to

be normal where as in case of measles, milestones were delayed 0.2 times per child per year.

The prevalence of malnutrition in Table 43 was observed to be higher in ST (66.7 %) and SC (62.5 %) families as compared to other caste category (23.6 %). But 50 % of Grade-IV malnourished children at the age of two years belonged to other caste. Among the malnourished children, maximum belonged to Grade-I group in case of SC (37.5 %) where as, Grade - II was observed (37.5 %) in Grade -II malnourished in case of SC and ST caste. The possible reason may be due to poor SES and mothers working outside as wage earners. The difference was significant statistically.

Maximum malnourished children belonged to lower SEG (48.4 %) whereas maximum normal children belong to middle (85.77 %) followed by high SEG (71.4 %). Out of 35.3 % of total malnourished, 19.6 % were Grade-I group in the study population, 75 % children belongs to nuclear family where as, only 63.3 % belongs to joint family. Again, malnutrition was more in children belonged to joint families. However, the difference was not significant statistically. More attention and care of children in nuclear family may be the probable cause for better nutritional status of the child belonging to nuclear family than joint family. The present findings were in agreement with Srivastava *et al* (1979) who reported higher prevalence of children were drawn from joint family.

Malnutrition among the children increased with increasing birth order and vice-versa (Table 46). The association between nutritional status and birth order was statistically significant. Srivastava *et al* (1979) also reported that prevalence of PEM incidents significantly with increase in birth order. It was highest in the children having birth order above 4 and that of lowest with order 1 and 2.

Evidences in support of the above findings were also reported by Gopalan (1970), Sharma (1977 and Luwang and Singh (1980).

Table 47 showed that the prevalence of malnutrition in early was more (60 %) and optimum (51.6 %) introduction of supplementary feeding. The highest incidence among optimum introduction of supplementary feeding may be due to too little or too much of food which was itself a risk factor for children to adjust or under nourished in more exposure to diarrhoeal diseases.

Delayed weaning is detrimental to health of infants and leads to malnutrition.

Table. 48, based on the nutritional status at the age of one and two years of children were computed using WHO standards (1983). In general, majority of male children suffered significantly malnutrition than female children at one year of age. However, at the age of 2 years no difference was observed between sex so far as malnutrition is concerned , about 40 % male children were

presently underfed with post history of malnutrition at first year of age which decreases to 17.5 % at two years of age. On the other hand, maximum female children (24.4 %) were presently normal fed with post history of malnutrition at 1st year of age gradually increases to 33.3 % towards 2nd year of age. The percentage of male children suffered presently and past underfed increased from 1.8 % to 10.5 % from 1 to 2 years of age and for that of female children. Incase of normal nutritional status , it decreases with increase in age but that of female children increased with increases in age.

When the children at one and two years of age were compared, 41.2 % of them were normal at 1st year as against 46.1 % at two years of age (Table 49). During 1st year of age, 28.4 % of children were found to be presently underfed with past history of malnutrition. Whereas, gradually towards 2nd year, it decreased to 16.7 % only. Presently normal fed with past history of malnutrition from 18.6 % to 26.5 % from 1st to 2nd year of age. Present and past underfed status increased from 1.9 % to 2.9 % at 2nd year of age. As a whole, it can be concluded that malnutrition decreases with the advancement of age.

The present study found only marginal impact of ICDS on the nutritional status of children below two years of age. There is no provision of supplementary foods for infants or below two years of children in the ICDS. Therefore, the study children remained excluded from the scope of nutrition intervention programme.

In comparison to Indian standards the overall growth pattern of infants in the ICDS block remained unsatisfactory, particularly in the later part of infancy. They had their weight below the fifth centile , length below the tenth centile (Agarwal *et al*, 1990).