

# **CHAPTER - VI**

## **SUMMARY AND CONCLUSION**

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A study entitled “Growth and development pattern of 0-2 years children and factors associated with it “ – a longitudinal study was undertaken purposively at Biridi block of Jagatsinghpur district located on the way of Cuttack – Jagatsinghpur road during 1997-2000.

The longitudinal study was undertaken in the rural block where ICDS scheme was operating from 1989-90. Out of 121 Anganwadi Centres operating in the block, 18 centres were selected for study area on the basis of simple random sampling techniques. A total 120 new born were registered within 72 hours after delivery. These observations were carried on for four months from the start of the first enumerative observations. During follow up, 18 numbers of children were dropped out due to death (5) migration (9) and parents' unwillingness of taking weight measurements of their children (4). Finally, 102 children were considered individually for observation purpose up to the age of 2 years at monthly interval i.e. 25 visits were made for each individual.

Out of 102 children registered, 57 were male and 45 were female children. The sex ratio at birth was 739 female per 1000 male.

The findings indicated that, majority of the children under study were from other caste category , low socio-economic group and joint families . This indicates that joint family system still existing in the community. Maximum mothers were in the age range between 26-30 years where as, 24.5 % of mothers were more than 30 years of age signified that elderly pregnancy was common in the community. The overall literacy rate of the mother was above the state. female literacy rate. More than half of the mothers were housewives. Though they were educated and health care facilities particularly ICDS services were at their door step, they were not conscious about antenatal care of pregnant mothers due to which 52.0 % pregnant ladies received antenatal care inadequately. The inadequate coverage was also possible due to door to door services of AWWs . Mothers having higher qualification received adequately antenatal care in comparison to mothers who had not received antenatal care were either illiterate or having primary education. Maximum delivery was normal at home attended by trained personnel in contrast to 43.1 % by untrained personnel.

Maximum normal birth weight children were observed in the mothers age group of 21-25 years . While 90 % of low birth weight children in the age group of more than 25 years of age. The difference was significant statistically. Regarding birth order, maximum (84.2 %) number of children having low birth weight were of above 4th birth order and all were belong to low SES to middle SES group where as, highest (82.4 %) number of normal birth weight children belonged to 1st birth order. They were from higher to middle SES. It was observed that two of them had 9th and 18th para who were both male children

suffering from IVth - Grade PEM upto 2 years of age and both were from low socio-economic group. It may be concluded that socio-economic condition and birth order affects birth weight of child.

Nutritional status of infants depends on feeding practices prevalent in the community. The introduction of breast feeding i.e. colostrum was started within 24 hours after birth. Boiled and cooled water was used most frequently as prelacteal feeding followed by honey water and sugar solution. They have the belief that, if they do not give water to their baby, his/her throat will dry which, may create problem or child may die. At 4 months of age, 37.3 % of children were introduced supplementary feeding. At the age of 7 months, 58.7 % children had received supplementary feeding along with breast feeding. But at the same, 37.3 % Continued BF alone with some quantity of boiled and cooled water. At the age of one year, 5.9% children were exclusively breast fed in contrast to 94.1% had received supplementary feeding. Then it was found that around 12-15 months of age, 3.9% of children were still breast fed alone which need to be avoided. After 15 months of age, nobody was observed exclusively breast fed. But 62.8 % had continued breast feeding along with top feeding . Prevalence of only breast feeding (59.5 %) at the age of one year was of much concerned. Diluted cow's milk was used most frequently as supplementary feeding except higher SES. Some families of middle SES used commercial milk formula, sago water and chuda powder (ground roasted rice flakes) along with milk. The starting of supplementary feeding and type of feeding was not maintained properly being an

ICDS adopted area. Majority of mother gave supplementary food by the advice of AWWs.

Encouragement should be given for early initiation of breast-feeding, continuance of exclusive breast-feeding at least for first four months and proper weaning practices. The mothers are to be discouraged from giving any prelacteal or top feeding to their infants.

Maximum normal birth weight children were observed from the mothers age group between 21-25 years while 90% of low birth weight children observed from the age group of more than 35 years of age. It may be concluded from the finding that the ideal age of child bearing is between 21 to 25 years of age.

The mean weight of study children showed lower value as compared to 50<sup>th</sup> percentile of WHO standard and higher value to ICMR standard. The percentage deficit of weight in comparison to WHO standard was higher in male than female.

The mean heights of study children were shorter in comparison to 50<sup>th</sup> percentile of WHO standard and at par with ICMR standard value. The percentage deficit of mean height was observed 9.7% in case of male and 7.3% in case of female at the age of 2years.

The nutritional status was observed on the basis of ICDS growth chart, Waterlow's classification and also WHO standard classification.

AS per ICDS growth chart, the result of the study indicated that among malnourished children, majority belonged to Group-I PEM followed by Group-II. The increasing rate of malnutrition with the advancing age probably because of more exposure to morbidity, poor sanitary environment, delayed or early supplementation, increasing birth order, socio-economic status etc. and pregnancy in the later age. The prevalence of PEM in the present study ranged from 18.6 % to 46.1 % from 3 months to 24 months of age as per ICDS growth chart, which is being practiced by all Anganwadi Centres all over India. Though, the study children doubled their birth weight at 5 months of age irrespective to sex, did not show tripling at one year and four times at the age of 2 years. It was concluded that growth faltering started after 6 months of age and the most vulnerable period was between 6 months to 2 years of age.

According to Waterlow's classification based on weight-for-height, the prevalence of malnutrition ranged from 22.5 % to 25.5 % at the age of 6 months to 2 years. Both marginal and moderate malnutrition increased with increasing age upto 18 months and decreased towards 24 months of age. Severe malnutrition was observed only in case of male children those who belonged to 9th and 18th para and in case of others, severe malnutrition increased after 18 months of age since maximum episode of diseases were observed during 13 to 18 months of age and decreased afterwards.

The prevalence of malnutrition was found to be 58.8 % at the age of one and 53.9 % at the age of two years of study children as per WHO standard classification based on weight-for-age, height-for-age and weight-for-height. Maximum children were presently normal fed with past history of malnutrition irrespective to sex at the age of one year. But at the age of two, majority was presently normal fed with past history of malnutrition. 6.9 % children were present and past under fed category i.e. low wt./age, low ht/age and low wt./ht.

Severe malnutrition increased with increasing age. It was found to be 3.9 % as per ICDS growth chart, 4.9 % Waterlow's and 6.9 % as per WHO standard classification. No special care and attention was given to severe malnourished children during the study period. Steps are to be taken specifically for them at Anganwadi worker's level and also mothers should take care to improve the health of their children.

Significantly higher prevalence of malnutrition was observed in S.C. and S.T. children than that of other caste category. The reason may be due to their mothers working outside as wage earners. Similar findings was observed in case of low:socio-economic group which belonged to highest percentage of malnourished children.

Malnutrition was more prevalent in joint family system. More attention and care of children in nuclear family may be the probable cause for

better nutritional status of the children belonging to nuclear family than joint family.

The prevalence of PEM increased with increasing birth order and vice-versa. It was highest in the fourth and above fourth birth order. Maximum normal children were found to be in first and second birth order. Better parental care for 1<sup>st</sup> and 2<sup>nd</sup> born child was the result of better health status.

Diarrhoeal diseases had direct impact on nutritional status. The diarrhoeal spell rate was higher in early and late supplementation than optimum. The prevalence of malnutrition were more in early due to more change of diarrhoeal diseases. If the food supplements are not adequate in quantity and quality, the child becomes malnourished. Therefore, it is necessary to introduce proper amount of supplementary diets in optional age.

The factors like morbidity, caste, socio-economic status, family system, birth order and supplementary feeding affected the nutritional status of children under study.

DPT (66.7 %) and OPV (66.7 %) were vaccinated adequately in the study community, whereas 31.4 % DPT and OPV also were vaccinated inadequately. Measles and Vit.-A prophylaxis vaccines were not received adequately by them. 2 % of children did not receive any single dose of DPT or OPV vaccines. Measles is a very common disease in early childhood. However,

35.3 %. Children were completely immunized with 3 doses of DPT, 3 doses of OPV, one dose of BCG and one dose of measles.

Immunization under ICDS programme of this block was not intensified satisfactorily. However, complete immunization is required to every child through ICDS to prevent childhood fatal diseases.

Out of total 1676 episodes of illness up to 2 years of age, 7.7 times diarrhoea, 4.7 times common cold, 1.5 times skin diseases, 1.5 times ear discharge, 1.0 times measles and 2.0 times other diseases like malaria, vomiting, stomach pain etc. were observed. The average episodes rate per sick child was found to be 16.0 times during the study period.

Maximum episode of diseases were observed during 13 to 18 months of age and minimum were upto 6 months of age. The morbidity rate decreased after 18 months of age. The rate of morbidity from birth to two years of age was higher in male than female. Due to which majority of male children suffered significantly malnutrition than female children at one year of age. However, at the age of 2 years no significant difference was observed.

Preference for the homeopathic treatment by the mothers during illness of their children under study was due to its low cost, low residual effect and safe specially for children despite of availability of other facilities like medical officers, anganwadi workers and ayurvedic medicines etc.

Prevalence of different childhood diseases was observed higher in SC & ST communities than others. Higher numbers of spells were reported in low socio-economic groups and comparatively lower prevalence in higher socio-economic groups. This observed difference was statistically significant for all morbidities.

Prevalence of malnutrition increased with increase in spell rate of different diseases which need to be quick cure.

The observations from different developmental milestones in the present study indicates that 79.4 % were observed normal motor development as per age, only grade IV th malnourished children had delayed motor development, they were not able to stand even at the age of 2 years as observed. It was concluded that severe malnourished children had direct impact on their motor development. Though malnutrition slows down development, the observations could not find in case of mild to moderate malnutrition.

Regarding ICDS services, though steps have been taken to uplift the antenatal care of mother, trained personnel during delivery, feeding practices of children, immunization. Regular attention by AWWs, supervisors as well as CDPOs should be made at their door steps for betterment of preschool children specially under two children, as the very crucial stage of growth and development. As the general morbidity status of the population under study was high in respect

of spell rate in particular, the incidence of malnutrition was considered as a major concern. During morbidity, majority of mothers preferred homeopathic medicines from doctors or practitioners. They had the belief that it was low cost, low residual effect and was better for children especially. Homeopathic medicines requires long treatment to cure. The mother of the study area did not trust the allopathic medicines available with AWWs in respect to its effectiveness, expiry dates and they are available/distributed open without any prescribed cover/packing.

Furthermore, problems like the quantity, quality, regularity and acceptability of the food supplied and proper selection of beneficiaries to provide nutritional supplementation are also encountered.

Physical growth is an important indicator of a child's health and well-being. The maintenance of optimum nutrition during infancy is critical because it is a vulnerable period for motor and brain development. Therefore, it is universally understood that, all mothers, whether rich or poor, literate or illiterate, must care for the well-being of their children.

Shaping tomorrow's India by investing in children today is the best possible development strategy for the country.