



NUTRITIONAL STATUS OF INFANTS ATTENDING THE PEDIATRICS OPD IN A TERTIARY LEVEL HOSPITAL IN BIHAR

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ABSTRACT

Background - The study was undertaken at the Pediatric OPD of Patna Medical College and Hospital at Patna the capital city of the Indian state of Bihar.

Objectives - To establish the nutritional status, feeding practices, rates of exclusive breastfeeding and immunization.

Methods and Methodology - Thirty Questionnaires were administered to the mothers and anthropometric measurements of children were taken.

Results - The rate of exclusive breastfeeding was found to be 61.4% and of immunization around 71.4%. The nutritional status of infants were found to be moderately fair.

Conclusion - Adequate Counselling of mothers will further help attain better nutritional status of Infants in the community

KEYWORDS : Infants , Nutrition , Breastfeeding , Immunization

INTRODUCTION

Nutrition is a crucial, universally recognized component of the child's right to the enjoyment of the highest attainable standard of health as stated in the Convention on the Rights of the Child¹. Nutrition is a critical necessity for children not only to sustain life, but to ensure adequate growth and development. Growth during the first year of life is greater than at any time after birth. Adequate nutrition and healthcare during the first few years of life is fundamental for child survival and prevention of malnutrition.

Irreversible faltering in linear growth and cognitive deficits can occur during infancy and early childhood in the absence of adequate nutrition². Breastfeeding is an unequalled way of providing ideal food for the healthy growth and development of infants; it is also an integral part of the reproductive process with important implications for the health of mothers. Review of evidence has shown that, on a population basis, exclusive breastfeeding for 6 months is the optimal way of feeding infants³.

During the early months of life breast milk is the ideal source of nutrition for the young infants. It contains all the nutrients for the normal growth and development of the baby from birth up till the first six months of life. The nutritional and immunological superiority of breastmilk over formula milk and cow's milk is now well established. The nutrients are in an optimum proportion and in a form that can be easily digested and absorbed, besides breastmilk contains a number of enzymes, hormones, antibodies and protective factors. Breastfed babies have a lower risk of allergies and decreased risk of chronic diseases in later life⁴. Exclusive breastfeeding has been validated as the most effective intervention known to reduce the under-five mortality rate.

After six months breast milk alone may not be sufficient to meet the energy and the nutritional requirements of the infant and hence the need for other foods. Adequate Complementary feeding requires the appropriate introduction of foods that are nutritionally adequate and culturally acceptable in infants beyond the age of six months. Several studies have ascertained that children who are exclusively breastfed in the first six months with proper initiation of complementary feeding and are adequately immunized grow well⁵.

However data provide startling evidences. No more than 35% of infants worldwide are exclusively breastfed during the first four months of life, complementary feeding frequently begins too early or too late, and foods are often nutritionally inadequate and unsafe. Malnourished children who survive are more frequently sick and suffer the life-long consequences of impaired development. Malnutrition has been responsible, directly or indirectly, for 60% of the 10.9 million deaths annually among children under five. Well

over two-thirds of these deaths, which are often associated with inappropriate feeding practices, occur during the first year of life⁶.

OBJECTIVES

This study was conducted to assess the state of infant nutrition in a Tertiary level set-up and to use the opportunity for providing scientific information and counselling of mothers and care-givers.

MATERIALS AND METHODS

This Study was conducted in a tertiary level set-up in the Bihar state of India at Patna Medical College and Hospital, Patna.

STUDY POPULATION - All the Infants (< 1 yr) attending the Pediatric OPD during the period May 2014 to October 2014 were included in the study.

INCLUSION CRITERIA : All healthy infants in the 0-12 months age group.

EXCLUSION CRITERIA :

1. Infants with congenital anomalies of the gastrointestinal system, cardiovascular and respiratory systems.
2. Those with Cerebral Palsy or other neurological defects (post-meningitic / post-encephalitic sequelae) leading to feeding difficulties.
3. Infants who had undergone major Surgical interventions.

METHODS

A structured Questionnaire was prepared and mothers/care-givers were interviewed on this basis. It included a set of 30 questions that aimed at gaining relevant information on infant nutrition and feeding practices apart from their immunization status. The Questionnaire also focused on vital demographic parameters like the educational status of mothers.

Informed consent was taken from the mothers. The junior residents and nursing staff posted in the OPD clinic were employed to interview the mothers often in the local dialect.

MATERIALS

Anthropometric measurements were taken by the nursing staff according to the standard procedures^{7,8} after adequately training them. The infants were weighed without any clothing using a portable infant weighing scale (Salter England). The weight was calibrated to the nearest 0.1 kg. A horizontal measuring board with a sliding foot piece was used to measure the recumbent lengths to the nearest 0.1 cm.

RESULTS AND DISCUSSION

A Total of 2881 infants attended the Pediatric OPD at Patna Medical College during the six months study period. The study provided a number of relevant findings.

Around 42 % of mothers had received education till the higher secondary level and 25 % women had pursued higher education . 19 % of the mothers did go to school and had some primary education . However around 14 % of the mothers had never been to school and were completely illiterate.

The percentage of infants that were exclusively breastfed during the first six months of life was around 61.4 % (1,768) however around 78 % (2,247) of babies were given colostrum in their first few days of life , the yellow colored milk that is rich in antibodies . Exclusive Breastfeeding in the first six months of life is recommended by various scientific organisations including the Indian Academy of Pediatrics (IAP), American Academy of Pediatrics (AAP) , the Breastfeeding promotion network of India (BPNI) and the American Dietetic Organisation⁹ .

Complementary feeding was initiated timely i.e around 6-7 months of age in only 55.7 % (1,604) of the study population . Initiated at earlier ages this can trigger food allergies and further several enzymes required for metabolism are not yet synthesized . Adequate Complementary feeding was considered as infants receiving 4 or more food groups other than milk and milk products atleast twice a day in 6-8 months age and atleast three times a day for those above 9 months . For non-breastfed infants a minimum meal frequency of three times a day was considered satisfactory .

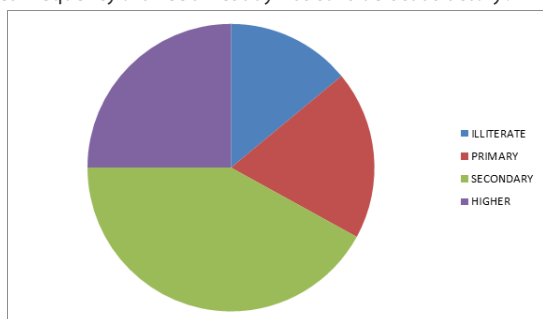


Fig 1 : Educational status of Caregivers of Infants attending Pediatric OPD at PMCH, Patna



Fig. 2 : Rates of Exclusive Breastfeeding of mothers attending Ped. OPD at PMCH, Patna.

Around 71.4 % of infants were found to be completely immunized in the first year of life and around 68 % of children had received a single dose of Vitamin A. As per the NFHS-4 about 61.7 % of children in the 12-23 months age group were fully immunized (with BCG , measles and 3 doses of DPT in the state of Bihar¹⁰ .

According to the NFHS-4 about 53.4 % of Infants under six months were exclusively breastfed. Children in the 6-8 months age group who received solid/semi-solid diet alongwith breast milk were around 30.8 %¹⁰ .

Anthropometric data was used for the assessment of nutritional status of children .

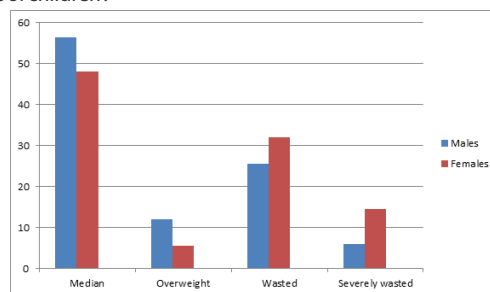


Fig 3 : Nutritional Status with respect to Weight/ Height (W/H) of the study population.

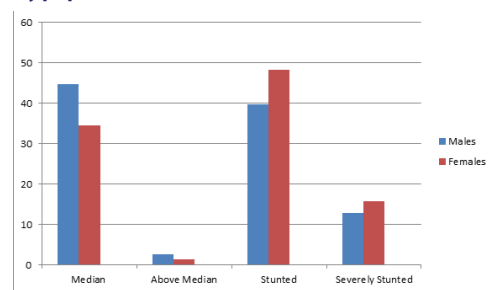


Fig 4 : Nutritional Status with respect to Height /Age (H/A) of the Study population

CONCLUSION

The nutritional status of infants attending the Pediatrics OPD at a tertiary level hospital in Bihar was found to be moderately fair. The data indicates that for most of the infants , 56.5 % of males and 48 % of females the W/H was in the median category. Wasting (below - 2SD based on WHO standards) was seen in 25.5 % of males and 32 % of females . About 6% of males and 14.5 % of females in the study population were found to be severely wasted (below -3SD based on WHO standards).

About 44.8 % and 34.6 % of males and females respectively were found to be in the median category as per their Height/Age . In our study 39.8 % males and 48.3 % females were found to be stunted (below -2SD based on WHO standards). Severely stunted males and females comprised 12.8 % and 15.8 % of the study population respectively.

Thus the nutritional status of infants can be further improved with improved infant and child rearing practices . Adequate counselling of the care-givers and imparting scientific knowledge will help in achieving better outcomes in future .

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