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Research Paper

INFLUENCE OF BREAST FEEDING AND WEANING PRACTICES ON ACUTE RESPIRATORY INFECTION IN UNDER FIVE CHILDREN

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Background: Breast feeding is an investment that cannot be undermined or ignored because of traditional practices. More than 2.4 million child deaths occur in India each year and two third of these death related to inappropriate infant feeding practices. Aims and objectives: To know the prevalence of ARI and to assess the influence of breast feeding and weaning practices on acute respiratory infection in under five children. Materials and methods: This community based cross sectional study was carried out in an urban slum of Raichur. The study population comprised of children under five who were permanent residents of the slum. The study subjects were enrolled for the study using systematic random sampling method. Results: Prevalence rate of ARI at the time of survey was 16.6%. Out of 409 children, 254 (62.1%) have received exclusive breast feeding, out of 433 children who got weaning food, 380 (87.8%) children have received appropriate weaning. ARI is more in those children who have not received exclusive breast feeding (25.8%) and inappropriate weaning practices (45.3%). Conclusion: Nutritional education regarding promotion of exclusive breast feeding, avoidance of prelacteal feeds and appropriate weaning practices should be given to all nursing and expectant mothers.

Keywords: Breast feeding practices, Weaning, Under five children, Acute respiratory infection

INTRODUCTION

Children below five years constitute 14% of total population in our country (Health information of India, 1991). They are vulnerable group deserving special health care. Children are considered to be susceptible to the host of disease and infections of respiratory tract are the most common cause of morbidity and mortality in young children (Park, 2007). Globally every year around 10.5 million children die before reaching their fifth birthday that is about 30,000 children everyday! Most of these deaths occur in developing and underdeveloped countries (UNICEF, 2009).

Pneumonia in children is a major concern in developing countries, because almost all

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childhood related deaths occur in these countries. In India an estimated 0.4 million pneumonia deaths occur annually, which is highest among all countries in the world. Childhood pneumonia has been identified as the major "forgotten killer of children" by the UNICEF and WHO (2006). The five most important causes of under five mortality are ARI (19% of total death in under five), diarrhoea (17%), malaria (8%), measles (4%), HIV/AIDS (3%), neonatal conditions (37%) and injuries (3%) (Park, 2009).

In India, ARI accounts for a morbidity burden of 12.1% prevalence rate and 2.5 episodes per child per year and an estimated one million deaths in under five (Chabra *et al.*, 1993). It has been reported that the problem of ARI in urban slum areas is more compared to rural areas (Deb, 1998). The knowledge about these risk factors will help in developing preventive measure needed to complement efforts directed at improved case management. The present study is under taken, so that preventive measures can be initiated to control ARI at community level in the urban field practice area of Navodaya Medical College and Hospital, Raichur.

MATERIALS AND METHODS

This community based cross sectional study was carried out in an urban slum of Raichur. The study population comprised of children under five who were permanent residents of the slum. Sample size was calculated using the formula $n=z2pq/e2$ (total population of slum 10000, under five children constitutes 14% of population and prevalence rate of ARI is 12% with allowable error 25% of proportions, e=3). The total sample size was 451. The study subjects were enrolled for the study using systematic random sampling method. The consent was taken from the immediate care taker of the child. Using the interview technique and clinical examination,

information was collected from the mothers or immediate care taker in a predesigned and pretested semi structured questionnaire. Statistical methods such as proportions and Chi-square test were used. The statistical software Epi Info Version-3.5.1 was used for the analysis of data.

Objective of this study was to find out the prevalence and influence of breast feeding and weaning practices on occurrence of ARI among under five children residing in the urban slum of Raichur.

RESULTS AND DISCUSSION

In our study 75 out of 451 children had ARI at the time of survey. Hence prevalence rate of the ARI was found to be 16.6%.

Table 1: Distribution of Children According to Age Group, Sex, Type of Family and Living Condition		
Indicators	Frequency	Percentage
A) Age (in months)		
1-12	69	15.3
13-24	86	19.1
25-36	101	22.4
37-48	94	20.8
49-60	101	22.4
B) Sex		
Male	225	49.9
Female	226	50.1
C) Type of family		
Nuclear	262	58.1
Joint	130	28.8
Three generation family	59	13.1
D) Living condition		
Type of house		
Katcha	47	10.42
Pucca	402	89.1
KatchaPucca	2	0.4
Overcrowding		
Yes	220	48.8
No	231	51.2
Total	451	100

Majority of children were in the age group of 25-36 and 49-60 months constituting about 22.4% each (Table 1). The numbers of male and female children were 49.9% and 50.1%, respectively. Of the total families enrolled, 69.8% of the families were Hindu and 27.9% Muslim. More than half of children (58.1%) were from nuclear families. Majority of the families (44.8%) were in class IV according to modified B G Prasad's socioeconomic classification. In the present study, 32.2% of mothers were illiterates and 25% were graduates. 89.1% children were living in pucca house. Overcrowding was present in 48.8% of the families.

Table 2: Distribution of Children According to Exclusive Breast Feeding and Occurrence of ARI*

Exclusive Breast Feeding	ARI Present	ARI Absent	Total
	No (%)	No (%)	No (%)
Yes	29 (11.4)	225 (88.6)	255 (62.1)
No	40 (25.8)	115 (74.2)	155 (37.9)
Total	75 (16.9)	376 (83.1)	409 (100)

*42 children are not included in the analysis, because 20 children are less than 6 months of age and 22 children have received weaning food before 6 months

$\chi^2 = 14.21$, df = 1, p < 0.0001.

It is evident from above table that, ARI is more in those children who have not received exclusive breast feeding (25.8%), as compared to exclusively breast fed children (11.8%). There is highly significant association between exclusive breast feeding and occurrence of ARI (p<0.0001).

In study by Savitha administration of prelacteal feeds was significant nutritional risk factor causing ARI in children (33% vs. 4%, p value<0.05) (Savitha *et al.*, 2007). In a study by Alarcon (1997)

infants those who never breast-fed were more likely to have an episode of ARI than those who were fully breast-fed for at least 1 month. The probability of suffering an episode of ARI was higher for formula-fed than for fully breast-fed infants during the first 4 months. The risks for the partially breast-fed infants were intermediate between those of formula-fed and fully breast-fed, except for last 2 months of follow-up. The number of episodes of ARI was negatively associated with the duration of full breast-feeding (p<0.05) (Alarcon *et al.*, 1997). The protective action of breast milk which is well known is due to its content of bacterial and viral antibodies, macrophages synthesizing complement and lysozymes which not only protect against severe LRI but also protects from development of asthma and other allergic disorders.

Table 3: Distribution of Children According to Weaning Practices and Occurrence of ARI*

Weaning Practices	ARI Present	ARI Absent	Total
	No (%)	No (%)	No (%)
Appropriate	51 (13.4)	329 (86.6)	380 (100)
Inappropriate	24 (45.3)	29 (54.7)	53 (100)
Total	75 (17.3)	358 (82.7)	433 (100)

*18 children not included in the analysis as they didn't receive any weaning food.

$\chi^2 = 32.97$, df = 1, p < 0.0001

Inappropriate weaning practices in children have shown more prevalence (45.3%) compared to appropriate weaning practices (13.4%). There is highly significant association between appropriate weaning practices and occurrence of ARI (p<0.0001).

Our results could be compared with Savitha *et al.* (2007) and Dharmage (Dharmage *et al.*,

1996). Late weaning practices might have provoked the child to go for malnutrition which in turn will results in infection.

CONCLUSION

Efforts should be made to improve the literacy status of both parents especially mothers by encouraging them to avail adult literacy program conducted by government. Community health education program needs to be conducted to create awareness with regards to the risk factors and preventive measures to be taken during the illness. Health education regarding exclusive breast feeding and weaning practices should be given to all the post natal mothers. These measures will eventually help to reduce ARI morbidity and mortality in the children.

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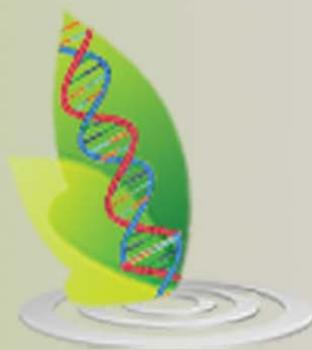
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