Research Article

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Morbidity profile of preschool children in rural area of central Madhya Pradesh

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ABSTRACT

Background: The children of Preschool age are a vulnerable or special risk group in any population, deserving special health care. Major causes of death in the age group 0-5 years are preventable. Objective of this study was to study the morbidity profile of preschool children (0-5 years) in the rural areas and its association with some selected

Methods: A cross sectional study was conducted among preschool children of rural areas for a period of 4 months. A sample size of total 400 children was selected and the children were examined after interviewing mother.

Results: Morbidity was found in 217 out of total 400 children. The male and female ratio of morbid children was 1.47:1. The respiratory infections and diarrheal diseases together accounted for 76.5% of children at least once in three month.

Conclusions: Communicable diseases were the commonest cause of morbidity in the preschool children. A total of 164 children were found having one of the episodes of illness in last three month.

Keywords: Morbidity, Mortality, Malnutrition, Vulnerability

INTRODUCTION

Preschool children constitute approximately 15% of the country's total population and are the most vulnerable group suffers from highest morbidity. These children represent a transition from infancy when the child is protected physically & physiologically by the mother. In these initial years of life, the child need proper health care and any adverse influences during this period may result in severe confines in their development. During this period about 40% of physical growth and 80% of mental development occurs in children.² It has been estimated that 1.9 billion children lived in developing world and one billion of it lived in poverty and deprived of many basic amenities considered as their basic rights.³

Preschool children are most affected by various common and easily preventable illnesses. Infectious diseases like acute respiratory infections, diarrhea, malaria and whooping cough have been found to be the leading cause of morbidity and premature death especially in developing countries. Three in four episodes of childhood illness are caused by one of these conditions or a combination of these conditions.4 Of the common morbidities among children, malnutrition is rarely perceived as a morbid event by families, communities, and health system.^{5,6} The mortality among children are mostly caused by respiratory infections 6.9%, malaria fever 2.2% and other childhood illness 2.0%. During the neonatal period, almost 40 per cent of all under-five deaths occur due to a variety of complications and of these neonatal deaths, around 26 per cent are caused by severe infections. The major causes of deaths in the age group 0-5 years are preventable.⁸

There is a need to acquire community based information on morbidity patterns among preschool children, which will be of use in assessing the overall morbidity status of preschool children. Hence an attempt has been made to study the pattern of morbidity in preschool children with the objectives as to study the morbidity profile of preschool children (0-5 years) in the rural areas and its association with some selected variables.

METHODS

A cross sectional study was carried out in the rural areas, to see the morbidity pattern among preschool children of eight sub centers of Obaidullaganj block of Raisen district of Madhya Pradesh. The sample size was calculated based on 50% prevalence rate 10, as similar study considering the methodology. The calculated sample size was 400 at 10% allowable error and at 5% The sampling frame has been significance level. designated as 50 children selected randomly from each sub center (cluster) out of total eight sub centers in the block. Verbal consent was sought from head of the family before initiation of study. The present study was under taken with the objectives: To study the morbidity profile of preschool children (0-5 years) in the rural areas and its association with some selected variables.

The Clinical examination of all the children was done to find out any morbid condition present at the time of the survey or in the last three months. Parents preferably the mothers were interviewed to know any illnesses (present or past) in their children. Episodes were calculated based on at least period of three consecutive days free from symptoms and signs between next attacks. Chi-square test was applied to test for significance in the difference.

RESULTS

In the present study, a total of 400 children under the age of 5 years were enrolled. It has been observed that in the studied children population most of the children 258 (64.5%) were belonging to the nuclear family while 142 (35.5%) were belonging to joint family. A total of 164 (63.6) children were found having one of the episodes of illness in last three month from nuclear family while 53 (37.3) children having illness in joint family. In the study 227 (56.75%) mother were literate while 173 (43.25%) were illiterate. The morbid children associated with literate mother were 104 (45.8%) and with illiterate were 113 (65.3). Out of 400 children studied 218 (54.5%) were male and 182 (45.5%) were female (Table 1).

It has been observed that majority of the children were in the age group 4-5 years (28.5%) followed by 2-3 and 3-4 years (19%), 0-1 (17.7%) and 1-2 15.8%). In the study, 217 children (54.25%) were encountered with some morbid condition while 196 children (49%) did not show any morbid condition. The male and female ratio of the preschool children was 1:1.2. maximum morbidity was found 53 (24.42%) in 4-5 years age group followed in decreasing order by 0-1 (21.66%), 2-3 (20.28%), 3-4 (17.51%) and 1-2 (16.13%) (Table 2).

The principal causes of morbidity in children under five years of age were respiratory infections, fever, diarrheal diseases, measles, worm infestation, skin infections, eye infection and ear infection. The respiratory infections and diarrheal diseases together accounted for 76.5% of children at least once in three month. The respiratory infections accounted for 46.25%, with episode of 1.77 per child while fever is the next commonest symptom with 34.25% sickness load during three month period with 1.3 episodes followed with diarrhea (30.25%) with 2.33 episodes per child per three months (Table 3).

Illness last 3 months						■ P value
S. No.	Characteristics		No (%)	Yes (%)	Total (%)	r value
1	Type of family	Nuclear	94 (36.4)	164 (63.6)	258 (64.5)	
		Joint	89 (62.7)	53 (37.3)	142 (35.5)	< 0.00001
2	Literacy status of	Literate	123 (54.2)	104 (45.8)	227 (56.75)	
	mother	Illiterate	60 (34.7)	113 (65.3)	173 (43.25)	0.00010
3	Sex	Male	89 (40.8)	129 (59.2)	218 (54.5)	
		Female	94 (51.65)	88 (48.35)	182 (45.5)	0.03049
4	Age in years	<1 year	24 (33.8)	47 (66.2)	71 (17.75)	
		1-2 year	28 (44.4)	35 (55.6)	63 (15.75)	
		2-3 year	32(42.1)	44 (57.9)	76 (19.0)	0.0971
		3-4 year	38 (50.0)	38 (50.0)	76 (19.0)	
		4-5 year	61 (53.5)	53(46.5)	114 (28.5)	

Table 1: Distribution of illness according to different characteristics.

Table 2: Age and gender wise distribution of morbid and non morbid preschool children.

Age	Morbid			Non Mo	Non Morbid			Total		
in yrs.	Male	Female	Total	Male	Female	Total	Male	Female	Total	
0-1	28	19	47	10	14	24	38	33	71 (17.7)	
1-2	21	14	35	13	15	28	34	29	63 (15.8)	
2-3	26	18	44	14	18	32	40	36	76 (19.0)	
3-4	23	15	38	18	20	38	41	35	76 (19.0)	
4-5	31	22	53	34	27	61	65	49	114 (28.5)	
Total	129	88	217	89	94	183	218	182	400	
Age g	Age group <3 yrs. & >3 yrs. morbidity x^2 -5.8894, p-value 0.01523.									

Table 3: Distribution of illnesses encountered in children with episodes during three months period (n=400).

S. No.	Type of Diseases	No. of children affected (%)	Frequency	Episode per child in 3 months
1	Respiratory infection	185 (46.25)	328	1.77
2	Fever	137 (34.25)	178	1.3
3	Diarrhea	121 (30.25)	282	2.33
4	Eye infection	8 (2.0)	10	1.25
5	Ear infection	3 (0.75)	3	1.0
6	Skin infection	20 (5.0)	28	1.4
7	Measles	43 (10.75)	43	1.0
8	Worm infestation	27 (6.75)	27	1.0
9	Other	94 (23.5)	146	1.55

DISCUSSION

Distribution of illnesses according to different characteristics

The analysis of data by type of family showed that maximum morbidities were in nuclear families (63.6%), may be because of large number of selected children population belong to nuclear families. The morbidity has been found significantly associated with illiteracy (p<05) amongst the children. The analysis by sex showed that the morbidities were more common in males (59.2%) as compared to female (48.35%). These findings has been quoted by Lakshmi, 11 Bhansali, 12 Mittal A, 13 Panda P, 14 who observed more episodes in male as compared to female in their studies.

Age and gender wise distribution of morbid and non morbid preschool children

It has been observed that the episodes of illness were more among 4-5 years age group. There was no trend observed, where advancement or decrease of age is associated with increase or decrease of morbidity. The difference in the distribution of morbidity according to age and gender considered together was not statistically significant. The contrast trend was observed by Datta Banik. Maximum morbidity was observed in age group 4-5 (28.5%), which may be due to more exposure of this

higher age group to poor environmental conditions. The possible reasons for varying number of episodes in different studies could be differing geographic and climatic conditions.

Distribution of illnesses encountered in children with episodes during three months period (n=400)

There were a total of 1045 spells of sickness in 217 morbid children with in last three month. The mean incidence rate of morbidity was 4.82 episodes per child in three month. This corroborates well with the findings of Venkatesh S^{16} (4.85 episodes per child per year).

The respiratory infection was the commonest disease (46.25%) amongst the preschool children during the period of last three month followed by fever (34.25%), diarrhea (30.25%), measles (10.75%), worm infestation (6.75%), skin infection (5.0%), eye infection (8.0%) and ear infection (0.75%). Similar observations were found in studies conducted by Yurembam M et al, ¹⁷ Mukherjee DK, ¹⁸, Nwolisa CE et al, ¹⁹ where ARI was the commonest disease followed by diarrhea, however the fever was found second commonest symptom in the present study, the reason being on getting the history of fever it was difficult to make out the diagnosis.

It has been observed in the study that respiratory and diarrheal diseases together account for 76.5% of total morbidity in children under the age of five years. Similar

findings were reported by Datta Banik et al.¹⁵ who reported that respiratory and diarrheal diseases together account for 73.9% of total episodes of diseases with respiratory diseases contributing 39.7% and diarrheal diseases 33.9% of total episodes of diseases. Bansal RD.²⁰ also reported that respiratory illnesses and diarrhea accounted for 64.9% of all morbidity.

CONCLUSION

The present study concludes that respiratory infections and diarrheal diseases are still common among preschool children. Multiple morbidities in these children is still a major public health problem and there is a need for preventive community approach like availability of the health services, improvisation of the environmental sanitation and awareness of the community, that can certainly reduce the burden of the health problems.

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