Morbidity profile of Preschool children in a rural community of Shimoga, Karnataka

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Abstract

Introduction: Ensuring healthy growth and development of children should be a prime concern of all the countries as they are the future citizens of a country. Preschool children represents the most vulnerable group and they suffer from highest morbidity. There are geographical differences in the nature and extent of morbidities highlighting the need for area specific strategies and interventions.

Materials and Methods: A community based cross-sectional study was conducted for a duration of one year from January 2013 to December 2013 in the catchment area of PHC Aaynoor, Shimoga, Karnataka. Cluster sampling technique was used for sample selection and 400 preschool children were included by house to house visit. Data was collected using a pretested and semi - structured questionnaire by interviewing the mothers/guardian. Data thus obtained were entered and analyzed using WHO Epi-info software version 3.5.4.

Results: The prevalence of morbidity among study subjects was 20.25%. Acute respiratory infections were the most common morbidities affecting majority of the preschool children. Morbidity was found to be significantly associated with age, number of siblings and the paternal literacy of the child.

Conclusion: The present study findings may have important implications for policy-makers and planners seeking to improve child health.

Keywords: Preschool child, Morbidity, Age, Literacy.

Introduction

Children represent the future, and ensuring their healthy growth and development ought to be a prime concern of all the societies. Childhood is the period when the foundation for physical, psychological and social development of a human being are laid. The first few years of life represents the most crucial period as during this age there will be accelerated growth and development in the child, which warrants regular monitoring and any adverse influences occurring during this period may result in severe limitations in their development.[1, 2]

Preschool children constitute approximately 15% of the country's population and are the most vulnerable group which suffers from highest morbidity. These children represent a transition from infancy when the child is protected physically and physiologically by the mother and it is this period during which about 40% of physical growth and 80% of mental development occurs. This age group is most affected by various common and easily treatable illnesses.[3,4]

Globally, the under-five mortality rate has decreased in the last few decades from 91 in 1990 to 43 deaths per 1000 live births in 2015. However, still many countries have very high rates, and there is a huge disparity in child mortality between high-income and low-income countries.[5] India alone accounted for one-fifth of all under-five deaths with 48 deaths per 1000 live births in the year 2015. More than half of these deaths were due to diseases that are either preventable or treatable through simple, affordable interventions.[6]

There are wide variations in morbidity pattern among under-five children in different countries. Infectious diseases like "acute respiratory infections", "Diarrhea", malaria and whooping cough have been found to be the leading causes of morbidity and premature death in developing countries like India. Three in four episodes of childhood illness are caused by one of these conditions or a combination of them.[4] Even within India, there are geographical differences in the nature and extent of morbidities highlighting the need for area specific strategies and interventions. With this background, the present study was undertaken to study the morbidity pattern among preschool children in the study setting and its association with some selected variables.

Objectives of the Study

1. To estimate the prevalence and pattern of morbidities among preschool children in the study setting.
2. To determine the various factors associated with morbidity in children.

Materials and Methods

A community-based cross-sectional study was conducted for a duration of one year from January 2013 to December 2013 in the catchment area of PHC Aaynoor which is the rural field practice area of Shimoga Institute of Medical sciences, Shimoga, Karnataka. Ethical clearance for the study was obtained from Institutional Ethics Committee, SIMS, Shimoga.

Minimum sample size calculated was 390 with an absolute precision of 7% and a significance level of 0.05 and design effect of 2, taking 54% prevalence of morbidity from a previous study.[4] Cluster sampling technique was used for subject selection. There were four subcentres under PHC Aaynoor and each subcenter was considered as a cluster. In order to have a representative sample, it was decided to include 100 preschool children from each of the four sub centers to make a total sample size of 400. In each sub-Centre, one village was selected by simple random sampling. House to house visit was done and all the pre-school children of either sex were included for the study. The neighboring villages were also included for sample selection till a target of 100 pre-school children for that sub center was reached. Preschool children who were temporary visitors to the house, those who were not found in the house even after giving two visits and those residing in the study area for a duration of less than 6 months were excluded from the study.

Data about the socio-demographic profile, immunization history, history of current morbidity in the child and other relevant data were collected using a pretested and semi-structured questionnaire by interviewing mothers/guardian after taking an informed consent. Preschool children suffering from minor ailments were given treatment at their home itself while those with major illnesses were referred to nearest health center for management. Data thus obtained were entered and analyzed using WHO Epi-info software version 3.5.4.

Results

Out of the 400 preschool children included in the present study, 85 children were reported to be suffering from some morbidity thereby making a prevalence rate of 21.25%.

Acute respiratory infection (ARI) was the single most common morbidity affecting majority i.e. 67 (16.75%) followed by fever in only about 6 (1.5%) of children as seen in Fig. 1.
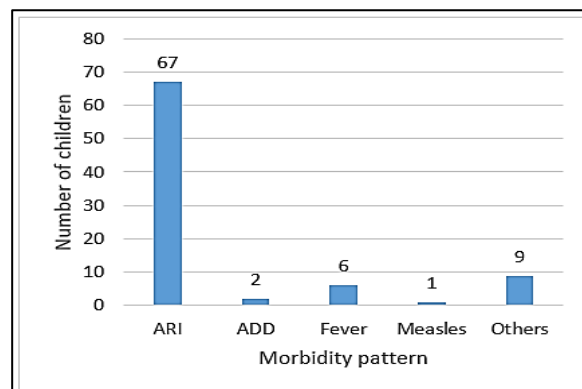

Fig 1: Distribution of study subjects according to their morbidity

Table 1 shows the association of morbidity prevalence among study subjects with certain variables related to child. It is evident from the table that the prevalence of morbidity was more in female children compared to males, but this was not found to be statistically significant ($P > 0.05$). Morbidity was found to be directly proportional to the age group of the child except for the age group of 48–59 months which had the least prevalence and the association between the prevalence of morbidity and age was found to be statistically significant ($P < 0.05$). Similarly there was significant association between the prevalence of morbidity among study children and the number of siblings they had ($P < 0.05$). However, the present study could not find any significant association between the prevalence of morbidity and birth order and immunization status of the child as evident from the table ($P > 0.05$)

Table 1: Prevalence of morbidity among study subjects according to certain variables of the child (n = 400).

Variable	Classification	Children Observed N	Morbidity status n (%)		
			Present	**Absent**	
Gender	Male	190	33 (17.4)	157 (82.6)	$\chi^2 = 3.258$
	Female	210	52 (24.8)	158 (75.2)	$P = 0.071$
Age (months)	12 – 23	112	19 (17)	93 (83)	
	24 – 35	101	21 (20.8)	80 (79.2)	$\chi^2 = 11.722$
	36 – 47	97	32 (33)	65 (67)	$P = 0.008$
	48 – 59	90	13 (14.4)	77 (85.6)	
Birth order	First	192	40 (20.8)	152 (79.2)	$\chi^2 = 0.535$
	Second	134	27 (20.1)	107 (79.9)	$P = 0.765$
	Third & above	74	18 (24.3)	56 (75.7)	
Number of siblings	None	87	10 (11.5)	77 (88.5)	$\chi^2 = 6.358$
	One	206	50 (24.3)	156 (75.7)	$P = 0.042$
	Two & above	107	25 (23.4)	82 (76.6)	
Immunization status	Complete	376	83 (22.1)	293 (77.9)	$\chi^2 = 2.546$
	Partial	24	2 (8.3)	22 (91.7)	$P = 0.111$

Table 2 shows the association of morbidity among study subjects with certain Social and Environmental factors. The present study could not find any significant association between the prevalence of morbidity among preschool children and the literacy and employment status of their mothers (P > 0.05). However, morbidity was directly proportional to the paternal literacy and this was found to be statistically significant (P < 0.05).

The prevalence of morbidity was more in children belonging to Hindu religion, more in Scheduled caste/ Scheduled tribe (SC/ ST) children among Hindus, more in children belonging to other than nuclear families and more in children residing in houses having toilets in the present study. However, none of the above mentioned factors showed significant association with morbidity (P > 0.05).

Table 2: Prevalence of morbidity among study subjects according to certain Social and Environmental

Variable	Classification	Children Observed N	Morbidity status n (%)		
			Present	**Absent**	
Literacy of mother (n = 400)	Illiterate	37	5 (13.5)	32 (86.5)	$\chi^2 = 2.878$ P = 0.237
	Literate but below High school	157	30 (19.1)	127 (80.9)	
	High school & above	206	50 (24.3)	156 (75.7)	
Employment status of mother (n = 400)	Housewife	351	79 (22.5)	272 (77.5)	$\chi^2 = 2.706$ P = 0.100
	Employed	49	6 (12.2)	43 (87.8)	
Literacy of father* (n = 398)	Illiterate	54	7 (13)	47 (87)	$\chi^2 = 7.911$ P = 0.019
	Literate but below High school	130	21 (16.2)	109 (83.8)	
	High school & above	214	57 (26.6)	157 (73.4)	
Religion (n = 400)	Hindu	342	74 (21.6)	268 (78.4)	$\chi^2 = 0.430$ P = 0.806
	Muslim	57	11 (19.3)	46 (80.7)	
	Christian	1	0 (0)	1 (100)	
Caste† (n = 342)	SC/ST	146	35 (24)	111 (76)	$\chi^2 = 0.819$ P = 0.365
	Others	196	39 (19.9)	157 (80.1)	
Type of Family (n = 400)	Nuclear	148	26 (17.6)	122 (82.4)	$\chi^2 = 1.904$ P = 0.168
	Others	252	59 (23.4)	193 (76.6)	
Availability of toilet in house (n = 400)	Present	301	69 (22.9)	232 (77.1)	$\chi^2 = 2.036$ P = 0.154
	Absent	99	16 (16.2)	83 (83.8)	

Discussion

The prevalence of morbidity in the present study was found out to be 21.25% which is similar to the findings of another study done in the same district.[6] Many other studies done in different parts of the country[1,2,4,7-11] however have found out even higher prevalence of morbidity among their study subjects which could be due to geographical differences in the study settings, differences in the profile of study population, differences in the study periods, differences in the method / tools of data collection etc. The most common morbidity affecting the children in the present study was Acute respiratory infections similar to the findings of many other studies.[3,4,6-8,12,13] On the contrary few studies[1,2,11,14] have found diarrhea as the most common morbidity and a couple of others[9,15] have found anemia.

The present study could not find any significant association between the prevalence of morbidity and the gender of the child unlike few other studies.[1,3,4,7]

However age of the child was found to be significantly associated with morbidity similar to the findings of other studies.[1,6,12] The prevalence of morbidity was significantly more in children who had at least one sibling against those who had none in the present study which confirms the findings of a longitudinal study done in Kolkata by Sucharita Maji et al.[16]

Neither literacy nor employment status of mothers have been found to have impact on morbidity among their children as per the present study findings. On the contrary a study by Mohan Shinde et al[4] in Madhya Pradesh and Nitin Joseph et al [17] in Karnataka have found inverse relationship between morbidity prevalence and Maternal literacy. Paternal literacy however has been found to be significantly associated with morbidity prevalence among children similar to the findings of a study by Mane V et al. done in same district of Karnataka.[6] Any other factors studied like religion, caste, type of family or availability of toilet in the house were

found to have no impact on the morbidity prevalence in the present study.

Conclusion

More than one in five preschool children was found to be suffering from some morbidity and Acute respiratory infections were the most common infections affecting majority of them. Morbidity was found to be significantly associated with age, number of siblings and the paternal literacy of the child in our study. The present study findings may have important implications for policy-makers and planners seeking to improve child health.

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