Research Article

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

Mohan Shinde*, Ankur Joshi, Anshuli Trivedi

Department of Community Medicine, Gandhi Medical College, Bhopal, M.P., India

Received: 07 June 2015
Accepted: 13 July 2015

*Correspondence:
Dr. Mohan Shinde,
E-mail: shinde_mohan@hotmail.com

Copyright: © the author(s), publisher and licensee Medip Academy. This is an open-access article distributed under the terms of the Creative Commons Attribution Non-Commercial License, which permits unrestricted non-commercial use, distribution, and reproduction in any medium, provided the original work is properly cited.

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 variables.

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.1 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%.7 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.6

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.9 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% significance level. The sampling frame has been 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 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).

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).

Table 1: Distribution of illness according to different characteristics.

| S. No. | Characteristics     | Illness last 3 months | P value |
|--------|---------------------|-----------------------|---------|
|        |                     | No (%)                | Yes (%) | Total (%) |         |
| 1      | Type of family      |                       |         |           |         |
| 2      | Literacy status of mother |                  |         |           |         |
| 3      | Sex                 |                       |         |           |         |
| 4      | Age in years        |                       |         |           |         |
|        |                     | <1 year                |         |           |         |
|        |                     | 1-2 year               |         |           |         |
|        |                     | 2-3 year               |         |           |         |
|        |                     | 3-4 year               |         |           |         |
|        |                     | 4-5 year               |         |           |         |

Source: International Journal of Community Medicine and Public Health; July-September 2015; Vol 2; Issue 3. Page 299
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(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, Mukherjee DK, Nwolisa CE et al 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

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

| Age in yrs. | Male | Female | Total | Male | Female | Total |
|-------------|------|--------|-------|------|--------|-------|
| 0-1         | 28   | 19     | 47    | 10   | 14     | 24    |
| 1-2         | 21   | 14     | 35    | 13   | 15     | 28    |
| 2-3         | 26   | 18     | 44    | 14   | 18     | 32    |
| 3-4         | 23   | 15     | 38    | 18   | 20     | 38    |
| 4-5         | 31   | 22     | 53    | 34   | 27     | 61    |
| Total       | 129  | 88     | 217   | 94   | 89     | 183   |

Age group <3 yrs. & >3 yrs. morbidity x²-5.8894, 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                         |
findings were reported by Datta Banik et al.\textsuperscript{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.\textsuperscript{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.

Funding: No funding sources
Conflict of interest: None declared
Ethical approval: Approved

REFERENCES

1. Bhansali KM, Mathur GM, Sharma R. A study of morbidity pattern in preschool children. Indian J Paediatrics. 1979;46:13-9.
2. Joshi S. Child survival, Health & Social work intervention (1996). Concept publishing company, New Delhi.
3. Sharma S, Gupta B.P. Prevalence of ‘At Risk’ Under-five Children in a Rural Area. Indian Journal of Community Medicine. 2005;30(1):30-1.
4. IMCI Information. Management of childhood illness in developing countries: Rationale for an integrated strategy. UNICEF. 1999.
5. Mishra CP. Strategic issues in child health. Indian J Public Health. 2010;54:75-80.
6. NFHS-3 International Institute of Population Sciences. National Family Health Survey NFHS-3 India. 2005-2006.
7. Lakshmi JA, Khyrunnisa B, Saraswathi G, Jamuna P. Influence of Nutrition and Environment on Morbidity Profile of Indian Preschool Children. Mal J Nutr. 2005;11(2):121-32.
8. Park K. Parks Text Book of Preventive and Social Medicine. 18th Edn. Jabalpur. M/s Banarsidas Bhanot. 2005.
9. Awasthi S, Pande VK. Seasonal pattern of morbidities in preschool slum children in Lucknow, North India. Indian Paediatrics. 1997;34:987-93.
10. Macfarlane SB. Conducting a Descriptive Survey: 2. Choosing a Sampling Strategy. Trop Doct. 1997;27(1):14-21.
11. Lakshmi J. A., Khyrunnisa Begum, Saraswathi G. & Jamuna Prakash, Influence of Nutrition and Environment on Morbidity Profile of Indian Preschool Children. Mal J Nutr. 2005;11(2):121-32.
12. Bhansali KM, Mathur GM, Sharma R. A study of morbidity pattern in preschool children. Indian J Paediatrics. 46: 13-19, 1979.
13. Mittal A, Singh J, Ahluwalia SK. Effect of maternal factors on nutritional status of 1-5-year-old children in urban slum population. Indian J Community Med. 2007;32:264-7.
14. Panda P., Benjamin, A.I., & Zachariah, P. Health status of under-fives in a Ludhiana slum. Health and Population, Perspectives and Issues. 16 (3&4), 133-141, 1993.
15. Datta Banik ND, Krishan R, Mane SIS, Lila R. Longitudinal study on morbidity and mortality patterns of children in Delhi during the first two years of life .A review of 1000 children. Indian J Med Res. 1967;55:504-10.
16. Venkatesh S, Bansal RD. A longitudinal study of morbidity among under five children in a semi-urban area. Ind J Community Med. 1986;11(1):11-20.
17. Yurembam M, Rajkumar N, Pukhrambam B, Hijam RKI, Rungsung S. Study of morbidity pattern among preschool children of urban and rural area of Manipur. Dept. of Community Medicine, RMS; 1992.
18. Mukherjee DK. A longitudinal study of the pattern of illness in under privileged Bengali Hindu Children from birth up to 18 months of age. Ind J Pub. Health. 1979;23(1):17-23.
19. Nwolisa CE and Erinangha Au. Pattern of morbidity among pre-school children attending the children’s outpatient clinic of Federal Medical Center Owerri, Nigeria. Niger J Med. 2005;14(4):378-80.
20. Venkatesh S, Bansal RD. A longitudinal study of morbidity among under five children in a semi-urban area. Ind J Community Med. 1986;11(1):11-20.

Cite this article as: Shinde M, Joshi A, Trivedi A. Morbidity profile of preschool children in rural area of central Madhya Pradesh. Int J Community Med Public Health 2015;2:298-301.