



BURDEN OF HOSPITALISED PAEDIATRIC MORBIDITY IN A SERVICE HOSPITAL OF CENTRAL INDIA

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ABSTRACT **Background** Life expectancy at birth, mortality and morbidity rates are important indicators of health status of a population. This study aimed at providing statistical data related to morbidity patterns of common illnesses seen in children admitted to a secondary care hospital of services in central India. **Methods** The study population comprised of children in the age group of 0 to 12 years, admitted during the year 2012 to 2016 (from 1st Jan 2012 to 31st Dec 2016). A retrospective record analysis was carried out from the data available in the medical records department. **Results** During the study period, the total no. of admissions was 3253 (M-1665, F- 1588). Nearly 48.80 % (n= 1588) were girls and 51.20 (n= 1665) were boys, with an almost equal sex ratio. Study does not show any significant gender inequality. **Conclusions** The study highlights that 3/4th of the hospitalised children were suffering from morbidity events like acute respiratory infections and gastroenteritis more care and attention needs to be paid in children of younger age group.

KEYWORDS : Morbidity, mortality

Introduction

Childhood morbidity consumes a substantial portion of health care resources in terms of hospital bed utilisation. Life expectancy at birth, mortality and morbidity rates are important indicators of health status of a population. In India there are huge variations in health across states and districts of the country (1). The estimates of morbidity in general and the disease specific incidence rates in particular would serve as valuable information to the health planners and administrators for appropriate and timely measures to monitor, control and eradicate the diseases. It will also enable the administrator to allocate resources for health i.e. such as hospitals, physician, medicine etc., and provide basic infrastructure such as sanitation and drinking water.

Morris SK, Bassani DG et al observed that 60% of all deaths in children are due to infectious disease and nearly half of these deaths are due to diarrheal diseases and pneumonia (7). ClaesonMet al reported the slowing decline in infant mortality rates in India; a departure from longer term trends (8). Studies have found contrasting pattern of evidences about disease burden in rural and urban population with some reporting greater burden among rural population than in urban population (10, 11). It has been argued that a better educated population takes more precautions against diseases which in turn reduce their morbidities.

Methods

The study was conducted in admitted children, 0-12 years of age from 1st Jan 2012 to 31st Dec 2016 in a service hospital Jabalpur in central India. Military hospital Jabalpur has 25 paediatric beds with many paediatricians.

In our study, bed occupancy rate has been recorded at 92% throughout the year. The data on morbidity and mortality were collected from the case records of the children or the discharge register kept in medical records department. Relevant information pertaining to socio demographic indicators, diagnosis, treatment prognosis of the disease condition at discharge and cause of death etc as recorded in the case records by the clinicians. Records of the children with missing information of demographic data and diagnosis were excluded from the study. All information collected was cross checked for completeness of the data from the records available at hospital.

Results

Table 1 shows distribution of children according to morbidity by age and sex. A total of 3253 children were admitted from 1st Jan 2012 to 31st Dec 2016. Of these 48.80% (n=1588) were girls and 51.20% (n=1665) were boys with an almost equal sex ratio of boys to girls. In both the

sexes highest morbidity belonged to the age group < 1 year (n= 1050 i.e. 32.4%) followed by the 1-4 years age group (n = 1008 i.e. 31%)

Table 1. Morbidity by age and sex

Age group (in years)	Boys		Girls		Total	
	Number	Percentage	Number	Percentage	Number	Percentage
<1 year	537	16.5	516	15.86	1053	32.37
1-4 year	511	15.7	497	15.27	1008	30.98
5-9 year	316	9.71	301	9.25	617	18.96
10-12 year	291	8.94	287	8.82	578	17.76
Total	1665	51.20	1588	48.80	3253	100

Table 2. Distribution of Paediatric Morbidity

Disease	No. of patients	Proportion of morbidity (%)
Acute respiratory infection	698	21.45
Gastroenteritis	531	16.32
Viral infections	86	2.64
Nutritional disorders	96	2.95
Accident and poisoning	254	7.80
Anaemia	195	5.99
Tubercular infection	78	2.39
Urinary tract infection	254	7.80
Seizure disorder	86	2.64
Others	975	29.97
Total	3253	100

Acute respiratory infection was the commonest morbidity in both the sexes (no. =698 (21.45%). This was followed by acute gastroenteritis no. =531 (16.32%). Anaemia was again very common no.=195 (5.99%). This included iron deficiency anaemia, megaloblastic anaemia, haemolytic anaemia like thalassemias as well as sickle cell anaemia and others. Accidents mainly road traffic accidents and various poisonings are also quite common cause of morbidity no. 254 (6.38%). There is an alarming rise accidental poisoning in paediatric age group. Urinary tract infection was another important cause of morbidity. The others category included various congenital anomalies, skin conditions, ear, nose and throat conditions, various malignancies, and surgical causes.

Discussion

Hospitalised Morbidity helps us to understand the health care needs of the community, judge the adequacy of health care resources and thus help in [planning and efficient bed management in the hospital]. A total of 3253 children comprising of 1652 males and 1601 females were admitted to the paediatric ward, of which about 30% were infants. Singh (18) observed a comparatively higher rate of admission by male children both in tertiary care institute and in command hospital. This could be related to preferential care to male child in the society along with the biological vulnerability of male to infection. The gender bias was not found in our study with male to female ratio being almost equal. In the present study, infants accounted for relatively higher proportion of the total bed days of admission.

The study only analyzed hospital admissions, which did not include children seen in emergency and outpatient department (OPD). The digestive system maladies were because of lack of safe water and poor sanitation in the homes as well as unhygienic handling of the infants feed. Similar results were reported by Ogbeide MI and Feacham RG (12,13). Gastroenteritis, acute lower respiratory infection and severe anaemia are the most important causes of childhood morbidity and mortality in Benin City, Nigeria, reports from other African countries also confirm the leading role of these preventable diseases as causes of childhood morbidity and mortality. (14, 15, 16, 17). This underlies the need to strengthen preventive paediatrics. This difference in morbidity pattern may be explained by the improvement in immunisation coverage against the target diseases as covered by the expanded programme on immunisation and the current breast feeding practices being advocated.

It should be noted that although hospital admission data are inevitably referral and access biased, they can provide useful information on morbidity and mortality in the community.

It is clear from the analysis that respiratory tract infection was the leading cause both in terms of number of cases and utilisation of bed days.

Conclusions

The study highlights that 3/4th of the hospitalised children were suffering from morbidity events like acute respiratory infection and gastroenteritis. More care and attention needs to be paid in children of younger age group. Respiratory tract infection including ARI was the leading cause for hospitalisation. These conditions together with convulsive disorder, consumed significant health resources in terms of bed days utilisation were identified.

REFERENCES

- Annual report 2010-2011 (2011) ministry of health and family welfare, department of health and family welfare.
- Registrar general of India. Sample Registration System (SRS) statistical report 2017, New Delhi: 2017
- UNICEF (2017) state of world's children, 2017.
- March of dimes, the partnership of maternal newborn and child health, save the children, WHO, born to soon; the global action report on preterm birth, Geneva, WHO. 2012 (http://whqlibdoc.who.int/publications/2012/9789241503433_eng.pdf. accessed 13 Oct 2014).
- Ministry of health and family welfare (2011) family welfare statistics in India. Statistics division, ministry of health and family welfare, government of India, India.
- Duriasamy P. Morbidity in Tamilnadu; levels, differential and determinants, economic and political weekly, 1998;33(17).
- Morris sk, Bassani DG, Awasthi S, Kumar R, Shet A, et al Diarrhoea, Pneumonia and Infectious disease mortality in children aged 5 to 14 years in India. PLoS ONE. 2011;6(5):e20119
- Claeson M, Bos ER, Mawji T, Reducing Child Mortality in India in the new millennium, Bulletin of the world health organisation, 2000;78(10):1192-9
- Krishnaswamy P, morbidity study – incidence prevalence, consequences and associates "Discussion paper no. 78, Kerala research programme on local level development, centre for development studies, 2004.
- Gumber A, Kulkarni V, Health insurance for workers in informal sector, Detail result from a pilot study, National Council for Applied economic Research, New Delhi, 2000.
- Duggal R, S Amin, Cost of Health Care, an household level survey in an Indian district, foundation for research in community health, Bombay, 1989.
- Davies RL, Macaulay HMC, Hospital planning and administration, WHO monograph series no.54, WHO, Geneva, Jaypee Brothers, India, 1995:6-35.
- Manual of international statistical classification of diseases and related health problems (10th revision), volume 1 & 2, second edition published by the WHO Geneva, 2010.
- lawal OM, Temiye EO, Pattern of preschool children's admission and mortality in a private health facility in Lagos, Nigeria, Nig Med Pract, 1998;35(3/4):42-6
- Rajmil L, Fernandez E, Salas T, Gender differences in children hospitalisation in Catalonia. Another inequality? Acta Paed Scand. 1999;88:990-7.
- Ogbeide MI, Socioeconomic factors in diseases of infancy and childhood (with particular reference to Nigeria), Ghana. Med j. 1968; 7:129-38.
- Feacham RG. Intervention for the control of diarrheal diseases among young children: promotion of personal and domestic hygiene. Bull World Health Organisation. 1984; 62:467-6.
- Singhi S, Singhi S, Gupta G. Comparison of paediatric emergency patients in a tertiary care hospital vs. a community hospital. Indian Paediatrics 2004;41:67-72.