

Pattern of Paediatric Mortality of hospitalized patients in a Tertiary Care Hospital, Rawalpindi

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Abstract

Introduction: Mortality of children is the prime indicator of a country's health status and its development. Understanding child mortality among different age groups is one of the valuable public health insights. Therefore, studies regarding child mortality patterns are essential for re-evaluating existing health services.

Objective: The objective of this study is to describe the pattern of paediatric mortality in our hospital.

Materials and Methods: A retrospective analysis was done with the medical records of Pediatric patients (up to 12 years) who died in the Pediatrics department of Benazir Bhutto Hospital, Rawalpindi from 1st Jan 2018 to 31st Dec 2018.

Results: A total of 15,500 children were admitted to the Paediatric department from 1st January 2018 to 31st December 2018. A total of 1738 deaths were recorded. The overall mortality of 11.3% was noted in the cases admitted to the Paediatric Department.

Conclusion: Septicemia, Acute respiratory infection(ARI)/Pneumonia, Birth asphyxia, and low birth weight (LBW)/prematurity were the major causes of paediatrics mortality.

Keywords: Child mortality, pre-maturity, birth asphyxia, septicemia.

Introduction

Many factors are contributing to high child mortality rates around the globe. Preventable diseases are responsible for a large number of deaths in vulnerable children who do not have access to vaccinations. Poor sanitary environment especially in regions with turmoil and chaos leave children Worldwide in despair. Malnutrition and hunger kill millions of innocent children who do not have the proper availability of food and nourishment.

Over the last two decades, the World made substantial progress in reducing mortality amongst children and adolescents (including children under age 5, children aged 5–9, and adolescents aged 10–14). Still, in 2017 alone, an estimated 6.3 million children and young adolescents died, mostly from preventable causes. Children under age 5 accounted for 5.4 million of these deaths, with 2.5 million deaths occurring in the first month of life, 1.6 million at age 1–11 months, and 1.3 million at age 1–4 years. An additional 0.9 million deaths occurred amongst children aged 5–14.¹ Globally, the majority of child mortality occurred during the earlier age with 85 percent of the 6.3 million deaths in 2017 occurring in the first five years of life. Across all regions and income groups, more than 80 percent of the deaths of children under age 15 happened in the first five years of life¹. In 2017, half of all deaths under 5 years of age took place in Sub-Saharan Africa and another 30% in Southern Asia. In Sub-Saharan Africa, 1 in 13 children died before their fifth birthday. In high-income countries, that number was 1 in 185.

In Pakistan, one in every 14 children die before reaching the age of one year and one in every 11 does not survive to his or her fifth birthday. Pakistan is still ranked among the countries with the highest birth rates². Given this progress the targets set in the sustainable development goals (SDGs 3) of WHO become even more ambitious, which state lowering the under-five mortality to 25 deaths per 1,000 live births by 2030.³ The World Health Organisation (WHO) has estimated the under-five mortality rates at 81.1 per 1,000 live births in this country. In Pakistan Neonatal Mortality Rate (NMR) in rural and urban areas is 62 per 1,000 live births and 47 per 1,000 live births respectively.² To accomplish the United Nations Sustainable Development Goals, it is crucial to continue studying the complexities of child health and monitoring causes of paediatric mortality so that it can be translated into a plausible health policy. The

objective of this study is to describe the 2018 paediatric mortality in our hospital.

Materials and Methods

We conducted a secondary analysis of official data from our hospital for one year. The data was scrutinized by the investigators for any disparity and was again cross-matched with the registers before being put into the departmental record. Such records from 1st January 2018 to 31st December 2018 were retrieved for the study purpose. The surgical cases including road traffic accidents, operated cases, and few congenital abnormalities for which surgery was indicated were excluded from the study because these cases were primarily being treated by the paediatric surgical department. Data was entered and analysed using SPSS version 24.

Results

A total of 15,500 children were admitted to the Paediatric department during the period from 1st January 2018 to 31st December 2018. A total of 1738 deaths were recorded. The overall mortality of 11.3% was noted in the cases admitted in the Paediatric Department. Among the children expired, 47.3% of children were female and 52.7% of children were male. Out of total paediatric deaths, 65% were postneonatal deaths. Amongst the children of the 1-4 year age group and 5-12 year age group, the mortality was 20.7% and 14.3% respectively. The risk of death was found to be more in female children of the 5-12 year age group when compared to male children of the same age group.

Table 1: Age Distribution

Age group	Male Deaths	Female Deaths	Total Deaths
Upto 1 year	640	531	1171
01 - 04 years	170	151	321
05 - 12 years	106	140	254
Total	916(52.7%)	822(47.3%)	1738

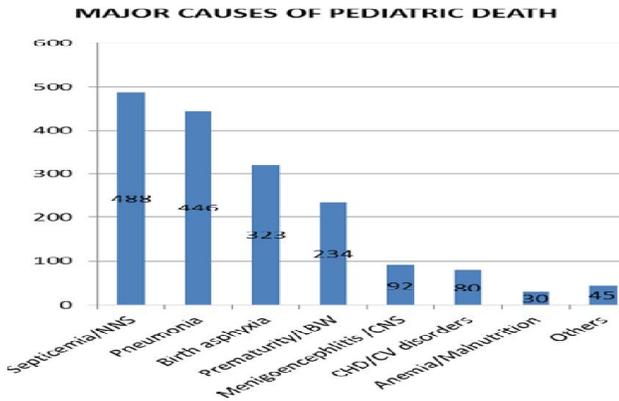


Figure 1: Major Causes of Death

Table 2: Duration of Hospital Stay

No. Of Deaths (n=1738)		N	%
Duration of stay	Less than 24 hrs	353	20.3
	1-5 days	699	40.2
	More than 5 days	686	39.5

Discussion

We analysed data on the mortality of children admitted to our hospital for one year. The overall mortality rate was found to be 11.3%, which is similar to studies by Singh et al⁴ and Forae et al.⁵ Higher rates of mortality in tertiary care hospitals could be attributed to a referral from peripheral hospitals in critical conditions. The outcome of the patient depends on many factors including the severity of the disease, prior treatment, and time of referral and condition at admission. Without detailed analysis contribution of these factors could not be ascertained.

Male dominance amongst the admitted is a significant concern. Different levels of care amongst different genders could be a potential cause with the preference for taking male children to the hospital, as biased affection for male children is a documented problem in developing countries. Higher death rates amongst older female children could also be a result of a negative attitude towards the girl child.

There is a gradual reduction in the mortality rate with increasing age of the children. We recorded more than 65% mortality in under 12 months of age, A finding similar to the studies by Burstein et al⁶, Abir et al⁷, Ghimire et al⁸, and Okoronkwo et al.⁹ The differences between our study and other studies could be ascribed to the fact that our hospital is a tertiary care hospital with no rejection policy for admissions, serves all the

surrounding areas and usually deals with critical cases referred from other hospitals.

The current study shows that septicemia (28.2%) is the leading cause of death followed by ARI/Pneumonia (25.6%) and Birth Asphyxia (18.6%). The high mortality (14.3%) in 1-4 years age group compared to older children may be due to the fact that they are more prone to infections. Similar trends in the cause of mortality have been reported by Liu et al¹⁰ and Forae et al⁵ and Ojoronkwo et al.⁹ This study also shows meningitis as a significant infection amongst 1-4 year old children.

Conclusion

The mortality rate especially under 1 year of age is high in our department. Having an admission policy with admissions according to the number of beds available only, will reduce the overload and improve the working conditions and is therefore likely to decrease the mortality.

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