

Investigating the causes of death in children at Children's Hospital of Tabriz

Nemat Bilan(MD)¹, Mahya Ebrahimi(MD)², Zakiyeh Ebadi(MD)¹, Babak Abdinia(MD)^{1*}

¹Pediatric Health Research Center, Tabriz University of Medical Sciences, Tabriz, Iran.

²Faculty of Medicine, Tabriz University of Medical Sciences, Tabriz, Iran.

ARTICLE INFO	ABSTRACT
<p><i>Article type:</i> Original article</p> <hr/> <p><i>Article History:</i> Received: 24-Sep-2019 Accepted: 29-Dec-2019</p> <hr/> <p><i>Key words:</i> Children, Disease, Mortality.</p>	<p>Introduction: Death has long been considered important, because of its substantial impacts on population dynamics. Specifically, child mortality is one of the most important indicators of development and one of the determinants of life expectancy. Investigation of child mortality causes and elimination of preventable cases can play a major role in the health and productivity of the community. Given the distribution and causes of child mortality in different countries and regions, each region should be separately studied for strategic policymaking.</p> <p>Materials and Methods: The present research was a retrospective study in which the medical records of dead children in Children's Hospital of Tabriz were extracted from 2011 to 2016 and their demographics were recorded in special checklists. Finally, the obtained data were statistically analyzed.</p> <p>Results: Among 788 expired cases, the most common causes of child mortality in the studied hospital were congenital heart defects 118(15%), cancer 69(8.8%), and other congenital anomalies 68(8.6%). The mortality rates of males and females were 55.8% and 44.2%, respectively. In addition, the highest mortality rate was related to children with age one month to two years 83.7%(660) and then 2-7 years 10.2%(80), and 7-18 years 6.1% (48). The findings also indicated that most cases were from urban areas.</p> <p>Conclusion: Maternal nutrition improvement, gestational diabetes control, vaccination improvement, and increased awareness of health sector staff can be effective in reducing genetic anomalies and deaths caused by them. Therefore, special planning should be done for interventions such as referral for genetic counseling and genetic tests before cousin marriages. Moreover, pregnant women should be trained in unnecessary drug use and non-exposure to radiation and chemicals.</p>
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Introduction

Determining the causes of child mortality is of great importance because of its association with policymaking and planning. Patterns and trends associated with the causes of child mortality help decision-makers to investigate preplanned requirements, prioritize the

interventions, and monitor their progress (1-3).

However, there is little information on child mortality causes in developing countries, where vital registration systems have a poor coverage and most deaths occur outside the health system. Child mortality causes are categorized based on the child gender,

* **Correspondence Author:** Pediatric Health Research Center, Tabriz University of Medical Sciences, Tabriz, Iran.
Tel: 0098-41-35262280. E-mail: babbdinia@yahoo.com

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residence (rural or urban), regional division, and mother's education (3-5).

The results indicated that mortality causes in the studied center were somewhat different from the state pattern. The main causes of child mortality in Iran include accidents, anomalies, acute respiratory infections, infectious diseases, perinatal diseases, and malignancies. Some studies have shown that about a quarter of deaths among children aged under five years are due to acute respiratory infections and about one-fifth due to diarrhea (6, 7). Drowning, tetanus, and measles were among other causes of child mortality (8, 9). With the advancement of science and health care, almost all causes of child mortality have reduced. Confirmation of this considerable drop in mortality among children requires further studies (10). Assessment of child mortality causes may help to explain the reasons for this reduction and yet increase the attention to these causes (11).

Some child mortality causes such as child abuse or suicide may be rare but they should be taken into account due to their possible social consequences. The present study aims to investigate the common causes of child mortality in Children's Hospital of Tabriz. The main objective of this study is to determine the most common causes of mortality in this age group, provide future studies and strategic policymaking with a clear perspective, and take small steps towards reducing mortality among infants and children.

Materials and Methods

After approval by the Ethics Committee and considering the principles of confidentiality and medical ethics, medical records of dead children in Children's Hospital of Tabriz from 2011 to 2016 were reviewed. The required data were extracted and recorded on a special checklist by the author in collaboration with the Death Committee Expert of Children's Hospital of Tabriz. The data included age, gender, place of residence, and cause of death. Based on complete enumeration, the sample size was determined to be 788. The data were statistically analyzed in SPSS (version 22 for Windows; SPSS Inc., Chicago, IL). The cause of death was determined and confirmed by a

physician in all cases. Patient information was coded and kept confidential and all principles of medical ethics were observed.

Results

In this study, 788 cases of child death in Children's Hospital of Tabriz from 2011 to 2016 were reviewed. In terms of gender, 55.8% of dead Children were male and 44.2% were female. The highest frequency of deaths was related to children aged under 2 years. Regarding the place of residence, 68.4% of dead children were from urban areas and 31.6% from rural areas. The results showed that the most common causes of death among children included congenital heart defects 118(15%), malignancies 69(8.8%), and anomalies 68(8.6%). Since there are multiple causes of child mortality, only the most common causes are discussed in this article. A case of possible suicide was recorded among mortality causes in children and adolescents.

Discussion and Conclusion

Based on the results, the order of child mortality causes in the studied center is different from the domestic and foreign patterns (12). The main causes of child mortality in Iran include accidents, anomalies, acute respiratory infections, infectious diseases, perinatal diseases, and malignancies (13-16). Since there is no trauma ward in the studied hospital, the rate of mortality caused by trauma is low in this center. In addition, since the Children's Hospital of Tabriz is a referral center in the northwest of Iran, child mortality in this center may be different from domestic and foreign centers. The main cause of child mortality in this study was congenital heart defects. This is consistent with the findings of a study conducted in Ardebil in which the main causes of child mortality were reported to be congenital anomalies (31%), accidents (23%), and infection (11%) (16). Similar to this study, congenital anomalies were the most common cause of child mortality in the Ardebil study. Accidents were the second cause of child mortality in Ardebil. Due to the lack a trauma ward in Children's Hospital of Tabriz, the number of child mortality caused by accidents in the studied hospital was lower than Ardebil. In a study conducted in

Kermanshah, child mortality was equal to 45.1% among girls and 54.9% among boys. In addition, the main causes of child mortality in this province included accidents (18.6%) acute respiratory infections (14.9%), and cardiovascular diseases (12.1%). This is consistent with a study conducted in Zabol but different from the results obtained from Ardebil and the studied center (17-19).

The highest frequency of mortality in the present study was related to children aged under 2. This indicates the vulnerability of children at this age and the need for providing more care for them. However, further studies are needed to investigate the underlying causes and prevention methods. Unfortunately, some information such as the use of cigarettes or other harmful substances and other factors affecting the birth or life of children was not recorded in medical files, making judgment or investigation difficult. Therefore, the health care practitioners are recommended to record effective causes or components on medical records of dead persons (19-22). One of the research limitations was the lack of data on accidents causing child mortality. Hence, there is a need for another study to investigate all causes of child mortality in all public and private health centers of the studied province.

Maternal nutrition improvement, cigarette and alcohol restraint during pregnancy, gestational diabetes control, vaccination improvement for infants and mothers, and increased awareness of health sector staff can be effective in reducing genetic anomalies and deaths caused by them. Therefore, special planning should be done for interventions such as referral for genetic counseling and genetic tests before cousin marriages. Moreover, pregnant women should be trained in unnecessary drug use and non-exposure to radiation and chemicals.

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