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The International Classification of Diseases- Perinatal Mortality: A Global Strategy to End the Silent Epidemic

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ABSTRACT

A significant proportion of perinatal deaths are preventable. The most critical factor contributing to the failure of international programs aimed at reducing preventable perinatal deaths is the lack of sufficient and accurate information about the causes of these deaths. This deficiency hinders the ability of countries to develop effective interventions for reducing perinatal mortality rates. Various classification systems have been developed to categorize the causes of perinatal death, aiming to enhance understanding and prevention. However, these systems face several challenges, such as assigning a considerable portion of perinatal deaths to unknown causes and usability limitations in developing countries with high perinatal mortality rates. The need for a comprehensive and unified international system for classifying the causes of perinatal mortality is crucial due to the variety of current classification systems, which hinder data comparison at national and global levels. This editorial study aims to introduce the first classification system for the causes of perinatal mortality with international applicability developed by the World Health Organization.

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Introduction

Perinatal deaths are a worldwide problem, with more than five million occurring every year, a significant number of which are preventable. However, the process of registering and reporting perinatal deaths is weak and ambiguous, leaving many of them uncounted and thus leading to a silent epidemic (1). The first step in any program to reduce preventable perinatal mortality is to record and accurately classify the causes of deaths (2, 3). Therefore, systems that classify the causes are essential tools for researchers, policymakers, and medical staff engaged in efforts to reduce the number of these deaths (4).

A 2015 systematic review found that 81 different systems for classifying the causes of perinatal mortality were used in 40 countries between 2009 and 2014. These systems have fundamental differences in their basic principles, such as the number of recorded primary causes, consideration of stillbirths and neonatal deaths together, and consideration of the time of perinatal deaths (4). In 2016, a Delphi study with the presence of experts in the field from 21 countries identified 17 key features for a classification system for the causes of perinatal mortality through a consensus process (5). Nevertheless, studies have shown that none of the existing perinatal

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mortality cause classification systems has all the characteristics, and most of them lack less than half of these key characteristics (6). The variety of classification systems hinders the ability to compare, understand, and estimate the causes of perinatal deaths at the national and international level, which can adversely affect decision-making for effective interventions (7, 8). Therefore, considering the growing trend of perinatal deaths, especially in low- and middle-income countries, all countries in the world are required to adopt a single system of classification for the causes of perinatal deaths and take into account maternal conditions that affect the time or occurrence of deaths (5, 9). The World Health Organization (WHO) also acknowledged the necessity of this issue and, in 2008, for the first time, proposed the International Classification of Diseases 10th Edition (ICD10) to classify the causes of perinatal mortality. This issue facilitated the collection, analysis, and interpretation of relevant information in this field (10). However, in 2010, a review identified a need to create an international classification system for perinatal deaths that includes all key characteristics, such as maternal conditions and the underlying causes at the time of perinatal deaths (11). Furthermore, the poor registration and classification of perinatal deaths, especially stillbirths, with ICD10 became a driving factor for WHO to try to create a single and comprehensive classification system for perinatal deaths (4). Therefore, in 2014, a working group was formed, including obstetricians, gynecologists, epidemiologists, and public health specialists from developing and developed countries, to create standard guidelines for recording information related to perinatal deaths to classify their causes. The findings of this project, in addition to those of a systematic review study, led to the identification of more than 80 perinatal death classification systems. A Delphi study also identified the characteristics of an ideal classification system for the causes of perinatal deaths. Furthermore, the results of an exploratory study about the relationship between the main characteristics of the ideal system and the existing classification systems were used as a background for the development of a classification system with international applicability. The working group meetings in July 2014 resulted in the final decision for the structure and content of the new classification system. The criteria of the working group for the development of the system included major principles, such as applicability on a global scale and compliance with the ICD10 rules of coding the causes of perinatal deaths in volume two of ICD10, which allows the identification of the most relevant code from among the groupings. They effectively applied ICD10 categories through the correct application of coding rules and developed the new system to be compatible with ICD11, which will be in the near future. Finally, in 2016, WHO developed ICD10 codes for perinatal deaths and published them in August of the same year under the title of the International Classification of Diseases for Perinatal Mortality (ICD-PM). This system is the first classification system for the causes of perinatal deaths that was developed on a global scale and uses a layered approach to classify the causes of perinatal deaths based on the time of death. At the first level, the type of perinatal mortality is determined based on the time of its occurrence, which includes antepartum, intrapartum, and early neonatal deaths (less than seven days). At the second level, there are several categories, each of which is divided into smaller subcategories. With each layer, a more specific underlying cause of death is identified, for which more clinical and diagnostic information is required. At the third level, maternal conditions affecting the occurrence of deaths are identified (12). ICD-PM allows local, regional, and national healthcare institutions to review perinatal deaths based on regional priorities. It also provides the possibility of a more detailed examination of perinatal deaths based on the time of death, tracking very rare causes of death and their related codes. (13) A pilot study in South Africa and England approved the ICD-PM as a standard for classifying the causes of perinatal mortality at the global level (developed and developing countries) (14).

WHO asserts that the adaptation of ICD-PM can lead to the reduction of coding errors and the improvement of data quality related to the causes of perinatal mortality. It can also improve the applicability and comparability of the statistics produced by ICD10 and enable the standardization of the results of the reports. Therefore, it is recommended to use this system to classify the causes of perinatal mortality in different countries around the world (12). Since its publication, this system has been used in countries such as South Africa, England, Australia, Turkey, and Qatar to classify the causes of perinatal mortality.

Conclusion

ICD-PM, as an international classification system for the causes of perinatal deaths, has the potential to establish the correct relationship between maternal complications and perinatal deaths, which can lead to the identification of

effective interventions to prevent perinatal and maternal deaths. However, despite the relatively long time since the introduction of this system by the WHO, no use has been reported in Iran yet. Therefore, it is recommended that this system be adapted in the obstetrics and gynecology units of hospitals in the country to improve clinical performance and identify and classify the causes of perinatal mortality.

Conflict of interest

The authors declare that there is no conflict of interest regarding this study.

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