

Review / Derleme

Public health strategies to fasten the achievement of the millennium development goal -4A related to under-five mortality

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ABSTRACT

Under-five mortality rate (U5MR) refers to the total number of deaths in the age group of 0-5 years divided by the total number of live births in the same time interval. Under the MDG-4A, the target was to reduce U5MR by two-thirds, between 1990 and 2015. An extensive search of all materials related to the topic was made using library sources including Pubmed, Medline and google scholar searches. Keywords used in the search include under-five mortality rate, Millennium development goals, and global. Although, reduction in U5MR has been observed, the decline is neither sufficient nor uniform, being highest in the African region and least in the European continent. Multiple barriers and gaps have been identified that are eventually aggravating the magnitude of the under-five mortality. In order to reduce the global burden of under-five mortality and to counter the identified challenges, there is a need of formulating innovative, cost-effective, multi-faceted and targeted strategies to address the problem in all dimensions. To conclude, there is a crucial need to save lives of under-five children by ensuring strategic implementation of comprehensive and target-oriented strategies, especially in developing countries to universally achieve the millennium development goal-4A.

Keywords: Under-five mortality rate, Millennium development goals, Global, Policy

INTRODUCTION

With just one year remaining to achieve the Millennium Development Goals (MDGs), considerable improvement has been recorded in most of the health-related indicators¹. Under-five mortality rate (U5MR) refers to the total number of deaths in the age group of 0-5 years divided by the total number of live births in the same time interval². Under the MDG-4, the target was to reduce U5MR by two-thirds, between 1990 and 2015 (i.e. annual rate of reduction of U5MR by 4.4% each year between 1990 and 2015)². However, in the year 2012, almost 6.6 million under-five deaths have been recorded, accounting for roughly 18000 deaths every day³. Although, reduction in U5MR has been observed, the decline is neither sufficient nor uniform, being highest in the African region and least in the European continent^{1,3}. In fact, global heterogeneity has been even observed in high (6 deaths/ 1000 live births) and low income countries (82 deaths / 1000 live births)³. In another dimension, despite overall reduction in under-five deaths, the proportion of such deaths occurring during the neonatal period has greatly increased¹.

The aim of this article is to systematically review the published literature on the potential risk factors of under-five mortality, identify the challenges in the field of child health care, and finally suggest interventions to reduce the magnitude of under-five mortality.

MATERIAL AND METHODS

An extensive search of all materials related to the topic was made using library sources including Pubmed, Medline, World Health Organization (WHO) website and Google scholar searches in the month of May 2014. Relevant documents, technical publications series, systematic reviews, research articles focusing on practice of under-five mortality published in the

period 2005 – 2014 were included for the review. Overall 26 articles were selected based upon the suitability with the current review objectives and analyzed. However, eight of them could not be included on account of their non-availability of the full versions. Hence, for final analysis 18 research articles and two monographs from WHO website were utilized. The identified articles were then re-grouped into different sections viz. potential determinants; identified barriers; and recommended measures to counter under-five mortality. Keywords used in the search include under-five mortality rate, Millennium development goals, and global.

POTENTIAL DETERMINANTS

A wide range of potential determinants such as maternal age^{4,5}; sex of child^{5,6}; birth order^{2,5}; short birth intervals^{2,7}; socio-economic status & lowest wealth quintile^{5,8,9}; rural-urban disparity⁸; place of residence⁵; mother's education status^{2,5,7,9}; mother's occupation⁵; maternal health status²; accessibility to health care services¹⁰; social inequality^{2,5}; quality of antenatal / intra-natal / postnatal care services^{5,11}; low birth weight²; under-nutrition^{12,13}; breastfeeding (exclusivity and duration)⁸; socio-cultural practices⁵; political commitment¹¹; economic growth of the country¹¹; infectious diseases (i.e. measles, malaria, pneumonia, diarrhea)¹⁴; hazardous environmental effects on childhood illness¹³; and religious attitude of the mother¹⁵; have been attributed in the causation of under-five mortality. Different tools and measures (i.e. Lives Saved Tool or Gaussian Process Regression or utilizing vital statistics, etc.) have been employed to accurately measure the under-five mortality in variable settings^{14,16,17}.

IDENTIFIED BARRIERS

Multiple barriers and gaps like absence of sustained level of political commitment; inadequate monetary support; ineffective family welfare policies; disparities within the developing countries; absence of policies aimed at reducing socioeconomic inequalities between rural and urban areas; poor implementation of strategies to improve education of girls; scarce number of competent health care personnel; limited number of healthcare establishments offering integrated form of care under the same roof; non compliance of the physician with the standardized protocol recommended for the management of childhood illnesses; poor health care / treatment seeking behavior; prevalence of high malnutrition among children; presence of myths/misconceptions associated with exclusive breastfeeding practices; absence of regular training / re-training of the health care staff; non-utilization of the outreach workers in a systematic & planned manner; minimal education of the mother about the danger signs pertaining to common illness & importance of routine care in the home; limited involvement of allied sector / non-governmental organizations; and minimal linkages with national / international welfare agencies have been identified that are eventually aggravating the magnitude of the under-five mortality^{1,2,8,13,18,19}.

RECOMMENDED MEASURES TO COUNTER UNDER-FIVE MORTALITY

In order to reduce the global burden of under-five mortality and to counter the identified challenges, there is a need of formulating innovative, cost-effective, multi-faceted and targeted strategies to address the problem in all dimensions^{1,20}. However, the crucial step is to ensure continuous political and financial support so that the existing strategies can be regularly

modified based on the trends and available resources^{11,21}. In addition, special emphasis should be given to parameters like establishing a sound health information system within the community / hospital settings²²; developing strategies to guarantee the holistic development of the population by reducing social inequality / poverty^{1,8,20}; improving education status of the girl child^{2,5,7,9}; strengthening of the existing health care delivery system²; filling-up all vacant posts of health care personnel²⁰; training outreach workers and utilizing them optimally to clear the myths associated with child care (i.e. pertaining to breastfeeding / dietary habits / health care practices)^{19,22}; implementing strategies to ensure availability of quality assured / integrated health care services^{5,10,11}; sensitizing physicians to be compliant with the recommended treatment protocol for childhood morbidities¹⁸; advocating home-based management of diseases of childhood¹⁴; ensuring maximum involvement of the mother in the process of early recognition of danger signs and rehabilitation of the child by imparting health education^{14,19,22}; increasing healthcare-seeking behavior among all sections of society^{18,22}; fostering linkages with the non-governmental / international organizations¹; and developing a strong monitoring & supervision mechanism^{1,3}; so that the coverage of existing strategies can be expanded.

IMPLICATIONS FOR PRACTICE

The findings of the current review clearly reflect the necessity for a comprehensive national program for the holistic development of the child well supported by strategically planned awareness campaigns to spread information about the potential risk factors that can lead to under-five mortality. Standardized guidelines should be formulated with regard to the management of all common ailments in children and physicians from

both the public / private health sector should be sensitized about the same. In addition, the outreach community health workers should be periodically trained to facilitate early recognition of danger signals and thus promote referral to higher centers. Above all, a strong political will is desired for supporting the existing maternal & child welfare programs and for establishing a network with national / international agencies to reach to the children from remote areas.

CONCLUSION

To conclude, there is a crucial need to save lives of under-five children by ensuring strategic implementation of comprehensive and target-oriented strategies, especially in developing countries to universally achieve the millennium development goal-4A.

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