

Child Mortality at Different World Regions: A Comparison Review

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Abstract

The loss of a child is a tragedy - families suffer and human potential is wasted. 6.3 million children under the age of five died in 2013, nearly 17 000 every day. Most deaths among children aged one to five years are due to diseases that can be prevented, but that can also be easily treated at home or in health facilities. Leading causes of death in under-five children are preterm birth complications, pneumonia, birth asphyxia, diarrhea and malaria. About 45% of all child deaths are linked to malnutrition.

Under-five deaths are increasingly concentrated in sub-Saharan Africa and Southern Asia, while the proportion in the rest of the world dropped from 32% in 1990 to 18% in 2013. Children in sub-Saharan Africa are more than 15 times more likely to die before the age of five than children in developed regions. About half of under-five deaths occur in only five countries: China, Democratic Republic of the Congo, India, Nigeria and Pakistan. India (21%) and Nigeria (13%) together account for more than a third of all under-five deaths.

Key Words: Child mortality, World, Neonate, Disease, WHO regions.

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1-Introduction

The under-five mortality rate is a key indicator of child well-being, including health and nutritional status. It is also a key indicator of the coverage of child survival interventions and, more broadly, of social and economic development.

Millennium Development Goal 4 (MDG 4) calls for reducing the under-five mortality rate by two-thirds between 1990 and 2015. The world has made substantial progress, reducing the rate 49 percent, from 90 (89, 92) deaths per 1,000 live births in 1990 to 46 (44, 48) in 2013. Since 1990 almost 100 million children under age five-roughly the current population of the Philippines have been saved. The world is also reducing under-five mortality faster than at any other time during the past two decades. The global annual rate of reduction has steadily accelerated since 1990-1995 more than tripling from 1.2 percent to 4.0 percent in 2005-2013 (1, 2).

Despite these gains, child survival remains an urgent concern. The toll of under-five deaths over the past two decades is staggering: between 1990 and 2013, 223 million children worldwide died before their fifth birthday-more than today's population of Brazil, the world's fifth most populous country. Progress has been insufficient, and the MDG 4 target risks being missed at the global level. To achieve MDG 4 on time, the global annual rate of reduction in under-five mortality would need to rise to 20.8 percent for 2013-2015, much higher than the 4.0 percent achieved over 2005-2013. At the country level, historical trends show that progress for most countries has been too slow and that only 12 of the 60 countries with high under-five mortality rates (at least

40 deaths per 1,000 live births) are on track to achieve MDG 4 if current trends continue (1, 3).

It is unacceptable that every day 17,000 children still die before their fifth birthday, mostly from preventable causes and treatable diseases, even though the knowledge and technologies for life-saving interventions are available. In addition, inequities in child mortality between low and high-income countries remain large. In 2013 the under-five mortality rate in low-income countries was 76 deaths per 1,000 live births-more than 12 times the average rate in high-income countries (4). Many countries still have very high rates-particularly in Sub-Saharan Africa, home to all 12 countries with an under-five mortality rate of 100 deaths or more per 1,000 live births. Reducing these inequities across countries and saving more children's lives by ending preventable child deaths are important priorities. With the share of under-five deaths during the neonatal period rising in every region and almost all countries, accelerated change for child survival needs more focus on a healthy start to life. In 2013, 2.8 million newborns died within 28 days of birth, accounting for 44 percent of global under-five deaths. Neonatal health will need to be addressed more effectively to continue the rapid progress on overall child mortality (2, 5, 6).

2-Materials and Methods

The current study is a review survey which was conducted to evaluate of current status of child mortality by studying WHO website, Centers for Disease Control and Prevention (CDC), United Nations Children's Fund (UNICEF) and United Nations (UN) websites and scientific texts about this

subject. To evaluate the texts and websites, the singular or combination forms of the following keywords were used: “Mortality”, “Children”, “Worldwide” and “WHO regions”. To evaluate the electronic databases the following websites were searched: Google, Ministry of Healthcare, Google Scholar, Scopus and PubMed. Also, library search was performed by referring to the journal archives of libraries, and evaluating the available Persian and English references, and also articles of research-scientific journals, and articles of the annual seminar of Immunization and Public health.

3-Results

3.1- Key facts

- 6.3 million children under the age of five died in 2013.
- More than half of these early child deaths are due to conditions that could be prevented or treated with access to simple, affordable interventions.
- Leading causes of death in under-five children are preterm birth complications, pneumonia, birth asphyxia, diarrhoea and malaria. About 45% of all child deaths are linked to malnutrition.
- Children in sub-Saharan Africa are more than 15 times more likely to die before the age of five than children in developed regions (1, 2).

3.2- Newborns

Nearly 3 million babies die every year in their first month of life and a similar number are stillborn. Within the first month, up to one half of all deaths occur within the first 24 hours of life, and 75% occur in the first week. The 48 hours immediately following birth is the most crucial period for newborn survival. This is when the mother and child should

receive follow-up care to prevent and treat illness.

Prior to birth, the mother can increase her child's chance of survival and good health by attending antenatal care consultations, being immunized against tetanus, and avoiding smoking and use of alcohol.

At the time of birth, a baby's chance of survival increases significantly with delivery in a health facility in the presence of a skilled birth attendant. After birth, essential care of a newborn should include:

- ensuring that the baby is breathing;
- starting the newborn on exclusive breastfeeding right away;
- keeping the baby warm; and
- washing hands before touching the baby.

Identifying and caring for illnesses in a newborn is very important, as a baby can become very ill and die quickly if an illness is not recognized and treated appropriately. Sick babies must be taken immediately to a trained health care provider. Globally, the neonatal mortality rate fell from 33 deaths per 1,000 live births in 1990 to 20 in 2013, and the number of neonatal deaths declined from 4.7 million in 1990 to 2.8 million in 2013. However, the decline in neonatal mortality over 1990-2013 has been slower than that of post-neonatal mortality: 40 percent, compared with 56 percent (and 49 percent for overall under- five mortality), a pattern consistent across all MDG regions (2, 7, 8).

Around 44 percent of under-five deaths worldwide occur during the neonatal period

Despite falling rates and levels of neonatal mortality, its importance in the burden of under-five deaths has never been greater. Because declines in the neonatal mortality rate are slower than those in the post-neonatal

mortality rate, the share of neonatal deaths among under-five deaths increased from about 37 percent in 1990 to 44 percent in 2013. This trend is expected to continue as the under-five mortality rate continues to decline.

In five developing regions: Eastern Asia, Latin America and the Caribbean, Northern Africa, Southern Asia and Western Asia more than half of under-five deaths took place during the neonatal period in 2013. Eastern Asia cut overall under-five mortality rates so quickly that the share of neonatal deaths among under-five deaths jumped from 47 percent in 1990 to 60 percent in 2013 (1, 5, 6).

The first day and week are most critical for the survival of newborns

In 2013 almost 1 million newborns (36 percent) died on the day they were born, and another 1 million (37 percent) died within the next six days of birth. Some 0.8 million neonatal deaths (27 percent) occurred between day 7 and day 27 of life (9).

Most neonatal deaths are preventable

Children that die in the first 28 days of life suffer from diseases and conditions that are often associated with quality of care around the time of child-birth and are readily preventable or treatable, With proven, cost-effective interventions. In 2013, 35 percent of the global neonatal deaths were caused by preterm birth complications and 24 percent by intrapartum related complications (complications during labour and delivery). Another quarter of neonatal deaths worldwide were caused by sepsis (15 percent), pneumonia (5 percent), tetanus (2 percent) or diarrhoea (1 percent)-all highly preventable or

treatable diseases, provided simple interventions and basic treatment knowledge are available. Only 7 percent of neonatal deaths in high-income countries are caused by these four infectious diseases, compared with 27 percent in Sub-Saharan Africa and 23 percent in Southern Asia (10).

3.3- Children under the age of five

Under-five deaths are increasingly concentrated in sub-Saharan Africa and Southern Asia, while the proportion in the rest of the world dropped from 32% in 1990 to 18% in 2013. Children in sub-Saharan Africa are more than 15 times more likely to die before the age of five than children in developed regions. About half of under-five deaths occur in only five countries: China, Democratic Republic of the Congo, India, Nigeria and Pakistan. India (21%) and Nigeria (13%) together account for more than a third of all under-five deaths.

Children are at greater risk of dying before age five if they are born in rural areas, poor households, or to a mother denied basic education. More than half of under-five child deaths are due to diseases that are preventable and treatable through simple, affordable interventions. Strengthening health systems to provide such interventions to all children will save many young lives. Malnourished children, particularly those with severe acute malnutrition, have a higher risk of death from common childhood illness such as diarrhoea, pneumonia, and malaria (Figure.1). Nutrition-related factors contribute to about 45% of deaths in children under five years of age (10, 11).

3.4- Acute respiratory illnesses

Acute respiratory illnesses, such as pneumonia, are the largest single cause of death in children under five. Addressing the major risk factors for the illness -

malnutrition and indoor air pollution - is essential to prevention, along with vaccination. Once children have a serious respiratory illness, they need appropriate care by a trained health provider, including access to antibiotics and oxygen.

Diarrhoea

Diarrhoea can be prevented with exclusive breastfeeding and good hygiene and sanitary practices. When a child with diarrhoea becomes dehydrated, rapid treatment is necessary with Oral Rehydration Salts (ORS) and zinc supplements.

Malaria

Malaria can be prevented by the use of protective nets treated with insecticide that prevent mosquitoes from biting a child. If a child is bitten and has malaria, rapid and appropriate care is essential.

HIV/AIDS

Over 90% of children with HIV are infected through mother-to-child transmission, which is preventable with the use of anti-retrovirals, as well as safer delivery and feeding practices. Anti-retroviral therapy for HIV-infected children greatly improves survival rates and quality of life. Without interventions, over half of all HIV-infected children die before their second birthday.

Malnutrition

About 20 million young children worldwide are severely malnourished, which leaves them more vulnerable to illness and early death. Mothers and other caretakers need to know how to feed their child correctly to prevent nutritional problems. If a child becomes malnourished appropriate care is essential. Around three quarters of malnourished children can be treated with "ready-to-use therapeutic foods". These highly fortified and energy-rich foods provide ample nutrients for

malnourished children aged over six months to be treated at home (1, 2).

3.5- Prevention with Vaccines

For some of the most deadly childhood diseases, such as measles, polio, diphtheria, tetanus, pertussis, pneumonia due to *Haemophilus influenzae* type B and *Streptococcus pneumoniae* and diarrhoea due to rotavirus, vaccines are available and can protect children from illness and death (2, 7).

3.6- Global Action

In June 2014, WHO, UNICEF and partners issued the first-ever global plan to end preventable newborn deaths and stillbirths by 2035. The Every Newborn Action Plan calls for all countries to take steps to provide basic, cost-effective health services in particular around the time of childbirth, as well as for small and sick babies and to improve the quality of care (1, 2).

Global response: Millennium Development Goals 4 and 5

The Millennium Development Goals adopted by the United Nations in 2000 aim to decrease child and maternal deaths worldwide by 2015. The fourth Millennium Development Goal (MDG) is to reduce the 1990 mortality rate among under-five children by two thirds. Child mortality is also closely linked to MDG 5 to improve maternal health.

Since 44% of all child deaths occur within the first month of life, providing skilled care to mothers during pregnancy, as well as during and after birth, greatly contributes to child survival. Member States have set targets and developed specific strategies to reduce child mortality and monitor progress (8, 12).

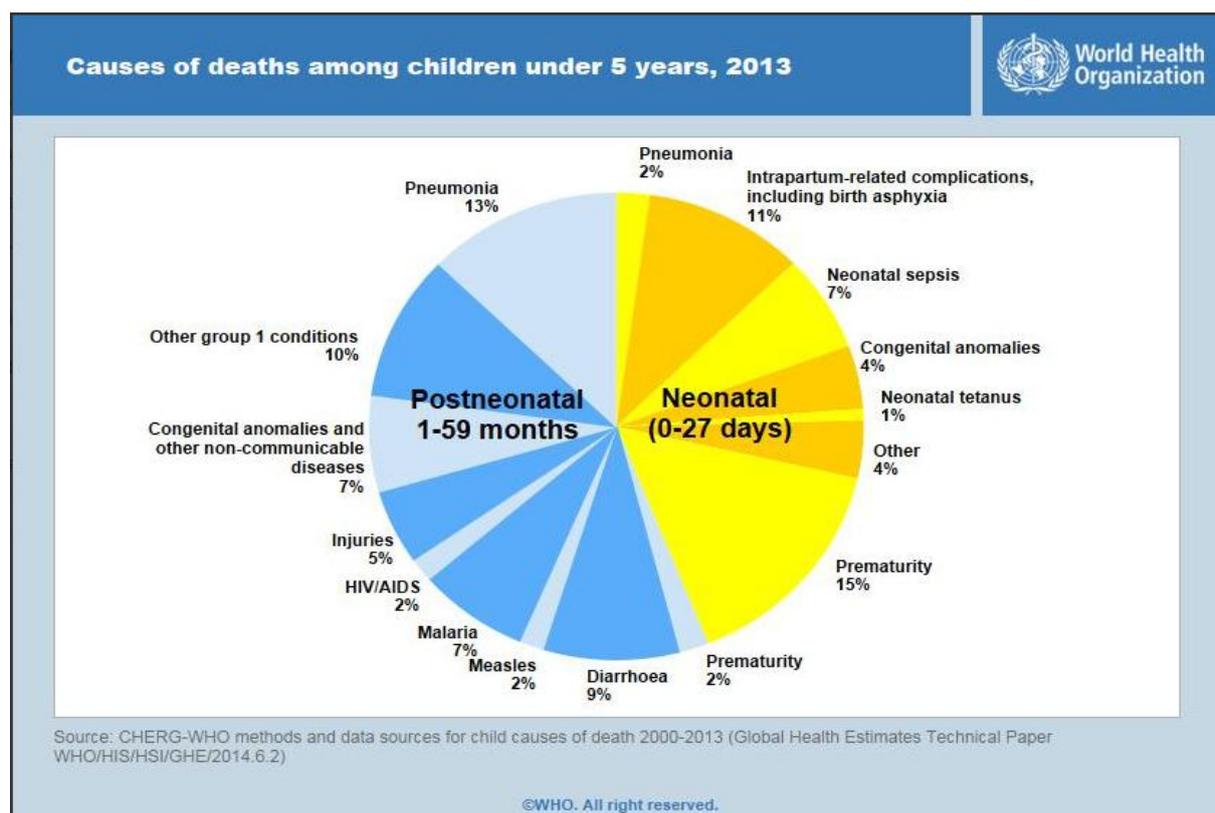


Fig. 1: Major causes of death in neonates and children under five globally - 2013

3.7- Child mortality in WHO regions

6.3 million children under age five died in 2013, nearly 17 000 every day (Figure.2). Global under-five mortality has been roughly halved since 1990. A baby born today has a dramatically better chance of living to age five compared with one born in 1990. The global under-five mortality rate dropped 49 percent, from 90 (89,92) deaths per 1,000 live births in 1990 to 46 (44,48) in 2013. Over the same period the total number of under-five deaths in the world fell from 12.7 million in 1990 to 6.3 million in 2013. Put another way, 17,000 fewer children died each day in 2013 than in 1990—thanks to more effective and affordable treatments, innovative ways

of delivering critical preventive and curative interventions to the poor and excluded, and sustained political commitment. These and other vital child survival interventions have helped save about 100 million lives since 1990. All regions except Sub-Saharan Africa and Oceania have more than halved the under-five mortality rate. Eastern Asia, Latin America and the Caribbean, and Northern Africa, have already reduced the under-five mortality rate by more than two-thirds since 1990 and thus achieved MDG 4. Western Asia, with a reduction of 61 percent, and South-eastern Asia, 59 percent, are also close to reaching the MDG 4 target (2, 13, 14).

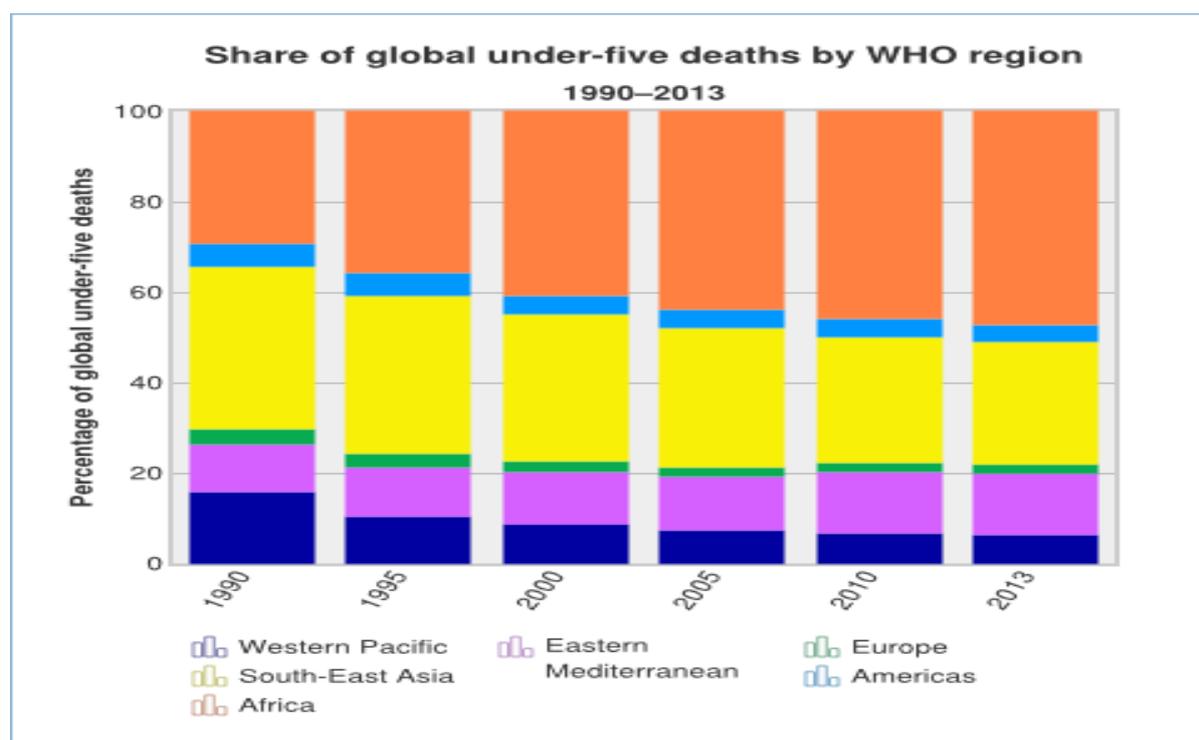


Fig.2: UNICEF, WHO, World Bank, UN DESA/Population Division. Levels and Trends in Child Mortality 2014. UNICEF, 2014.

4- Conclusion

About half of under-five deaths occur in only five countries: China, Democratic Republic of the Congo, India, Nigeria and Pakistan. India (21%) and Nigeria (13%) together account for more than a third of all under-five deaths. All regions except Sub-Saharan Africa and Oceania have more than halved the under-five mortality rate. Eastern Asia, Latin America and the Caribbean, and Northern Africa, have already reduced the under-five mortality rate by more than two-thirds since 1990 and thus achieved MDG 4. Western Asia, with a reduction of 61 percent, and South-eastern Asia, 59 percent, are also close to reaching the MDG 4 target. A child's risk of dying is highest in the neonatal period, the first 28 days of life. Safe childbirth and effective neonatal care are essential to prevent these deaths. 44%

of child deaths under the age of five take place during the neonatal period. Preterm birth, intrapartum-related complications (birth asphyxia or lack of breathing at birth), and infections cause most neonatal deaths. From the end of the neonatal period and through the first five years of life, the main causes of death are pneumonia, diarrhoea and malaria. Malnutrition is the underlying contributing factor in about 45% of all child deaths, making children more vulnerable to severe diseases. Overall, substantial progress has been made towards achieving Millennium Development Goal (MDG) 4. Since 1990 the global under-five mortality rate has dropped from 90 deaths per 1000 live births in 1990 to 46 in 2013. But the rate of this reduction in under-five mortality is still insufficient to reach the MDG target of a two-thirds reduction of 1990 mortality levels by the year 2015 (1, 14-18).

5- Conflict of interest: None.

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