Children in Pakistan are dying! Who is Responsible?

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Abstract:
Child mortality is a serious global issue with more than two thirds of neonatal deaths caused by conditions that are preventable and can be treated by simple interventions. Diarrhea is among the most common causes for neonatal mortality and poor WASH (Water and Sanitation Hygiene) is the biggest cause of diarrhoeal cases (90%). In Pakistan urbanization, industrialization, acute water shortage and population explosion adversely affect water quality. Furthermore, Pakistan faces the threat of acute water crisis due to climate change. This problem needs to be addressed. The child mortality rate can be reduced by focusing on optimisation of the direct interventions for diarrhoea. Also, improvement of WASH strategy, promotion of nutrition, vaccination, provision of properly treated water, ORT (Oral Rehydration Therapy), mass education and collaboration among departments would be effective. Together we can overcome these barriers to improve the child mortality rate.

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Introduction:
Children in Pakistan are dying! Pakistan has a high NMR and child death rate. Why is it so?

Neonatal mortality rate (NMR) is defined as total number of deaths during the initial twenty-eight days of life per thousand live births (LBs) in a given year. It is an important indicator of overall physical health of a community. Greater is the NMR, poorer is the quality of life in that community. Likewise, under five mortality rate is also important. It is the probability of dying by age 5 per 1000 live births. In 2019, 2.4 million neonatal deaths were reported all over the world and, the mean NMR was 17. The rates are not same everywhere. Most of the countries with the highest NMR fall in the region of Sub-Saharan Africa. South Asia also has high child mortality as well as NMR.

The condition is bad in Pakistan too. According to UNICEF report, in 2018 Pakistan was ranked number one among the countries with the worst NMR, even exceeding the war-torn countries like Central African Republic and Afghanistan. The current NMR in Pakistan is 41 deaths per 1000 live births while the under-five mortality rate is 67.2 deaths per 1000 live births. Although the trend shows a decrease in mortality from 1990(140 per 1000 LBs) to 2019(67.2 per 1000 LBs), it is still high.

If one looks for the causes of deaths among neonates, one will find that more than two thirds of these deaths were caused by conditions that were preventable and could have been treated by simple interventions.

This article focuses on the factors that mainly contribute to increased child mortality rate in Pakistan and discusses the appropriate strategic measures that would prove highly effective in preventing these deaths if implemented with care.

Discussion:
After looking at the high child mortality rate, the first question that comes to one’s mind is "What are the causes that lead to child mortality in the first place?"
So, infectious diseases are an important cause of death among children that can be prevented. In low and middle-income countries, among infectious diseases, diarrhoea is one of the most common causes for mortality. About 2.2 million deaths of children, mostly under age 5, were reported with the global disease burden of diarrhoea exceeding 4 billion. Now our main focus would be on diarrhoea, its source of transmission and techniques effective for its treatment and prevention.

Polluted Water-the Main Source of Transmission of Diarrhoea:

In low-income countries, the main source of transmission of agents causing diarrhoea among young children is polluted water. Water is contaminated with many bacterial, viral, and protozoal pathogens causing diarrhoeal diseases. In this way, polluted water causes the death of a number of children each year. Thus, a myriad of preventable deaths and diseases in young children and infants occur due to inadequate water and sanitation hygiene (WASH) claiming the lives of approximately 6000 children per day.

Young children are especially swift to fall prey to diseases caused by unsafe water and poor sanitation such as diarrhoea, malaria etc. This is because of weaker immune system of children as compared to adults. To make the matter worse, immune system of such young children is further compromised with each episode of diarrhoea leaving those poor children vulnerable to other life-threatening illnesses indirectly claiming millions of lives yearly.

Why do People use Polluted Water?

After establishing that polluted water is the main culprit for transmission of the disease, one might think that provision of safe water would solve the problem right away. But there are a lot of hurdles that make it difficult. Now we would discuss the factors that compel people to use polluted water.

The main cause for consumption of polluted water is the scarcity of fresh water. Fresh water forms only 2.5% of the total earth's water and approximately 30% of it is ground water. This already small percentage of fresh water is further polluted by industrial and domestic sectors. Furthermore, this situation is worsened by population explosion leading to poor quality of water supply. In developing countries, the water related problems become more intense as they not only lack resources and face financial restraints but also mismanage available resources.
If we talk about conditions in Pakistan, ground water is the basic source of supply. Population explosion, urbanisation, industrialisation and acute shortage of water with increased utilisation of water for various purposes have led to a decline in water quality in such developing countries, the poor infrastructure regarding water sanitation and supply further deteriorates the water quality by allowing leakage and mixing up of sewage and drinking water.

Even in some areas, people do not have water directly piped to their homes. Fetching clean drinking water in the distant parts of the country requires the natives to cover long distances on foot, thus increasing the likelihood of water contamination during transport and storage. The situation becomes dire in desert areas with rain as the major water source. Humans and animals sometimes have to share the same pond water. Moreover, open defecation is still practiced in some rural areas and contributes to contamination of water.

Climate change is further augmenting the acute water crisis in Pakistan. Floods cause damage to infrastructure such as gutters and drains causing sewage and polluted water to spill into water bodies. Polluted flood water pools, not having outlets to drain, become standard ground for growth of pathogens causing water borne diseases. This leads to wide outbreaks of water borne illnesses. Secondly, floods lead to overcrowding of affected masses and poor hygiene control, facilitating the oro-fecal spread of gastrointestinal pathogens causing subsequent disease outbreaks. Additionally, Pakistan is listed among the countries which are going to face shortage in the renewable water resources by 2030.

Moreover, Pakistan government has allocated less budget to water and sanitation sectors, as compared to that of health and education sectors, merely amounting to 0.26% of total GDP in 2013. Thus due to regional and political conflicts and natural disasters such as droughts, earth quacks and floods; millions of people are in emergency need of improved sanitation and safe drinking water.

What Can We Do to Control Diarrhoea?

In Pakistan, mortality rates among children can be reduced by taking specific measures. As per WHO estimates, 94% of diarrhoeal diseases can be prevented through modifying the environment, which includes not only increasing the availability of safe drinking water but also improving hygiene and sanitation. The importance of clean water can be estimated by the fact that Sustainable development goal (SDG-6) developed by WHO and UNICEF also focuses on clean water and improved sanitation for all by 2030. These are crucial to maintain a healthy lifestyle.

Some of the ways to tackle the problem have been highlighted in table 1.

Water treatment:

This method is so important for provision of clean water that it deserves special attention. There are various methods for water treatment. Some of them are discussed below:

1. Boiling: This method kills most of the water-borne infectious agents. It can be easily practiced in homes. It also prevents the contamination of water after it has been collected.

2. Chlorination: It is a popular way for water treatment. It helps in disinfecting water. It has been adopted worldwide to decrease epidemics of infectious diseases and makes drinking water safe. It has been mentioned in the United Nation's International Children Emergency
Conclusion:
In addition to above mentioned strategies to combat diarrhoea related deaths, neonatal deaths can be reduced by delivery of maternal and neonatal care by community health workers such as trained lady health workers. Funds Report that this method has helped in reducing the diarrhoea rate by 29%\(^{27}\). Unfortunately, the agencies in Pakistan had been focusing more on the quantity of water than the quality due to its increased demand. Lack of awareness, trained people, equipment, techniques and control worsen the situation\(^{28}\).

3. **Filteration:** Filters can be used to remove impurities from water. It provides safe drinking water\(^{26}\).

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**Conclusion:**
Among many causes for high NMR in Pakistan, diarrhoea is very important. Provision of safe water and practising good hygiene would decrease the disease burden and reduce NMR. For developing effective strategies to combat the situation, there is a need to take measures on community and governmental level. There is a need for greater funding and political attention if we want to achieve this goal.

**References:**


22. Phaswana-Mafuya N, Shukla N. Factors that could motivate people to adopt safe hygienic practices in...


