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RESEARCH ARTICLE

FACTORS ASSOCIATED WITH DIARRHEAL DISEASE AMONG CHILDREN: A MAJOR CAUSE OF DEATHS IN DEVELOPING COUNTRIES

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Abstract

Diarrhea remains the leading cause of morbidity and mortality in children under 5 years old worldwide. The burden is disproportionately high among children in low- and middle-income countries. Many studies have established that the diarrhea prevalence is higher in younger children, 6-11 months, and boys than girls. Some studies have revealed that children not washing hand before meals or after defecation, mothers not washing hands before feeding children or preparing food, children eating with their hands rather than with spoons, eating of cold leftovers, dirty feeding bottles and utensils, unhygienic domestic places were associated with risk of diarrhea morbidity in children. In general, the morbidity of diarrhea is lowest in exclusively breast-fed children; it is higher in partially breast-fed children, and highest in fully-weaned children. The preventive practices according to WHO include; breast feeding, improved weaning, use of plenty of water for hygiene and clean water for drinking, hand washing, use of latrines, proper disposal of the stools of young children and immunization against measles, exclusive breast feeding during the first 4- 6 months greatly reduces the risk of severe or fatal diarrhea and the risk of other serious infections are also reduced.

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Introduction:-

Diarrhea remains the leading cause of morbidity and mortality in children under 5 years old worldwide. The burden is disproportionately high among children in low- and middle-income countries. Young children are especially vulnerable to diarrheal disease and a high proportion of the deaths occur in the first 2 years of life. Worldwide, the majority of deaths related to diarrhea take place in Africa and South Asia. Nearly half of deaths from diarrhea among young children occur in Africa where diarrhea is the largest cause of death among children under 5 years old and a major cause of childhood illness (Black, 2012; Uzoma and Obeagu, 2019; Esimai and Obeagu, 2022; Ojo et al., 2022).

Globally acute diarrheal disorder account for a large proportion (18%) of childhood deaths, with an approximately 1.8 million deaths per year. WHO suspects that there are more than 700 million diarrheal episodes per yearly in children under 5 years of age in developing countries. In US, there are 1.5 million outpatient visits for diarrheal disease, 200,000 hospitalizations, and 300 deaths yearly (Kliegman, 2010)

Diarrheal disease is much less common than in bottle-fed infants, but when they occur, the infant should be maintained on the breast if possible. Human milk is a physiologic solution that normally causes neither dehydration nor hypernatremia. Sometime mother's diet may be cause diarrhea or intestinal upset in infant during breast feeding. To treatment these cases, mothers must continue to nurse at the breast (Lawrence, 2010; (Esimai et al., 2022; Obeagu et al., 2022; Aloh et al., 2015).

Dehydration, electrolyte imbalance, and hypovolemic shock can occur if diarrhea is not treated. In infants and small children, it can be life threatening because fluid losses are not adequately replaced. Parents must understand that giving plain water alone is dangerous because it does not contain electrolytes. To rehydrate, the children especially infants, should be given oral rehydration solutions. ORS contains salt, water, and glucose can be absorbed through intestines (Mckinney, 2010).

Many diarrheal episodes in children under five years of age are caused by contaminated food or human or animal fecal waste through the fecal-oral route. Because of the seriousness of AGE in children under five years of age and the danger of spreading acute diarrhea, the child with moderate or severe diarrhea is often isolated until treated (WHO, 2010).

Due to high of lactose, a breastfed baby passes two to six times golden yellow, sticky, semi loose stools. Mother should be explained about the breastfed baby's stools. Diarrhea may be caused by intake of large quantities of glucose water or honey by baby, malpractices in preparing bottle feeding, over feeding, and serious under feeding also can cause diarrhea in the neonates(MCIntosh, 2010)

Mild and moderate diarrhea can be treated at home by their family by using ORT but where dehydration is more severe, there's need for hospitalizations to treat the dehydration; IV therapy is often used in the management (Al-Rawaz, 2008).

Factors associated with diarrheal disease among children under five years.

Demographic factors
Many studies have established that the diarrhea prevalence is higher in younger children, 6-11 months, boys than girls.

Water-related factors
As diarrhea is acquired via contaminated water and foods, water-related factors are very important determinants of diarrhea occurrence. Increased distance from water sources, poor storage of drinking water, obtaining water from storage containers by dipping, no drinking water storage facilities, use of unsafe water sources (such as rivers, pools, dams, lakes, streams, wells and other surface water sources)(Beleke, 2010).

Sanitation factors
Sanitation plays a key role in reducing diarrhea morbidity. Some sanitation factors, like indiscriminate or improper disposal of children's stool and household garbage no existence of latrine or unhygienic toilet, sharing latrine, increase the risk for diarrhea in children (Aulia et al, 2011).

Hygiene practices
Some studies have revealed that children not washing hand before meals or after defecation, mothers not washing hands before feeding children or preparing food, children eating with their hands rather than with spoons, eating of cold leftovers, dirty feeding bottles and utensils, unhygienic domestic places were associated with risk of diarrhea morbidity in children(Tumwine, 2011).

Breastfeeding
In general, the morbidity of diarrhea is lowest in exclusively breast-fed children; it is higher in partially breast-fed children, and highest in fully-weaned children(Molbak, 2010).

Malnutrition
Diarrhea, especially persistent and chronic diarrhea, undermines nutritional status, resulting in mal-absorption of nutrients or the inability to use nutrients properly to maintain health. A tendency of increased incidence of diarrhea was also found in children with low weight-for-age, or, in particular, in stunted children (Molbak, 2010).

Immunodeficiency
HIV positive patients are vulnerable to pathogens that cause infectious diseases including diarrhea. Diarrhea is reported in up to 60% of patients with AIDS (Kosek, 2012).

Seasonal distribution
Seasonal patterns to childhood diarrhea have been noted in the summer with bacterial infections, and the winter viruses related (Grace, 2006).

Consumption of food sold by street vendors
Tourists visiting foreign countries with warm climates and poor sanitation can acquire diarrhea by eating contaminated foods such as fruits, vegetables, seafood, raw meat, water, and ice cubes(Banerjee, 2011).

Eating habits
Eating with the hands; eating raw foods; or drinking un boiled water, may increase the risk of diarrhea (Warren, 2010)

Measures taken to prevent diarrheal disease among children under 5 years
The preventive practices according to WHO include; breast feeding, improved weaning, use of plenty of water for hygiene and clean water for drinking, hand washing, use of latrines, proper disposal of the stools of young children and immunization against measles, exclusive breast feeding during the first 4- 6 months greatly reduces the risk of severe or fatal diarrhea and the risk of other serious infections are also reduced.

Prevention of diarrhea in children can take place if caregivers practice preventive practices. However, in a study conducted in Santo Domingo, Dominican Republic, revealed that 55% of caregivers did not boil water for their children, 38% did not always wash hands of their children prior to meals and 54% of the caregivers breastfed their children for less than a year. Furthermore, 46% of the caregivers reported that one of the children had got diarrhea in the last months.

WHO further stated that stools of young children should be collected quickly, wrapped in a leaf or newspaper and buried or put into the latrine; or helping a young child to defecate into an easily cleaned container, which should then be put into a latrine and the container washed out or a child who has defecated should be cleaned properly, the child's hands washed and the person who has cleaned the child should also wash his or her hands thoroughly (WHO, 2010)

Prevention, is better than cure; therefore, children should be immunized against measles at nine months of age. Measles' vaccine given at this recommended age can prevent up to 25 per cent of diarrhea associated deaths in children under five years of age (WHO, 2000).

Causes of diarrhea
Though most diarrheal episodes are due to errors of metabolism, chemical irritation or organic disturbance, the vast majority are caused by infectious pathogens (Grace, 2006)

Bacterial infections
Diarrhea among the under-fives is caused by a range of causative microorganisms which include; E. coli, Salmonella, Shigella, Campylobacter, Yersinia, vibrios and Clostridium difficile(Banerjee, 2011)

Viral infections
Rotavirus is one of the most common causes of severe diarrhea. Other viruses include; Norwalk virus, adenoviruses, caliciviruses, and astroviruses(Banerjee, 2011)

Conclusion:-

Diarrhea remains the leading cause of morbidity and mortality in children under 5 years old worldwide. Some studies have revealed that children not washing hand before meals or after defecation, mothers not washing hands before feeding children or preparing food, children eating with their hands rather than with spoons, eating of cold leftovers, dirty feeding bottles and utensils, unhygienic domestic places were associated with risk of diarrhea morbidity in children. In general, the morbidity of diarrhea is lowest in exclusively breast-fed children; it is higher in partially breast-fed children, and highest in fully-weaned children.

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