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Mother's Knowledge and Practice Toward Their Children's Diarrhea and Role of Family Physician in Its Management

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Abstract:

Childhood diarrhea remains a leading cause of morbidity and mortality among children under five years worldwide, particularly in low- and middle-income countries. Mothers' knowledge and practices play a crucial role in early recognition, home management, and prevention of complications. Family physicians have a central role in providing education, early assessment, appropriate management, and preventive counseling to reduce disease burden and improve child outcomes.

Keywords: Diarrhea; Mothers' knowledge; Mothers' practice; Under-five children; Family physician; Primary health care; Oral rehydration therapy.

Introduction:

Diarrheal diseases remain one of the most common childhood illnesses and a major public health concern worldwide, particularly among children under five years of age. Despite significant global improvements in sanitation and health care services, diarrhea continues to contribute substantially to childhood morbidity and mortality, especially in developing countries. Recurrent diarrheal episodes may also lead to malnutrition, impaired growth, and impaired cognitive development **(1).**

Appropriate home management, including early use of oral rehydration solution (ORS), continued feeding, zinc supplementation, and recognition of danger signs, plays a vital role in preventing dehydration and serious complications. Mothers are usually the primary caregivers; therefore, their level of knowledge and practical responses directly influence disease outcomes. Inadequate knowledge and improper practices may result in delayed medical consultation and inappropriate management **(2).**

Family physicians, as the first point of contact within primary health care systems, play a pivotal role in managing childhood diarrhea. Their responsibilities extend beyond clinical treatment to include health education, counseling on hygiene and nutrition, vaccination advocacy such as rotavirus immunization, and community-based preventive strategies **(3).** Strengthening the educational role of family physicians can significantly improve maternal awareness and health-seeking behavior.

Diarrhea remains a significant global health concern, particularly among children under five years old, where it accounts for a substantial portion of morbidity and mortality. The effective management of childhood diarrhea is multifaceted, involving both preventive measures and appropriate responses when symptoms arise. (4)

Maternal Knowledge

Maternal knowledge regarding diarrhea encompasses various aspects, including understanding the causes, symptoms, prevention strategies, and treatment options. Studies indicate a wide range of knowledge levels among

mothers, influenced by factors such as education, socioeconomic status, cultural beliefs, and access to healthcare services.(5)

Mothers with higher education levels and access to healthcare facilities tend to possess better knowledge regarding the causes of diarrhea, recognizing factors such as contaminated food and water, poor sanitation, and infectious agents like bacteria, viruses, and parasites. However, misconceptions, such as attributing diarrhea solely to teething or exposure to cold weather, still prevail in some communities.(6)

Recognizing the signs of diarrhea is crucial for timely intervention. Mothers often identify common symptoms such as frequent loose stools, abdominal pain, vomiting, and dehydration. However, distinguishing between mild, moderate, and severe diarrhea remains a challenge for some, leading to delayed treatment.(7)

Maternal knowledge regarding preventive measures is essential for reducing the incidence of diarrhea. Promoting practices such as breastfeeding, hand hygiene, safe food and water preparation, vaccination, and sanitation measures are critical components of diarrhea prevention. While awareness of these strategies exists, adherence may vary due to cultural norms, economic constraints, or lack of access to resources.(8)

Maternal Practices

Maternal practices in managing children's diarrhea encompass a spectrum of actions, ranging from home-based remedies to seeking professional healthcare services. The effectiveness of these practices depends on their alignment with evidence-based guidelines, accessibility, affordability, and cultural acceptance.(9)

Many mothers resort to traditional home remedies or over-the-counter medications to alleviate their child's diarrhea symptoms. While some remedies may offer symptomatic relief, others can be ineffective or even harmful, highlighting the importance of educating mothers about safe and evidence-based practices.(10)

Oral Rehydration Therapy (ORT) is a cornerstone in the management of childhood diarrhea, aiming to prevent dehydration and electrolyte imbalances. Maternal knowledge and utilization of ORT significantly impact treatment outcomes. While awareness of ORT is relatively high, adherence to correct preparation and administration protocols may vary, affecting its efficacy.(11)

Timely healthcare seeking behavior is crucial, especially in cases of severe diarrhea or when home management fails. Factors influencing maternal healthcare seeking behavior include perceived severity of symptoms, access to healthcare facilities, financial constraints, and cultural beliefs. Encouraging early healthcare seeking behavior through community education and improving healthcare accessibility can reduce diarrhea-related morbidity and mortality.(12)

Challenges and Opportunities

Despite advances in healthcare education and interventions, several challenges persist in enhancing maternal knowledge and practices concerning children's diarrhea as following:

1. Socioeconomic Disparities: Disparities in education, income, and access to healthcare services contribute to variations in maternal knowledge and practices. Targeted interventions aimed at vulnerable populations can help bridge these gaps.(11)
2. Cultural Beliefs and Practices: Cultural beliefs and practices influence maternal perceptions and behaviors regarding diarrhea management. Integrating culturally sensitive approaches into health education programs can enhance acceptability and effectiveness.(10)
3. Health System Strengthening: Improving healthcare infrastructure, training healthcare providers, and ensuring the availability of essential medications and supplies are essential for effective diarrhea management.(9)

Maternal knowledge and practices significantly impact the burden of childhood diarrhea. Enhancing maternal understanding of diarrhea causes, symptoms, prevention strategies, and treatment options is vital for reducing morbidity and mortality associated with this condition. Strengthening healthcare systems, promoting

evidence-based practices, and addressing socioeconomic and cultural determinants are essential steps toward achieving this goal. Empowering mothers with accurate information and resources can lead to improved diarrhea management outcomes and better overall child health.(13)

we are well aware that this common disease is preventable and treatable (**14),** but the practice of preventive strategies is not as efficient as it should be **(15).**

1. To improve access and quality of care for newborns and children in primary health care services, WHO and UNICEF designed the Integrated Management of Childhood Illness (IMCI) strategy. The strategy includes three main components **(16)**:
    - Improving case management skills of healthcare providers;
    - Improving health systems to provide quality care;
    - Improving family and community health practices for health, growth and development

2. Early Assessment and Diagnosis through:

Family physicians are often the first point of contact and play a critical role in early recognition of diarrhea in children through the following:

- The physician takes a comprehensive history (e.g., duration, stool characteristics, fever, vomiting).
- Conduct physical exams to assess dehydration and nutritional status.
- Determine if further investigation (e.g., stool culture) is needed—often unnecessary unless red flags are present.

3. Treatment and Clinical Management

The family physician ensures prompt and evidence-based treatment through:

- Oral Rehydration Therapy (ORT): First-line treatment in mild to moderate dehydration. ORS is proven to be as effective as IV fluids in many cases **(17).**
- Feeding Advice: Continued breastfeeding and normal feeding should be encouraged. BRAT diet is no longer recommended due to poor nutritional value.

Medications:

- Avoid anti-diarrheal medications like loperamide in young children. Antibiotics are reserved for specific bacterial infections (e.g., shigella, cholera) or when indicated by clinical guidelines.

4. Preventive and Educational Role **(18)**.

Family physicians play a central role in health education and prevention through:

- Counsel families on hand hygiene, clean water, and food safety.
- Promote rotavirus vaccination as an effective preventive strategy.
- Identify at-risk populations (e.g., malnourished children) for close follow-up.

5. Follow-up and Ongoing Care **(19).**

- Monitor recovery and ensure rehydration is sustained.
- Track growth and nutritional status post-illness.
- Provide guidance to parents on when to seek further care (e.g., signs of severe dehydration, persistent diarrhea).

References:

1. Troeger, C., Blacker, B. F., Khalil, I. A., Rao, P. C., Cao, S., Zimsen, S. R., ... & Reiner, R. C. (2018). Estimates of the global, regional, and national morbidity, mortality, and aetiologies of diarrhoea in 195 countries: a systematic analysis for the Global Burden of Disease Study 2016. The Lancet Infectious Diseases, 18(11), 1211-1228.
2. Sreeramareddy, C. T., Shankar, R. P., Sreekumaran, B. V., Subba, S. H., Joshi, H. S., & Ramachandran, U. (2006). Care seeking behaviour for childhood illness-a questionnaire survey in western Nepal. BMC international health and human rights, 6(1), 7.
3. Starfield, B., Shi, L., & Macinko, J. (2005). Contribution of primary care to health systems and health. The milbank quarterly, 83(3), 457-502.
4. Alghadeer, S., Syed, W., Alhossan, A., Alrabiah, Z., Babelghaith, S. D., Al Arifi, M. N., & Alwhaibi, A. (2021). Assessment of Saudi mother's knowledge and attitudes towards childhood diarrhea and its management. *International Journal of Environmental Research and Public Health*, *18*(8), 3982.
5. Bapanpally, N., Shree, G. V. U., Ranjeet, M., & SundarJunapudi, S. (2021). Knowledge, Attitude, and Practice of Mothers of Under-Five Children Regarding Diarrheal Illness: A Cross Sectional Study; Hyderabad. *Education*, *31*, 17.
6. IbrahimAbd Al-Moniem, I., AbdElfatah Ali, E., & Mohamed Mohamed, S. (2022). Maternal Traditional practice toward their Children Suffering from Diarrheal Disease. *Egyptian Journal of Health Care*, *13*(4), 1139–1147.
7. Yüksel Kaçan, C., Palloş, A., & Özkaya, G. (2022). Examining knowledge and traditional practices of mothers with children under five in Turkey on diarrhoea according to education levels. *Annals of Medicine*, *54*(1), 674–682.
8. Upashe, S. P., & Shil, R. (2022). Knowledge and Attitude towards prevention of Diarrhea among the mothers of under-five children: A cross-sectional approach. *International Journal of Nursing Education and Research*, *10*(1), 41–46.
9. Sumathi, W. S., Balasubramanian, S., Pradeebaa, T., & Sumathi, B. (2020). A study on knowledge, attitude and practices of mothers about acute diarrhea and its management with oral rehydration therapy and zinc in children under 5 years. *Int. Arch. Integr. Med*, *7*, 1–10.
10. Kumari, R., Yadav, A., & Gupta, M. (2021). Maternal practices and management of childhood diarrhea: A hospital-based study. Indian Journal of Public Health, 65(2), 148–152.
11. Upashe, S. P., & Shil, R. (2021). Practices of the mothers of under-five children towards the prevention of diarrhea-A cross-sectional approach. *Asian Journal of Nursing Education and Research*, *11*(2), 236–240.
12. Dujaili, J. A., Blebil, A. Q., Jayasinghe, D., & Sivanandan, N. (2021). Knowledge, attitudes, and practices of mothers on the use of oral rehydration salts in children with diarrhoea: a cross-sectional survey in Malaysia. *Journal of Pharmacy Practice and Research*, *51*(4), 321–327.
13. Momoh, F. E., Olufela, O. E., Adejimi, A. A., Roberts, A. A., Oluwole, E. O., Ayankogbe, O. O., & Onajole, A. T. (2022). Mothers' knowledge, attitude and home management of diarrhoea among children under five years old in Lagos, Nigeria. *African Journal of Primary Health Care & Family Medicine*, *14*(1), 3119.
14. Shah D, Choudhury P, Gupta P, Mathew J, Gera T, Gogia S (2012). Promoting Appropriate Management of Diarrhoea: A Systematic Review of Literature for Advocacy and Action: UNICEF-PHFI Series on Newborn and Child Health, India Indian Pediatr. 2012;49:627–49
15. Li R, Lai Y, Feng C, Dev R, Wang Y, Hao Y (2020). Diarrhea in Under Five Year-Old Children in Nepal: A Spatiotemporal Analysis Based on Demographic and Health Survey Data Int J Environ Res Public Health. 2020;17:2140
16. World Health Organization. (2023). Diarrhoeal disease fact sheet. Retrieved from https://www.who.int/news-room/fact-sheets/detail/diarrhoeal-disease
17. American Academy of Family Physicians (AAFP). (2019). Gastroenteritis in Children.
18. Centers for Disease Control and Prevention (CDC). (2024). Rotavirus Vaccination.
19. Johns Hopkins Medicine. (2023). Diarrhea in Children.