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Original Research Article

Community Knowledge, Attitudes, and Practices Regarding Diarrhoea Prevention and Control - A Cross-sectional Study

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ABSTRACT

Background: Diarrhoea remains a leading cause of morbidity and mortality among children under five in India, despite the availability of simple, cost-effective preventive and management interventions such as oral rehydration solution (ORS), zinc, safe water, hygiene, and vaccination. A persistent gap between caregiver knowledge and actual practice continues to sustain the disease burden. This study aimed to assess the knowledge, attitudes, and practices regarding the prevention and control of diarrhoea among caregivers in a rural community.

Methods: A community-based cross-sectional study was conducted among caregivers in the rural field practice area of a medical college in western india, using a pretested, structured questionnaire administered through household interviews.

Results: A total of 437 participants were included in the study. Most respondents had heard of diarrhoea (84%) and were aware of ORS (73%), while awareness of the rotavirus vaccine was low (27%). Favorable attitudes were seen for hand hygiene (85%) and trust in health workers (74%). However, only 38% always administered ORS and 43% continued breastfeeding during diarrhoeal episodes, and only 30% consistently reheated leftover food. Overall, 73% of respondents had good knowledge and 68% had favorable attitudes, but only 18% demonstrated good practices. 27% of households reported a diarrhoeal episode in a child in the preceding six months.

Conclusion: Caregivers in the study population had satisfactory knowledge and attitudes regarding diarrhoea prevention, but this was not matched by adequate preventive and management practices, reflecting a substantial knowledge-practice gap. Strengthening ORS use, continued breastfeeding during illness, and safe food-handling practices through community health worker-led counselling could help translate existing awareness into effective action.

Keywords: Diarrhoea; knowledge; Attitude; Practices; Caregivers; Oral Rehydration Solution; Rural community

INTRODUCTION

Diarrhoea, defined as the passage of three or more loose or watery stools per day, remains a leading cause of morbidity and mortality among children under five years, particularly in low- and middle-income countries.[1] Diarrhoeal disease accounts for nearly 444,000 child deaths annually worldwide.[2] In India, diarrhoea continues to pose a substantial public health challenge, largely due to poor awareness, inadequate preventive practices, and limited utilisation of treatment options.[3]

Simple, cost-effective interventions — including oral rehydration solution (ORS), zinc supplementation, safe water, hygiene practices, and vaccination — can significantly reduce diarrhoeal deaths. The World

Health Organization estimates that ORS alone could prevent up to 93% of diarrhoeal deaths.[4] Rotavirus vaccination has similarly been shown to reduce the burden of severe diarrhoea in children substantially.[5] However, uptake of these interventions remains low: National Family Health Survey-5 data indicate that only 30.5% of children with diarrhoea in India received zinc, while 60.6% received ORS.[6]

Evidence shows a persistent gap between knowledge and practice in diarrhoea management, with caregivers often recognising preventive measures without consistently applying them.[7] Understanding this knowledge-attitude-practice (KAP) gap is important for designing interventions that translate awareness into effective behaviour change. The present study was therefore undertaken to assess the knowledge, attitude, and practices regarding diarrhoea prevention and control among caregivers in a rural community, in order to identify gaps that can inform targeted health education and policy initiatives.

Objectives

- To assess caregivers' knowledge, attitudes, and practices regarding diarrhoea prevention and management.
- To identify gaps between knowledge, attitudes, and practices contributing to the burden of diarrhoea.

MATERIAL AND METHODS

Study design and setting

A community-based cross-sectional study was conducted in the rural field practice area of a Medical College in Gujarat, Western India. Data were collected through household visits.

Study population

Residents of households in the selected village were included in the study. One adult respondent — preferably the primary caregiver or decision-maker for water, food, and child care in the household — was interviewed per household. The village population was selected purposively, as it constitutes the designated rural field practice area of the Department of Community Medicine.

Sample size and sampling method

The sampling frame comprised 847 households in the village, drawn from updated ASHA/Anganwadi/health records. Households were selected using systematic random sampling, with a sampling interval calculated from the total number of households in the sampling frame. For households with more than one eligible resident, one eligible respondent was interviewed; the respondent was selected by lottery. If a selected house was locked, the next eligible household was approached, and locked houses were revisited once later the same day.

Inclusion criteria

- Households available and consenting on the day of data collection.
- Respondent aged ≥18 years and a usual resident of the household.

Exclusion criteria

- Visitors/guests, and households that remained locked after two revisit attempts on the same day.
- Respondents unable to participate due to severe illness or cognitive impairment.

Study tool

A pretested, structured questionnaire covering caregiver demographics and the domains of knowledge, attitude, and practice regarding diarrhoea was used to collect data after a pilot study of 25 participants in another village.

Scoring of Knowledge, Attitude, and Practice (KAP):

The KAP questionnaire comprised knowledge, attitude, and practice items related to diarrhoea prevention and control. Knowledge responses were scored as 1 for each correct response and 0 for incorrect or 'Don't know' responses. Attitude items were assessed using a three-point Likert scale (Agree

= 3, Not sure = 2, Disagree = 1), with reverse scoring applied for negatively worded statements where applicable. Practice items were scored as Always/Yes = 2, Sometimes = 1, and Never/No = 0. Individual scores for each domain were summed and converted into percentages. Participants were categorized as having Good (≥75%), Average (50–74%), or Poor (<50%) knowledge, attitude, and practice

Data collection procedure

Data were captured on mobile devices using Google Forms, through face-to-face interviews conducted in the local language.

Data management and analysis

Data were entered in Microsoft Excel and analysed using SPSS v.25 software.

Ethical approval has been obtained from the GMERS Medical College Institutional Review Board.

RESULTS

A total of 437 respondents participated in the study. The majority were male (347; 79.4%), while female respondents accounted for 90 (20.6%). Regarding educational profile, nearly half of respondents had attained primary education (48.3%), followed by non-formal education (32.0%), secondary education (17.2%), and graduation (2.5%).

Table - 1: Respondents' knowledge, attitude, and practice regarding diarrhoea prevention and control.

Domain	Item	Response	Frequency (n)	Percentage (%)
Knowledge	Heard of diarrhoea as a health issue	Yes	369	84.4
		No	48	11.0
		Not sure	20	4.6
	Awareness of ORS	Yes	320	73.2
		No	117	26.8
	Awareness of rotavirus vaccine	Yes	116	26.5
		No	255	58.4
		Not sure	66	15.1
	Role of clean water in prevention	Yes	350	80.1
		No	31	7.1
		Not sure	56	12.8
Attitude	Belief in ORS effectiveness	Agree	318	72.8
		Not sure	108	24.7
		Disagree	11	2.5
	Medical consultation during diarrhoea	Agree	271	62.0
		Not sure	108	24.7
		Disagree	58	13.3
	Importance of hand hygiene before feeding	Agree	371	84.9
		Not sure	43	9.8
		Disagree	23	5.3
	Trust in health workers/ASHAs	Yes	325	74.4
		Sometimes	92	21.0
		No	20	4.6
Practice	ORS administration during diarrhoea	Always	166	38.0
		Sometimes	225	51.5
		Never	46	10.5

Table - 1: Respondents' knowledge, attitude, and practice regarding diarrhoea prevention and control.

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Domain	Item	Response	Frequency (n)	Percentage (%)
	Continuation of breastfeeding during diarrhoea	Always	189	43.3
		Sometimes	178	40.7
		Never	70	16.0
	Handwashing before meal preparation	Always	246	56.3
		Sometimes	165	37.8
		Never	26	5.9
	Use of safe water (boiled/RO)	Always	221	50.6
		Sometimes	179	41.0
		Never	37	8.5
	Reheating leftover food	Always	130	29.7
		Sometimes	242	55.4
		Never	65	14.9
	Child had diarrhoea in past 6 months	Yes	118	27.0
		No	319	73.0

Knowledge

Most respondents (84.4%) had heard of diarrhoea as a health issue, while 11.0% had not and 4.6% were unsure. Awareness of ORS was reported by 73.2% of respondents, whereas 26.8% were unaware. Awareness of the rotavirus vaccine's preventive role was low, reported by only 26.5% of respondents, while 58.4% did not know and 15.1% were uncertain. Most respondents (80.1%) recognised the role of clean water in preventing diarrhoea.

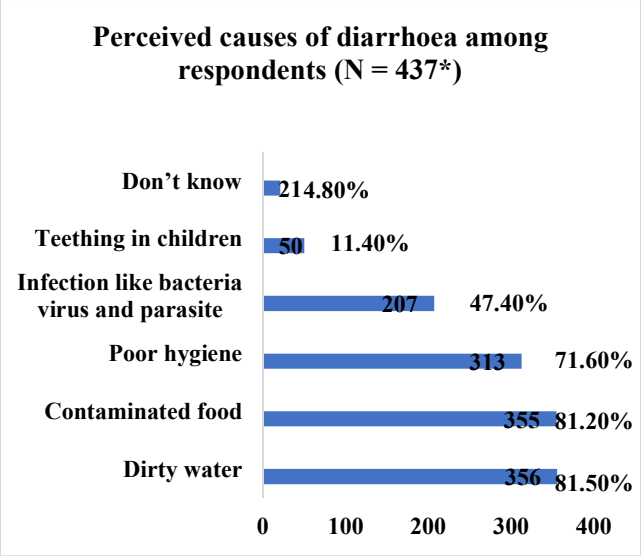

Figure -1: Perceived causes of diarrhoea among respondents

Perceived causes of diarrhoea are shown in Figure 1: dirty water (81.5%) and contaminated food (81.2%) were most frequently cited, followed by poor hygiene (71.6%) and infections such as bacteria, viruses, or parasites (47.4%). Misconceptions were also noted, with 11.4% of respondents attributing diarrhoea to teething, and 4.8% unable to identify any cause.

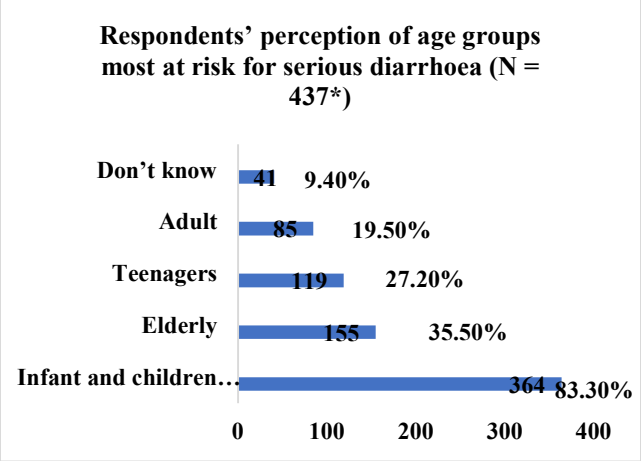

Figure – 2: Respondents' perception of age groups most at risk for serious diarrhoea

Figure 2 shows respondents' perceptions of the age groups most vulnerable to serious diarrhoea: infants and children under five years (83.3%), elderly

individuals (35.5%), teenagers (27.2%), and adults (19.5%); 9.4% did not know.

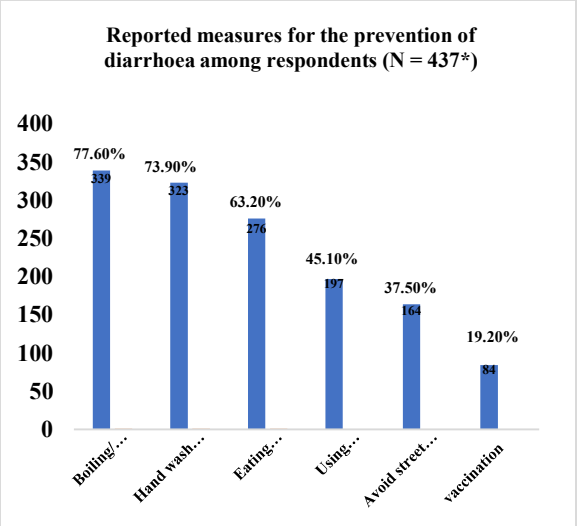

Figure – 3: Reported measures for the prevention of diarrhoea among respondents

Preventive measures identified by respondents are shown in Figure 3: boiling or filtering drinking water (77.6%), handwashing with soap (73.9%), eating freshly cooked food (63.2%), use of toilets/avoidance of open defecation (45.1%), avoiding street food (37.5%), and vaccination (19.2%).

Attitude

Most respondents agreed that ORS is effective in treating diarrhoea (72.8%), that children should be taken to a doctor immediately during diarrhoeal episodes (62.0%), and that hand hygiene before feeding children is important (84.9%). Trust in the information provided by health workers/ASHAs was reported by 74.4% of respondents, with 21.0% expressing conditional trust and 4.6% reporting no trust.

Practice

Only 38.0% of respondents always administered ORS during diarrhoeal episodes, 51.5% did so only sometimes, and 10.5% never did. Continuation of breastfeeding during diarrhoea was reported as always practised by 43.3% of respondents, sometimes by 40.7%, and never by 16.0%. Handwashing before meal preparation was always practised by 56.3% of respondents, use of safe (boiled/RO-treated) water for cooking and drinking by 50.6%, and reheating of leftover food by only 29.7%. A total of 118 households (27.0%) reported at least one child having had diarrhoea in the preceding six months.

KAP scoring

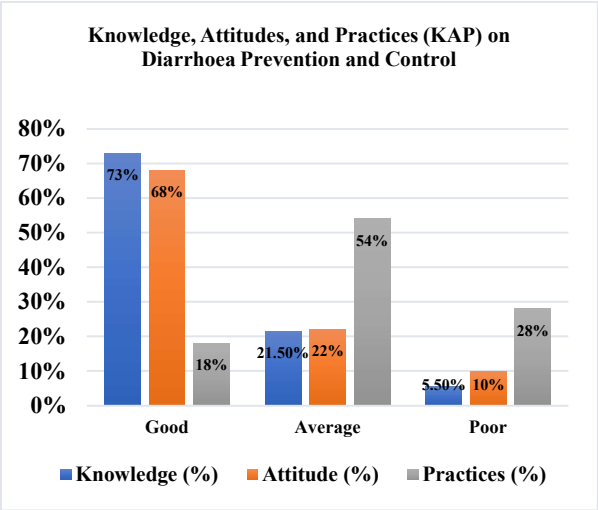

Figure – 4: Knowledge, Attitudes, and Practices (KAP) on Diarrhoea Prevention and Control

Based on composite scores, 73.0% of respondents demonstrated good knowledge, and 68.0% had a favourable attitude. In contrast, only 18.0% demonstrated good practices, while 54.0% showed average practices and 28.0% poor practices (Figure 4).

DISCUSSION

The high level of awareness regarding diarrhoea observed in this study is consistent with other community-based studies, where diarrhoea is widely recognised as a public health problem, although a subset of the population often remains poorly informed.[8] The perceived causes identified by respondents contaminated water, food, and poor hygiene align with global evidence identifying unsafe water and unhygienic practices as leading risk factors for diarrhoeal disease.[9] However, misconceptions such as linking diarrhoea to teething have been

documented elsewhere; mothers in Indonesia, for example, have reported similar beliefs linking diarrhoea to teething, the "evil eye," or environmental changes, underscoring the need for health communication that addresses cultural explanations alongside biomedical causes.[10]

The predominant focus on children under five as the most vulnerable age group is consistent with WHO reports identifying diarrhoea as a leading cause of morbidity and mortality in this age group.[11] The extent to which teenagers and adults were also perceived as vulnerable reflects gaps in age-specific knowledge that warrant clarification through targeted education.

Awareness of hygiene-related preventive measures was generally good, though knowledge of vaccination as a preventive strategy remained limited — a pattern also reported from Pakistan and the Gambia, where hygiene awareness exceeded knowledge of vaccination.[12,13] In contrast, a Karnataka-based study found that only 25% of mothers boiled their drinking water, highlighting considerable regional variability in preventive practice.[14]

ORS awareness in this study was comparable to that reported among mothers in Nigeria (69.3%),[15] higher than in Botswana (32%),[16] but lower than in rural India, where 81.4% of mothers were aware of ORS.[17] Limited awareness of the rotavirus vaccine mirrors findings from Pakistan, where only 16% of mothers were aware of the vaccine despite high acceptance, and from Italy, where only 40.7% of parents had heard of rotavirus infection.[18,19] While safe water and hygiene practices reduce diarrhoeal burden generally, they are insufficient to prevent rotavirus infection, which spreads even in settings with improved sanitation; vaccination therefore remains an essential complementary preventive measure.[1]

The health-seeking behaviour observed in this study, wherein most respondents favoured prompt medical consultation, reflects the influence of physician advice on caregiver decision-making reported elsewhere: in Italy, parental awareness of rotavirus vaccination was strongly associated with information received from physicians,[19] while in Indonesia, mothers informed by physicians were considerably more likely to vaccinate their children than those informed by peers.[20] The protective effect of rotavirus vaccination is well established: vaccine introduction in Malawi substantially reduced infant diarrhoea mortality, and WHO estimates indicate that rotavirus vaccines considerably reduce severe diarrhoea incidence and child mortality risk in developing-country settings.[1] In India, inclusion of the rotavirus vaccine in the Universal Immunisation Programme has improved access and reduced out-of-pocket expenditure, supported by campaigns such as Mission Indradhanush.[21] Endorsement by community and religious leaders has also been shown to improve vaccine uptake in other settings.[22]

The strong awareness of hand hygiene observed in this study is consistent with meta-analytic evidence showing that handwashing promotion reduces childhood diarrhoea incidence by approximately 28-31%.[23] The generally positive trust reported towards health workers and ASHAs highlights their potential role in strengthening diarrhoea prevention efforts, provided this trust is reinforced through consistent engagement.[24]

Despite favourable knowledge and attitudes, actual practices in this study were considerably weaker, a pattern frequently described in the literature as a knowledge-practice gap.[23] Suboptimal ORS administration despite high awareness mirrors findings from Guinea-Bissau, where household availability of ORS sachets was associated with more prompt administration, suggesting that accessibility and preparedness, rather than awareness alone, determine actual use.[25] Discontinuation of breastfeeding during diarrhoeal episodes, observed in a substantial minority of households in this study, is concerning given evidence from Bangladesh that discontinuing breastfeeding during diarrhoea considerably increases the risk of dehydration.[26] Similarly, inconsistent food and water hygiene practices observed here, particularly infrequent reheating of leftover food, reflect well-established determinants of diarrhoeal disease burden described in other settings.[27,28]

Limitations

Limitations include the cross-sectional design, which precludes causal inference; reliance on self-reported data, which may be subject to recall and social desirability bias; and the exclusion of households absent on the day of the survey, which may have introduced selection bias. In addition, the response options for perceived age-related vulnerability did not include a distinct category for children aged 5-10 years, which may have limited the granularity of findings for this item and should be addressed in future study tools.

CONCLUSIONS

Caregivers in this rural community demonstrated satisfactory knowledge and attitudes regarding diarrhoea prevention, but their preventive and management practices were considerably weaker, reflecting a substantial knowledge-practice gap that continues to sustain the burden of childhood diarrhoeal disease in this setting.

Recommendations

- Community health workers should provide focused counselling on consistent ORS use and continued breastfeeding during diarrhoeal episodes, as these showed the largest gap between awareness and actual practice in this study.
- Health education efforts should specifically address safe food-handling practices, including reheating of leftover food, and correct misconceptions such as the belief that diarrhoea is caused by teething.
- Awareness generation regarding rotavirus vaccination should be strengthened, given the low level of knowledge identified in this study, alongside continued reinforcement of safe water use and hand hygiene.

REFERENCES

1. WHO. World Health Organization. Diarrhoeal disease [Internet]. WHO Fact Sheets. 2023 [cited 2025 Sep 4].

2. UNICEF. UNICEF. Diarrhoeal disease [Internet]. Data and Analytics. 2023 [cited 2025 Sep 4].

3. Varghese S, Mammen A, Paul P, et al. Prevalence and determinants of diarrhoeal diseases among under-five children in India: findings from NFHS-5. BMC Pediatr. 2023;23:312. doi:10.1186/s12887-023-04073-3.

4. Munos MK, Walker CLF, Black RE. The effect of oral rehydration solution and recommended home fluids on diarrhoea mortality. International Journal of Epidemiology. 2010 Apr 1;39(suppl_1):i75–87. doi:10.1093/ije/dyq025

5. Troeger C, Khalil IA, Rao PC, Cao S, Blacker BF, Ahmed T, et al. Rotavirus Vaccination and the Global Burden of Rotavirus Diarrhea Among Children Younger Than 5 Years. JAMA Pediatr. 2018 Oct 1;172(10):958. doi:10.1001/jamapediatrics.2018.1960

6. NFHS 5. Ministry of Health and Family Welfare (MoHFW). National Family Health Survey (NFHS-5), 2019–21: India Fact Sheet. International Institute for Population Sciences (IIPS); 2021.

7. Alamgir F, Fatmi Z, Zafar SN, Shafique K. Practices and perceptions of mothers regarding childhood diarrhoea and its management in Karachi, Pakistan. PLoS One. 2022;17(10):e0275495. doi:10.1371/journal.pone.0275495.

8. Mengistie B, Berhane Y, Worku A. Prevalence of diarrhea and associated risk factors among children under-five years of age in Eastern Ethiopia: A cross-sectional study. Open J Prev Med. 2013;3(7):446–53.

9. Prüss-Ustün A, Bartram J, Clasen T, Colford JM, Cumming O, Curtis V, et al. Burden of disease from inadequate water, sanitation and hygiene in low- and middle-income settings: a retrospective analysis of data from 145 countries. Tropical Med Int Health. 2014 Aug;19(8):894–905. doi:10.1111/tmi.12329

10. Usfar AA, Iswarawanti DN, Davelyna D, Dillon D. Food and Personal Hygiene Perceptions and Practices among Caregivers Whose Children Have Diarrhea: A Qualitative Study of Urban Mothers in Tangerang, Indonesia. Journal of Nutrition Education and Behavior. 2010 Jan;42(1):33–40. doi:10.1016/j.jneb.2009.03.003

11. WHO. World Health Organization. Diarrhoeal disease fact sheet. Geneva: WHO; 2017.

12. Mumtaz Y, Zafar M, Mumtaz Z. Knowledge, attitude and practices of mothers about diarrhea in children under 5 years. J Dow Univ Health Sci. 2014;8(1):3–6. ournal of Dow University of Health Sciences. 2014;8(1):3–6.

13. Keenan JD, Aunger R, Peprah D, et al. Long-term behavioral impact of an intervention to promote face washing and environmental cleanliness in rural Gambia. Am J Trop Med Hyg. 2011;84(6):979–85.

14. Bevoor D, Moreshwar S, Madhale M. A Study to Evaluate the Effectiveness of Planned Teaching Programme on Knowledge on Prevention and Control of Malnutrition among Mothers of Under Five Children Residing in Vantmuri Primary Health Centre of Belgaum City, Karnataka. Interna Jour of Nur Edu and Rese. 2015;3(3):317. doi:10.5958/2454-2660.2015.00014.9

15. Ugwu J, Ezeagu I, Ibegbu M. Awareness and practice of zinc therapy in diarrheal management among under-five caregivers in Enugu State, Nigeria. Int J Med Health Dev. 2019;24(2):63. doi:10.4103/1110-1067.271082

16. Motlogelwa K, Sebogodi L, Mmereki BT, et al. Caregiver knowledge and use of oral rehydration salt and zinc for treating diarrhea in under-five children in Botswana. Clin Epidemiol Glob Health. 2022;13:100998. doi:10.1016/j.cegh.2022.100998.

17. Jagadeesh KV, Narasannavar A, Kamble M, Prakasha S, Raja BY. Knowledge, Attitude and Practice of Mothers in the Management of Diarrhoea among Under-five Children in a Rural area of India. Ethiop J Health Sci. 2024 Jul;34(4):321–30. doi:10.4314/ejhs.v34i4.8 PubMed PMID: 39981008; PubMed Central PMCID: PMC11837805.

18. Anwar S, Ahmad K, Khan A, et al. Awareness about Rotavirus Vaccine among Mothers: A Cross-Sectional Study from Pakistan. Khyber Med Univ J. 2023.

19. Restivo V, Costantino C, Giorgianni G, et a. Restivo V, Costantino C, Giorgianni G, et al. Factors Associated with Parents' Knowledge about Rotavirus and Its Vaccine in Italy. Int J Environ Res Public Health. 2019;16(10):1807. doi:10.3390/ijerph16101807.

20. Marini A, Setiawan D, Umniyati S. Marini A, Setiawan D, Umniyati S, et al. Determinants of Rotavirus Vaccine Uptake among Mothers in Indonesia: A Cross-Sectional Study. PLoS One. 2023;18(6):e0286769. doi:10.1371/journal.pone.0286769.

21. Nandi A, Prinja S, Plessow R, et al. Impact of Rotavirus Vaccine Introduction in India: Evidence from Household and Health System Data. BMC Med. 2024;22:216. doi:10.1186/s12916-024-03664-w.

22. Iqbal M, Supriyadi E, Rosyada A, et al. . Community and Religious Leaders' Perspectives on Rotavirus Vaccination in Indonesia: A Qualitative Study. BMC Public Health. 2019;19:6706. doi:10.1186/s12889-019-6706-4.

23. Ejemot-Nwadiaro RI, Ehiri JE, Arikpo D, Meremikwu MM, Critchley JA. Hand-washing promotion for preventing diarrhoea. Cochrane Infectious Diseases Group, editor. Cochrane Database of Systematic Reviews. 2021 Jan 7;2021(1). doi:10.1002/14651858.CD004265.pub4

24. Benjamin, Matthew},. Role of Community Health Workers in Educating Mothers on Diarrhea Prevention and Management. 2025.

25. Sodemann M, Jakobsen MS, MÃ¸lbak K, Martins C, Aaby P. Management of childhood diarrhea and use of oral rehydration salts in a suburban West African community. Am J Trop Med Hyg. 1999 Jan;60(1):167–71. doi:10.4269/ajtmh.1999.60.167

26. Faruque AS, Mahalanabis D, Islam A, Hoque SS, Hasnat A. Breast feeding and oral rehydration at home during diarrhoea to prevent dehydration. Archives of Disease in Childhood. 1992 Aug 1;67(8):1027–9. doi:10.1136/adc.67.8.1027

27. Nizame FA, Unicomb L, Sanghvi T, Roy S, Nuruzzaman Md, Ghosh PK, et al. Handwashing before Food Preparation and Child Feeding: A Missed Opportunity for Hygiene Promotion. The American Society of Tropical Medicine and Hygiene. 2013 Dec 4;89(6):1179–85. doi:10.4269/ajtmh.13-0434

28. Soe, T.K., Laohasiriwong, W., Sornlorm, K. et al. Hygiene practice and diarrhea prevalence among underfive children in Myanmar: a cross-sectional study. BMC Pediatr 24, 675 (2024). https://doi.org/10.1186/s12887-024-05158-3Hygiene practice and diarrhea prevalence among under-five children (Myanmar) BMC Pediatr. 2024;24:158.

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