

Determining critical gaps in implementation of WHO and UNICEF's 7-point plan in diarrhoea control and prevention strategy: A cross sectional study in District Swabi, Pakistan

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Abstract

Objective: To determine the critical gaps in knowledge and practices of mothers/caregivers in the management of diarrhoea in children at home.

Method: The descriptive cross-sectional study was conducted from September 2019 to August 2020 at primary health centres across Swabi district of the Khyber Pakhtunkhwa province of Pakistan, and comprised mothers/caregivers presenting with children aged <5 years suffering from diarrhoea. Barriers to childhood diarrhoea prevention and control were identified in accordance with the 7-point plan adopted by the federal government in 2009. Data was analysed using SPSS 23.

Results: There were 287 mothers with a mean age of 26.8±5.39 years (range: 17-42 years). The mean age of the children was 24.85±12.72 months (range: 2-55 months). Among the mothers, 145 (51.5%) had received no schooling, 83(29%) had primary level schooling, 56(19.5%) secondary level and 3(1%) had received higher-level education. Only 63(22%) were aware of the use of oral rehydration salts and 32(11%) knew about the need of using zinc in diarrhoea. Safe water was available in 14(5%) households. Hand hygiene awareness was low, as 169(59%) mothers were washing hands with soap. Household access to toilet facility was 247(86%). Preventive health services were good with overall breastfeeding practices 204(71%) and children vaccination 244(85%).

Conclusion: Majority of mothers were found to be well aware of breastfeeding practices and the children had adequate vaccination coverage. There was a wide gap in direct awareness and practices of mothers about sanitation and hygiene and also home-based management of diarrhoeal diseases in children.

Keywords: Diarrhoea, Sanitation and hygiene, Mothers, ORS, 7-point plan. (JPMA 72: 2395; 2022)

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Introduction

Diarrhoea is a disease in which the patient has three or more than three loose stools in a day. It is the second leading cause of death in children age <5 years, particularly in rural low-income settings,¹ and accounts for the 9% of all <5 deaths which totalled more than 580,000 in 2012 worldwide.² Even with the progress on child survival there were still more than five million deaths in children <5 years, including half-a-million diarrhoea deaths in 2015.³

Critical gaps in childhood diarrhoea prevention and control are widely related to socio-economic status (SES) and behavioural and environmental variables. The low literacy level of parents, especially lack of mother's education, poverty-related malnutrition, and lack of general prevention in the shape of breastfeeding and vaccination.^{4,5}

The health of children <5 is dependent on

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mothers/caretakers. Incidence of diarrhoea is directly related to the hygienic behaviours of their caretakers. In Pakistan, childhood diarrhoea is one of the main areas of concern for public health professionals.⁶ Three countries, including Pakistan, Nigeria, and Congo, showed very less or no change in their Global Action Plan for Pneumonia and Diarrhoea (GAPPD) scores during 2015 and 2016.⁷ The World Health Organisation (WHO) and the United Nations International Children's Emergency Fund (UNICEF) considered diarrhoea a major cause of death in children <5 years globally in March 2018, and Pakistan was shown with very little decrease in childhood mortality.²

There were documented differences in the prevalence of diarrhoea by region; Khyber Pakhtunkhwa (KP) was found with the highest prevalence from 28% to 21%, followed by Sindh from 23% to 14%, and Punjab from 22% to 21%. The lowest proportion was in Baluchistan 12%. There has been a downward trend in the prevalence of diarrhoea in children from 23% in 2013 to 19% in 2018.⁸⁻¹⁰

WHO and UNICEF in 2009 recommended a 7-point

plan for comprehensive diarrhoea control, consisting of 5 prevention and 2 treatment strategies.¹¹ They included vaccination against rotavirus and measles, promoting early and exclusive breastfeeding along with vitamin A supplementation, encouraging people to wash their hands with soap, improving water quality and quantity, promoting communitywide sanitation and hygiene, fluid replacement treatment to prevent the body from dehydration, and Zinc supplementation.

The UNICEF programme of diarrhoea control not only focussed on environmental hygiene, but also on developing personal hygienic practices and public self-empowerment in identifying the need for appropriate health-seeking behaviour. They were adopted by the Pakistan government and made part of the primary healthcare services.²⁻¹²

The current study was planned to determine the critical gaps in knowledge and practices of mothers/caregivers in the management of diarrhoea in children at home.

Subjects and Methods

The descriptive cross-sectional study was conducted from September 2019 to August 2020 at primary health centres (PHCs) across Swabi district, KP, Pakistan. After approval from the ethics review committee of the Armed Forces Post Graduate Medical Institute (AFPGMI), Rawalpindi, Pakistan, the sample size was calculated using the formula, $n = (Z)^2 * P * (1-P) / (e)^2$ ¹³ in the light of the Pakistan Demographic and Health Survey (PDHS) 2017-18 which reported diarrhoea prevalence of 21%.⁹ The calculation was based on 95% confidence interval (CI) (Z score 1.96) and 0.05% precision. The sample was inflated by 10% to cover for anticipated non-response.

The sample was raised using purposive sampling technique from among mothers/caregivers presenting with children of either gender aged <5 years suffering from diarrhoea. Mothers having distinct language barrier and those who were residing as guests in some house were excluded. Informed/written consent was taken for voluntary participation in the study.

Data was collected using a questionnaire adopted from the

WHO/UNICEF assessment tool.¹⁴ The questionnaire was pilot-tested on a sample of 30 women to ensure reliability and validity. The questionnaire was translated into the local Pashto language. Respondents were interviewed in Pashto and their responses were noted by the interviewers.

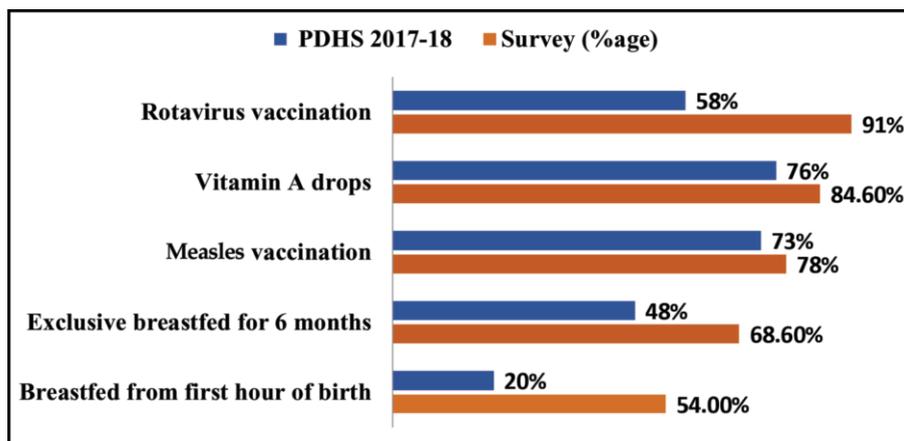
Data was analysed using SPSS 23. Socio-demographic characteristics were expressed as frequencies and percentages. Age-wise distribution of mothers and children were expressed as mean \pm standard deviation. Relevant results were compared with the PDHS 2017-18 data.

Results

There were 287 mothers with a mean age of 26.8 \pm 5.39years (range: 17-42 years). The mean age of the children was 24.85 \pm 12.72 months (range: 2-55 months). Among the mothers, 145 (51.5%) had received no schooling, 83(29%) had primary level schooling, 56(19.5%) secondary level and 3(1%) had received higher-level education. Preventive health services were good as expressed by overall breastfeeding practices and children vaccination which was better than the relevant PDHS data (Figure).

In terms of knowledge and practice, 63(22%) were aware of the use of oral rehydration salts (ORS) and 32(11%) knew about the need of using zinc in diarrhoea. The knowledge and practice related to ORS and zinc were low compared to PDHS data (Table-1).

Safe water was available in 14(5%) households. Hand hygiene awareness was low, as 169(59%) mothers were washing hands with soap. Household access to toilet facility was 247(86%). The data was compared with PDHS numbers (Table-2).



PDHS: Pakistan Demographic and Health Survey.

Figure: Preventive Health Services for Children (n=287).

Table-1: Knowledge and practice of ORS and zinc in childhood diarrhoea.

S.No	Knowledge about ORS and Zinc among mothers	Statements	Survey n =287 (%age)	PDHS 2017-18 (%age)
1	Use of ORS for combating diarrhoea	Yes	63 (22)	-36
		No	205 (71)	-40
		Don't Know	19 (7)	-14
2	Quantity of ORS served in 4-6 hours	Half glass (50-100ml)	14 (5)	-
		1 Glass (100-200ml)	35 (12)	-
		More than 1 glass (200ml or above)	14 (5)	-
		Total	287 (100)	-100
3	Zinc Supplementation	Yes	32 (11)	-21
		No	231 (81)	-14
		Don't Know	24 (8.5)	-40
		Total	287 (100)	-100

ORS: Oral rehydration salts.

Table-2: Sanitation and hygiene practice (n=287).

S.No	Sanitation & Hygiene Practice	Statements	Survey (%age) n=287	PDHS 2017-18 (%age)
1	Water treatment to make it safer	Yes	14 (5)	-10
		No	273 (95)	-90
		Don't know	0	0
2	Practice of Hand washing with Soap	Yes	169 (59)	-48
		No	117 (41)	-52
3	Access to Toilet Facilities	Flush to pit/ latrine	247 (86)	-79.2
		Composting	0	0
		Open defecation /bush/ field	40 (14)	-19.8
		Total	287 (100)	-100

PDHS: Pakistan Demographic and Health Survey.

Discussion

Maternal education is an important determinant of health status worldwide. Female education in Pakistan is mainly affected by gender inequality, customs and norms, especially in rural areas.¹⁵ The current study was conducted in a less developed district of the KP province of Pakistan. Out of the total number of mothers (n=287), 145(51.5%) were reported with no schooling. According to PDHS 2017-18, 49% women aged 15-49 had no education background.⁹ According to the Family Advancement for Life and Health (FALAH), a baseline household survey conducted in Swabi in 2010, the literacy rate among 491 mothers was 'none' in 69% cases. Such dismal literacy level was because of cultural stigma, early marriages and poverty.¹⁶ PDHS 2012-13 showed that mortality was much higher among women with no education⁸ compared to women with higher education. Community education and sensitisation, especially focussing on women's education, helps leverage child health through not only better care and prevention, but also through a better understanding of the importance of seeking appropriate and early care for childhood

illnesses.¹⁷

In the current study, 71% mothers had awareness about ORS, but none was actually using ORS for combating diarrhoea in their children. This was in line with PDHS⁹ and other surveys.¹⁸

Knowledge and practice of preventive approaches, like early childhood vaccination and breastfeeding, were good in the current study, and were better compared to PDHS.⁹

The current study found that the majority households (69%) were using unprotected dug well as a source of drinking water compared to and PDHS data (25%). There is a great difference in the data from the Swabi region and overall Pakistan. The water level was closer to the ground in Swabi, and that is why the dug well is a common source in majority households. Open defecation was found to be a big issue even though unhygienic environment increases the frequency of diarrhoea and other diseases.¹⁹

The current study had its limitations as it only covered the public health sector, presenting only one side of the coin.

The sample size was small, the respondents may have overrated the responses, and there might have been selection bias as well. The findings are not generalisable to the community across the country.

Conclusion

Majority of mothers were found to be well aware of breastfeeding practices and the children had adequate vaccination coverage. There was a wide gap in direct awareness and practices of mothers about sanitation and hygiene and also home-based management of diarrhoeal diseases in children.

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