

Stunting Amongst Pakistani Children Under Five: Status of Knowledge, Attitude and Practice of Health Care Workers at Basic Health Units and Rural Health Centers in Raiwind, Lahore

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Abstract

Background: One of the major public health problems amongst children of Pakistan is the lack of proper nutrition. Health care workers (HCWs) at the primary level have a pivotal role in promoting good nutrition, but they lack basic nutrition knowledge and competence to provide good nutrition counseling to their clients.

Objective: To assess the knowledge, attitude, and practice of health care workers regarding stunting in under-five children, at Basic Health Units and Rural Health Centers of Raiwind, Lahore.

Methodology: This was a cross-sectional descriptive study including all HCWs (15 doctors and 15 nurses) in the selected 3 Rural Health Centers (RHC) and 9 Basic Health Units (BHU) in Raiwind, Lahore, from March 2019 to March 2020. A structured questionnaire was used for assessing the Knowledge, Attitude, and Practice (KAP) of HCWs regarding stunting in children under five. Descriptive statistics were used to analyze data, P-values ($p \leq 0.05$) were considered to see if the difference is statistically significant between doctors and nurses.

Results: The HCWs' mean percent score of doctors versus nurses, for knowledge related to major childhood illnesses, was 48 ± 22 vs 46 ± 21 , common nutritional problems 35 ± 19 vs 26 ± 16 , and nutritional assessment methods 22 ± 12 vs 42 ± 23 , in children under 5 years was found to be suboptimal. The total mean percent score for HCWs practices regarding health education of mothers was below 50 i.e. 46 ± 16 vs 40 ± 18 in doctors vs nurses. The practice regarding breastfeeding was higher 65 ± 20 in nurses. All the doctors and 11 (73%) nurses reported correct practice regarding iron and folic acid supplementation to pregnant mothers.

Conclusion: Despite having a positive attitude towards stunting, HCWs' had suboptimal knowledge and practice score in most of the items.

Keywords: KAP, HCWs, PHC, Stunting, Nutrition, Assessment methods

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Introduction

Sound nutrition is essential for good health, mental and social development, especially in early childhood and the achievement of the Sustainable Development Goals.¹ Malnutrition is a major public health concern in the world. Worldwide, 1/3 of children under 5 are not growing well due to various types of malnutrition; stunting, wasting, and overweight.² In 2019, 5.2 million children under five died, mostly from preventable causes.³ Globally, around 50% of all under-five deaths annually are caused by undernutrition.⁴

Stunting is the result of poor maternal nutrition before and throughout pregnancy, and repeated bouts of infection in early childhood. A stunted child never attains full possible height, and also suffers from stunted development of the brain, learning difficulties in school, and poverty.⁵ About 144 million children under 5 years (21.3 %) were

stunted in 2019, the majority of them lived in Asia and Africa.² Children malnutrition is a serious public health problem in Pakistan. The country did not show any impressive gains in achieving the Millennium Development Goals regarding maternal and child health.⁶ According to the 2018 Pakistan National Nutrition survey, 40.2% of children are stunted.⁷

Stunting has multifactorial determinants which require efforts from both within and outside the health sector i.e. policy, health system, and health manpower.⁸ The first two years of a child's life are crucial for investing in child nutrition ensuring more productive and healthier populations.¹ During this period, HCWs at the primary care level have a crucial role for the improvement, prevention, and control of malnutrition among children.⁹ However, HCWs have inadequate nutrition knowledge and skills to provide basic nutrition counseling to the caregivers on antenatal visits. World Health Organization

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recommends the need for a strong in-service nutrition training package and continuing education workshops for antenatal care providers to address nutritional problems among pregnant women.¹⁰ Primary care infrastructure in Pakistan includes more than 5500 BHUs or RHCs, and other first-level care facilities. However, the delivery of PHC services at the BHUs and RHCs is below the expected level. The health status of the people can be improved by having integrated PHC services in Pakistan.¹¹

The current study assessed the role of HCWs' KAP in managing poor nutritional status in children under five years of age. The findings of the study may be used to identify existing knowledge, attitudes, and practices gaps regarding stunting management. The objective of this study was to assess the knowledge, attitude, and practice of health care workers regarding stunting in under-five children, at Basic Health Units and Rural Health Centers of Raiwind, Lahore.

Methodology

A cross-sectional descriptive study was conducted from March 2019 to March 2020, in three RHCs and nine BHUs centers in Raiwind, Lahore. All Healthcare Care Workers (15 doctors and 15 nurses) from the selected 3 Rural Health Centers (RHC), and 9 Basic Health Units (BHU) centers in Raiwind, Lahore were included. All Primary Healthcare Centers (RHCs & BHUs) that are located in Raiwind were taken as a study population. The study area Raiwind was chosen because of its geographical accessibility and feasibility. Data were collected using a pretested questionnaire in English for doctors and for nurses we used a questionnaire in Urdu for their better understanding. Data were analyzed with SPSS version 24. The questionnaire was designed to collect data about HCWs' socio-demographic information, and HCW's KAP domain including six items for measuring knowledge, seven items for attitude, and seven items for practice. A five-point Likert scale with a score range, 1-Strongly disagree, 2- Disagree, 3- Neutral, 4- Agree, 5- Strongly agree, was used to assess HCWs' attitude towards stunting. For quantitative variables, mean percent and standard deviation were used while for qualitative variables percentages and numbers were used. Chi-square test for qualitative variables and independent sample t-test for

quantitative variables were being used. P-values of ≤ 0.05 were considered statistically significant. The mean percent score was calculated. Greater the scoring value, the better the level of HCWs' Knowledge, Attitude, and Practice. The researcher used 60 as a cutoff point to differentiate between optimal 60 and suboptimal <60 . Ethical approval was sought from the Ethics Committee of the Hospital.

Results

Amongst the studied group, there were 50% doctors and 50% nurses from the designated BHU and RHC centers. Out of the total, 86.6% of the studied participants were 35 years old or less. About 24% of the HCWS had a working experience of 5 years or less. (Table-I) The HCWs' mean percent score for knowledge related to major childhood illnesses, common nutritional problems, and nutritional assessment methods in children under 5 years was found to be suboptimal. (Table-II) However, there was a significant difference in mean percent score between the two groups regarding their knowledge of nutritional assessment methods: 42.9 of nurses versus 22.2 of doctors (p-value = 0.001). (Table-II)

Table-I: Sociodemographic Information of Healthcare Workers

Sociodemographic information	N	%
Age		
≤ 35 years	26	86.6
>35 years	4	13.3
Sex		
Male	9	13.4
Female	21	86.6
Profession		
Doctors	15	50
Nurses	15	50
Type of duty in Health Facility		
Direct patient care	22	74
Others*	8	26
Duration of work (years)		
Doctors ≤ 5 years	24	80
Doctors <5 years	6	20
Nurses		
Nurses ≤ 5 years	4	26.6
Nurses >5 years	11	73.3

Others*: Teaching, Research and Administration

However, the total mean percent score for practice related to breastfeeding was higher in nurses (65.4) than doctors (60.2) without significant difference

(Table-II). The mean percent score for practice regarding recommendations to complementary feeding for an infant at 6 months was higher in doctors (48.7) than nurses (41.6), with no significant difference ($p=0.3$). More than 73.3% of HCWs reported correct practice regarding iron and folic acid supplementation to pregnant mothers'. (Table-III) However, less than a quarter 20% vs 13% of doctors vs nurses could report correct practice regarding Vitamin A supplementation for children U5 (Table-III). Although HCWs had a positive attitude towards characteristics and management of stunting in children under five; the total mean percent score for doctors' attitude (75.8 ± 8.3) was significantly higher versus nurses (64.9 ± 17.1) (p value=0.03). (Figure-I)

Table-II: Mean Percent for Knowledge and Practices of Healthcare Workers regarding Stunting in Children under Five

Variable	Doctors (n=15)		Nurses (n=15)		P-value
	Mean Percent Score	Standard Deviation	Mean Percent Score	Standard Deviation	
Knowledge					
Major childhood illnesses*	48.2	22.0	46.5	21.7	0.70
Common nutritional problems**	35.4	19.7	26.6	16.1	0.07
Nutritional assessment methods***	22.2	12.7	42.9	23.0	≤ 0.001
Practices regarding mother's Health Education					
To overcome the problem of malnutrition in children	53.1	17.3	41.13	25.3	0.02
Barriers in the health education of mothers of children	47.6	22.4	31.2	24.6	0.01
Components of sanitation to prevent malnutrition	44.3	25.8	52.6	28.6	0.50
To counsel the mother about her own health.	53.4	25.0	33.2	22.1	≤ 0.001
Total mean percent score	46.7	16.0	40.8	18.6	0.03
Practice related to breastfeeding					
Recommendation for the start of breastfeeding	13	86.6	14	93.3	0.23
Recommendation for exclusive breastfeeding	11	73.3	9	60	0.03
Recommendation for breastfeeding continued with food	8	53.3	9	60	0.12
Total mean percent score(MPS \pm SD)	60.2 \pm 25.2		65.4 \pm 20.9		0.32

* ARI, Diarrhea, Nutritional problems ** Iron Deficiency Anemias, PEM, Iodine Deficiency Disorders and Ricketts

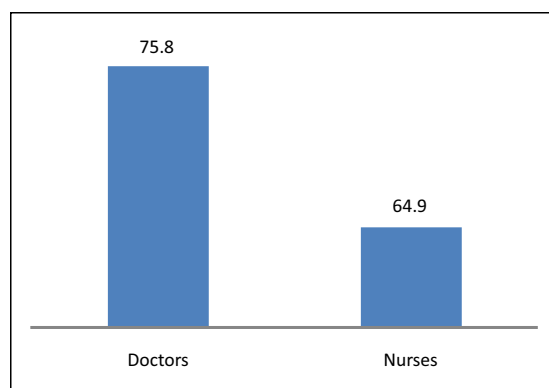
*** Anthropometric assessment, Biochemical parameters, Clinical

The total mean percent score for doctors' and nurses' practice regarding health education of mothers was suboptimal; below 50 (Table-II). More than 80% of HCWs gave correct recommendations for the start of breastfeeding in infants.

Table-III: Mean Percent for Practices on weaning and micronutrient supplementation of Healthcare Workers regarding Stunting in Children under Five

Variable	Doctors (n=15)		Nurses (n=15)		P value
	Mean Percent Score	Standard Deviation	Mean Percent Score	Standard Deviation	
Practice related to weaning					
Recommendations to complementary feeding for an infant at 6 months	48.7	22.7	41.6	31.2	0.37
Type of counseling with mothers on preparing complementary foods	41.0	19.1	35.7	25.8	0.55
Practice regarding micronutrient supplementation					
Micronutrients supplementation for women during pregnancy	15	100	11	73.3	
Vitamin A supplementation for children under five	3	20	2	13.3	
Zinc recommendation in children with diarrhea	5	33.3	10	66.6	

Figure-I: Mean Percent of Healthcare Worker's Attitude regarding Stunting in Children under Five



Discussion

In our study, among the respondent's majority were female (86.6%), this finding concurs with the

observation in a similar study conducted at PHC facilities in South Africa, in which the majority of participants were females (91.7%) compared with male participants.¹² Majority of the doctors (86.6%) were about 35 years old and 60% of them had work experience of 5 years or less. This is in agreement with a study conducted at PHC facilities in Abbottabad, Pakistan, in which the majority of physicians were 38 years and they had 2.53 years of experience of working in BHU.¹³ Nevertheless, more than 50% of the nurses in our study were 35 years old or above and 87% of them had a working duration of more than 5 years.

The mean percent score of HCWs' knowledge was about 50 regarding major childhood illnesses, common nutritional problems, and nutritional assessment methods in children under 5, in our study. This is attributed to inadequate medical nutrition education in undergraduate and postgraduate studies, and due to a lack of implementing practical part of it. A similar level of response about nutritional knowledge (50%) was reported by a study conducted in Jeddah, Saudi Arabia, in which the majority of Saudi physicians found it difficult to perform nutritional management of patients due to their inadequate nutrition knowledge and skill.¹⁴ Also in another study it was found that the majority of HCWs had poor knowledge and skill, in nutrition topics and 3/4 of the respondents had a positive attitude towards nutritional issues.¹⁵ HCWs face difficulty in child nutrition management due to a lack of adequate nutrition knowledge and practical nutrition training. Nonetheless, a core nutrition curriculum in Public health and Community Medicine has been introduced, which is likely to strengthen the medical nutrition practice.

In our study, nurses scored significantly higher mean percent knowledge score than doctors (≤ 0.001) in 'Nutritional Assessment Methods'. This could be due to the majority of nurses (73.3%) having working experience of > 5 years, and performing nutritional assessment of children on daily basis at PHCs. This is consistent with the findings of a study at Pediatric Emergency at Kenyatta Hospital (2018), in which 96.8% of nurses did the nutritional assessment of the children while the performance by doctors was poor (78.6%).¹⁶ The total mean percent score for the practice of doctors' and nurses' in health education of mothers was suboptimal; 46.7 and 40.8 respectively in our study. It could be due to

the barriers including 'Mother's cultural issues', 'lack of HCWs' trainings' and 'lack of HCWs' knowledge' identified by HCWs in the health education of mothers in the current study. This observation concurs with the finding in the study carried out at PHC facilities in South Africa (2017), in which all HCWs felt that health promotion messages are important, but only 51% of them could convey health messages during consultations.¹²

According to WHO, breastfeeding should be initiated within one hour of birth. Among South Asian countries, Pakistan has the lowest breastfeeding rate (29%),¹⁷ and according to Pakistan Demography and Health Survey (PDHS) (2017-18), the Exclusive Breastfeeding (EBF) rate is also worst (37%).¹⁸ In Pakistan, Baby-Friendly Hospital Initiative (BFHI) was started in 1992 for the training of staff on breastfeeding practices and policies. Counseling under the BFHI improved breastfeeding practices up to 98.97% in baby-friendly hospitals.¹⁹ In the current study, nurses had an overall higher mean percent score (64.5) regarding breastfeeding practice as compared to doctors (60.2), which could be due to the majority (87%) of nurses' job description, more working experience, and being 35 years old or above. This is in contrast to findings in another study, 'KAP of the medical staff regarding Breastfeeding management' (2019), where mean percent scores of physician practice (62.90) were significantly higher than that of nursing staff (49.7) regarding breastfeeding.²⁰ Moreover, in the current study more than 86% of doctors and nurses gave correct recommendations for the start of breastfeeding in infants which is in agreement with a study at the tertiary care hospital of Karachi (2016), where 91.5% of the doctors supported breastfeeding to be started within half an hour of birth.²¹

Diarrhea and acute respiratory infections are the leading two causes of death among under-five.²² Exclusive breastfeeding prevents growth faltering and protects against childhood infections.²³ However, regarding correct recommendations for duration of EBF, in our study, the proportion (73.3%) of doctors was higher versus (60%) of nurses (p value < 0.05), supported by higher mean percent attitude score of doctors towards EBF comparing to nurses in our study. This is supported by a finding in a study conducted to 'Assess the KAP of mothers in South Indian hospital towards breastfeeding' in which mothers relied on doctors as their preferred counselor (87.5%).²⁴ However, the proportion of doctors reporting 'EBF recommendation for the first

6 months of life (73.3%) and 'duration of breastfeeding as 2 years (53.3%) was lower in the present study than that reported (97%) and (82.5%) respectively in another study.²¹ Moreover, only 52.9% of doctors and 40.2% of nurses advised breastfeeding to be continued for 2 years in another study (2018).²⁵ Less than 70% of 6 to 8 months old children received solid or semisolid foods according to PDHS (2017 -18). In the current study, reported practice on 'introducing solid foods at 6 months' though suboptimal, was higher in doctors than nurses, with no significant difference; the reason being the majority of doctors were fresh graduates retaining their undergraduate knowledge, and their positive attitude towards weaning. This observation is in agreement with the findings of another study at pediatric departments, Alexandria in which the proportion of doctors (58.8%) was higher than nurses (25.7%) in their opinion regarding children should be weaned on cow's milk for better growth after 6 months.¹⁷

According to PDHS (2017 -18), despite the fact 75% of children (6-59 months of age) were given vitamin A supplements, we found in our study that less than a quarter of HCWS could report recommended practice regarding Vitamin A supplementation for children. This is in contrast to a study where it was observed that 93% of HCWs showed knowledge for correct regimens for vitamin A supplementation and Road to Health Booklets were completed adequately for vitamin A supplementation (94.6%).¹² Moreover, more than 73.3% of HCWs reported correct practice regarding 'iron and folic acid supplementation to pregnant mothers'. This is similar to a study in which all PHC pediatricians followed national standards for anemia and prescribed iron in prophylactic doses.²⁶

Conclusion

This study showed that Healthcare Workers had sub-optimal knowledge regarding stunting. There was no significant difference between doctors' and nurses' KAP in most of the terms. Although, they had a positive attitude towards stunting management, yet they showed sub-optimal practices in most of the items. Inadequate undergraduate nutrition curricula, lack of practical nutrition training, and the barriers in health

education of caregivers reported by HCWs could be the reason so that inadequate knowledge could not be translated into accurate and useful counseling to mothers during nutrition-related services to children under five at PHCs. Since knowledge is power, and health facilities could invest this power to improve the quality of services, as caregivers empowered by knowledge ensure optimal infant feeding. On the job and continuous practical training of HCWs is mandatory for refreshing and updating their knowledge and skills. The undergraduate curriculum of medical and paramedical students, as well as postgraduate medical students, should contain detailed knowledge about the optimal feeding patterns of children. More research is required to identify gaps in HCWs' nutrition knowledge and training and to determine if that knowledge is being translated into accurate and useful counsel to mothers during the ANC visit.

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