Original Article

Assessment and factors associated with wasting in under five children in Faisalabad

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Objective: To access the prevalence of wasting and investigate associated risk factors of wasting among children under 5 years in Faisalabad.

Methodology: A survey-based cross-sectional study was conducted with 400 mother-child pairs between aged 0–59 months in rural areas of Faisalabad. Children's anthropometric measurements were taken to determine the prevalence of wasting. Data were collected by mothers with a structured questionnaire. Univariate and bivariate analysis was done by SPSS 23 vision.

Results: The overall prevalence of wasting was 28.2%. Children aged group 0-5 months were found at 12(37.7%) highest prevalence of wasting, while children aged group between 48-60 months were found at 18(24.3%) lowest prevalence of wasting. Lack of antenatal care visits during pregnancy, 5 and higher childbirth order, home deliveries, the prevalence of diarrhea in the last two weeks, and unimproved source of drinking water were significantly associated with wasting.

Conclusion: Antenatal care visits during pregnancy, birth order number, delivery place, diarrhea in the last two weeks, and the source of drinking water were responsible factors for wasting. (Rawal Med J 202;45:690-693).

Keywords: Malnutrition, wasting, associated factors, under-five children.

INTRODUCTION

In 2015 globally, 13% of deaths (representing 875,000 deaths) under 5 years of children were attributed to wasting. Wasting is nutritious deficiency which brings severe health consequences among children.[1] Different studies highlighted that wasting consequences as morbidity and mortality.[2,3] According to the National Nutrition Survey 2018, 17.7% of children under five years of age had wasting in Pakistan.[4]

The United Nation Sustainable Development Goals emphasized to strengthen the nutritional status of children that can reduce the morbidity and mortality in under five years of children.[5] In 2016, 52 million children worldwide suffered from wasting.[6] In south Asia, wasting prevalence is around 15% which is a critical health problem of children.[7] In Pakistan, wasting has received little attention due to a lack of resources, awareness, and cultural barriers, and other restrictions. In this study, we explored contributory factors of wasting in under five years children in rural areas of Faisalabad.

METHDOLOGY

This cross-sectional community-based quantitative study mothers having at least one child age between 0–59 months. The study was approved by the advanced research board of Government College University, Faisalabad and a written informed consent was taken from all mothers. The sample size was 400 (child-mother pair) calculated with a single proportion of the population equation $z^2 \times p \times q/d^2$, using the assumptions as 95% confidence level (CI) and a 5% error margin.

The study was conducted in four rural towns in district Faisalabad. Eight rural union councils (two from each town) were randomly selected. One village from each union council was selected randomly. A list of eligible households was taken from the lady health workers from their respective villages. The households were selected through systematic random sampling through the list of eligible households. Mothers were interviewed through a structured questionnaire and children's weight and height were measured through child anthropometric kit. The interviews were conducted face to face in the Urdu language.

Statistical Analysis: The quantitative data were analysed through SPSS version 20, while child anthropometric data were analysed by WHO 2006

Anthro 3.2.1 software.[8] For anthropometric classifications, international criteria were used −2 SD was classified as wasted child. The dependent variable was wasting which was defined as 0 = for not wasting and 1= for wasting. To classify the association of the factors with child wasting between dependent and independent variables chi-square test was used.

RESULTS

We found 28.8% of both (males and females) children are moderately wasted (below -2 SD) while male children were more affected (51.3%) than female children (51.3%) (Table 1). The children age range is shown in Table 2. The highest prevalence of wasting were found 12(37.7%) and 10 (33.3%) among 0-5 months and 6-11 months of children's age group respectively. On the other hand, the lowest prevalence of children wasting was found 18(24.3%) among the children age group of 48-60 months, while 24-35 months and 36-47 months children age groups were found the prevalence of wasting 25 (26.0%) and 24 (26.0%), respectively. Children age has an inverse relation with wasting as child age increases the prevalence of wasting get decrease (Table 2).

Table 1. Prevalence of wasting based on gender.

Children	Wasting	Not Wasting	Total
Total	113(28.25%)	287(71.75%)	400(100%)
Males	61 (29.7%)	144(70.24%)	205(51.3%)
Females	52 (26.6%)	143(73.33%)	195(48.7%)

Table 2. Prevalence of wasting based on age groups.

Contributing Factors	Wasting		Total	Chi-square	Sig. Level
	No	Yes			
No ANC visits during pregnancy	1	11	12	126.544	0.000
	8.4%	91.6%	100.0%		
5 and higher child birth order	44	63	107	71.090	0.000
	41.1%	58.9%	100.0%		
Home delivery	20	45	65	64.292	0.000
	30.7%	69.2%	100.0%		
Diarrhea within last 2 weeks	10	27	37	30.077	0.000
	27.0%	73.0%	100.0%		
Unimproved source of drinking water	229	109	338	17.201	0.000
	67.8%	32.2%	100.0%		

Table 3. Factors associated with wasting.

Age groups	Wasting	Not Wasting	Total children
0-5 months	12(37.7%)	19(61.2%)	31(7.7%)
6-11 months	10(33.3%)	20(66.6%)	30(7.5%)
12-23 months	25(30.6%)	54(68.3%)	79(19.7%)
24-35 months	25(26.0%)	71(73.9%)	96(24%)
36-47 months	24(26.0%)	66(73.3%)	90(22.5%)
48-60 months	18(24.3%)	56(75.6%)	74(18.5%)

Lack of antenatal care (ANC) visits during pregnancy, 5 and higher childbirth order, home deliveries, diarrhoea within the last 2 weeks and unimproved source of drinking water were determinants of wasting among children (Table 3).

DISCUSSION

Weight-for-height "wasting" is a measure of body composition particularly the fat plus muscle mass. Recent nutritional deficient results as wasting and indicates acute undernutrition. In our study, out of 400 children, 28.8% had wasting in which males had slightly more wasted as compared to females. It is evident from the results that mothers with a lack of ANC visits during pregnancy had more like wasted children ($p \leq 0.001$). Studies have pointed out that children whose mothers did not attend any ANC visits were more likely to be wasted than children whose mothers attended visits.[9,10]

The study found that children who belonged to age 0-11 months had a significantly higher prevalence of wasting as compared to a higher age group. The cause of wasting in this population is most likely related to the type of feeding practices of children. In this age group, children are predominantly relaying on breastfeeding and complementary feeding. Due to lactation failure, lack of exclusive breastfeeding, poor complementary feeding are the major causes of malnutrition in infants.[11,12] Higher birth order indicates the higher number of siblings in the household and lack of optimal birth interval in children. As the birth order increased the prevalence of children's odds of being wasted also increased.[9]

Place of delivery was found highly significant with child wasting. This could be due to poor households deliver the babies at home and they are on risk of malnutrition due to their socio-economic status. Also, mothers at health facilities received valuable information from the health professionals (doctors and nursing) who assist the child delivery. The results of other studies conducted in Pakistan, India and Bangladesh are similar to this study.[13-15]

In the last two weeks prior to the survey, children who had the diarrheal disease were highly negatively associated with wasting than other children. It is a fact that diarrhea results in poor digestion, malabsorption, and lower appetite which lead to undernutrition as wasting among children. These results are similar with studies from other developing countries.[16,17]

Unimproved source of drinking water was also significantly associated with wasting. Unproductive water may cause diarrhea and these combinations of factors caused higher prevalence of wasting in rural areas of Faisalabad. In rural areas, people use groundwater without any treatment. According to a study, 93.8% of the household do not use any method for water treatment.[18] Pakistan has greatest number of people living without safe water access and is ranked in the top 10 countries which are deprived of access to safe water.[19] Another study also found that lack of unimproved water is linked with the prevalence of wasting among children.[20]

CONCLUSION

The study concluded that antenatal care visits during pregnancy, lower birth interval, home deliveries, diarrhea in the last two weeks and the source of drinking water were contributory factors for wasting among under-five children. There is an urgent need to enhance health care practices and create awareness regarding birth spacing with campaigns through the Ministry of Health and concerned NGOs. Awareness programs regarding, utilizing antenatal care, deliveries at health facilities, use of contraceptive methods for birth spacing, and safe drinking water to reduce the risk of wasting in under five years children.

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