Original Article

Nutritional Status And Its Associated Factors Among The Children Presented In Maternal And Child Health Center

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Abstract

Background

According to World Health Organization about 45 percent deaths in less than 5-year age group children are due to undernutrition and total undernourished children. Several factors affect child nutritional status of which some include improper breast feeding, inadequate formula feeding, number of children, multiple episodes of infectious diseases, improper hygiene and availability of vaccine. The aim of the current study was to find out the nutritional status and its associated factors among the children presented in maternal and child health center Nawabshah.

Methods:

A descriptive cross-sectional study was conducted at the Pediatric OPD, Peoples University of Medical and Health Sciences for Women (PUMHSFW) Hospital, Nawabshah. Anthropometric measures including height, and weight, were measured. Both height and weight were plotted by using 'weight for age' and 'weight for height' WHO Child Growth Standards charts. Data was analyzed by using SPSS version.20. p-value less than 0.05 was considered as sigmnificant.

Results:

Out of 377 cases, 348 (92.31%) were underweight, 361 (95.76%) were stunted and 322 (85.41%) were wasted. Among 377 children, 81.96% had all three conditions of underweight, stunted and wasted. There was no case of overweight found during my study period. Results found a very strong significant association of educational status of mother, exclusive breast feeding and immunization status of child with nutritional status. Other factors including age of mother and space between the child had a mild but positive association with the nutritional status.

Conclusion:

It can be concluded that there is high prevalence of underweight 92.31%, Stunting 95.76% and wasting 85.41%. The most common risk factors associated with nutritional status of children under 5 years of age are lack of exclusive breastfeeding, poor immunization status, and increased number of siblings and lack of mother's education.

Keywords: Nutritional status, Underweight, Stunting, Wasting

Introduction

In children under five-year age malnutrition causes marked mortality and morbidity. According to World Health Organization about 45 percent deaths in less than 5-year age group children are due to undernutrition and total undernourished children in the world are approximately 165 million (1). Malnutrition impairs physical as well as mental growth of children and also causes impaired immunity development which increases risk of diseases and thus contributing to increased death in that age groups (2). Malnourish children include both over nutrition and undernutrition but it is undernutrition which causes almost 50 percent death in this age group (3).

Looking over the international literature the recent global estimates reported that 45% of child deaths annually attribute to various forms of undernutrition. More than 90% of the children who live in the African and Asian countries are stunted and 70% are wasted (4). According to World Health Organization (WHO) standard in Qazvin, Iran, the underweight, stunting, and wasting were observed in 11.7%, 11.5%, and 0.7% of the children, respectively (5). Through several decades' malnutrition has been recognized as major contributor in under 5 years' mortality in Pakistan and still country is suffering from high rates of childhood malnutrition (6). Prevalence in rural under children of less than 5- year age for limited growth is 43.2%, Low weight 31.6%, wasting 18.6% and overweight 9.4%. Among urban children's of less than 5-year, 34.8% have limited growth, 24% are underweight, 16.2% are wasted and 9.6% are overweight, respectively (7).

Several factors affect child nutritional status of which some include improper breast feeding, inadequate or improperly formulated formula feeding. Other common factors include number of children, multiple episodes of infectious diseases; improper hygiene and availability of vaccine. These all contribute to malnourishment and making children vulnerable to different diseases and deficiencies of minerals and vitamins thus increasing mortality and morbidity (8, 9). The aim of the current study was to find out the nutritional status and its associated factors among the children presented in maternal and child health center Nawabshah.

Material and Methods

A descriptive cross-sectional study was conducted at the Pediatric OPD, Peoples University of Medical and Health Sciences for Women (PUMHSFW) Hospital, Nawabshah. Rao soft sample size calculator was used to calculate sample size and was 377 at the margin of error 5%, confidence level 95% and response rate of 50%. Convenience sampling technique was used to collect the data. Those patients were included who were from the age up to 5 years while those children were excluded whose parents did not give consent. Informed consent was taken from the mother.

Anthropometric measures including height, was measured in centimeters (with scale having 0.10 cm precision) and weight, was measured in Kg (with weighing scale with 0.1 kg precision). Both height and weight were plotted by using 'weight for age' and 'weight for height' WHO Child Growth Standards charts. Data was analyzed by using SPSS version.20. Qualitative data was analyzed for age specific underweight, stunting, wasting overweight and associated factors in the form of frequency and percentage. Confounding factors were controlled with stratification. Confidence interval of 95% was taken. p-value less than 0.05 was considered as sigmnificant.

Results

Study was conducted on about 377 children who met the inclusion criteria. Out of 377 cases, 160 (42.44%) mothers were educated, 217 (57.56%) uneducated, 200 (53.09%) children were exclusively breastfed, 177 (46.95%) were bottle feeding, children of 180 (47.57%) mothers were immunized and 197 (52.25%) were unimmunized as shown in

Table 4. Out of 377 cases, 348 (92.31%) were underweight, 361 (95.76%) were stunted and 322 (85.41%) were wasted as presented in Figure 1. Among 377 children, 309 (81.96%) had all three conditions of underweight, stunted and wasted. There was no case of overweight found during my study period.

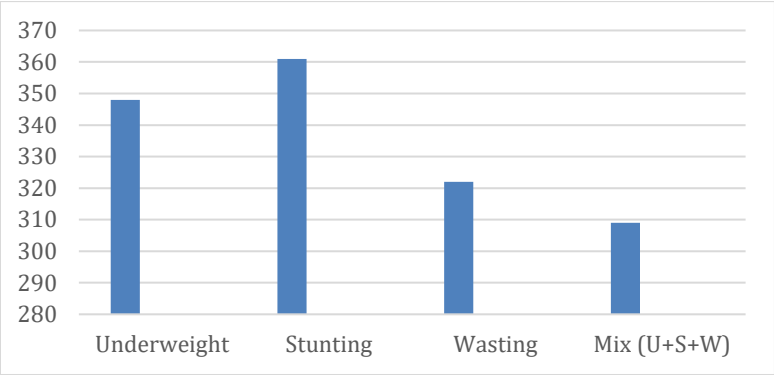

Figure 1 Frequency of underweight, stunting, wasting

Chi-square was applied to find out the association between risk factors and underweight, stunting and wasting. Results found a very strong significant association of educational status of mother, exclusive breast feeding and immunization status of child with nutritional status, having p-value of 0.003, 0.001 and 0.039 respectively. Other factors including age of mother and space between the child had a mild but positive association with the nutritional status, p-value of 0.042 and 0.005 respectively, as mentioned in Table 1.

Table 1 Factors associated with nutritional status

Variables	n=377 (%)	p-value
Age of mother		
≤ 20 years	53 (14.1)	
20-35 years	196 (52.0)	0.042
≥ 35 years	128 (33.9)	
Educational status of mother		
Educated	160 (42.4)	0.003
Uneducated	217 (57.6)	
Space between two births		
≤ 2 years	148 (39.3)	0.005
≥ 2 years	229 (60.7)	
Feeding		
Exclusive breast feeding	200 (53.1)	0.001
Bottle feed	177 (46.9)	
Immunization status		
Immunized	180 (47.7)	0.039
Unimmunized	197 (52.3)	

Discussion

Malnutrition contributes to various health issues in the child age group, timely recognition of nutritional status helps rational management as per Integrated Management of Neonatal and Childhood Illness (IMNCI) protocols and provide the individuals with proper management and nutritional counselling. The study sample was 377 out of which 92.31%

(348) were found underweight, 95.76% (361) were suffering from Stunting and 85.41% (322) were suffering from wasting.

In Pakistan a Survey called National Nutrition Survey (NNS) 2018 showed 40.2% of children below 5-year age have limited growth, 28.9% are underweight, 17.7% are wasted and 9.5% are overweight (7). According to data in Pakistan Demographic and Health Survey (PDHS) 2012-13,4 45% were stunted and 24% were severely stunted, 30% were underweight and 10% are severely underweight and 11% were wasted. According to data in PDHS 2017-18 in Pakistan Stunting is 38% (which is 33% at birth and 69% at the age of 58 moths), Underweight is 23%(which is 11% at birth and 55% at the age of 58 moths) and Wasting is 7% (which is 7% at birth and 13% at the age of 58 moths). However, in Sindh Stunting is 49.9%, Wasting 11.7% and underweight 40.2% (10).

According to Multiple indicator cluster surveys (MICS) Sindh 2018-2019, underweight 41%, stunting is 50%, wasting 15% and overweight 4% (the indicators are also reflected in SDG 2.2.1 and 2.2.2) (11), findings in our study reveals a higher frequency of the underweight, stunting as well as wasting. However, overweight was 0% among study population which reflects the burden of nutritional conditions among populations in general and sick children in particular. Exclusive breast feeding protects the children from infection as it contains multiple factors that has the anti-infective properties so protects the baby against infection of respiratory system and gastrointestinal problems and boost the child's immune system. Current study revealed that out of 377 children, 200 (53.09%) were exclusively breastfed whereas 177 (46.95%) were on bottle feeding. According to National Nutritional Survey (NNS) 2018, 48.4% children in Pakistan receive exclusive breastfeeding with Sindh having ratio of 52.3% (10). According to Pakistan Demographic and Health Survey (PDHS) 2017-2018, only 48% of the infants were exclusively breastfed (12). The study finding show comparative advantage of breastfeeding among nutritionally compromised study population.

Current study shows that 180 (47.57%) children were immunized and 197 (52.25%) were unimmunized leading to increased ratio of stunted and wasted children. A study done by Salcedo et al shows that 96.3% of the children got vaccination as per guidelines mentioned age, only 4.6% of the children are poorly vaccinated and having the higher risk of getting underweight, while 12.1% are malnourished. The risk of being underweight, stunting and wasting is related to number of siblings, as majority of children are those who have ≥5 siblings. Among underweight, 26% mothers had number of children less than three, 31% mothers had number of children between 3 & 5 and 43% mothers had 5 or more children. In stunted, 24.65% mothers had number of children less than three, 34.90% mothers had number of children between 3 & 5 and 40.44% mothers had 5 or more children. Among wasted, 15.53% of mothers had number of children less than three, 22.36% mothers had number of children between 3 & 5 and 62.11% mothers had 5 or more children. This could be because families with more children gets less attention and care as needed. Similar findings were reported by Sengupta et al in her study who reported risk of getting underweight, stunting and wasting is proportionate to the number of children (13). It is necessary to educate the mothers about how to well-nourish the child, as the literature found that educated mother always have a good knowledge about the child's nutrition. In our study 160 (42.44%) mothers were educated, 217 (57.56%) uneducated. Nandini et al conducted a study which favors this by showing highest proportion of underweight, stunting as well as wasting was documented in uneducated mothers (14).

Conclusion

It can be concluded that there is high prevalence of underweight 92.31%, Stunting 95.76% and wasting 85.41%. The most common risk factors associated with nutritional status of children under 5 years of age are lack of exclusive breastfeeding, poor immunization status, and increased number of siblings and lack of mother's education.

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