ORIGINAL ARTICLE

Role of Nutritional counseling and Maintaining Growth Charts in Prevention of Malnutrition through Follow up of Discharged Patients of Rooming in, at Under Five Clinic

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ABSTRACT

Objective: To determine the role of nutritional counseling and maintaining growth charts in prevention of malnutrition through follow up of discharged patients at under five clinics.

Study design and setting: The Cross Sectional Study conducted at Under Five Clinic, CMC Children Hospital/SMBBMU Larkana, from April 2015 to January 2017.

Methodology: Total 380 study subjects were taken and general physical examination and anthropometry were carried out. Malnutrition was assessed according to WHO Growth Charts. Factors of Nutrition and Vaccination were assessed. All Caregivers were counseled standard WHO nutritional recommendations. Descriptive statistics were calculated. Chi square test was applied considering p-value ≤0.05 as significant.

Results: The mean age of cases was 8.73±5.71 months and the mean birth spacing was 1.05±0.56 years. 60.0% cases were belonged to rural areas and 40.0% cases were belonged to urban areas. 51.8% women feed their child in first hour after birth. 17.1% were completely cured, 62.6% were cured partially, and 20.3% were not survived. Vaccination was not done in 58.2% cases.

Conclusion: Proper counseling regarding breast feeding, vaccination, treatment options and also emotional support and encouragement by health care professionals to the mother help to increase the nutrition.

Keywords: Nutritional counseling, Maintaining Growth Charts, Prevention of Malnutrition.

INTRODUCTION

Malnutrition is thought to be a factor in over 33% of all fatalities among children, despite the fact that it is seldom mentioned as a direct causative factor.[1] Malnutrition means "poor nutrition," and it refers to both under-nutrition and over-nutrition. Child malnutrition has been linked to 54% of mortality among children in underdeveloped countries in 2001, accounting for above 50% of all child deaths globally.[2-3] Protein energy malnutrition (PEM), which was originally documented in the 1920s, is most common in underdeveloped nations, but in the United States, it is now becoming more common among chronically diseased and hospitalized children.[4] Infections caused by protozoans and Insects may be exacerbated by poor environmental factors, which can also lead to nutritional deficiencies. Overpopulation, which is more prevalent in developing nations, can diminish food availability, resulting in insufficient food consumption or food of inadequate nutritional quantity and quality. Malnutrition among people, on the other hand, can produce and perpetuate poverty, which can hinder social and economic growth.[5] This is characterized by children having low intellectual potentials at the beginning of their lives and eventually being unable to provide the best of their assumed intellectual ability. A child suffering marasmus has insufficient calories and protein, while a child suffering kwashiorkor has normal calorie consumption but insufficient protein. Deficiency of vitamin A, zinc, iodine, and Iron are the most frequent as well as clinically significant micronutrients deficiencies among children and pregnant women in the world, affecting up to 2 billion individuals. Deficiencies of micronutrients, as well as calorie and protein, must be resolved in order for these people to achieve optimal development and growth.[4,5]

Severe malnutrition among children is frequently associated with pneumonia, gastroenteritis, and other diseases. Children with severe malnutrition go through metabolic and physiological changes to protect vital functions, such as reduced capacity of organ function and slowed cellular activities. The challenge of sustaining metabolic regulation is exacerbated by coexisting infections. Hypoglycemia, heart failure, electrolyte imbalance, untreated infection and hypothermia are all lethal risks for children with severe malnutrition, and the WHO recommendations for the administration of severe malnutrition suggest devoting special focus towards minimizing deaths from such causes.[6,7] Women's health providers are in a unique position to shape their decision regarding breastfeed. Parents can make informed decisions regarding how long and whether to breastfeed their infants by addressing the advantages of breastfeeding in prenatal care. Breastfeeding outcome is largely determined by a supportive attitude of healthcare professional, family support, a hospital environment that is favorable to start breastfeeding and continuation, and health professionals' understanding of the necessity for breastfeeding education and support.[8] Breastfeeding is one of the goals of Healthy People 2010, with 75% of mothers breastfeeding in the first six months after giving birth and 50% continue breastfeeding after six months of age of their baby.[9] In 2004, 73 % of mothers continued breastfeeding

their infants during the first six months after delivery, and 41% proceeded to do so after six months.[10] According to the Healthy People 2010 Midcourse Review, 60 percent of mothers should breastfeed completely for three months, and minimum 25% should breastfeed completely for six months.[11] During 2004, 30% of the mothers completely breastfed their babies for three months, and 11% completely breastfed their babies for six months.[10] It is vital for parents and healthcare providers to understand the substantial advantages of breastfeeding as well as breast milk, to fully comprehend how to efficiently handle lactation, and also to know the value of breastfeeding solely for the very first 6 months of baby's life in order to promote ideal nutritional status among infants. This study was conducted to determine the role of nutritional counseling and maintaining growth charts in prevention of malnutrition through follow up of discharged patients at under five clinics

MATERIAL AND METHOD

Study design and setting: The Cross Sectional Study was conducted in under five Clinic, CMC Children Hospital/ SMBBMU larkana from April 2015 To January 2017. The sample size calculated on estimated proportion 0.45, Confidence interval 95%, desired precision of estimation 0.05 and population size 1000.

Inclusion Criteria: children both gender from birth to 2 year of age enrolled from Outdoor patients coming for common problems, Outdoor patients who have discharged card of our Hospital and Parental consent to participate in this study.

Exclusion Criteria children above 2 year of age, congenital problem, inborn error of metabolism or operated cases of gastrointestinal problems, Very sick children who require hospitalization on urgent basis, Medical (HIV/Fungal) and psychological problem to mother or children.

Data collection procedure: All children who met the Inclusion Criterion were entered into study after taking a written consent from Parents or Guardian and data were entered into study specific Proforma. Detailed information regarding demography and clinical presentation were taken and general physical examination and anthropometry were carried out. Malnutrition was assessed according to WHO Growth Charts. Factors of Nutrition and Vaccination were assessed by detailed interview as per Demographic standards. All Caregivers were counselled standard WHO nutritional recommendations.

Statistical Analysis of Data: The Data were analyzed on computer using SPSS version 16 software program. Continuous variables like age, duration of illness, weight (kg), height (meters) and Anthropometry were analyzed as mean and standard variation. Frequencies and percentages were expressed for gender, residence, socio-economic status and frequency of malnutrition (outcome variable). Age, gender, socio-economic status and Anthropometry were stratified on the basis of WHO recommendations and CDC Charts to analyze the effect of these variables on outcome variable (frequency of malnutrition). Chi square test was applied and a p value ≤ 0.05 was taken as significant.

RESULT

Total 380 study subjects were evaluated in the study. The results showed that among total study subjects, the mean age of was 8.73±5.71 months. The mean weight was 7.89 Kg. The mean height was 69.52±8.00 cm. The mean mother's age was 28.41±6.483 years. The mean birth spacing was 1.05±0.56 years.Table.1

The frequency of mid upper arm circumference (MUAC) and fronto occipital circumference (FOC) were calculated and results of MUAC showed that red was39.2%, Yellow was 25.5%, and green was 35.3%. The results of FOC showed that normal was 67.7 and low were 32.3%. The detailed frequency distributions are presented in Table-2.

There were 53.9% male and 46.1% female cases. 68.2% cases were belonged to rural areas and 31.8% cases were belonged to urban areas. Total 83.9% marriages were consengenous and 16.1% were non-consengenous. The results about occupation of mother revealed that 48.9% were households, 42.7% were land farming, and 8.4% were belonged to other professions. The frequency distribution is presented in Table-3.

51.6% women were illiterate, 10.8% can read only, 10.0% had studied till primary, 3.4% studied till secondary, 1.8% were graduate and 22.4% were got religious education. The frequency distribution is presented in Table-3.

Table–1: Descriptive statistics of age, weight, height, mother's age, and birth spacing

	Mean	SD	Range	Minimum	Maximum
Age (months)	8.73	5.719	22	2	24
Weight (Kg)	7.709	2.074	9.4	2.1	11.5
Height (cm)	68.949	9.132	44.0	43.0	87.0
Mother's Age (years)	28.41	6.489	24	18	42
Birth Spacing	1.05	.565	4	0	4

Table–2: Frequency distribution of MAUC and FOC

		Frequency	Percentage
MAUC	Red	149	39.2%
	Yellow	97	25.5%
	Green	134	35.3%
FOC	Normal	257	67.6%
	Low	123	32.4%

Table–3: Frequency distribution of gender, background, marriage, and mother's occupation

		Frequency	Percentage
Gender	Male	205	53.9%
	Female	175	46.1%
Background	Rural	259	68.2%
	Urban	121	31.8%
Marriages	Consengenous	319	83.9%
	Non-Consengenous	61	16.1%
Mother's Occupation	House Hold	186	48.9%
	Land Farming	162	42.7%
	Others	32	8.4%
Maternal education	Illiterate	196	51.6%
	Read Only	41	10.8%
	Primary	38	10.0%
	Secondary	13	3.4%
	Graduate	7	1.8%
	Religious Education	85	22.4%

Table–4: Frequency Distribution of Breast Feeding

			Mother Feeding	Bottle Feeding	Growth Parameters
Duration of Breast Feed		Visit 1	97.0%	3.0%	93.0%
	2 months	Visit 2	89.0.%	11.0%	79.0%
	3 months	Visit 3	73.0%	27.0%	63.0%
	4 months	Visit 4	66.0	34.0	57.0%
	6 months	6 months	58.0%	42.0%	64.0%

Table–5: Frequency distribution of Treatment

		Frequency	Percentage
Treatment	Indoor	83	21.8%
	Outdoor	297	78.2%
Consultation	Hakeem	48	12.6%
	Quack	28	7.4%
	Home Remedy	230	60.5%
	Doctor	74	19.5%
Outcome	Completely Cured	65	17.1%
	Partially Cured	238	62.6%
	Death	77	20.3%

51.8% women feed their child in first hour after birth and 48.2% were not. The visit wise frequencies of breast feeding and growth parameters are presented in Table-4.

Indoor treatment was given by 21.8% and outdoor treatment was given by 78.2%. For treatment 12.6% were consult with hakeem, 7.4% with quack, 60.5% with home remedy, and only 19.5% were consult with doctor. Total 17.1% were completely cured with treatment, 62.6% were cured partially, and 20.3% were not survived. The frequency distribution is presented in Table-5.

Vaccination was done in 100.0% cases at discharge time. Out of routine vaccines other vaccines were used in 3.9% cases.

DISCUSSION

UNICEF's "State of the World's Children" report 2004 stated that literacy rate among adult females in Pakistan is just 28%, and in comparison to this the literacy percentage among mothers must have been significantly lower.[11] Keeping the WHO recommendations in mind, the CDC growth charts were utilized for the assessment of the growth of the child and also whether the child was stunted, wasted or underweight in comparison to the international standards. A study showed that majority of 319 (79.75%) mothers were illiterate, whoever literate mothers were only 81(20.25%). Of the 20.25% mothers from literate group, 3 mothers could read/write, 38 (9.5%) mothers were primary pass, 10 mothers were middle pass, 15 (3.75%) mothers were matric pass, 12 mothers were intermediate pass and 3 mothers were graduate.[12]

A study looked at the relationship between educational level of mothers (n=400) and their children's nutritional health. Out of 400, 319 (79.75%) Mothers were illiterate and 56.43%, 40.75% and 21.63% children of these mothers were underweight, stunted and wasted respectively. Three Mothers (.75%) who could read/write only, 33.33% of their children were stunted and underweight. Out of 400 children, 217 (54.25%), 156 (39%) and 86 (21.5%) children were underweight, stunted and wasting. In our study cohort, out of total 380 study subject 11.8% mothers were illiterate, 34.7% mothers got only religious education and rests of 43.5% mothers were literate so the literacy rate in this study cohort was less that 50%. The literate group included 13.7% mothers who can only read. A study was carried out wherein the educational status of the mother was compared to the malnutrition type. A total of 400 mothers were categorized into two groups.[12] In first group there were 360 (90%) mothers who were either illiterate or primary pass. The second group consisted of 40 (10%) women who either middle, matric, inter or graduate In the group consisting of mothers who were either uneducated or received only primary education; underweight, stunted and wasted children were 203 (56.39%), 144 (40%) and 79 (21.94%) respectively. In educated mothers' group; underweight, stunted and wasting children were 14 (35%), 12 (30%) and 7 (17.5%) respectively. In terms of underweight, there was a statistically significant variance between children of illiterate or primary pass mothers and those whose mothers were educated more than the primary level; P<0.016. However, there was no significant difference between booth groups in terms of wasting and stunting. In this study the same tabulation was done and the comparison was done between the two groups of mothers and their children's nutritional status. According to a study, in rural regions of Pakistan, the prevalence of wasting and stunting is 16.5% and 32.50% respectively and it is higher than the urban regions.[13] This disparity could be due to a lack of health-care availability and accessibility. According to studies, just 35% of remote regions have accessibility to healthcare, while 90% of metropolitan regions receive this services.[14] In the religious and Islamic setting, it is the family's and mother's responsibility to breastfeed consistently until the child reaches the age of 2 years. A study conducted in Faisalabad, Pakistan showed that 86% of the mothers breastfed their infants up to 2 years of age.[15] However, out of this group only 37% were those who exclusively breastfed their child. The globally conducted studies also had similar results including Kulkarni *et al.*[16] Banapurmat *et al*[17] and Mushaph *et al.*[18] found lower rates of EFB (40%, 26.8% and 6 % respectively). In this study, 51.8% children were breastfed at 1st hour after birth.

CONCLUSION

Breastfeeding in public is high at first, but drops quickly owing to a variety of factors, and is supported with bottle feeding. Because of poor appropriate guidance, complementary feeding is insufficient in terms of time, quality, quantity, and frequency. Hence, proper counseling regarding breast feeding, vaccination, treatment options and also encouragement and emotional support by health professionals to the mother must help to increase the nutritional status and to reduce infant morbidity and mortality in this part of the world.

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