DETERMINATION ROLE OF NUTRITIONAL COUNSELING AND MAINTAINING GROWTH CHART FOR PREVENTION OF MALNUTRITION OF CHILD.

Asghar Ali Memon[1], Vivek Khetpal[2], Pardeep Kumar[3], Abdul HameedLanjwani[4], Muhammad Siddique Rajput[5]

ABSTRACT

INTRODUCTION: Undernourishment is predictable to add to more than 1/3 of totally juvenile mortality, while it is infrequently recorded as the straight reason. **OBJECTIVE:** To Determine the 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, CMC Children hospital SMBBMU (Shaheed Mohtarma Benazir Bhutto Medical University, Larkana, Sindh, Pakistan). **DESIGN OF STUDY:** This was a Cross Sectional reseach. **PLACE AND STUDY DURATION**: The Department of Under Five Clinic, CMC Children Hospital/SMBBMU Larkana. From April 2015 to January 2016. **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 assessment was carried by in view of p-value ≤0.05 as important. **RESULTS:** The mean age of was 8.73±5.71 months. 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. For treatment 60.5% done home remedy. 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 reassurance & emotive care by health experts to nursing mother must help towards increase the nutritional.

KEY WORDS: Nutritional counseling, Maintaining Growth Charts, Prevention of Malnutrition.

1. Department of Community Medicine, Ghulam Muhammad Maher Medical College, Shaheed Mohtarma Benazir Bhutto Medical University Larkana, Sindh, Pakistan.
2. ADHO /DHO Office /kashmore@Kandhkot
3. Assistant Professor Department of Pediatrict Medicine. GMC Gambat District: KhairpurMirs. Pakistan
4. Assistant Professor, Department of Biochemistry, Chandka Medical College, ShaheedMohtarma Benazir Bhutto Medical University Larkana, Sindh, Pakistan.
5. Assistant Professor Department of community Medicine. PUMHS Nawabshah.

How to cite this article: Memon AA[1], Khetpal V[2], Kumar P[3], Lanjwani AH[4], Rajput MS[5]. **DETERMINATION ROLE OF NUTRITIONAL COUNSELING AND MAINTAINING GROWTH CHART FOR PREVENTION OF MALNUTRITION OF CHILD.** *JPUMHS; 2021:11:03,57-62.* http://doi.org/10.46536/jpumhs/2021/11.03.316

For Correspondence: Asghar Ali Memon, Department of Community Medicine, Ghulam Muhammad Maher Medical College, Shaheed Mohtarma Benazir Bhutto Medical University Larkana, Sindh, Pakistan.drasgharmemon@gmail.com

Received July 10th2021, Accepted On 30th August 2021, Published On 30thSeptember 2021.

INTRODUCTION

Although rarely cited as a direct cause, malnutrition is estimated to account for more than one-third of all child deaths1. Malnutrition literally means "undernourished" and technically includes both overnutrition and undernutrition. The World Food Program (WFP) defines undernourishment as: "a state in which the bodily role of an distinct is compromised to a fact wherever she & he could no lengthier preserve satisfactory physical presentation procedure in terms of growth, pregnancy, lactation, physical work & struggling & improving after illness" [1]. It contributes to more than half of the world's infant mortality rate. Malnutrition in children was associated with 54% of child deaths in developing countries in 20012,3. Protein-Energy Malnutrition (PEM), first described in the 1920s, is most commonly found in developing countries, but is increasingly described in hospitalized and chronically ill children in the United States. Contributes to the lack of micronutrients in the environment. Overpopulation, which is more common in developing countries, can reduce food adequacy and lead to inadequate or

undernourished food intake. Conversely, the special effects of undernourishment on persons can create and perpetuate poverty, which coukld further impede economic and social development. This is explained by the fact that children start living with a low intellectual index and then fail to provide the expected intellectual abilities. Kwashiorkor and Marasmus are two described forms of protein-energy malnutrition (PEM). The difference amongst the 02 methods of Protein Energy Malnutrition is centered on occurrence of swelling (kwashiorkor) or lack of edema (marasmus). Marasmus has inadequate protein and calorie intake, while children with kwashiorkor have inadequate protein intake and calorie intake is moderate to normal. Although there are significant clinical differences between kwashiorkor and marasmus, some studies suggest that marasmus represents an indication for hunger and kwashiorkor represents a maladaptation for hunger. In addition to PEM, children can also be affected by micronutrient deficiencies, which also have a negative impact on growth and development. The most common and clinically important micronutrient deficiency in childbirth-potential children and women worldwide is iron, iodine, zinc, and vitamin A deficiency, estimated to affect up to 2 billion people. It has been. Fortification programs have helped reduce iodine and vitamin A deficiencies in people in the United States, but these deficiencies continue to be a major cause of prevalence in developing countries, with vitamins C, B, and D. Deficiency has improved in recent years. Micronutrient deficiencies, as well as protein & calorie insufficiencies, essential to be spoke in directive to achieve optimal growth and development in these individuals. By discussing the benefits of breastfeeding during prenatal care, parents can make informed decisions about whether and how long to breastfeed their children. Breastfeeding success is primarily due to the supportive attitude of health care professionals, the hospital environment that facilitates the start & preservation of feeding of breast, family support, & the awareness of health care specialists about the necessity for breastfeeding guidance & care. Depends 75% of mothers are breastfed early in the puerperium and 50% are breastfed by the time the baby is 6 months old [9]. 73% of mothers in 2004, breastfed their children initial afterward childbirth & 41% sustained breastfeeding until 6 months of age10. 2010 the goal of Fit Persons Midcourse Review that 60% of moms breastfeeding for merely 03 months & minmumly 25% in only for 06 months for Breastfeeding [11]. Breastfed was in 30% of mothers for 03 months & breastfed were 11% for 06 months in 2004, to understand how to effectively manage breastfeeding and breastfeed only 6 months after birth. I learned the importance of doing.

Babies who were born in the USA in 20th century mostly was not breast-fed. Preparation of Milk and additional baby nutrients were frequently the chief basis of diet in 1st year of lifecycle. However, studies over the last three decades have repeatedly shown the importance of breast milk to babies12. This perception of breast milk health, nutrition, immunity, psychological and social benefits for all alternatives had directed to steady growth in feeding of breast, particularly in the initial 02-04 months of lifecycle. Extra motherly wellbeing profits of breastfeeding, as well as financial and ecological profits have been identified[12-16].

MATERIAL AND METHOD

Study Setting: This study was conducted in under five Clinic, CMC Children Hospital/SMBBMU larkana.

Design of Study: this was a Cross Sectional Study

Study Duration: 06 months (April 2015 To January 2016)

Inclusion Criteria: Age range from Birth-2 years**,** Patients of both gender**,** Outdoor patients coming for common problems**,** Outdoor patients who have discharged card of our Hospital**,** Parental consent to participate in this study

Exclusion Criteria: Age above 2 years, Congenital problem/known Inborn Error of Metabolism/undergone surgery of Gastrointestinal TractVery sick children who require hospitalization on urgent basis, Medical (HIV/Fungal) and psychological problem to mother or children

Data Collection Procedure: After approval of synopsis and permission of Board of Advance Studies & Research and Ethical Review Committee, Study was conducted in Under Five Clinic, CMC Children Hospital/ SMBBMU Larkana. 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 was investigated as mean+/- SD. Percentages & Frequencies remained 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 done to test any variance amongst groups. P value less than 0.05 was taken as significant.

RESULT

Table–1: Descriptive statistics of age, weightand 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)	68.94	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	**%**
MAUC	Red	149	39.2%
	Yellow	97	25.5%
	Green	134	35.3%
FOC	Normal	257	67.6%
	Low	123	32.4%

A total of 380 study subjects were evaluated in the study. The outcomes revealed that between total study populace, mean age 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. The detailed descriptive statistics are presented in Table-1. The distribution of age, and mother's age are presented in Figure-1 and Figure-2. The frequency of mid upper arm circumference (MUAC) and frontooccipito 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.

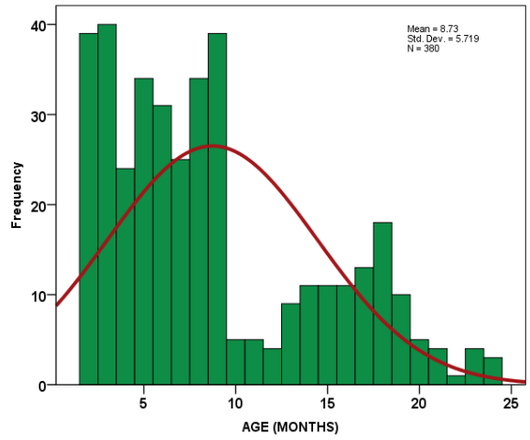

Figure-1: The histogram presenting distribution of Child's age

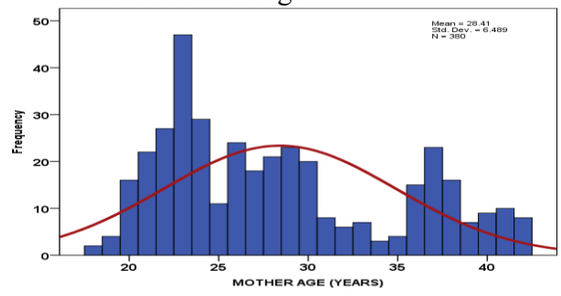

Figure-2: The histogram presenting distribution of Mother's age

The results showed that 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.

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

		Frequency	%
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%

As far as no of children are concerned, it was observed that 53.9% mothers had 5 or less children, 32.9% had 6 to 10 children and 13.2% had more than 10 children. 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-4.

Table–4: Frequency distribution of no. of children and mother's education

		Freq	%
Total No. of Children	0-5	205	53.9%
	6-10	125	32.9%
	11-15	50	13.2%
Mother's 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%

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-5.

Table–5: 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%

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-6.

Table–6: Frequency distribution of Treatment

		Frequency	%
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%

Vaccination was done in 100.0% cases at discharge time. Out of routine vaccines other vaccines were used in 3.9% cases. The final outcome about weight was observed according to mother's education and presented in Table-7.

Table–7: Frequency distribution of weight

		Frequency	Percentage
Illiterate	Underweight	194	51.0%
	Stunted	163	43.0%
	Wasted	68	18.0%
Literate	Underweight	125	33.0%
	Stunted	103	27.0%
	Wasted	61	16.0%

DISCUSSION

According to Pakistan's national statistics released by the World UNICEF Children's Fund in 2004, female adults have a literacy rate of only 28%, and mothers' literacy rates should be much lower than this actual figure[17]. 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 underweight, wasted or stunted as compared to the international standards. One study showed the educated status of mothers (n = 400), the majority of whom 319 (79.75%) were illiterate and 81 (20.25%) were educated. Of the literacy groups, 3 are literate, 38 (9.5%) are primary, 10 are secondary, 15 (3.75%) are high school diplomas, 12 are secondary and 3 mothers. I was trained to the maximum. University degree 18. One study analyzed the relationship between the education of 400 mothers and the nutritional status of their children. Of the 400, 319 mothers (79.75%) were illiterate, & their kids were underweight 56.43%, stunted 40.75%, & exhausted 21.63%. 03 mothers (0.75%) can merely write & read, 33.33% of the children were underweight & stunted, & none of the 400 children were malnourished. 217 (54.25%) children were underweight, 156 (39%) were stunted, & 86 (21.5%) were wasted.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 conducted that cross-tabulated the level of education of mothers per category of malnourishment. Total mothers with 400 kids were separated into 02 sets. Eighteen mothers with 90% (360) kids were placed in Set 01 depending on their educational situation. They were illiterate or educated up to primary education. The second group consisted of 40 (10%) mothers who had higher education than primary schooling (ie, 203 in the group of mothers who did not have primary education or had only primary education. In the second group of 79 In educated mothers, 14 (35%) were underweight and 12 (30) were underweight, 144 (40%) were underweight, (56.39%) were underweight, and 144 (40%) were underdeveloped. %) were stunted and 7 (17.5%) were wasted. For low weight P <0.016, there was a significant difference between children whose mothers were illiterate or educated at primary level compared to children whose mothers were more educated at primary level. However, here remained no important variance. Discovered amongst the 02 groups and wasted on growth delays. In this study the same tabulation was done and the comparison was done between the two groups of mothers and the nutritional status of their children. According to one study, the prevalence of stunts and waste in rural Pakistan is 32.50% and 16.5% higher than in urban areas, respectively. This alteration may be due to restricted admission & use of medical facilities. According to the survey, merely 35% of countryside zones take admittance to health care and 90% of city zones have admittance to these services. [20].The study conducted by us showed that the 60.0% of the rural areas while 40.0% of the urban areas had access to health care services. In the Islamic & spiritual background, it is the responsibility of the mother & family to breastfed uninterruptedly up to the period of 02 years. A study conducted in Faisalabad, Pakistan showed that 86% of the mother's breastfed their infants up to 2 years of age [21]. However, out of this group only 37% were those who exclusively breastfed their child. The studies conducted around the globe also had similar results Kulkarni*et al.* in Bangalore[22].Banapurmat*et al.* in Davangere[23] and Mushaph*et al.* in Botswana[24].found that the EFB rates were lower with 40 percent, 26.8 percent and 6 percent. In this study, 51.8% children were breastfed at 1st hour after birth.

CONCLUSION

Breast feeding is primarily in elevation then decreases quickly owing to numerous explanations & accompanied with bottle nursing. Balancing nourishing is faulty in relations of judgment, incidence, & amount & superiority due to deficiency of suitable direction. Henceforth, proper counseling regarding breast feeding, vaccination, treatment options and also reinforcement & emotive care by health experts to the mother must help to increase the nutritional status and to decrease newborn sickness & death in this part of the ecosphere.

ETHICS APPROVAL: The ERC gave ethical review approval

CONSENT TO PARTICIPATE: written and verbal consent was taken from subjects and next of kin

FUNDING: The work was not financially supported by any organization. The entire expense was taken by the authors

ACKNOWLEDGEMENTS: We would like to thank the all contributors and staff and other persons for providing useful information.

AUTHORS' CONTRIBUTIONS: All persons who meet authorship criteria are listed as authors, and all authors certify that they have participated in the work to take public responsibility of this manuscript. All authors read and approved the final manuscript.

CONFLICT OF INTEREST: No competing interest declared.

REFERENCES

1. World Food Programme. Food and Nutrition Handbook. 2000. Rome. World Food Programme.
2. WHO. Malnutrition-The Global Picture.World Health

Organization.Available at http://www.who.int/home-page/.Accessed on 1 January 2013.
3. Monika B, Mercedes O. Malnutrition: quantifying the health impact at national and local levels: Environmental Burden of Disease Series. 2005.Geneva, Switzerland: World Health Organization.
4. Hendricks KM, Duggan C, Gallagher L, et al. Malnutrition in hospitalized pediatric patients. Current prevalence. Arch PediatrAdolesc Med. Oct 1995; 149(10):1118-22.
5. World Health Organization. Management of severe malnutrition: a manual for physicians and other senior health workers. Geneva: World Health Organization, 1999.
6. World Health Organization. Management of the child with a serious infection or malnutrition. Guidelines for care at the first-referral level in developing countries. Geneva: World Health Organization, 2000. (Available at: http://www.who.int/child-adolescent-health/publications/referral_care/homepage.html)
7. Reneman L, Derwig J. Long-term prospects of malnourished children after rehabilitation at the Nutrition Rehabilitation Centre of St Mary's Hospital, Mumias, Kenya. J Trop Pediatr1997; 43: 293-6.
8. Pecoul B, Soutif C, Hounkpevi M, Ducos M. Efficacy of a therapeutic feeding centre evaluated during hospitalization and a follow-up period, Tahoua, Niger, 1987-1988. Annals Trop Paediatr1992; 12: 47-54.
9. US Department of Health and Human Services. Healthy People 2010.2nd ed. Washington, DC: US Department of Health and Human Services; 2000
10. Centers for Disease Control and Prevention. Breastfeeding trends and updated national health objectives for exclusive breastfeeding—United States, birth years 2000–2004. MMRW Morb Mortal Wkly Rep. 2007;56(30):760–3
11. US Department of Health and Human Services, Office of Public Health and Science. Healthy People 2010Midcourse Review. Washington, DC: US Department of Health and Human Services, Office of Public Health and Science; 2006
12. Ip S, Chung M, Raman G, et al. Breastfeeding and Maternal and Infant Health Outcomes in Developed Countries. Rockville, MD: Agency for Healthcare Research and Quality; 2007 1
13. American Academy of Pediatrics Section on Breastfeeding. Breastfeeding and the use of human milk.Pediatrics.2005;115(2):496–506
14. Lawrence RA. A Review of the Medical Benefits and Contraindications to Breastfeeding in the United States. Arlington, VA: National Center for Education in Maternal and Child Health; 1997
15. Horwood LJ, Fergusson DM. Breastfeeding and later cognitive and academic outcomes. Pediatrics.1998;101(1):e9
16. Montgomery DL, Splett PL. Economic benefit of breastfeeding in infants enrolled in WIC. J Am Diet Assoc. 1997;97(4):379–85
17. UNICEF. Statistical Tables 5 - Education, UNICEF, The State of the world's children, Oxford University Press, New York: 2004, p. 120.
18. Ali SS, Karim N, Billoo AG, Haider SS. Association of literacy of mothers with malnutrition among children under three years of age in rural area of district Malir, Karachi. J Pak Med Assoc 2005; 55:550–3.
19. Pakistan Medical Research Council. National Health Survey of Pakistan, 1990-94, Islamabad, Pak. Med. Res. Coun., 1997, pp. 20-27.
20. UNICEF. Atlas of South Asian Children and Women, UNICEF Regional Office South Asia, 1996, pp. 54-55.
21. Muhammad A, Nazia M, Aqeela T, Murtaza H, Haq NA.Perception and Practices of Mothers about Feeding Practices of Newborn Babies in Faisalabad, Pakistan.**Med Jour Soc Sci**.2014;5(4):662-9
22. Kulkarni, R. N., Anjenaya, S., Gujar, R. (2004). Breast Feeding Practices in an Urban Community of Kalamboli, Navi Mumbai.Indian Journal Community Medicine.29 (4):179-80. Masvie, H. (2006). The role of Tamang mothers-in-law in promoting breastfeeding inMakwanpur District, Nepal. Midwifery, 22, 23-31.
23. Banapurmath, C. R., Nagaraj, M.C., Banapurmath, S., Kesaree, N. (1996). Breastfeeding practices in villages of Central Karnataka. Indian Paediatric. 33(6):477-9.
24. Mushaph, L.F, Mbhenyane,X. G., Khoza, L.B., Amey, A. K. A. (2008). Infant-feeding practices of mothers and the nutritional status of infants in the Vhembe District of Limpopo Province. South African Journal of Clinic and Nutrition. 21(2):36-41.