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Impact of Pharmacist Provided Counselling to the Parents of Malnutrition Children at Government District Hospital, Kalaburagi, Karnataka

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Abstract: ***Aim: To assess the nutrition adherence among malnutrition children. To assess the improvement in weight of malnutrition children. Methods: A prospective interventional study was conducted among 98 children for 6 months who were admitted in the District Government Hospital, Gulbarga. Mothers of the children were interviewed and followed by an anthropometric and a clinical examination of the children which includes measuring the patients length, height, weight according to the standards given by the WHO(World Health Organisation) and MUAC using mid upper arm circumference strip based on the results the child's severity of the SAM is determined. The variables studied were age, gender, region, relation between gender and grade, month wise cases collected, comparison of male and female based on month, co-morbidities, relation between co-morbidities and gender, socio-economic status, medical illness in the past months, birth order, breast feeding, immunization status, dietary intake and anthropometric measurements were conducted on malnourished children..Results: It was found that out of 98 patients, 42 were male, 56 were female, 65 were from Gulbarga and 33 were from other villages. According to grades 3SD and 4SD are more compared to other grades. Among co-morbidities GE and LRTI were found in large numbers compared to other diseases. Conclusion: Pharmacist's plays a vital role, in our study it clearly suggests that pharmacist's counselling to the parents of malnutrition children had improved the child health status than before counselling. Out of 98 undernourished children, 40 children had improved their health status after counselling. So pharmacist plays a vital role in improving the child's nutritional status and health.***

Keywords: SAM, NRC, SD, PEM, GE, LRTI, MUAC

1. Introduction

The term nutrition is derived from a Latin word "nutritic'' meaning nourishment. "Mal" means any deviation from normal phenomenon. Malnutrition is defined as any deviation from normal phenomenon.[1]

World health organisation (WHO) defines malnutrition as the cellular imbalance between the supply of nutrients and energy and the body's demand for them to ensure growth, maintenance and specific functions.[2]

Malnutrition is the principal cause of child deaths. Half of all child deaths in India could be prevented if this one issue is tackled. Children die because malnutrition lowers a child's resistance to infection.[3]

"Children are our future, and their mothers are its guardians". Almost 11 million children will die before they reach the age of 5; 4 million of them in the first month of life. A large number of them could be prevented by prompting their good health. In India almost one out of every 2 children goes to bed on an empty stomach.[4]

Malnutrition usually occurs when the body is under nourished. This occurs when proper nourishment is not supplied to the body or when the body is unable to obtain nourishment from the ingested food. This condition is mainly due to the presence of medical complication or may be due to the nature of the ingested food. The term marasmus is derived from the Greek word, which means withering or wasting. The term kwashiorkor is taken from the language of Ghana and means the sickness of the weaning.[5]

Forms of Malnutrition:

- Under Nutrition: In sufficient food intake over a extended period of time.
- Over Nutrition: Excessive intake of food over a period of time.
- Imbalance: Disproportion among essential nutrients with or without absolute deficiency of any nutrient.
- Specific deficiency: Relative or absolute lack of an individual nutrient.[5]

Causes & Consequences of Malnutrition:

- Malnutrition affects the function and recovery of every organ system.

Muscle function

Weight loss due to depletion of fat and muscle mass, including organ mass, is often the most obvious sign of malnutrition. Muscle function declines before changes in

muscle mass occur, suggesting that altered nutrient intake has an important impact independent of the effects on muscle mass. Similarly, improvements in muscle function with nutrition support occur more rapidly than can be accounted for by replacement of muscle mass alone. Down regulation of energy dependent cellular membrane pumping, or reductive adaptation, is one explanation for these findings. This may occur following only a short period of starvation. If, however, dietary intake is insufficient to meet requirements over a more prolonged period of time the body draws on functional reserves in tissues such as muscle, adipose tissue and bone leading to changes in body composition.

Gastrointestinal function:

Adequate nutrition is important for preserving GI function: chronic malnutrition results in changes in pancreatic exocrine function, intestinal blood flow, villous architecture and intestinal permeability. The colon loses its ability to reabsorb water and electrolytes, and secretion of ions and fluid occurs in the small and large bowel. This may result in diarrhoea, which is associated with a high mortality rate in severely malnourished patients.

Immunity and wound healing:

Immune function is also affected, increasing the risk of infection due to impaired cell mediated immunity and cytokine, complement and phagocyte function. Delayed wound healing is also well described in malnourished surgical patients.[6]
The classification of SAM can be summarized as follows: [WHO]

- Up to -2SD: Normal
- <-2SD to -3SD: Moderate
- <-3SD: Severe

Signs of Severe Malnutriton:

1. Severe Wasting
2. Oedema
3. Weigh And Measure The Child
4. Mid Upper Arm Circumference (MUAC)

5. Methodology

A prospective interventional study was conducted among 98 children who were admitted in the Department of paediatrics at District Government Hospital, Gulbarga during September 2017 to April 2017.All children who were diagnosed with malnutrition were included in the study. Children who have normal BMI value were excluded from the study.

1. Results

The study was conducted among 98 under malnourished children who were admitted in the department of paediatrics at district government hospital, Gulbarga. Out of 98 patients, male patients were 42 and female patients were 56 [table 1], our study shows that girls are at greater risk of higher degrees of malnutrition, might be because of negligence towards the girl child in rural areas of India.

When compared region wise more number of malnourished children was found in Gulbarga were 65 followed by other villages were 33[table 2] this may be due to migration of labour in search of employment to the district (Gulbarga).

It is clear from our study that the prevalence of malnutrition was high in lesser age group, indicates relatively younger children are the common victims of the malnutrition. Under nutrition in younger age; especially between 1-3 years [table 3] is likely to be due to low energy intake, because children are not feed often with enough household food.

Where as in age-wise distribution 1-2 years that is 41 patients, 2-3 years 24 patients, 3-4 years 13 patients, 4 years above are 14 patients [table 3].

Our study which included 98 patients among them 55 patients were with Grade3-SD followed by 4-SD grade patients were 25 [table 4], co-morbidities were 60, and SAM were 38 patients. With Acute GE were 15patients and SAM with LRTI were 15 patients [table 5].

Table 1: Demographic Profile of Patients

Gender	Number	Percentage
Males	42	42.85%
Females	56	57.14%

Figure 1: Demographic Profile of Patients

Table 2: Demographic Profile of Patients Region Wise

Sl. No	Region – Wise	No.of patients
1	Gulbarga	65
2	Others	33

Figure 2: Demographic Profile of Patients Region Wise

Table 3: Demographic Profile of Patients Age Wise Sam Cases Collected

Sl. No	Age	No.Of Patients
1	Below 1 year	06
2	1-2years	41
3	2-3 years	24
4	3-4 years	13
5	4-5 years	04
6	5 years & above	10

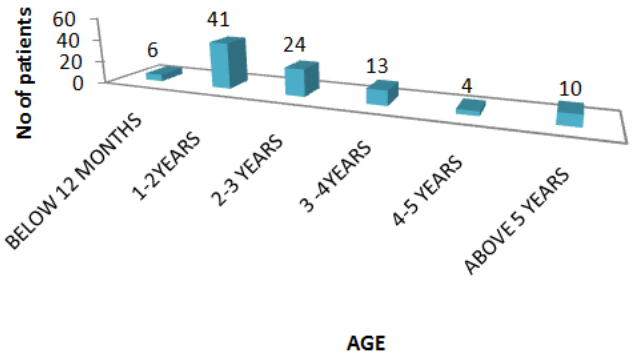

Figure 3: Demographic Profile of Patients Age Wise SAM Cases Collected

Table 4: Demographic Profile of Patients Showing Distribution of Malnourished Children According To Grades

Sl. No	Grades	No. of Patients
1	1SD	02
2	2SD	15
3	3SD	55
4	4SD	25

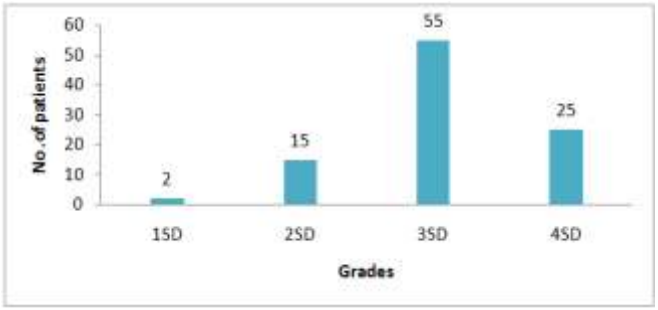

Figure 4: Demographic Profile of Patients Showing Distribution of Malnourished Children According to Grades

Table 5: Demographic Profile of Patients Co-Morbidities

Sl. No	Condition	No. of Patients
1	Marasmus	02
2	PEM	04
3	LRTI	15
4	Bronchopneumonia	04
5	Coryza	01
6	Bronchiolitis	01
7	Anaemia	04
8	Bronchial asthma	02
9	Acute GE	15
10	RVD	01
11	Measles	01
12	Umbilical hernia	01
13	Rickets	01
14	Down's syndrome	02
15	Enteric fever	02
16	Convulsions	04

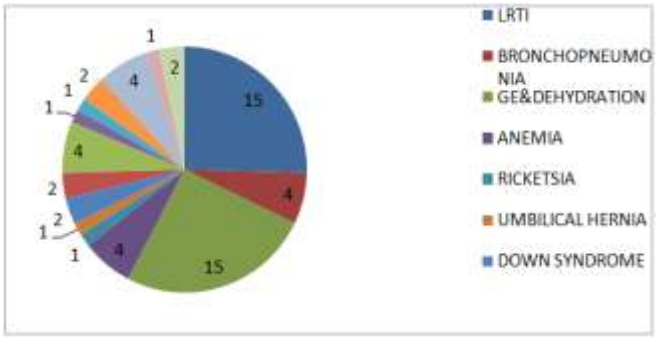

Figure 5: Demographic Profiles Of Patients Co-Morbidities

Table 6: Demographic Profile of Patients Improved Health Status after Counselling

Sl. No	No. Of Patients	Improved Health Status After Counselling
1	98	48

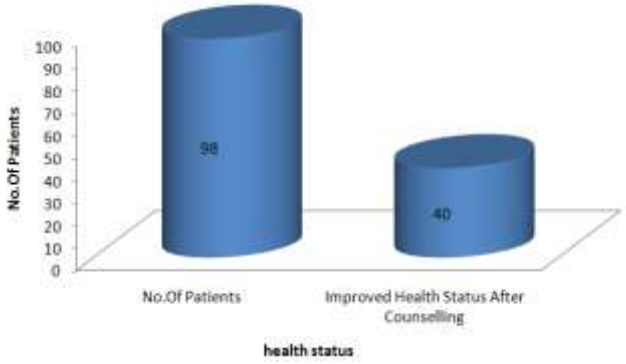

Figure 6: Demographic Profile of Patients Improved Health Status after Counselling

2. Discussion and Summary

Our study was conducted to look in to the concept whether pharmacist impact in malnutrition patient's improved or not by counselling to mothers and educating them regarding the good nutrition practices.

Childhood malnutrition is a massive crisis caused by a combination of factors including inadequate food child care practices, childhood diseases, harmful child practices, low socio-economic status, all these contribute to poor health and millions of deaths annually. Malnutrition is like an iceberg, which affected the community both directly and indirectly.

The direct effects are the occurrence of frank and subclinical nutritional deficiency diseases. The indirect effects are high morbidity and mortality among young children.

Out of 98 patients, male patients were 42 and female patients were 56 [table 1], Our study shows that girls are at greater risk of higher degrees of malnutrition, might be because of negligence towards the girl child in rural areas of India.

When compared region wise more number of malnourished children was found in Gulbarga were 65 followed by other villages were 33[table 2] this may be due to migration of labour in search of employment to the district (Gulbarga).

It is clear from our study that the prevalence of malnutrition was high in lesser age group, indicates relatively younger children are the common victims of the malnutrition. Under nutrition in younger age; especially between 1-3 years [table 3] is likely to be due to low energy intake, because children are not feed often with enough household food.

Where as in age-wise distribution 1-2 years that is 41 patients, 2-3 years 24 patients, 3-4 years 13 patients, 4 years above are 14 patients [table 3].

Our study which included 98 patients among them 55 patients were with Grade3-SD followed by 4-SD grade patients were 25 [table 4], co-morbidities were 60, and SAM were 38 patients. With Acute GE were 15patients and SAM with LRTI were 15 patients [table 5].

Gastroenteritis is high among the other co-morbidities associated with SAM this is because adequate nutrition is important for preserving GI function. Chronic malnutrition results in changes in pancreatic exocrine function, intestinal blood flow, villous architecture and intestinal permeability. The colon loses its ability to reabsorb water and electrolyte and secretion of ions and fluid occurs in the small and large bowel. This may result in diarrhoea, which is associated with a high mortality rate in severely malnourished patients.

Many Researches show that there is a strong linkage between maternal education and children's health. Children born to educated women suffer less from malnutrition. Malnutrition education has been associated with nutrition outcomes among children in various settings. NFHS-III data also collaborates with these findings. In southern India the incidence rate of malnutrition is high in Karnataka.

In our study it clearly suggests that pharmacist's counselling to the mother's of malnutrition children had improved the child health status than before counselling. Out of 98 under nourished children, 40 children have improved their health status after counselling.[table 6] So pharmacist plays a vital role in improving the child's nutritional status and health.

3. Conclusion

- Children of relatively younger age from rural areas especially girls are the common victims of malnutrition.
- RTI and acute GE were common co-morbid conditions found among malnourished children. Most of the children were in the early stages of malnutrition, a little extra attention and awareness of parents might definitely help to reduce this problem.
- Our study has found that mothers had poor knowledge on fewer than five nutrition problems and its prevention.
- A significant number of mothers were unaware of the prevention and management of under-five nutritional problems. The knowledge level of the mothers can be empowered with essential health information. This again emphasizes the need to strengthen IEC activities.
- Despite many programs and efforts put down by the government the malnutrition rates still prevail high in the county. The programmes were beneficial only to a certain class of people. We believe that the government should develop a plan in eradicating poverty in the country and providing a strong campaign across the country about the "killer" with real facts and figures, its treatment and its complications. we believe that Malnutrition has drawn the least attention of the leaders to find a solution.
- Nutrition education by the clinical pharmacist and other healthcare professionals to the mothers is essential to help the children grow physically and mentally.
- Clinical pharmacist should make awareness regarding diet which contains more of protein rich foods for nutritional rehabilitation of children with PEM.

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