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PRESENCE OF CHILDHOOD MALNUTRITION STATE AT REWA CITY

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ABSTRACT

Malnutrition, defined as underweight, is a serious public-health problem that has been linked to a substantial increase in the risk of mortality and morbidity. Women and young children bear the brunt of the disease burden associated with malnutrition. Malnutrition has become an urgent global health issue, with under nutrition killing or disabling millions of children each year. Malnutrition also prevents millions more from reaching their full intellectual and productive potential. In children, severe malnutrition accounts for approximately 1 million deaths annually1, with approximately 20 million children under the age of five suffering from severe malnutrition. India, the 7th biggest republican country draws the limelight for its pluralistic, multilingual and multiethnic society. Ironically it also claimed its position for bringing forth a very immense number of malnourished children. Malnutrition is a condition where the body is deprived of minimum daily nourishment. India is ranked second in having malnourished children. There is a myth that the Indian children are well nourished than the children in Africa, but the latest statistics by the WHO and UNICEF reveals our ignorance.

INTRODUCTION

Malnutrition actually means "bad nourishment" This condition is usually seen when the body is divested from its minimal daily requirements. The condition is more profound in children which results in the underweight of the child. It is also present in the adults where the primary reason is Malabsorbtion, which is usually associated with a disease [1-6]. Starvation is also a form of malnutrition .In some parts of the world Famine is a primary cause of Malnutrition and is endemic [7]. Substantial improvements have been made in health and well-being since India's independence in 1947 but, still more than half of all children under the age of 4are malnourished, 30 percent of newborns are significantly underweight, and 60 percent of women are anemic [8]. Chronic food deficits affect about 792 million people in the world, including 20% of the population in developing countries [9]. Worldwide, malnutrition affects one in three people and each of its

major forms dwarfs most other diseases globally. Malnutrition affects all age groups, but it is especially common among the poor and those with inadequate access to health education and to clean water and good sanitation [10]. More than 70% of children with protein-energy malnutrition live in Asia, 26% live in Africa, and 4% in Latin America and the Caribbean [11]. The World Bank estimates that India is ranked second following Bangladesh in producing the malnourished children [12]. These 2 Asian countries dominate even sub-Saharan Africa. In India infant mortality rate is high in Madhya Pradesh followed by Assam whereas Kerala occupies the last place [13-17].

ETIOLOGY

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. Protein energy malnutrition (PEM) may occur due to maldigestion or malabsorbtion and is usually of the following types:

1.Marasmus Syndrome.

It is characterized by heavy weight loss. The weight loss is an adaptive mechanism developed by the body in order to meet the catabolic needs of the body. Muscle protein and even subcutaneous fat are in involved in the adaptive mechanism. Malnourished child with Marasmus Syndrome

2.Kwashiorkor Syndrome:
It is usually characterized by heavy loss of visceral protein which results in hypoalbuminemia eventually resulting in generalized body edema. The word "KWASHIORKOR" is derived from the GA language, a language in Ghana, Africa meaning "Disease of a baby due to arrival of another child in the family". This syndrome is mostly found in African countries where the child is fed mostly a carbohydrate diet. Child with Kwashiorkor Syndrome

3.Classification of PEM:

The Gomez classification is widely followed and as per the classification the disorder is of the following types

Degree of PEM % of desired body wt. for age and sex
(a) Grade I. Severe Malnutrition: 90%-100%
(b) Grade II. Moderate Malnutrition: 75%-89%
(c) Grade III. Mild Malnutrition: <60%

Children whose weight-for-height is below -3 SD(Standard deviation) or less than 70% of the median NCHS/WHO reference values are termed as "severely wasted", or who have symmetrical edema involving at least the feet are termed as "edematous malnutrition" are severely malnourished [9]. They should be admitted to hospital where they can be observed, treated and fed day and night. Stunted children are usually considered to have a milder, chronic form of malnutrition. Standard deviation (SD) can be calculated by the following formula: SD-Score = (Observed value) - (median reference value) (Standard deviation of reference population)

Secondary Protein Energy Malnutrition

It is usually found in adults and children as a result of underlying medical condition or may be due to an infection. This condition is reversible and usually treated for the underlying cause.

4.Signs and Symptoms

The common symptoms of the PEM include: Weight loss, Hypoglycemia, Hypothermia, Vit A

deficiency and Anemia. The characteristic symptoms of Kwashiorkor include flaked appearance of the skin due to alternate hyper and hypo pigmentation and loss of color of the hair and fatty liver. Both the syndromes are the 2 ends of the spectrum and so significant number of symptoms overlap each other.

MATERIAL AND METHOD
Anthropometry

Weight children with <10K.g were weighed on electronic weighing machine with an accuracy of +o.5 grams and children with >10 Kg were weighed on beam scale or salter type scale. The beam should be properly balanced and should move freely when at rest and the pointer should be at zero. The scale should be set on flat horizontal surface .Shoes should be removed and child should not be in contact with any other object .The result should be read only after the beam reaches its balance point or The pointer become motionless. Children who were restless. Double weighing is done. First the mother the mother is weighted alone and then the mother is weighed holding her children, the weight should be accurate to the nearest 500 gram and for small children to 100 g. m.

Length In fantometer was used for measuring length in less than 2 years of children. H eight measured in lying down posture is called length. Length measurement needs two people one person maintains the of the Childs head against the fixed vertical head board the other person firmly presses the knee to gather and then mobile foot board is moved. So that it touches the heels. Accuracy must be to the nearest 0.5 cm. Beyond two years a vertical measuring rod or anthropometer is used heels buttocks shoulders and occiput should touch the wall. The chin should be straight (Frankfurt plane). Accuracy must be to the nearest 0.5 c.m.

Weight for length

For comparison of weight for height unicef chart was used. MUAC Measurement is performed on the left arm mid-way between the acromian and olecranon process by flexible and non-stretchable measuring tape, which is not affected by temperature.

Statistical analysis

Data thus obtained was coded and entered into Microsoft excel worksheet. This was analyzed using SPSS version 17 and OpenEpi version 2.3. The frequency distribution of the study subjects according to age, sex, religion, educational status, socioeconomic status, birth order and feeding practices were analyzed. Prevalence of PEM was worked out along with 95% confidence interval.

In addition to overall prevalence rate, the prevalence of PEM was also estimated in relation to certain selected factors such as age, sex, religion, educational status of parents, socioeconomic status, birth order and feeding practices. To find out the association of PEM with

the above factors, chi-square test and Fisher exact test was applied for each of the factor. The statistical significance was evaluated at 5% level of significance. Microsoft Word and Microsoft Excel were used to generate graphs and tables.

RESULTS

The present study entitled a "malnutrition state in children" is a prospective study conducted on 50 severely malnourished children carried out in the Department of Environment, APS University, REWA (M.P).

Table 1. Distribution of study according to the sex

Sex	Case	Malnutrition %
Male	30	60%
Female	20	40%

Table 2. Distribution of study cohort according to age

Age	Case	Control
<1 year	14	03
1-2 year	24	05
2-3 year	06	03
3-4 year	04	02
4-5 year	02	02

Most case of sever acute malnutrition were in age group 1-2 years (48%) fallowed by in <1 years (28 %) having trend of decrease in prevalence with increasing age after 2 years. This may indicate that there is a not proper weaning practice.
$X2 = 3.361$. The value of chi–square is 3.361 expected value for d.f 4, so p> 0.05. Therefore finding is not significant.
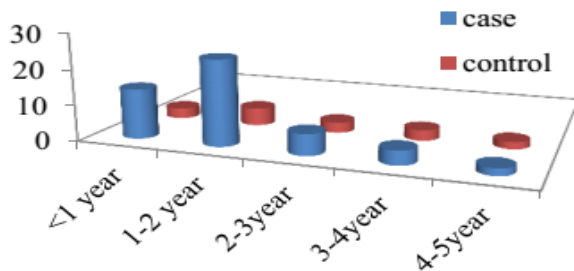
Figure 1. Distribution of study cohort according to age

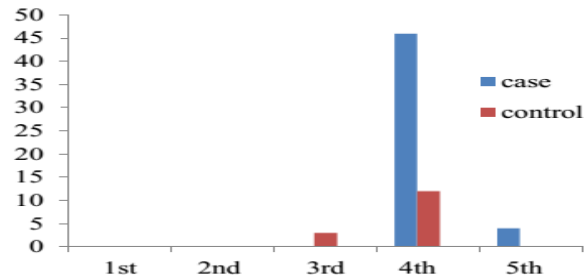**Figure 2. Distribution of study cohort according to socioeconomic status**

Figure 3. Distribution of study cohort according to hemoglobin concentration
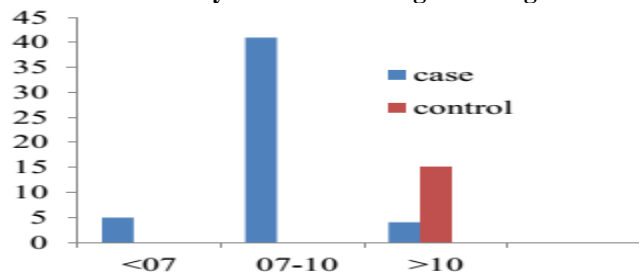

Table 3. Distribution of study cohort according to socioeconomic status

Socioeconomic class	Case	Control
1st	00	00
2nd	00	00
3rd	00	03
4th	46	12
5th	04	00

Above the table shoe that 92% case belongs to class 4th and 8% in class 5th in control group 80% case belong to class 3rd .so sever acute malnutrition is more prevalent in lower socioeconomic groups. $X2 =11.386$. The value of chi square is 11.386 expected value for d.f 4. So P<0.05 therefore finding is statically significant.

Table 4. Distribution of study cohort according to hemoglobin concentration

Hb (gm/dl)	Case	Controls
<07	05	0
07 to 10	41	0
>10	04	15

Above table shows that majority of case (92%) has low Hb values, whereas all the controls have normal hemoglobin values. X2=47.211. The value of chi-square is 47.211 expected value for d.f-2. So P<0.0001. Therefore finding is statically significant.

DISCUSSION AND CONCLUSION

In the present study was under taken for observing severe malnutrition Childs. Which include a total of 50 cases. Selection of case of case was done on clinical features and WHO criteria for severe acute malnutrition.

The analyses of the study are 60% female and 40% male are suffering from malnutrition, The age group of 6 months to 5 years most case of severe malnutrition were in age group 1-2 years (48%), Most of the malnutrition cases appear in socioeconomic class 5th.

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