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Knowledge Regarding Predisposing Factors, Possible Causes and Outcomes of Malnutrition Among Mothers of Under Five Children in Sullia Taluk, Dakshina Kannada, Karnataka

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ABSTRACT

Background: Good nutrition is the most important component which determines the growth and development of a child under-five years of age. Cultural taboos regarding breast feeding, weaning practices, and pregnancy diets may lead to various patterns of dietary behaviour. Malnutrition is a result of imbalance between the requirements of the human body and the nutrient intake. Objective: To assess the knowledge among mothers of under-five children regarding predisposing factors, possible causes and outcomes of malnutrition.
Materials and methods: A cross-sectional descriptive study was conducted among 200 mothers of children under 5 years of age attending Anganwadis of Sullia taluk, Karnataka. A structured interview schedule was used to collect the data. The level of knowledge was determined by a predefined score.
Results: 94% of mothers have received some formal education and 6% have not received any formal education. 75% of the mothers belonged to the middle class as per B.G Prasad classification. About 81.5% mothers are homemakers and 18.5% constitute working mothers. Overall, the mothers had poor knowledge regarding possible outcomes of malnutrition in the following domains-overweight, mouth sores, delayed eruption of tooth and mental retardation. However, knowledge regarding predisposing factors and possible causes of malnutrition was high in following domains- lack of appetite in child, lack of availability of right type of food, lack of mother care, presence of chronic illness, cultural and food taboos, inappropriate breastfeeding.
Conclusion: The present study reiterates the involvement of mothers in intervention programs held at Anganwadis to get awareness and hence prevent malnutrition in children.

Keywords: *Anganwadis, cultural taboos, malnutrition, Mothers perception, under five children*

INTRODUCTION

Child health is the foundation of the family and wealth of a nation.[1] Malnutrition in children is a result of imbalance between the body's needs and the intake of essential nutrients, which can lead to undernutrition or overnutrition. Most of the children with malnutrition manifest as undernutrition where the nutrients are not supplied adequately.[2]Under-nutrition results from different causes – immediate, underlying, and basic. Immediate causes include inadequate intake of diet and repeated illnesses, whereas underlying causes include inadequate care of mothers, lack of access to health facilities, poverty, and food insecurity.[3,4] There are several other risk factors to malnutrition which include parental literacy status, low socioeconomic status and large families.[5] The symptoms that might be experienced in malnutrition include breathing difficulties, higher risk of hypothermia, weight loss, and higher susceptibility to diseases.[6] The mother is the key provider of the primary care that her child needs during the initial years of his/her life and this care provided, depends widely on her knowledge and understanding regarding basic nutrition and health care.[7] Promoting good nutrition and dietary habits are the key components of maintaining a child's health.

'Malnutrition directly affects many aspects of children's development. In particular, it retards their physical and cognitive growth and increases susceptibility to infections and non-communicable diseases, further increasing the probability of malnutrition.[8]' 'The World Health Organization (WHO) defines underweight as low weight-for-age, wasting as low weight-for-height and stunting as low height-for-age. A child who is underweight may be stunted, wasted or both. Stunting is the result of chronic or recurrent undernutrition, usually associated with poverty, poor maternal health and nutrition, frequent illness and/or inappropriate feeding and care in early life. It prevents children from reaching their physical and cognitive potential.[9]' Severe acute malnutrition (SAM) is defined as very low weight-for-height or a mid-upper arm circumference less than 115 mm, or by the presence of nutritional oedema.[10] 'An estimated 38.3million children under the age of 5 years are overweight or obese, while some 144 million are stunted and 47 million are wasted.[11]'

Some new topics were included in NFHS-5 (National Family Health Survey) in 2019-21 like preschool education. 'NFHS-5 found 35.5 percent of children under the age of five were stunted, 19.3 percent were wasted, 32.1 percent were underweight and 3.4 percent were overweight in India. It showed prevalence of severe acute malnutrition among 7.7 per cent of children in the country. The number of children having wasting, stunting and being underweight have decreased whereas the number of SAM children and overweight has increased in comparison to NFHS-4.[12] Thus, the aim of the study is to assess the knowledge among mothers of under-5 children regarding predisposing factors, possible causes and outcomes of malnutrition.

MATERIALS & METHODS

A cross-sectional descriptive study was conducted in Sullia taluk, Karnataka to assess the knowledge of mothers of under five children regarding malnutrition. Thirty Anganwadis were listed in the study area, out of which eleven Anganwadis were selected using simple random sampling technique. 200 mothers of under five children were included from these Anganwadi centres according to the inclusive and exclusive criteria mentioned below. Modified B.G Prasad's classification was used to assess the socioeconomic status of the family. Pretested structured interview schedule having four domains. i.e., (1) Sociodemographic data, (2) predisposing factors to malnutrition, (3) possible causes of malnutrition and (4) outcomes of malnutrition were used to assess the mother's knowledge on these domains.

The level of knowledge was determined by a predefined score. The knowledge score on various domains was categorised as follows:

Predisposing factors to malnutrition- inadequate knowledge (0-8) and adequate knowledge (9-12).
Possible causes of malnutrition- inadequate knowledge (0-5) and adequate knowledge (6-7).
Possible outcomes of malnutrition- inadequate knowledge (0-5), and adequate knowledge (6-8).

Criteria for selection of sample: Mothers with children up to five years of age residing in the study area at the time of data collection were added for the study and mothers who were not willing to participate in the study were excluded.
This study was approved by the Institutional Ethics Committee and prior permission was taken from the concerned authority to visit and obtain information required for the study from the Anganwadis. Informed consent was obtained from the mothers participating in the study. The collected data was analyzed using IBM-SPSS version 27.

RESULT

A total of 200 mothers of children studying in Anganwadis were included in the study and their sociodemographic data are presented in table.1

Table 1: Frequency and percentage distribution of demographic variables of given population

Sociodemographic data		Frequency(n) N = 200	Percentage (%)
Age of mother (in years)	15-25	19	9.5
	26-35	148	74
	36-45	33	16.5
Educational status of mother	No formal education	12	6
	High school	121	60.5
	Higher education	67	33.5
Socioeconomic status	Lower class	10	5
	Lower middle class	19	9.5
	Middle class	46	23
	Upper middle class	104	52
	Upper class	21	10.5
Mother's occupation	Homemakers	163	81.5
	Working	37	18.5

Mean age of the mothers in the study was 31 years and the mean age of children was 3.5 years. Among the total,121(60.5%) of the mothers have completed high school, 38(19%) have completed PUC, 29 (14.5%) have completed degree and 12(6%) have not received any formal education. Majority i.e., 104 (52%) of the mothers belonged to upper middle class and 46(23%) to middle class as per B.G Prasad socioeconomic classification. About 163(81.5%) mothers are homemakers and 37(18.5%) constitute working mothers.

Table 2: Knowledge among mothers about predisposing factors to malnutrition

Predisposing factors to malnutrition	KNOWLEDGE(N=200)			
	Adequate		Inadequate	
	n	%	n	%
Ignorance	188	94	12	6
Illiteracy	138	69	62	31
Poverty	122	61	78	39
Total number of children in family	76	38	124	62
Presence of chronic illness	200	100	0	0
Inappropriate breastfeeding	196	98	4	2

Parent's occupation	97	48.5	103	51.5
Mother nutritional status	109	54.5	91	45.5
Cultural and food taboos				
Antenatal	173	86.5	27	13.5
Neonatal	195	97.5	5	2.5
Postnatal	160	80	40	20

Table 2 illustrates that, overall, the mothers have adequate knowledge regarding various predisposing factors to malnutrition. The mothers have inadequate knowledge regarding effects of total number of children in the family (62%), parent's occupation (51.5%) and mother's nutritional status (45.5%) as a predisposing factor to child malnutrition.

Table 3: Knowledge among mothers about possible causes of malnutrition

Possible causes of malnutrition	KNOWLEDGE(N=200)			
	Adequate		Inadequate	
	n	%	n	%
Lack of right type of food	192	96	8	4
Lack of protein	192	96	8	4
Lack of carbohydrates	193	96.5	7	3.5
Lack of micronutrients	185	92.5	15	7.5
Frequency of meals	109	54.5	91	45.5
Lack of appetite	181	90.5	19	9.5
Lack of mother's care	200	100	0	0

Table 3 shows that on average, mothers have adequate knowledge about various causes of child malnutrition. 45.5% of mothers had inadequate knowledge regarding frequency of meals as a possible cause of malnutrition.

Table 4: Knowledge among mothers about possible outcomes of malnutrition

Outcomes of malnutrition	KNOWLEDGE(N=200)			
	Adequate		Inadequate	
	n	%	n	%
Underweight	193	96.5	7	3.5
Overweight	78	39	122	61
Stunting	150	75	50	25
Anemia	185	92.5	15	7.5
Mental retardation	152	76	48	24
Mouth sores	63	31	138	69
Delayed eruption of tooth	97	48.5	103	51.5
Bone deformity	179	89.5	21	10.5

Table 4 illustrates that the participants had good knowledge about some possible outcomes of malnutrition. Majority of mothers had poor knowledge regarding following possible outcomes of malnutrition- overweight (61%), mouth sores (69%), delayed eruption of teeth (51.5%).

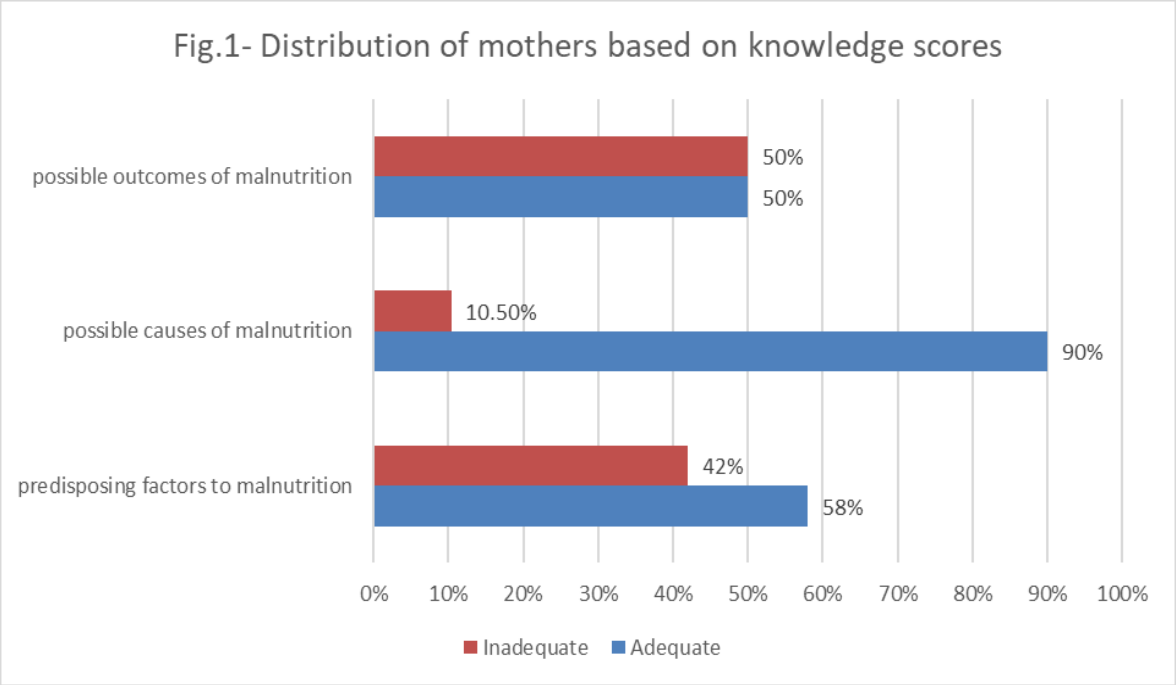

Fig. 1: Distribution of mothers based on knowledge scores in respective domains

Fig. 1 illustrates that 58% of mothers participating in the study have adequate knowledge and 42% have inadequate knowledge about various predisposing factors. 89.5% of the participants have adequate knowledge whereas 10.50% have inadequate knowledge about the possible causes of child malnutrition. Regarding possible outcomes of malnutrition, 50% of mothers have adequate knowledge and the remaining 50% have inadequate knowledge.

Table 5: Relationship between demographic variables and level of knowledge

Sl. No.	Sociodemographic variables	Categories	Knowledge score		p-value
			Adequate n (%)	Inadequate n (%)	
1	Age of the mother	15-25 years	17 (8.5)	2 (1)	0.37
		26-35 years	111 (55.5)	37 (18.5)	
		36-45 years	25 (12.5)	8 (4)	
2	Socioeconomic status	Low	20 (10)	9 (4.5)	0.55
		Middle	116 (58)	34 (17)	
		High	17 (8.5)	4 (2)	
3	Religion	Hindu	91 (45.5)	13 (6.5)	0.0002*
		Muslim	60 (30)	34 (17)	
		Christian	2 (1)	0 (0)	
4	Mother's educational status	No formal education	4 (2)	8 (4)	<0.0001*
		High school	85 (42.5)	36 (18)	
		Higher education	64 (32)	3 (1.5)	
5	Occupation of mother	Housewife	120 (60)	43 (21.5)	0.04*
		Working	33 (16.5)	4 (2)	
6	Type of family	Nuclear	128 (64)	40 (20)	1.0
		Joint	25 (12.5)	7 (3.5)	
7	Total no. of children in family	0-1	36 (18)	4 (2)	0.0005*
		2-3	111 (55.5)	34 (17)	
		4-5	6 (3)	9 (4.5)	
8	Mother's age at marriage	16-20 years	48 (24)	17 (8.5)	0.72
		21-25 years	68 (34)	21 (10.5)	
		26-35 years	37 (18.5)	9 (4.5)	

Table 5 illustrates that among the various sociodemographic variables considered in the present study, the following- religion, mother's educational status, mother's occupation and total number of children in the family play a significant role in the mother's knowledge regarding child malnutrition.

DISCUSSION

In this study, 60.5% of the mothers have completed high school education,19% have completed PUC, 14.5% are graduates and 6% have no formal education. S.Divya et al.[13] found out that 24% of the mothers have completed high school education,48% have completed PUC,12% are graduates and 16% have no formal education in a study conducted at Kotekar rural community of Mangalore. A similar study conducted in Udupi taluk, Karnataka, by B.Ansuya et al.[14], reported that 32.6% of the mothers have completed high school education, 31.8% have lower primary education and 3.3% were illiterate. Various studies [14,13,15] have reported that education of women plays a significant role in the health of children.

In the current study, domain wise knowledge scores reveal that 58% of mothers having adequate knowledge and 42% of them having inadequate knowledge on predisposing factors to malnutrition, 89.5% of mothers having adequate knowledge and 10.5% of them having inadequate knowledge on causes of malnutrition, 50% of mothers having adequate knowledge and 50% of them having inadequate knowledge on the outcomes of child malnutrition. Hence, it is evident from the study that mothers have average knowledge on the predisposing factors and outcomes of malnutrition and have adequate knowledge on the possible causes of malnutrition. Similar findings reported by B.Ansuya et al.[14] reveal that 72.8% of mothers had poor knowledge about predisposing factors to malnutrition, 61.2% of them were not aware of various causes of malnutrition and 57.4% of them were unaware about outcomes and complications of malnutrition. A study conducted by M. Kavitha [16] revealed 67.7% of mothers are having knowledge on outcomes of malnutrition and 66.9% of mothers are having knowledge on predisposing factors of malnutrition. A study conducted by Rita Abbi et al. [17] compared the mother's knowledge on malnutrition and the anthropometric measurements of their children and established significant associations between them.

Statistical tests of significance like chi square test and fishers exact test were used to illustrate the association between the knowledge of mothers in our study and sociodemographic variables like age, socio economic status, religion, mother's educational status, mother's occupation, type of family, number of children and mother's age at marriage. The study revealed that there is a significant association between knowledge of mothers of under five children and sociodemographic variables like religion, mother's educational status, mother's occupation and number of children in the family whereas a similar study conducted by Saaka[18] revealed a significant association of maternal knowledge with socioeconomic status of households and also with age of the child whereas no significant association between mother's knowledge level and the selected demographic variables is seen in the study conducted by Shettigar D et al.[13]

Limitations of study:

1. The study was limited to a smaller sample size.
2. The study was limited to mothers of children studying in Anganwadi centres.

CONCLUSION

Mother's understanding of the causes of malnutrition was comparatively adequate, but their understanding of its risk factors and consequences was moderate. Religion, educational attainment, occupation, and the number of children were all significantly correlated with maternal knowledge. It implies that a variety of social and demographic factors that vary depending on the context influence maternal knowledge.

Therefore, to increase understanding and eventually prevent malnutrition among children under five, it is imperative to strengthen maternal education and focused health awareness initiatives.

Declaration by Authors

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