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A cross sectional study to assess the knowledge, attitude and practice of mothers of under-five children regarding prevention of protein energy malnutrition in selected rural areas of Meghalaya

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Abstract
Protein-Energy Malnutrition (PEM) is a series of diseases due to the malnutrition of all macronutrients manifesting itself in three forms: marasmus, intermediate states of kwashiorkor-marasmus, and kwashiorkor. PEM is a common nutritional problem worldwide and can be seen in both developed and developing countries. Mothers play a vital role in preventing protein-energy malnutrition (PEM) in under-five children by ensuring proper nutrition, health practices, and care. Empowering mothers through education and resources can significantly reduce the risk of protein-energy malnutrition and improve overall health of under-five children.

The present study aims to assess the knowledge, attitude and practice of mothers of under-five children regarding Prevention of Protein Energy Malnutrition. Using a cross-sectional descriptive design, self-administered structured questionnaire was administered among the mothers of under-five children in rural areas of Meghalaya.

The study shows that out of the 135 mothers surveyed, the mean age was 29.8 years. Results revealed that majority i.e. 65(48.1%) of the mothers had average knowledge, 90 (66.7%) of them have a moderately favorable attitude and 86 (63.7%) mothers of under-five children had Satisfactory Practice level score regarding prevention of Protein Energy Malnutrition. Association was found between knowledge and the educational level and the type of family of the mothers. Association was also found between attitude and the educational level, occupation and number of under-five children of the mothers.

Keywords: Knowledge, attitude, practice, mothers, prevention of protein energy malnutrition

Introduction

Protein energy malnutrition, or PEM, is a widespread issue that affects both industrialized and developing countries. It is often caused by environmental, political, or social issues in the developing world. In contrast, chronic disease is typically the cause of protein energy deficiency in the industrialized world. The criteria used to determine malnutrition continue to vary widely, and each approach has drawbacks of its own. The best results in preventing and treating PEM depend on early detection, timely management, and thorough follow-up [1].

According to WHO Fact sheets (2022), it was predicted that 45 million children under the age of five were wasted (too thin for height) and 149 million stunted (too short for age). Undernutrition is a contributing factor in over half of fatalities in children under five. The majority of these take place in nations with poor and moderate incomes. In the fields of development, economics, society, and medicine, the global burden of malnutrition has serious and enduring consequences for individuals, families, communities, and countries [2].

Early nutrition optimization has long-term benefits and ensures the best start in life, including the 1000 days between conception and a child's second birthday. For instance, Sustainable Development Goal (SDG) 2 of the Agenda for Sustainable Development by 2030 seeks to eradicate hunger, attain food security, enhance nutrition, and advance sustainable agriculture, while SDG 3 seeks to guarantee healthy lifestyles and advance wellbeing for people of all ages. All types of malnutrition can be addressed and prevented with the help of these stated goals [2].

Need of the study

In India, 35.5% of children under five years old are stunted (height-for-age), 19.3% are wasted (weight-for-height), 7.7% are severely wasted (weight-for-height), and 32.1% are underweight (weight-for-age), according to NFHS-5 (2019-2021) [3].

In Meghalaya, 46.5% of under-five children under five are stunted, 12.1% are wasted, 4.7% are severely wasted, and 26.6% are underweight, according to NFHS-5 (2019-2021). According to NFHS-5(2019-2021), the district fact sheets of Meghalaya showed that the district with the highest percentage of stunted children is in West Khasi Hills (59%), followed by South West Khasi Hills (51.4%) and East Jaintia Hills reaching (49.8%); the highest percentage of wasted children is in East Garo Hills (20.1%) followed by South West Garo Hills (19.9%), South Garo Hills (18.3%) and the highest percentage of underweight children is in West Khasi Hills (31.1%) followed by Ri Bhoi District (29.6%) and West Jaintia Hills with(28.3%) [3].

Objectives of the study

1. To assess the knowledge, attitude and practices among the mothers of under five children regarding prevention of Protein Energy Malnutrition in selected rural areas of Meghalaya.
2. To find out the association between knowledge, attitude and practice with the selected demographic variables among mothers of under-five children in selected rural areas of Meghalaya.
3. To develop a pamphlet on Prevention of Protein Energy Malnutrition with an aim to create awareness among mothers of under-five children in selected rural areas of Meghalaya.

Methodology

After obtaining Institutional Ethical clearance and administrative permission, a community based cross-sectional study was conducted using quantitative design from 4th-30th November, 2024 to assess the knowledge, attitude and practices regarding Prevention of Protein Energy Malnutrition. A total of 135 participants were selected in this study using multi-stage sampling. The research tools were validated by experts from various departments like Department of Paediatrics, Department of Community Medicine, etc. Pre-testing of tools and pilot study was conducted and found to be feasible to be carried out in the main setting as proposed. Data was collected using self-administered structured questionnaire regarding Prevention of Protein Energy Malnutrition.

Considering the proportion of knowledge as 20% according to a study conducted by Harish Kumar Sharma and Gagan Deep at selected rural community, Jaipur (Rajasthan) on mothers' knowledge, attitudes, and practice about preventing protein energy malnutrition in children under five years of age and taking 7% as the margin of error, the sample size was calculated to be 135.

Study procedure

Purpose of the study was explained, confidentiality was assured and Informed consent was taken from the mothers of under-five children who met the inclusion criteria. Data was collected using semi-structured questionnaire which assessed the Demographic characteristics, Knowledge, Attitude and Practices regarding Prevention of Protein Energy Malnutrition.

Results

The data were analyzed using descriptive statistics (Mean, Standard deviation and Percentage) inferential statistics (Chi-square).

Table 1: Frequency and percentage distribution of mothers of under-five children according to demographic characteristic, n=135

Demographic	Frequency (f)	Percentage (%)
Age (in years)		
≤30	82	60.7
31–40	45	33.3
≥41	08	05.9
Religion		
Christian	135	100
Educational level		
Secondary level	93	68.9
Higher Secondary and above	42	31.1
Occupation		
Non-working	100	74.1
Working	35	25.9
Type of family		
Nuclear	106	78.5
Joint	29	28.5
Total members in the family		
3–5	65	48.1
6–10	54	40.0
11–20	16	11.9
Monthly income (in rupees)		
≤5000	04	03.0
5001–10000	44	32.6
≥10001	87	64.4
No of Under-five children		
1	72	53.3
2	55	40.7
3	08	05.9

Table 1 show that majority of the participants, 82(60.7%) are in the age group of ≤30 years with the mean age of 29.8 years and all of the participants135 (100%) of the participants are Christians. In terms of educational qualification, most of the mothers; 93(68.9%) were educated upto the secondary level and majority of participants were not working 100 (74.1%). Most of the participants belong to nuclear families 106 (78.5%) and majority, i.e.; 65(48.1%) of the participants have 3-5 total number of members in the family. Regarding the monthly income, most of the mothers 87(64.4%) responded that their monthly income is Rs. ≥10001 per month and among the mothers, 72 (53.3%) have only one child under the age of five years.

Table 2: Frequency and percentage distribution of knowledge score obtained by the mothers of under-five children regarding Prevention of Protein Energy Malnutrition, n=135

Level of knowledge score	Reference range score	Frequency (f)	Percentage (%)	Mean	Standard deviation
Poor	≤6 (≤50%)	40	29.6		
Average	7–9 (51–79%)	65	48.1	7.67	1.928
Good	≥10 (≥80%)	30	22.2		

Table 2 shows that out of 135 mothers of under-five children, majority i.e.65 (48.1%) of them have average

knowledge, 40 (29.6%) have poor knowledge and 30 (22.2%) are having good knowledge regarding Prevention of Protein Energy Malnutrition. The mean and standard deviation score of knowledge is 7.67± 1.928, which concluded that most mothers of under-five children have average knowledge regarding Prevention of Protein Energy Malnutrition.

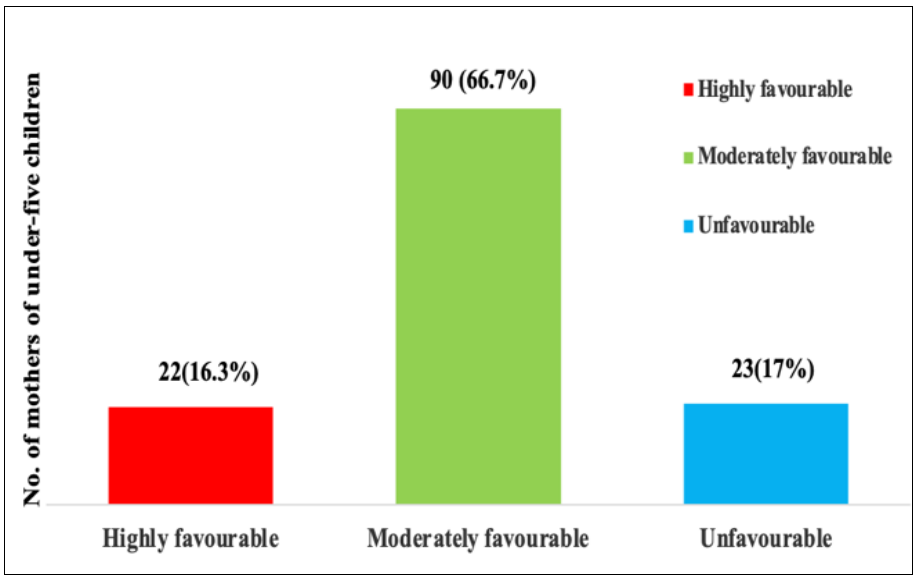

Fig 1: Frequency and percentage distribution of attitude score obtained by the mothers of under-five children regarding Prevention of Protein Energy Malnutrition using a 5-point Likert scale. n=135

Fig 1 shows that out of 135 mothers of under-five children, majority i.e. 90 (66.7%) of them have a moderatelyfavorableattitude,23(17%) have an unfavorable attitude and 22 (16.3%) mothers of under-five children have a highly favorable attitude regarding Prevention of Protein Energy Malnutrition with mean and standard deviation of 39.39 ± 4.587, which concluded that most mothers of under-five children have a moderately favourable attitude regarding Prevention of Protein Energy Malnutrition.

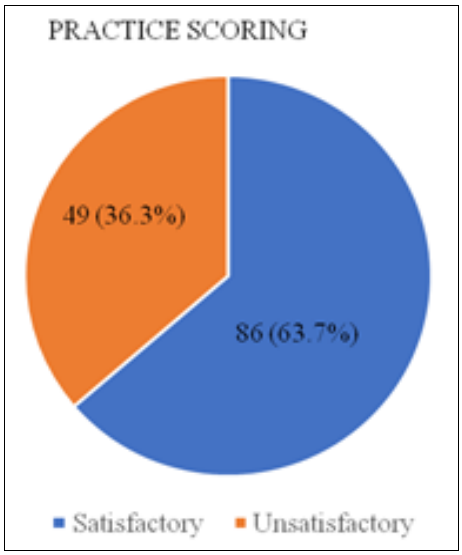

Fig 2: Frequency and percentage distribution of practice score obtained by the mothers of under-five children regarding Prevention of Protein Energy Malnutrition using a structured questionnaire. n=135

Fig 2 shows that out of 135 mothers of under-five children, majority i.e. 86 (63.7%) mothers of under-five children had Satisfactory Practice level score and 49 (36.3%) had Unsatisfactory Practice level score regarding Prevention of Protein Energy Malnutrition with mean and standard deviation of 6.81 ± 4.587, which concluded that most of the mothers of under-five children have satisfactory practice regarding Prevention of Protein Energy Malnutrition.

Findings related to association between knowledge, attitude and practice on Prevention of Protein Energy Malnutrition with selected demographic variables

The study results shows that there was significant association between knowledge of mothers of under-five children regarding Prevention of Protein Energy Malnutrition with their educational level and the type of family of the mothers.

Association was also found between attitude of mothers of under-five children regarding Prevention of Protein Energy Malnutrition with their educational level, occupation and number of under-five children of the mothers.

Discussion

In the present study, most of the mothers of under-five children 65(48.1%) have average knowledge regarding Prevention of Protein Energy Malnutrition which is similar to a study done by S U Santhosh *et al* (2022) where 52.05% of mothers of under-five children had average knowledge on Prevention of Protein Energy Malnutrition [4].

In the present study, majority of the mothers 90 (66.7%) have a moderately favorable attitude towards Prevention of Protein Energy Malnutrition whereas in a similar study by Sharma Kumar Harish *et al* (2018), it was found that the majority of women (56.66%) with children under five years of age had a neutral view [5].

The present study revealed that 86 (63.7%) mothers of under-five children had Satisfactory Practice level score regarding Prevention of Protein Energy Malnutrition. A similar study conducted by Suman Prakash Prem *et al*. (2022) found out that 32 (53.33%) of the mothers of under-five children had average practices regarding Prevention of

Protein Energy Malnutrition [6].

The present study revealed that there is significant association between knowledge and the educational level of the mothers at the p-value of 0.000 level of significance which is supported by Yadav Sarika *et al* who noted a significant correlation between the mother's level of education and her level of knowledge in her study [7].

In the present study, the lowest mean knowledge was on the sources of proteins 15(11.1%) which is contradicted by a study done by Patel Neepa A et. al where it was found out that aforementioned food pattern and PEM source prevention and control had the highest mean knowledge [8].

Conclusion

In the present study, majority of the mothers of under-five children have average knowledge, moderately favourable attitude and satisfactory practices regarding Prevention of Protein Energy Malnutrition.

Furthermore, the study also found that there is an association between knowledge of mothers of under-five children regarding Prevention of Protein Energy Malnutrition with their educational level and the type of family of the mothers. Also, Association was also found between attitude of mothers of under-five children regarding Prevention of Protein Energy Malnutrition with their educational level, occupation and number of under-five children of the mothers.

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Conflict of Interest

Not available.

Financial Support

Not available.

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