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Knowledge and Practices of Mothers Health on Malnutrition Prevention in Under-Five Children at Selected Community Area, Kanpur Nagar

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Abstract

Background: *Malnutrition is a common concern among children under five years old, particularly during their crucial growth years. Maintaining a nutritious and well-balanced diet is crucial for prevention. Consuming regular meals – such as three smaller meals along with two to three nutritious snacks daily – while ensuring sufficient intake of protein and carbohydrates can help lower the risk of malnutrition.* ***Objectives:*** *To assess mothers' knowledge regarding malnutrition in children under five. To evaluate mothers' practices in preventing malnutrition.* ***Design:*** *A non-experimental descriptive study.* ***Subjects & Sampling:*** *The study included 30 mothers selected using a non-probability convenience sampling technique.* ***Data Analysis:*** *Collected data were analyzed using descriptive and inferential statistics, aligned with study objectives and hypotheses.* ***Results:*** *Demographic variables of the mothers were analyzed in terms of frequency and percentage distribution. Findings revealed that: 50% of mothers had inadequate knowledge about malnutrition, 46.7% had moderate knowledge, and Only 3.3% had adequate knowledge. The overall mean knowledge percentage was 25.7%, indicating inadequate awareness. No significant association was found between knowledge scores and sociodemographic variables.*

KEYWORDS: Health education, child health care, maternal knowledge, child growth, malnutrition

INTRODUCTION

"*Children are future citizen of nation. The future of the nation is the hand of children. The welfare of today's children predicts the health and welfare of the community tomorrow*".

(Gandhi, 1967)

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A child's nutritional status is often assessed through body measurements (anthropometry), such as weight in relation to age or height, which helps determine underweight or wasting. Food is essential for life, and a child needs proper nourishment for healthy growth and development. Every child grows at their own pace, reaching different developmental milestones along the way. Malnutrition occurs when there is a deficiency, excess, or imbalance in a person's intake of energy and nutrients. It includes both undernutrition (wasting, underweight) and overnutrition (overweight, obesity, and diet-related diseases) [1–8].

According to the WHO, breast milk provides all the essential nutrients a baby needs for healthy

growth and development during the first six months of life. Babies who are breastfed have a six times higher chance of survival compared to those who are not [7–14].

Children become malnourished when their diet lacks essential nutrients for growth and maintenance or when illness prevents them from properly absorbing the food they eat. Malnutrition is a widespread and complex health issue, especially in low and middle-income countries. It appears in different forms worldwide, including stunting (low height for age), wasting (low weight for height), underweight (low weight for age), and overweight or obesity. Globally malnutrition contributes significantly to morbidity and mortality especially among children under five pregnant woman and to elderly. According to WHO 45% of death in children under five are linked under nutrition predominantly in low- and middle-income countries [15–22].

Malnutrition is influenced by a wide range of factors, including poverty, food insecurity, poor dietary practice, inadequate health care, and environmental conditions, such as access to clean water and sanitation. In some regions, conflict and climate change exacerbate the situation, further liming access to adequate nutrition. Understanding the prevalence and distribution of malnutrition within specific communities is crucial for developing effective public health strategies. This descriptive study aims to assess the current state of malnutrition in (specific population or region) and examine its prevalence, the associated risk factors, and socio-economic and environmental determinants contributing to the problem. The findings of this study will offer valuable data to support targeted interventions aimed at improving nutrition and overall public health [23–29].

OBJECTIVES OF THE STUDY

- To evaluate mothers' knowledge about malnutrition in children under five years old.
- To assess their practices in preventing malnutrition.
- To examine the relationship between mothers' knowledge and practices in malnutrition prevention with selected demographic factors.

Findings

The first objective focused on assessing mothers' knowledge about malnutrition through a post-test. The analysis presents the frequency and percentage of mothers based on their post-test knowledge scores. The results showed that 50% of mothers had inadequate knowledge, 46–7% had moderately adequate knowledge, and only 3.3% had adequate knowledge. This suggests a general lack of awareness among mothers regarding malnutrition in young children, particularly in the selected community of Kanpur Nagar.

The second objective examined mothers' practices in preventing malnutrition. To assess this, structured questionnaires were provided to gather relevant information.

The third objective aimed to determine the relationship between mothers' knowledge and practices in malnutrition prevention with various demographic factors.

HYPOTHESES

- *H1:* There is a significant difference between mothers' knowledge and practice regarding the prevention of malnutrition in children under five. The findings indicate that:
  - *Knowledge Levels:* 3.3% of mothers had adequate knowledge, 46.7% had moderate knowledge, and 50% had inadequate knowledge.
  - *Practice Levels:* 43.3% of mothers had poor practices, 30% had average practices, and 26.7% had good practices in preventing malnutrition.
- *H2:* To determine the relationship between knowledge and practice with selected demographic factors, statistical analysis was conducted. Since the calculated value was higher than the table value, the null hypothesis was rejected, and the research hypothesis was accepted, confirming a significant association.

REVIEW OF LITERATURE

Literature review is a crucial step in the nursing research process. It helps build on existing knowledge, ensuring that findings from previous studies contribute to ongoing research and advancements in the field. In review and literature, the researcher's analysis existing knowledge before dividing into a new study and when making Judgment about application of new knowledge in nursing practice Literature review is defined as a broad comprehensive, in depth, systematic critique and synthesis scholarly publication, unpublished, print and online material, audio visual materials and personal communication.

- A cross-sectional study was conducted on 276 children among children under five-year by random sampling technique. The prevalence of underweight was found to be 51.81% whereas 18.12% were severe underweight 46.74% were severe stunting [30].
- A study was conducted on 64 mothers under five years who were selected as non-probably convenient sampling techniques mothers having 10~20% knowledge before STP and after giving knowledge mothers having 36% knowledge regarding malnutrition [31].
- A descriptive study was conducted on 94 samples by simple random technique data that were collected by interview method (36, 46%) literate mothers having little bit knowledge about malnutrition and its prevention the mother who is illiterate having less knowledge in compared to educated mothers [32].
- a study was conducted on 259,627 children less than five years the data was collected by bivariate and regression techniques the prevalence of stunting and underweight children was significantly higher poor households accounts for about 40% of stunted and underweight overall ,60% of stunted and 56% of underweight children had illiterate mothers [33].
- A descriptive study was conducted on 40 mothers by simple random technique data collected by interview method. A majority group of participants (57.5%) belong to nuclear families and majority of mother (43.54%) have continued breast feeding till 6 months to 1 year out of 40 mothers 10 having good knowledge regarding breastfeeding and malnutrition [34].
- a descriptive study was conducted on 41 women's regarding malnutrition and its prevention in rural area by simple random and data is collected by interview method 81.7% of responders believed that lack of education is main reason for malnutrition while 74.4% of responders believed that lack of resources is most common cause of malnutrition [35].
- A descriptive study was conducted on 45 mothers of under five years by quantitative research approach and by using simple random technique before STP mothers having 30% knowledge and after giving knowledge mothers knowledge increase 68.4% about the malnutrition and its prevention [36].
- A descriptive study was conducted on 100 mothers by random sample technique. The data were collected by interview method 45.36% of mothers have knowledge about malnutrition 43.44% mothers knew about causes and sign and symptoms 42% have good knowledge about diarrhea management [37].
- A descriptive study was conducted among five-year-old children. Convenience sampling techniques were used in the sample selection; data was collected by interview method 56% other were given the information on malnutrition 58% parents having moderately adequate knowledge 86% have positive attitude [38].
- A descriptive study was conducted on 100 mothers by using convenient sampling techniques and using interview methods used for data collection. About 56% mothers were given information about malnutrition 46% mothers were got information from health workers while some parents had some knowledge [39].

RESEARCH METHODOLOGY

Research methodology refers to the design, plan, or strategy that guides a study, outlining the steps to be followed. It ensures a systematic approach to data collection, logical organization, and accurate analysis and interpretation of data. Research methodology is a way to systemically solve the research problem. The rationale for choice of research approach, the tool, the setting, the sampling technique, the pilot, the data collection and the plan of data analysis are included in this chapter.

- This chapter outlines the research methodology used in the study, including the research approach, study design, setting, sample, data collection techniques, tool description, and pilot study. It provides a structured framework for gathering empirical data relevant to the research problem.

RESEARCH DESIGN

- This study utilized descriptive research design.
- The design was chosen to assess the knowledge and practices of mothers of children under five regarding malnutrition prevention in a selected community area of Kanpur Nagar.

RESEARCH APPROACH

- A quantitative approach was used to assess the knowledge and practices of mothers of children under five regarding specific aspects of malnutrition prevention in Maksudabad.

RESEARCH SETTING

- The setting refers to the physical location where the study takes place. This study was conducted in Maksudabad, Kanpur Nagar.

POPULATION

- Population refers to the entire group of individuals relevant to a research study. In this study, the target population includes mothers in Maksudabad, Kanpur Nagar.
- *SAMPLE:* A sample refers to a smaller manageable version of larger group.
- The sample of the study includes mothers who is present in Maksudabad, Kanpur Nagar.

DEVELOPMENT OF TOOLS

The tools were developed by investigators to assess the and practice regarding prevention of malnutrition among parents of under five year children at maksudabad Kanpur nagar.

DESCRIPTION OF THE TOOLS

The Tools Consisted of Three Sections

- *Section A:* Demographic variable of mothers. the Demographic data consisted of base line information of parents at Maksudabad regarding their age, gender, education, types of family, monthly income, religion.
- *Section B:* Consists of a questionnaire structured regarding knowledge of malnutrition.
- *Section C:* Consists of a practice checklist regarding selected aspects of malnutrition.

SCORING PROCEDURE KNOWLEDGE

- 0–7 inadequate knowledge.
- 8–14 moderate knowledge.
- 15–20 adequate knowledge.

PRACTICE

- 0–4 poor practice.
- 5–7 average practice.
- 8–10 good practice.

CONTENT VALIDITY

Three nursing experts and two medical experts evaluated the tool for content validity. Based on their suggestions and recommendations, necessary modifications were made. After validation by experts, the tool was reviewed in English to ensure language accuracy.

RELIABILITY

The test-retest method was used to assess the reliability of the structured questionnaire and checklist. The reliability value (r = 8.0) indicated a satisfactory level of consistency.

PILOT STUDY

A pilot study was conducted in Maksudabad, Kanpur Nagar over a one-week period, involving available mothers from the area. Their knowledge and practices regarding malnutrition prevention in children under five were assessed using a knowledge questionnaire and a practice checklist. The pilot study was carried out in the same manner as the final study to test its feasibility and practicality.

DATA COLLECTION PROCEDURE

Data was collected using a knowledge questionnaire to assess the knowledge of mothers in Maksudabad, Kanpur. A structured questionnaire was given to the mothers as part of the planned data collection process.

PLAN FOR DATA ANALYSIS

After data collection, the information was organized, tabulated, summarized, and analyzed. The analysis was conducted based on the study objectives using descriptive and inferential statistics. Data analysis included frequency and percentage, mean, standard deviation, chi-square test, and paired "t" test to evaluate the effectiveness of the structured teaching program on menstrual hygiene.

PROTECTION OF HUMAN RIGHTS

The research proposal was approved by the dissertation committee before conducting the pilot study. Permission was obtained from the Principal of Chandni College of Nursing and the Gram Pradhan of Maksudabad. Informed consent was taken from each participant before data collection. Participants were assured of confidentiality, and their rights were respected throughout the study.

PERCENTAGE DISTRIBUTION OF DEMOGRAPHIC VARIABLES

Age of Mother

The age distribution of mothers showed that 30% were between 21–25 years, 46–7% were between 26–30 years, 13–3% were between 31–35 years, and 10% were above 35 years. This indicates that most mothers were in the 26–30 years age group (Figure 1).

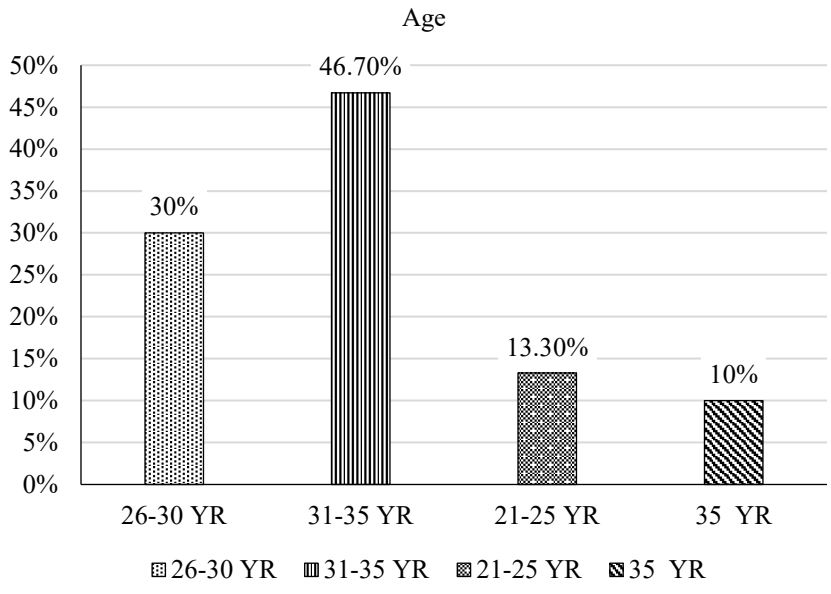

Figure 1. Bar diagram implicating Percentage wise distribution of mothers according to their age.

Type of Family

The family type distribution of mothers showed that 80% belonged to nuclear families, while the remaining 20% were from joint families (Figure 2).

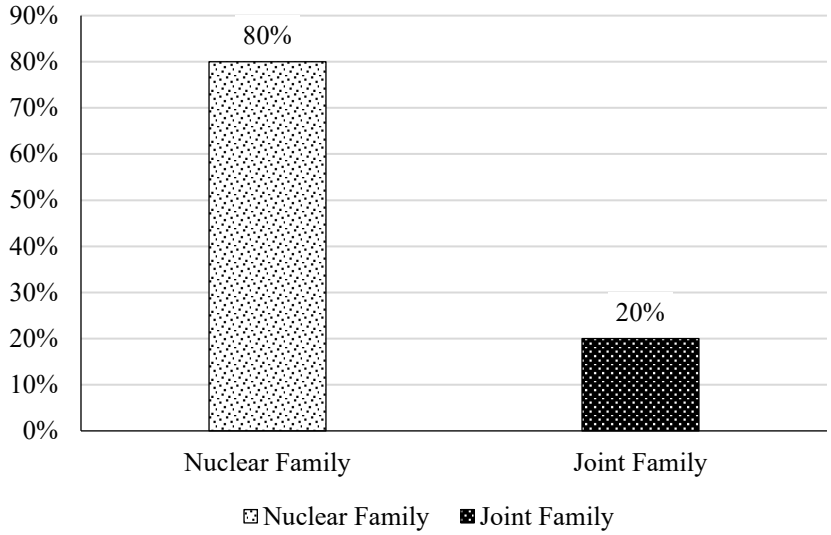

Figure 2. Bar diagram implicating Percentage wise distribution of mothers according to their Type of family.

Religion

The religion-wise distribution of mothers indicated that 100% of them were Hindu (Figure 3).

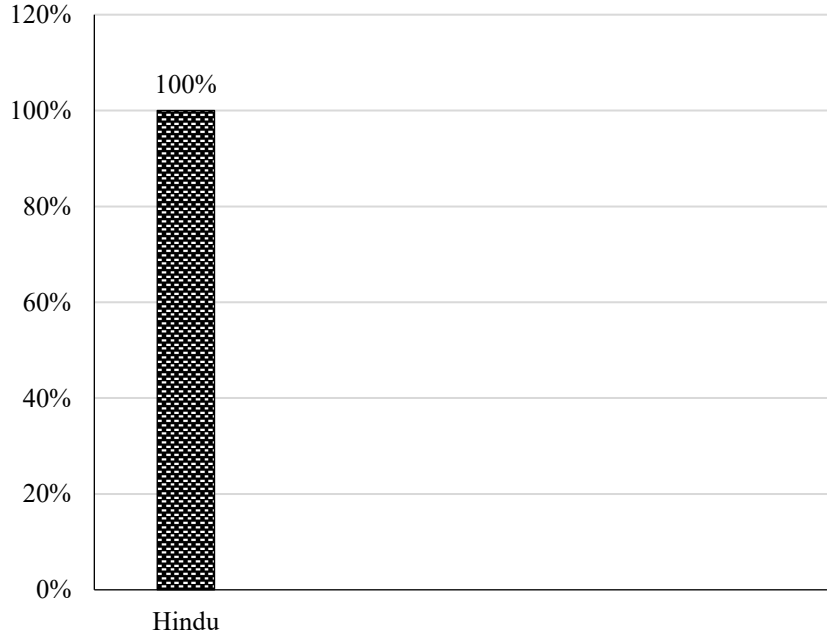

Figure 3. Bar diagram implicating Percentage wise distribution of mothers according to their religion.

Education

The education-wise distribution of mothers showed that 30% were illiterate, 16.7% had completed primary school, 33.3% had studied up to high school, and the remaining 20.5% were graduates or had higher education (Figure 4).

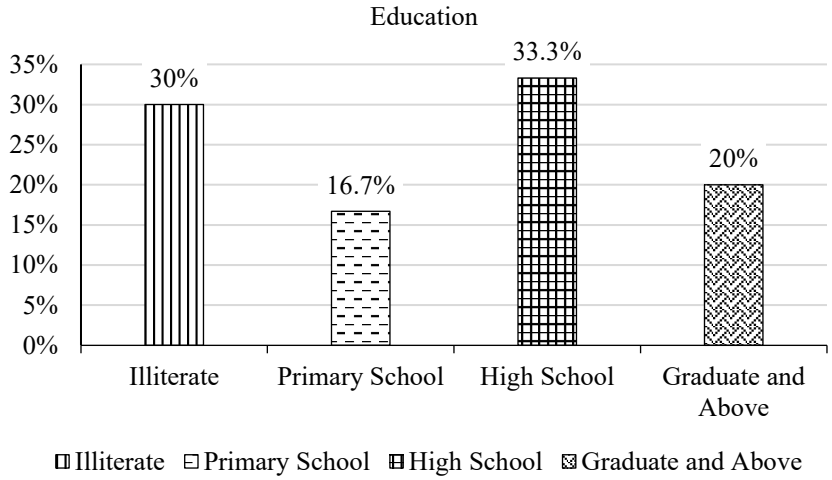

Figure 4. Bar diagram implicating Percentage wise distribution of mothers according to their education.

Occupation

The occupation-wise distribution of mothers showed that 13.3% were government employees, while the remaining 86.7% were housewives (Figure 5).

Figure 5. Bar diagram implicating Percentage wise distribution of mothers according to their occupation.

Monthly Income

The income-wise distribution of mothers showed that 30% had a monthly income of less than ₹10,000, while the remaining 70% had a family income between ₹10,000 and ₹20,000 (Figure 6).

Type of Diet

The dietary distribution of mothers showed that 50% were vegetarian, while the remaining 50% were non-vegetarian (Figure 7).

Source of Information Regarding Malnutrition

The source of information distribution showed that 100% of mothers received information about malnutrition from other sources (Figure 8).

Section: B

From the above table it was found overall mean knowledge score of mothers was 7.73, the mean percentage 25.7% with standard deviation 3.03 and median 3 (Table 1).

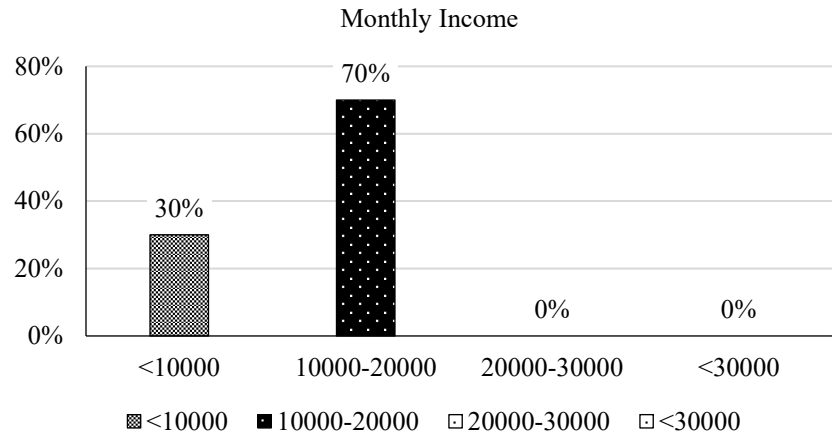

Figure 6. Bar diagram implicating Percentage wise distribution of mothers according to their monthly income.

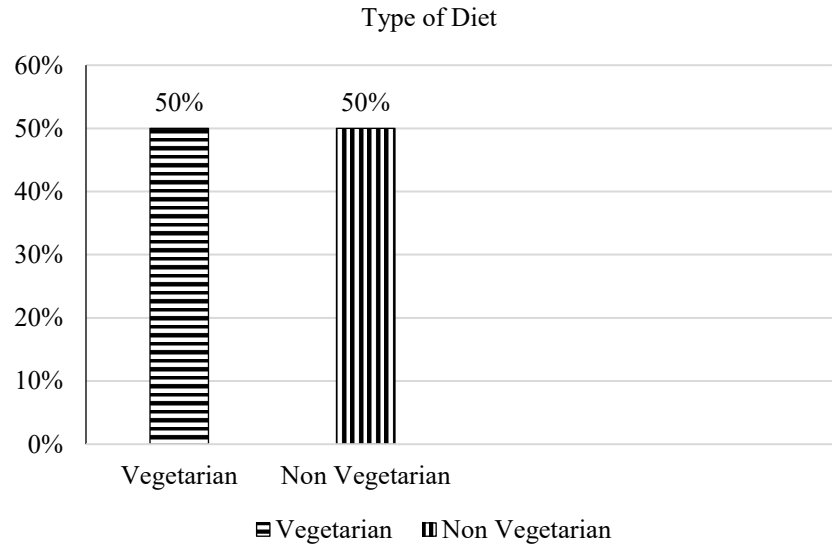

Figure 7. Bar diagram implicating Percentage wise distribution of mothers according to their Type of diet.

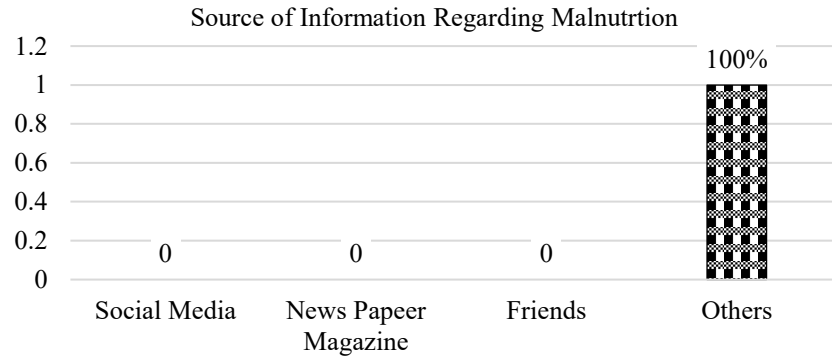

Figure 8. Bar diagram implicating Percentage wise distribution of mothers according to them source of information regarding malnutrition.

Figure 9 illustrates the mean, median, and standard deviation of the knowledge scores of mothers. The mean knowledge score was 7.73, with a mean percentage of 25.7%, a median of 7.50, and a standard deviation of 3.03. This graphical representation highlights the distribution of scores, showing variability and central tendency in mothers' knowledge levels.

Section: C

Percentage wise distribution of subjects according to their knowledge level reveals that majority of subjects (50%) were having inadequate level of knowledge and (46.7%) were having moderate level of knowledge. The remaining subjects (3.3%) were having adequate level of knowledge (Table 2).

Table 1. Mean standard deviation and median according to knowledge score of mothers.

Knowledge	Mean	Mean Percentage	Median	Standard Deviation
Score	7.73	25.7%	7.50	3.03

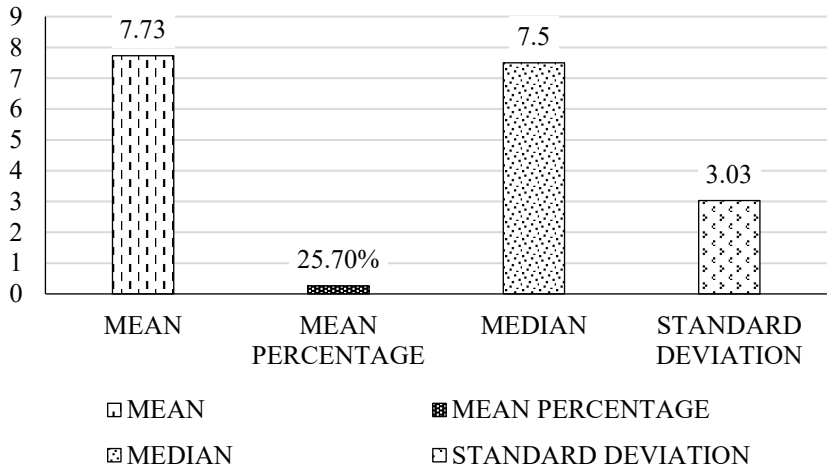

Figure 9. Mean, median, and standard deviation according to knowledge score of others.

Table 2. Knowledge level of mothers.

S.N.	Knowledge Level	Frequency	Percentage
1	Inadequate	15	50%
2	Moderate	14	46.7%
3	Adequate	1	3.3%

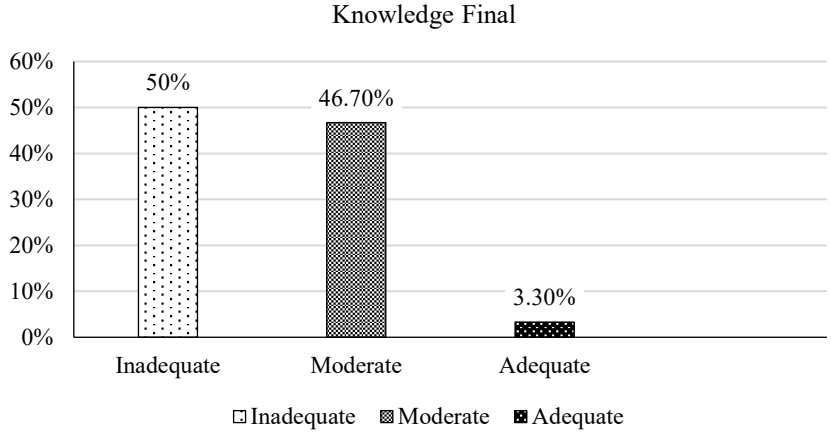

Figure 10. Knowledge level of mothers.

Figure 10 represents the distribution of mothers' knowledge levels. Most mothers (50%) demonstrated an inadequate level of knowledge, while 46.7% had a moderate level. Only 3.3% of mothers exhibited an adequate level of knowledge. This visual representation highlights the need for targeted educational interventions to improve knowledge levels among mothers.

Section: D

Percentage wise distribution of subjects according to their practice levels reveals that majority of subjects (43.3%) were having poor level of practice and (30%) were having average level of practice. The remaining subjects (26.7%) were having good level of practice (Table 3).

Figure 11 illustrates the practice levels of mothers. Most participants (43.3%) demonstrated a poor level of practice, while 30% exhibited an average level. Only 26.7% of mothers had a good level of practice. This distribution suggests the need for targeted interventions to enhance maternal practices, ensuring better health outcomes.

Table 3. Practice level of mothers.

S.N.	Practice Level	Frequency	Percentage
1	Poor	13	43.3%
2	Average	9	30%
3	Good	8	26.7%

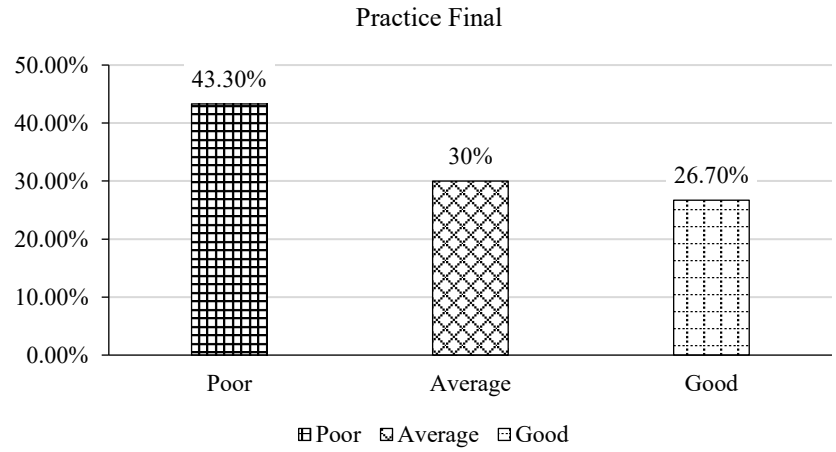

Figure 11. Distribution of Mothers' Practice Levels.

Analysis The Association of Demographic Variables of Mothers Regarding Prevention of Malnutrition

Table 4 presents the association between various demographic variables of mothers, and their post-test knowledge scores on malnutrition prevention. The analysis was conducted using the chi-square test to determine the significance of the relationships. The results indicate that variables, such as age, type of family, religion, education level, occupation, monthly income, and type of diet did not show a statistically significant association with knowledge scores ($p < 0.05$, NS). However, the source of information regarding malnutrition was found to have a significant association with knowledge scores ($p < 0.05$, S*). This suggests that awareness programs and information dissemination through reliable sources play a crucial role in improving maternal knowledge about malnutrition prevention.

These Values Are Not Significant

Age ($\chi^2_{cal} = 2.288$ is less than $\chi^2_{tab} = 7.81$, so it is not significant. The type of family ($\chi^2_{cal} = 1.39$ is less than $\chi^2_{tab} = 3.84$, so it is not significant. Religion ($\chi^2_{cal} = 0.0$ is less than $\chi^2_{tab} = 3.84$, so it is not significant. Education, ($\chi^2_{cal} = 5.880$ is less than $\chi^2_{tab} = 7.81$, so it is not significant. Occupation, ($\chi^2_{cal} = 1.92$ is less

than $\chi^2_{tab} = 3.84$, so it is not significant. Age of menarche ($\chi^2_{cal} = 1.170$ is less than $\chi^2_{tab} = 4.30$, so it is not significant. Monthly income ($\chi^2_{cal} = 1.693$ is less than $\chi^2_{tab} = 3.84$, so it is not significant.

Table 4. Association between demographic variables of mothers and post-test knowledge scores regarding malnutrition prevention.

Demographic Variable	Post-Test Knowledge Score		Chi-Square	P Value	df	Table Value
	<8 Median	*>8 Median*				
Age						
a) 21–25Yr	0	0	2.288	p < 0.05NS	3	7.81
b) 26–30Yr	0	0				
c) 31–35Yr	2	2				
d) <35Yr	3	0				
Type of family						
a) Nuclear	14	10	.139	p < 0.05NS	1	3.84
b) Joint	4	2				
c) Extended	0	0				
Religion						
a) Hindu	18	12	0.0	P < 0.05NS		
b) Muslim	0	0				
c) Sikh	0	0				
d) Christian	0	0				
Education						
a) Illiterate	7	2	5.880	P <0.05NS	3	7.81
b) Primary School	4	1				
c) High School	3	7				
d) >Graduate	4	2				
Occupation						
a) Housewife	16	10	.192	P < 0.05NS	1	3.84
b) Self-employee	0	0				
c) Gov. employee	2	2				
Monthly Income						
a) >10000	7	2	1.693	P < 0.05NS	1	3.84
b) 10000–20000	11	10				
c) 20000–30000	0	0				
d) <35000	0	0				
Type of Diet						
a) Vegetarian	8	7	.556	P < 0.05 NS	1	3.84
b) Non-vegetarian	10	5				
Source of Information Regarding Malnutrition						
a) Social media	0	0	0.0	p < 0.05S**		
b) Newspaper/ magazine	0	0				
c) Friends	0	0				
d) Others	18	12				

*Note: *NS – No Significant, **S – Significant.*

These Values Are Significant

Source of information regarding malnutrition ($\chi^2_{cal} = 8.734$ is less than $\chi^2_{tab} = 4.30$, so it is significant.). The above table shows demographic variables of Age, Type of family, Religion, Education, Occupation, Monthly income, Type of diet, Source of information regarding malnutrition.

CONCLUSIONS

The study was conducted on 30 mothers using a simple random sampling technique to assess their knowledge and practices regarding malnutrition prevention. The findings were analyzed in relation to the study's objectives, hypotheses, and previous research findings.

The results highlight the importance of a descriptive study in understanding mothers' awareness and practices related to malnutrition. The study effectively demonstrated that many mothers lacked adequate knowledge, emphasizing the need for educational interventions to improve awareness and preventive measures. Strengthening nutritional education programs can help reduce malnutrition rates and promote better child health and development.

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