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ASSESSMENT OF KNOWLEDGE REGARDING COMPLEMENTARY FEEDING AMONG B.SC. NURSING STUDENTS IN KOTA, RAJASTHAN

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ABSTRACT

Introduction: Complementary feeding is an essential aspect of infant nutrition that involves the introduction of semi-solid or solid foods alongside breastfeeding to meet the growing nutritional needs of the infant. This study aimed to assess the knowledge of B.Sc. Nursing students in Kota, Rajasthan, regarding complementary feeding practices. **Methods:** A descriptive survey approach was employed with a non-experimental, cross-sectional design. The sample included 70 nursing students from selected colleges in Kota. Data were collected through a validated structured questionnaire, and analysis was performed using descriptive and inferential statistics, including the Chi-square test to identify associations between knowledge levels and socio-demographic variables. **Result:** The results revealed that 62.85% of students had inadequate knowledge of complementary feeding practices, with only 14.28% demonstrating adequate knowledge. Significant associations were found between knowledge levels and variables such as age, type of family, monthly family income, and previous sources of information. Students from joint families and higher-income households exhibited better understanding. **Conclusion:** In conclusion, the findings highlight the critical need for targeted educational interventions to improve nursing students' knowledge of complementary feeding. Enhancing curricula to include more comprehensive training in this area could lead to better counseling and educational outreach by future healthcare providers, potentially reducing infant malnutrition rates in the region.

KEYWORDS: complementary feeding, B.Sc. nursing students, infant nutrition, knowledge assessment, malnutrition, educational intervention, Kota, Rajasthan.

INTRODUCTION

Complementary feeding is a critical aspect of infant nutrition, involving the introduction of additional foods and liquids alongside breastfeeding to meet the growing nutritional needs of the infant. The World Health Organization (WHO) and UNICEF recommend exclusive breastfeeding for the first six months of life, followed by the introduction of complementary foods while continuing breastfeeding up to two years or beyond.[1]

In India, the challenges surrounding infant nutrition are particularly pronounced. Despite efforts to improve maternal and child health, malnutrition remains a significant public health issue. Complementary feeding refers to the process of introducing semi-solid or solid foods to an infant's diet while continuing breastfeeding. Complementary feeding is essential for providing the additional nutrients required for the infant's continued growth, development, and overall health.[2]

The importance of complementary feeding cannot be overstated, particularly in the context of reducing neonatal mortality and improving child health outcomes. Inadequate or inappropriate complementary feeding practices are a significant contributor to malnutrition, which in turn is a leading cause of morbidity and mortality in children under five years of age.[3] Delays in introducing complementary foods or introducing inappropriate foods can lead to severe acute malnutrition, which is a significant risk factor for neonatal mortality.[4] Studies have shown that timely and appropriate complementary feeding practices significantly improve nutritional status, which directly correlates with lower rates of neonatal and infant mortality. (Singh & Dunkwal, 2020).[5]

Nursing students, as future healthcare providers, they are in a unique position to influence and improve feeding practices through education and community outreach. Knowledge among nursing students about the timing, types of complementary foods, and the correct methods of feeding is essential for them to effectively counsel mothers and caregivers.[6] A study focusing on the knowledge of nursing students regarding neonatal care found that those with better training were more effective in promoting appropriate feeding practices, thereby contributing to the reduction of neonatal mortality (Eltyeb et al., 2023).[7] Therefore, enhancing the curriculum for nursing students with comprehensive training on complementary feeding and neonatal care is critical. For instance, a study in Jaipur revealed that nearly 38% of mothers were unaware of the appropriate time to introduce complementary foods, leading to poor nutritional outcomes for their children (Nagar & Talikoti, 2022).[8] This study aims to evaluate the knowledge of complementary feeding among B.Sc. Nursing students in Kota, Rajasthan, and to develop an educational booklet that could serve as a valuable resource in enhancing their understanding and practices.

METHODOLOGY

Research Approach: This study used a descriptive survey approach to assess the knowledge of B.Sc. Nursing part III students regarding complementary feeding.

Research Design: A non-experimental, cross-sectional design was employed, focusing on evaluating and describing the knowledge levels of the nursing students without manipulating any variables.

Setting and Population: The study was conducted at selected colleges of nursing in Kota, Rajasthan. The population included B.Sc. Nursing part III students.

Sample Size and Sampling Technique: A total of 70 students were selected using purposive sampling, ensuring participants who were available and willing to participate.

Data Collection Tools: A structured knowledge-based questionnaire was used to collect data on students' understanding of complementary feeding. The tool was validated by experts and had a reliability score of 0.73.

Data Analysis

Data were analyzed using descriptive statistics (mean, standard deviation) and inferential statistics (Chi-square test) to assess knowledge levels and identify associations with socio-demographic variables.

RESULT

Table 1: Frequency and Percentage Distribution of Samples Based on Demographic Variables.

Demographic Variables	Categories	Frequency (n=70)	Percentage (%)
Age (in years)	Below 20 years	7	10.00
	20-25 years	63	90.00
Gender	Male	35	50.00
	Female	35	50.00
Religion	Hindu	53	75.71
	Muslim	15	21.42
	Christian	2	2.85
Type of Family	Joint family	28	40.00
	Nuclear family	42	60.00
Monthly Family Income	Less than ₹5,000	2	2.85
	₹5,000 - ₹10,000	21	30.00
	₹10,001 - ₹15,000	13	18.57
	More than ₹15,000	34	48.57
Previous Sources of Information	Yes	49	70.00
	No	21	30.00
Dietary Pattern	Vegetarian	50	71.42
	Non-vegetarian	14	20.00
	Eggetarian	6	8.57

Table 2: Frequency and Percentage Distribution of Knowledge Scores Among B.Sc. Nursing Part III Students Regarding Complementary Feeding.

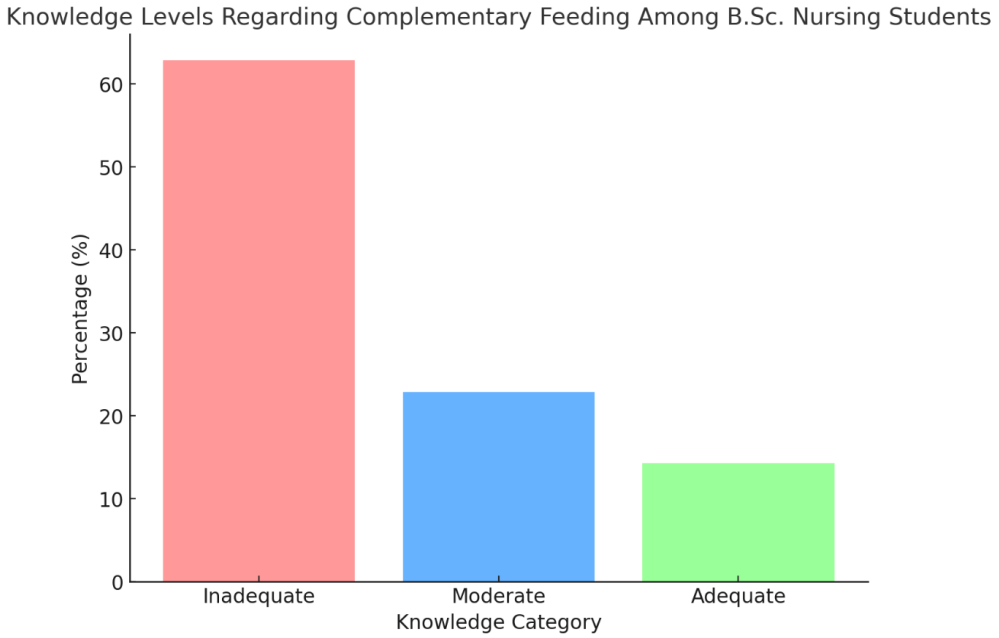
Knowledge Level	Frequency (n=70)	Percentage (%)
Inadequate (< 50%)	44	62.85
Moderately Adequate (50-74%)	16	22.85
Adequate (> 75%)	10	14.28

Table 3: Mean and Standard Deviation of Knowledge Scores by Content Area.

Content Area	No. of Items	Max. Score	Mean	Standard Deviation (SD)
General Introduction of Complementary Feeding	12	12	5.94	1.822
Preparation of Complementary Feeding	8	8	4.31	1.167
Frequency of Complementary Feeding	1	1	0.47	0.514
Miscellaneous Questions on Complementary Feeding	9	9	5.35	1.090
Overall Knowledge Score	**30**	**30**	**16.08**	**4.115**

Table 4: Chi-square Test Showing the Association Between Knowledge Scores and Selected Socio-demographic Variables.

Socio-demographic Variables	df	Chi-Square ($\chi 2$)	p-value	Inference
Age in Years	1	7.7136	0.034	Significant
Gender	1	0.0889	0.67	Not Significant
Religion	2	0.9514	0.12	Not Significant
Type of Family	1	21.2389	0.021	Significant
Monthly Family Income	3	15.1542	0.043	Significant
Previous Source of Information	1	4.7093	0.032	Significant
Dietary Pattern	2	0.3666	0.078	Not Significant



DISCUSSION

In our study, the knowledge of B.Sc. Nursing students in Kota, Rajasthan, regarding complementary feeding was found to be largely inadequate. Specifically, **62.85%** of the students scored below 50% in knowledge assessments, indicating a significant gap in their understanding of complementary feeding practices. Only **14.28%** of the students demonstrated adequate knowledge.

A study conducted in **Bangladesh** assessed nurses' knowledge on complementary feeding and found that **63.1%** of the nurses had a good understanding, but a significant portion was unaware of key aspects, such as the correct duration of complementary feeding (Simi et al., 2022).[10] This contrasts with our findings, where a much higher percentage of nursing students had poor knowledge. Similarly, a study in **Oman** revealed that **73%** of nurses lacked knowledge about WHO guidelines on complementary feeding. Only **27%** were aware of the recommended age to introduce complementary foods (Mahrouqi, 2019).[11] This aligns with the knowledge gaps found in our study, suggesting that this is a widespread issue among healthcare workers.

In **Greater Noida, India**, a study assessing the effectiveness of a teaching program found that **85%** of B.Sc. Nursing students gained good knowledge after the intervention (Mahato et al., 2021).[12] This demonstrates that targeted educational interventions can significantly

improve knowledge, contrasting with the inadequate levels observed in our study prior to intervention. A study in **Karnataka, India**, compared the knowledge of mothers and nurses, revealing that even healthcare professionals had significant gaps in understanding. Despite nurses performing better than mothers, there was still a need for further education, similar to the findings in our study (Mohan et al., 2023).[13] In **Indonesia conducted a study by**, Fahmida et al., 2015 a community-based intervention study demonstrated that promoting optimized complementary feeding recommendations led to improvements in maternal knowledge and children's nutrient intake.[14] However, gaps in nutrient density persisted despite the knowledge gains. This highlights the ongoing challenge of translating knowledge into effective practice, a theme that resonates with our study.

Our study found significant associations between socio-demographic factors and knowledge levels. Age, family type, monthly family income, and previous sources of information were strongly linked to students' understanding of complementary feeding. For example, students from joint families and higher-income households displayed better knowledge, suggesting that socio-economic and familial support structures play a key role in educational outcomes.

In **Bangladesh**, it was found that nurses' knowledge varied based on their exposure to educational resources, suggesting that socio-economic factors and access to information play a crucial role in shaping knowledge (Simi et al., 2022).[10] This is consistent with our findings where previous sources of information were significantly associated with knowledge levels. The study in **Pune, India**, also found that socio-economic factors like education and income significantly impacted mothers' knowledge about complementary feeding (Podder et al., 2018).[15] This supports the associations found in our study between family income and knowledge.

Our study's findings on the inadequate knowledge of nursing students regarding complementary feeding are supported by global literature, which reveals similar knowledge gaps among healthcare providers and caregivers. However, targeted educational interventions have been shown to significantly improve knowledge and practices. The associations between socio-demographic factors and knowledge highlight the importance of considering socio-economic and familial contexts when designing educational interventions. Overall, the need for enhanced education in complementary feeding remains a consistent theme across various settings and populations.

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