

Evaluation of Maternal Nutritional Knowledge, Attitudes, and Practices for Children Aged 2-5 Years in Salem District: A Cross-Sectional Study

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Abstract

Purpose: This study aims to identify and improve maternal nutritional knowledge, attitudes, and practices for children aged 2-5 years in Salem District, Tamil Nadu, India. The results will be valuable for educating mothers about their children's nutritional needs and developing healthy eating patterns.

Design and Methods: An analytical cross-sectional study was conducted from December 2016 to March 2017 in Salem, Tamil Nadu. 700 children aged 2-5 years were selected using cluster sampling from different Anganwadi centers. Data on maternal nutritional knowledge, attitudes, and practices were collected using a questionnaire.

Results & Conclusion: Mothers demonstrated good nutritional knowledge, but their attitudes and practices fell short of expectations. Maternal nutrition knowledge is crucial for developing healthy individuals. Knowledge areas included awareness of breakfast importance, effects of consuming bakery foods and sugary products, water intake, and balanced packed lunches. Maternal attitudes encompassed ensuring children eat at the right time and understanding the impact of family income on food selection. Some contradictions between knowledge, attitudes, and practices were observed, which can be addressed by enhancing maternal nutrition education.

Keywords: Awareness, Maternal Nutritional Knowledge, Nutrition, Health, Attitude, Practice

Introduction

Proper eating habits are developed between ages 2-5 years when children are exposed to various foods. Mothers play a crucial role in developing the right eating habits, which contribute to a strong and healthy body in the future.

Nutritional knowledge is vital for leading a healthy life. Developing mothers' nutritional knowledge, practices, and attitudes can result in economic growth and a healthier society [1]. Waisbord [2] applied behavioral studies to child survival programming, explaining behavior in terms of knowledge, practices, and attitudes [3]. Nutritional knowledge is essential for achieving a healthy, disease-free lifestyle [4].

A Malaysian study demonstrated that children's knowledge, attitudes, and practices improved after an intervention program [5]. Enhancing children's nutritional practices and attitudes can lead to a food-conscious public and healthier individuals [6]. Multiple studies suggest that maternal knowledge of nutrition and foods is the most critical factor in developing proper eating habits and food choices [7-10].

This study aimed to identify the level of knowledge, attitudes, and practices of mothers with children aged 2-5 years in Anganwadi Centers in Salem District, India. The findings can help develop appropriate eating habits for children, promoting a healthy and happy life while addressing current eating patterns that may lead to life-threatening complications and health issues.

Methodology

Study Design and Setting

This analytical cross-sectional study was conducted from December 2016 to March 2017 in rural areas of Salem District, Tamil Nadu, India. The study focused on Anganwadi centers, which are government-sponsored child-care and mother-care

centers in India.

Sample Size and Sampling Technique

A sample size of 700 mother-child dyads was determined using the formula: $n = Z^2 p(1-p)/d^2$ Where: n = sample size $Z = 1.96$ (for 95% confidence level) p = expected proportion (0.5, for maximum variability) d = precision (0.05)

To account for potential non-responses and incomplete data, the sample size was increased by 10%, resulting in a final sample of 700 participants. Cluster sampling was employed to select 25 Anganwadi centers from the district. From each center, 28 mother-child dyads were randomly selected, ensuring proportional representation.

Data Collection Instrument

A validated questionnaire was used for data collection, meeting psychometric validity and reliability standards for community nutrition studies [11]. Mothers of the sampled children were given the questionnaire and instructed on how to complete it. Both qualitative and quantitative research methods were employed. Trained research assistants administered the questionnaire through face-to-face interviews. Informed consent was obtained from all participants prior to data collection.

Statistical Analysis

The collected data were analyzed using SPSS software. Descriptive statistics were performed to identify mothers' nutritional knowledge, attitudes, and practices.

Results

Children's health and nutrition are crucial for developing a strong, disease-free society. This study aimed to identify the impact of family socioeconomic status on children's nutritional status. The results indicate that undernutrition remains prevalent among children aged 2-5 years, with socioeconomic background being a major contributing factor.

Maternal Attitudes Towards Breakfast Consumption

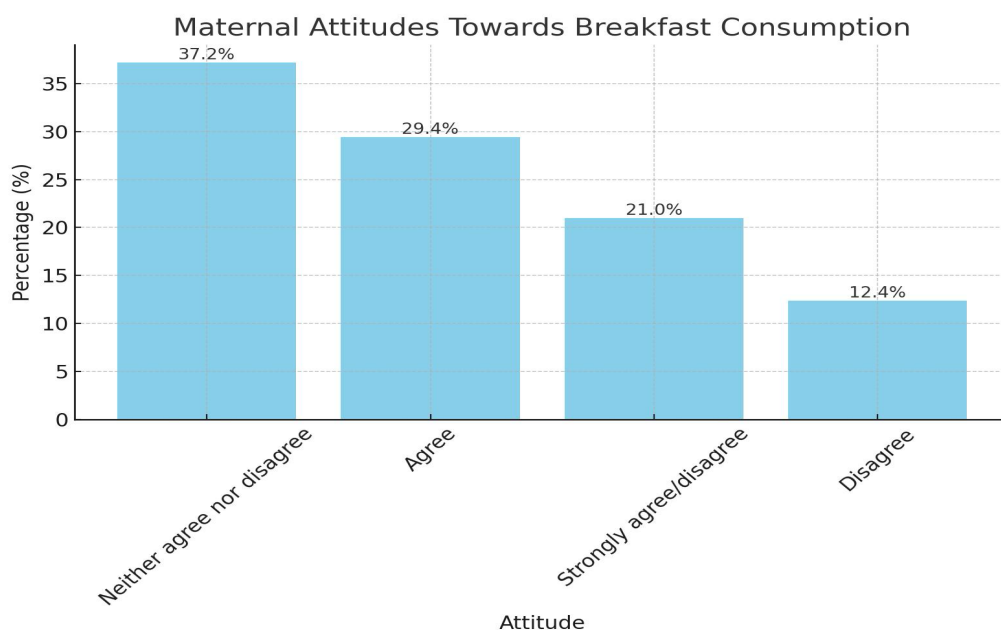


Figure 1: Distribution of Maternal Attitudes Towards Breakfast Consumption Among Children Aged 2-5 Years

Figure 1 illustrates mothers' attitudes towards their children's breakfast consumption. 37.2% of mothers neither agreed nor disagreed about ensuring their child eats breakfast on time. 29.4% agreed that regular breakfast is necessary, while 21% either strongly agreed or strongly disagreed. Only 12.4% disagreed about the importance of regular breakfast consumption. A study in Japan [16] found that maternal attitudes and preferences influence children's food habits, including breakfast intake.

Impact of Family Income on Food Selection

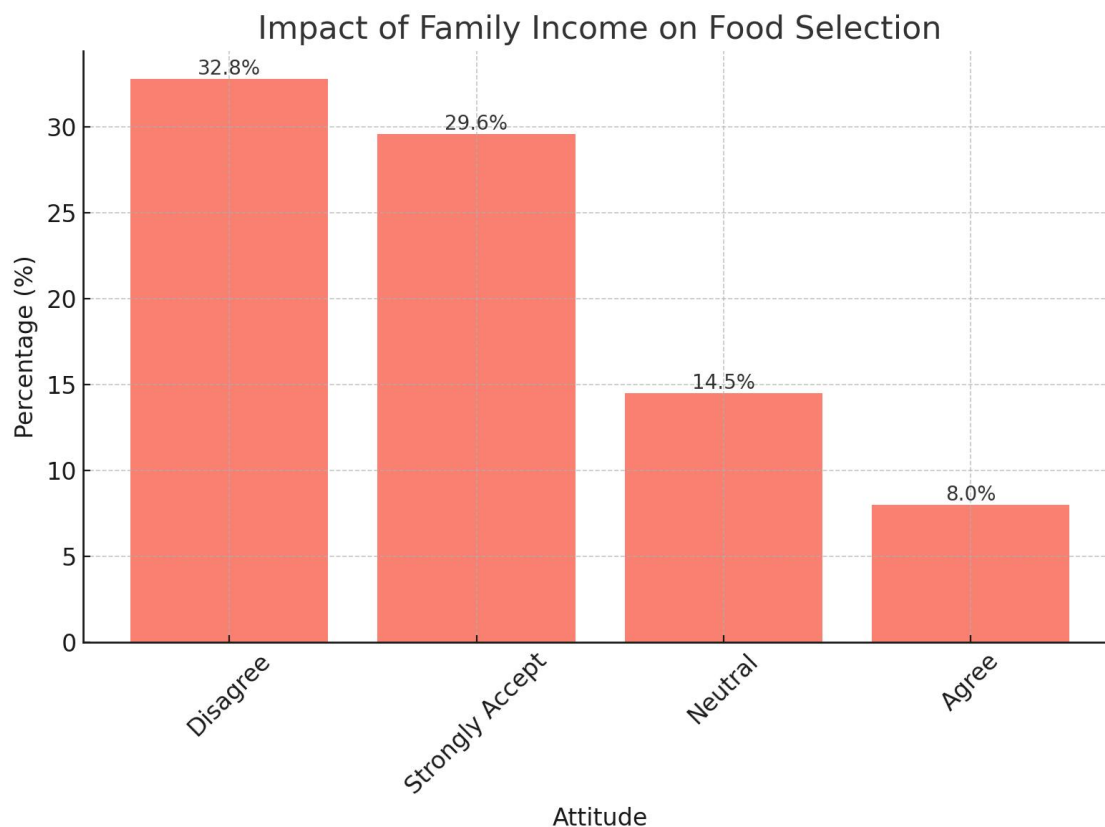


Figure 2: Maternal Perception on the Impact of Family Income on Food Selection for Children Aged 2-5 Years

Figure 2 shows mothers' attitudes regarding the relationship between family income and food selection. 32.8% of mothers disagreed that family income directly impacts food selection, while 29.6% strongly accepted this relationship. About 14-15% of mothers were neutral on the issue, and 8% agreed that food selection is influenced by family income. Another study [12] demonstrated that a family's socioeconomic status influences food selection. However, when mothers are particular about food selection, their children are less likely to become overweight or obese.

Water Intake Practices

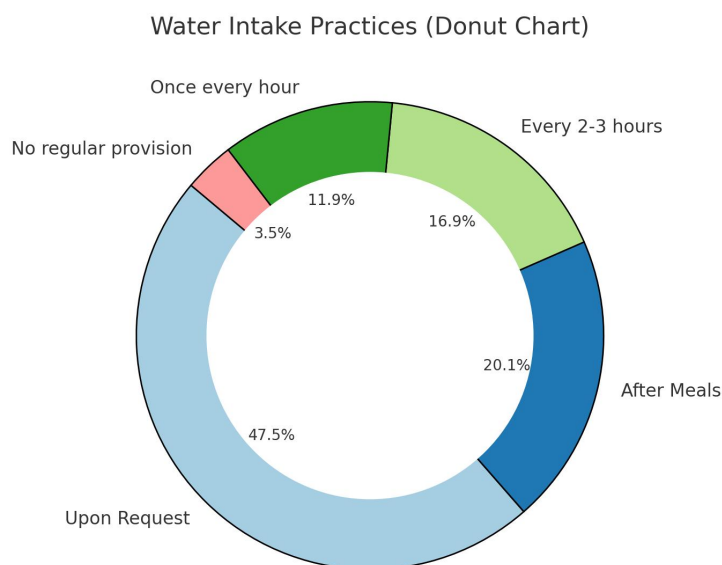


Figure 3: Water Intake Practices for Children Aged 2-5 Years by Their Mothers (Donut Chart)

Figure 3 depicts mothers' practices regarding their children's water intake. 47.5% of mothers give water to children upon request, 20.1% provide water after meals, 16.9% offer water every 2-3 hours, and 11.9% give water once every hour. Only 3.5% of mothers do not practice regular water provision.

Snack Provision Practices

Table 1: Maternal practices for providing different types of snacks

S.NO	TYPE OF SNACKS	FREQUENCY	PERCENTAGE
1.	Home made	279	32.7
2.	Petty shop	131	15.3
3.	Bakery & sweets	206	24.1
4.	Roadside shops	118	13.9

Table 1 details mothers' practices in providing various types of snacks. 32.7% of mothers provide homemade snacks, 24.1% offer bakery items and sweets, 15.3% purchase snacks from petty shops, and 13.9% provide snacks from roadside shops and chaat items. According to another study [13], mothers are primarily responsible for selecting snacks for younger children. Proper snack selection can help prevent overweight or obesity in the future. Mothers with lower educational levels are more influenced by unhealthy snacks from petty shops, while those from higher economic backgrounds may choose expensive, high-calorie junk foods that can lead to obesity.

Discussion

This cross-sectional study provides valuable insights into the nutritional knowledge, attitudes, and practices (KAP) of mothers with children aged 2-5 years in Salem District, Tamil Nadu. Our findings reveal several key areas that warrant further discussion and comparison with existing literature. Regarding breakfast consumption, 37.2% of mothers were ambivalent about ensuring their child eats breakfast regularly, while 29.4% agreed on its importance. This level of awareness is lower than that reported by Arora et al. in their study of urban Indian mothers, where 58% recognized the importance of daily breakfast [12]. The discrepancy might be attributed to differences in urban versus rural settings and varying levels of nutritional education. Our study found that 32.8% of mothers disagreed that family income directly impacts food selection, while 29.6% strongly accepted this relationship. This perception differs from the results of Vereecken et al., who found that 68% of mothers in their European study acknowledged the influence of income on food choices [13]. The lower percentage in our study might indicate a lack of awareness about the relationship between socioeconomic status and dietary quality among rural Indian mothers. Regarding water intake practices, 47.5% of mothers provide water to children only upon request, which is concerning given the importance of regular hydration. This percentage is higher than the 32% reported by Patel et al. in their study of urban Indian mothers [14], suggesting that rural mothers may be less aware of the need for proactive hydration practices.

The preference for homemade snacks (32.7%) among mothers in our study is encouraging, albeit lower than the 48% reported by Rathi et al. in their study of urban Indian mothers [15]. This difference might be attributed to the greater availability of convenience foods in urban areas, making the choice of homemade snacks more deliberate among urban mothers. However, the high percentage of mothers providing bakery items and sweets (24.1%) is concerning. This figure is similar to the 26% reported by Singh et al. in their pan-Indian study [16], suggesting that the preference for these potentially unhealthy snacks is a widespread issue that needs addressing across various Indian settings. The discrepancies between our findings and those of other studies, particularly in urban settings, highlight the need for tailored nutritional interventions in rural areas. Lower awareness levels regarding breakfast importance, income-nutrition relationships, and hydration practices in our study population suggest that nutritional education programs should be designed to address the specific knowledge gaps identified in rural communities. Future research should consider longitudinal designs to track changes in KAP over time and their impact on children's nutritional status, as well as qualitative methods to gain deeper insights into the cultural and socioeconomic factors influencing maternal KAP in rural settings.

Conclusion

This study reveals significant gaps between maternal nutritional knowledge and its practical application for children aged 2-5 years in Salem District, Tamil Nadu. Key areas of concern include breakfast consumption, hydration practices, and snack choices. The findings highlight the need for targeted interventions that address specific challenges faced by rural communities. To improve child nutrition, it is crucial to develop and implement tailored educational programs that enhance mothers' nutritional knowledge and focus on translating this knowledge into positive practices. By addressing these gaps through context-specific strategies, we can work towards improving child nutrition and long-term health outcomes in rural Tamil Nadu and similar settings across India.

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