RESEARCH PAPER

A study to assess the knowledge on growth monitoring among mothers of under five children in rural areas in puducherry.

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ABSTRACT

Background: Growth monitoring is a key component of child health services that facilities the early detection of growth faltering, malnutrition, and other nutritional problems among under five children. Mothers are the primary care givers and play a crucial role in ensuring regular growth monitoring. Assessing tier knowledge is essential for planning effective health education interventions.

Methods: A Community based descriptive study was conducts among 76 mothers of under five children residing in selected rural areas of Puducherry. Participants were selected using a purposive sampling technique. Data were collected using a structures questionnaire consisting of demographic characteristics and knowledge related items on growth monitoring. Statistical analysis was performed using SPSS version 25. Descriptive statistics (frequency, percentage, mean, and standard deviation) and the chi square test were used for data analysis.

Results: Of the 76 participants, 49 (64.5%) demonstrated moderate knowledge, while 27 (35.5%) had adequate knowledge. None of the mothers shoed inadequate knowledge. The mean knowledge score was 13.66_+ 2.79. Monthly family income and source of health information were significantly associated with knowledge regarding growth monitoring ($p<0.05$), whereas other demographic variables showed no significant association.

Conclusion: Most mothers had a moderate level oof knowledge regarding growth monitoring. Strengthening health education through primary health centres and Anganwadi workers may improve maternal awareness and promote timely growth monitoring, contributing to better health and nutritional outcomes among under five children.

Keywords: Growth monitoring, maternal knowledge, under five children, rural mothers, child health, Puducherry.

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INTRODUCTION

The first five years of life are a critical period of physical growth, cognitive development, and overall health. During this stage, children are particularly vulnerable to malnutrition, infections, and development disorders, making regular growth assessment an essential component pf child health care. Growth monitoring enables the early identification of growth faltering and nutritional deficiencies, facilitating timely intervention to improve health outcomes. Mothers are the primary caregivers of under five children and play a central role in ensuring appropriate nutrition, immunization, hygiene and healthcare utilization. Their knowledge of growth monitoring, including regular weight assessment, interpretation of growth charts, and recognition of abnormal growth patterns, is essential for preventing malnutrition and promoting healthy child development. Maternal education has been consistently associated with improved child health indicators and increased utilization of preventive health services. Despite the availability of growth monitoring services through primary health care facilities, inadequate maternal awareness remains a significant challenge, particularly in rural communities. Limited knowledge of growth charts, poor access to health information and socio-economic barrier often delay the recognition of growth problems and appropriate healthcare seeking. Community based health education and counselling have been shown to child nutrition and growth monitoring practices. Globally under five mortality and malnutrition continue to be major public health concerns, particularly in low- and middle-income countries. Although India has made considerable progress in reducing child mortality, undernutrition and growth faltering remain prevalent, especially in rural

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population. Similar challenges have been reported in Puducherry, where gaps in maternal knowledge may affect the effective utilization of growth monitoring services. Assessing maternal knowledge is essential for identifying educational needs and planning targeted community health interventions. Therefore, the present study was undertaken to assess the knowledge regarding growth monitoring among mothers of rural areas of Puducherry and determine its association with selected demographic variables.

METHODS

The Study design and setting are community based descriptive cross-sectional study was conducted among mothers of under five children residing in selected rural areas of Puducherry. The study participants of the population comprised mothers with at least one child ages below five years. Mothers who understood Tamil and were available during data collection were included in the study. Healthcare professional and mothers unavailable during the study period were excluded. The sample size and sampling technique in the total of 76 mothers participated in the study. Participants were selected using a non-probability purposive sampling technique. The study instrument of the data was collected using a structed questionnaire developed after an extensive review of the literature and expert consultation. The instruments consisted of two sections. section A collected socio demographic information, including age, education, occupation, religion, number of children, child's age, family type, monthly income, birth order, and sources of health information. Section B comprised 20 multiple choice questions assessing knowledge regarding monitoring,

including its importance, growth chart interpretation, identification of growth faltering, maternal responsibilities, and recommended frequency of growth assessment. Each correct response was awarded one mark, while incorrect responses received zero marks. Knowledge scores were categorized ass inadequate (0-7), moderate (8-14), and adequate (15-20). Variability and reliability of the questionnaire was validated by three nursing experts. Reliability was established using the test-retest method, yielding a reliability co efficient of r=0.87, indicating good reliability. Formal administrative permission and ethical approval were obtained before the commencement of the study. Eligible mothers were identified with the assistance of local health workers. Written informed consent was obtained from all participant before data collection. Face to face interviews were conducted using the structed questionnaire, with each interview lasting approximately 20-30 minutes. Confidentiality and anonymity were maintained throughout the study. The statical analysis data were entered into Microsoft excel and analysed using SPSS version 25. Desccriptive statistics including frequency, percentage, mean, and standard deviation, were used to summarize data. The chi square test was applied to determine the association between knowledge regarding growth monitoring and selected demographic variables. A p value less than 0.05 was considered statically significant.

RESULT

Frequency and percentage distribution of selected socio demographic characteristics.

Table 1 shows a total of 76 mothers of under five children participated in the study. More than half (57.9%) were aged 21 -25 years, while 32.9% were aged 26-30 years. Most participant had completed higher secondary education (26.3%), followed by secondary education (23.7%). Half of the mothers (50.0%) were housewives, and 97.4% belonged t the Hindu religion. Slightly more than half (51.3%) lived in joint families. The largest proportion (38.2%) had a monthly family income of 20,001-30,000. Most mothers (55.3%) had one under-five child, and 48.7% had a youngest child age 1-2 years. Health centres/primary health centres were the main sources of health information for 50.0% of participants, followed by Anganwadi workers (35.5%) most children (57.9%) were first born.

Table 4.1: Frequency and Percentage Distribution of socio-demographic variables among Mothers of Under-Five Children (N = 76)

Variable	Category	Frequency (N)	Percentage (%)
Age of the mother	21–25 years	44	57.9%
	26–30 years	25	32.9%
	31–35 years	6	7.9%
	Above 35 years	1	1.3%
Educational Status	No formal education	5	6.6%
	Primary school	17	22.4%
	Secondary school	18	23.7%
	Higher secondary	20	26.3%
	Graduate and above	16	21.1%
Occupation of the mother	Housewife	38	50.0%
	Agricultural labourer	3	3.9%
	Daily wage worker	15	19.7%
	Government employee	1	1.3%
	Private employee	7	9.2%
	Self-employed	12	15.8%

Religion	Hindu	74	97.4%
	Muslim	1	1.3%
	Christian	1	1.3%
Type of Family	Nuclear	37	48.7%
	Joint	39	51.3%
Monthly Income (INR)	Below 10,000	4	5.3%
	10,001–20,000	25	32.9%
	20,001–30,000	29	38.2%
	30,001–40,000	17	22.4%
	Above 40,000	1	1.3%
Number of Under-Five Children	One	42	55.3%
	Two	34	44.7%
Age of Youngest Child (Years)	<1 year	9	11.8%
	1–2 years	37	48.7%
	3–4 years	25	32.9%
	4–5 years	5	6.6%
Source of Health Information	Anganwadi worker	27	35.5%
	Health centre / PHC	38	50.0%
	Mass media	10	13.2%
	Friends/relatives	1	1.3%
Birth Order of Child	First	44	57.9%
	Second	32	42.1%

Table 4.2: Frequency and Percentage Distribution of level of knowledge on growth monitoring among mothers of under-five children in selected rural areas at Puducherry (N = 76)

Knowledge Level	Frequency	Percentage
Inadequate Knowledge	0	0.0%
Moderate Knowledge	49	64.5%
Adequate Knowledge	27	35.5%

The table 4.2 shows the level of knowledge on growth monitoring among mothers of under-five children. None of the mothers had inadequate knowledge 0(0.0%). The majority of mothers had moderate knowledge 49(64.5%), while 27(35.5%) had adequate knowledge.

Table 4.3: Mean and Standard Deviation of level of knowledge on growth monitoring among mothers of under-five children in selected rural areas at Puducherry (N = 76)

Variable	Mean	Standard Deviation
Knowledge Score	13.66	2.793

This table 4.3 shows the mean and standard deviation of the knowledge score on growth monitoring among mothers of under-five children. The mean knowledge score was found to be 13.66 with a standard deviation of 2.793

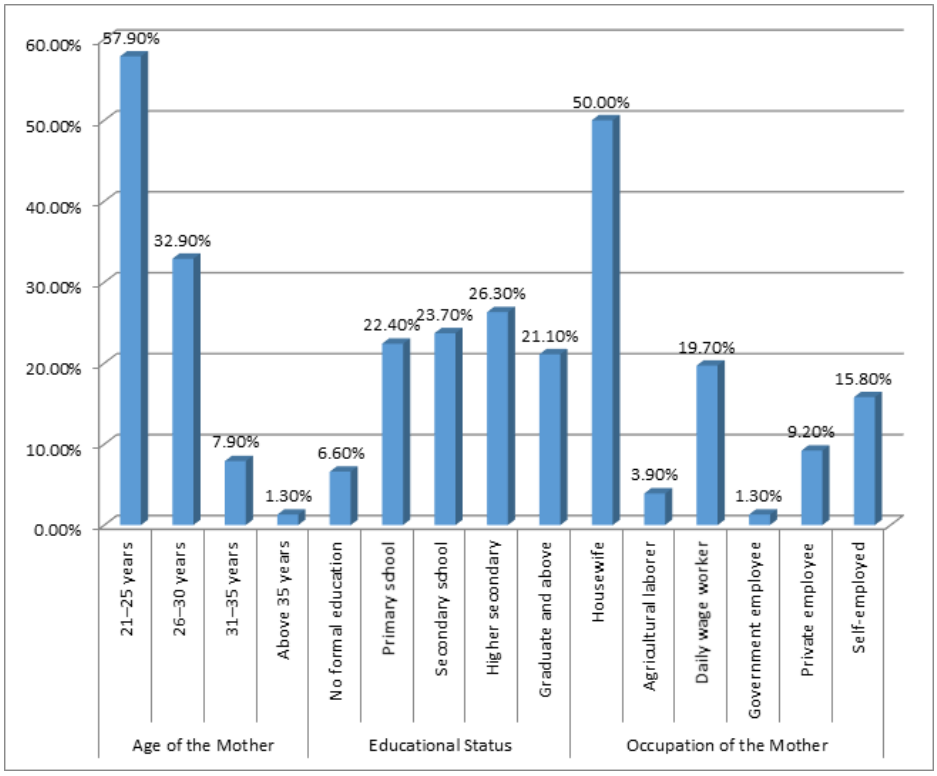


Figure no: 4.1

Knowledge regarding growth monitoring among the 76 mothers, 49 (64.5%) demonstrated moderate knowledge regarding growth monitoring, whereas 27 (35.5%) had adequate knowledge. None of the participants had inadequate knowledge. The mean knowledge score was 13.66-+2.79, indicating an overall moderate level of knowledge. Association between knowledge and socio demographic variables of the Chi square analysis showed that monthly family none (X2= 12.358, P=0.015) and health information (X2=10.725,p=0.013) were significantly associated with knowledge regarding growth monitoring ($p<0.05$). No significant association was observed between knowledge and age, educational status, occupation, under five, age of the youngest child, or birth order ($p>0.05$). no statically significant association was observed between knowledge and age, educational status, occupation, religion, type of family, number of under five children, age of the youngest child, or birth order ($p>0.05$).

DISCUSSION

The present study assessed knowledge regarding growth monitoring among mothers of under five children in selected rural areas of Puducherry. Most participants demonstrated a moderate level of knowledge (64.5%) while 35.5% had adequate knowledge, and none had inadequate knowledge. The mean knowledge score was 13.66+_2.79, indicating that although mothers possessed a basic understanding of growth monitoring, important knowledge gaps remain. These findings are consistent with previous studies conducted in different regions of India, which also reported that the majority of mothers had moderate regarding growth monitoring. Similar studies have highlighted the positive impact of maternal education and community-based health education programmes on improving awareness of growth monitoring and child nutrition. the present study found that monthly family income and source of health information were significantly associated with maternal knowledge, suggestion that socio economic factors and access to reliable health information influence awareness regarding child growth monitoring. No significant association was observed between knowledge and maternal age, educational status, occupation, religion, family type, number of under five children, age of the youngest child or birth order. These findings support the need for targeted health education through primary health care services and community health workers.

CONCLUSION

The study concluded that most mothers of under five children had a moderate level of knowledge regarding growth monitoring. Strengthening community-based health education, particularly through primary health centres and Anganwadi workers, could improve maternal knowledge and promote early identification of growth faltering. Regular awareness programmes and counselling should be integrated into routine maternal and child health services to enhance child growth monitoring practices.

Limitations; The study was limited by its relatively small sample size and the use of the purposive sampling, which may limit the generalized of the findings. In addition, data were collected from selected rural areas of Puducherry over a short study period and were based on participants self-reported responses.

Recommendations: Community based educational interventions should be strengthened to improve mothers

knowledge regarding growth monitoring. Regular counselling during maternal and child health visits, increased involvement of Anganwadi workers and primary healthcare professionals, and wider dissemination of growth monitoring information are recommended. Future studies with larger , randomly selected samples across multiple setting are needed to validate and extend these findings.

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Ethical approval: The study was conducted after obtaining approval from the institutional ethics committee, and written informed consent was obtained from all participants before data collection.

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