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"A study to assess the growth and development of preschool children (age 3-4 years) attending Anganwadi in selected rural area of Haryana."

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ABSTRACT

Growth and development are critical indicators of health and well-being during early childhood, particularly in the preschool years when rapid physical and developmental changes occur. This study aimed to assess the growth and development of preschool children (3–4 years) attending Anganwadi centres in selected rural areas of Haryana, to determine the association between growth and development with selected demographic variables, and to identify the correlation between growth and developmental domains. A quantitative research approach with a descriptive survey design was adopted. The study sample comprised 150 preschool children aged 3–4 years, selected using a non-probability convenient sampling technique. Data were collected through a structured interview schedule administered to parents. Anthropometric measurements including height, weight, and mid-upper arm circumference (MUAC) were assessed using standard measurement tools. Data analysis was performed using descriptive and inferential statistics. The demographic profile revealed that the majority of children were aged 3.7–3.9 years (33.33%), male (59.3%), Hindu (75%), from nuclear families (46.7%), and belonged to families with moderate monthly income. Most fathers had secondary-level education (39.34%) and were private employees (34.66%), while the majority of mothers were homemakers (66.66%). Anthropometric assessment showed that 59.3% of children had average height, 72.7% had average weight, and 86.0% had average MUAC. Significant associations were observed between height and fathers' education and meal pattern; weight with child's age and family income; and MUAC with age, birth order, and family income. Developmental assessment revealed significant associations across gross motor, fine motor, self-care, cognitive, language, psychosocial, and psychosexual domains with variables such as age, parental education, occupation, and meal pattern. A positive correlation was identified between overall growth and developmental status of preschool children. The study highlights the influence of socio-demographic and nutritional factors on the growth and development of preschool children in rural settings, emphasizing the need for targeted interventions through Anganwadi services.

BACKGROUND OF THE STUDY

Early childhood is a critical period marked by rapid physical, cognitive, emotional, and social development, which lays the foundation for health and well-being throughout the life course. Growth and development are widely recognized as sensitive indicators of a child's overall health, nutritional status, and environmental influences. During the preschool years (3–4 years), children undergo significant changes in body composition, motor skills, language acquisition, and psychosocial behaviour, making this stage particularly important for timely assessment and intervention. Growth refers to measurable physical changes such as increases in height, weight, and body proportions, whereas development denotes the progressive

acquisition of functional skills including gross motor, fine motor, cognitive, language, self-care, and psychosocial abilities. Regular monitoring of growth and development enables early detection of malnutrition, growth faltering, and developmental delays. Early identification is crucial, as corrective measures are more effective, less costly, and associated with better long-term outcomes when implemented during early childhood rather than at later stages. In India, a substantial proportion of preschool children, particularly in rural areas, continue to face challenges related to undernutrition, inadequate dietary intake, poor socioeconomic conditions, and limited access to health and educational resources. The Integrated Child Development Services (ICDS) scheme, implemented through Anganwadi centres, plays a pivotal role in promoting child health by providing supplementary nutrition, growth monitoring, health education, and early childhood care services. Despite these efforts, variations in growth and developmental outcomes persist due to factors such as parental education, family income, dietary practices, birth order, and household environment. Rural areas of Haryana present unique demographic and socioeconomic characteristics that may influence child growth and development. Limited empirical evidence is available on the comprehensive assessment of both growth and developmental domains among preschool children attending Anganwadi centers in these settings. Therefore, assessing the growth and development of preschool children and examining their association with selected demographic variables is essential to identify existing gaps, guide targeted interventions, and strengthen Anganwadi-based child health services. This study was undertaken to generate evidence that may contribute to improving early childhood care, nutritional strategies, and developmental surveillance in rural communities.

INTRODUCTION

Early childhood is a crucial phase of human development, during which rapid physical growth and functional maturation occur. Growth and development during the preschool years serve as sensitive indicators of a child's nutritional status, health, and environmental influences. Growth refers to measurable physical changes such as increases in height, weight, and body proportions, whereas development encompasses the progressive acquisition of motor, cognitive, language, social, and self-care skills. Any deviation from normal growth and developmental patterns during this period may have long-term consequences on physical health, academic achievement, and psychosocial well-being.

In developing countries like India, preschool children remain vulnerable to malnutrition and developmental delays due to poverty, inadequate dietary intake, limited parental awareness, and suboptimal access to health services. Rural populations are particularly at risk because of socioeconomic disparities and restricted health infrastructure. The Integrated Child Development Services (ICDS) scheme, implemented through Anganwadi centres, aims to improve the nutritional and developmental status of children by providing supplementary nutrition, growth monitoring, immunization support, health education, and early childhood care. Despite the extensive coverage of Anganwadi services, undernutrition and developmental delays continue to be reported among preschool children, indicating the need for regular assessment and evidence-based interventions. Parental education, family income, dietary

practices, birth order, and family structure have been identified as important determinants of child growth and development. However, limited empirical data are available on the combined assessment of growth and developmental domains among preschool children attending Anganwadi centres in rural areas of Haryana. Therefore, the present study was undertaken to assess growth and development and to examine their association with selected demographic variables, thereby providing evidence to strengthen child health programmes and nursing practices in rural communities.

MATERIALS AND METHODS

A quantitative research approach with a descriptive survey design was adopted for the present study. The study was conducted among preschool children aged 3–4 years attending Anganwadi centres in selected rural areas of Haryana. A total of 150 preschool children were selected using a non-probability convenient sampling technique. Children who were enrolled in Anganwadi centres and whose parents were willing to participate were included in the study. Data were collected using a structured interview schedule administered to parents, which comprised three sections: demographic profile, assessment of growth, and assessment of development. Anthropometric measurements including height, weight, and mid-upper arm circumference were measured using an inch tape, weighing scale, and Shakir's tape, respectively, following standard procedures. Developmental assessment covered gross motor, fine motor, cognitive, language, self-care, psychosocial, and psychosexual domains. The tool was developed based on a review of literature, expert opinion, and standardized growth and developmental guidelines. A pilot study was conducted to assess the feasibility and reliability of the tool. Data collection was carried out in November 2025 after obtaining informed consent from parents. Ethical approval was obtained from the institutional ethics committee. The collected data were analysed using descriptive statistics (frequency, percentage, mean, and standard deviation) and inferential statistics (chi-square test and correlation analysis).

Table-1: Mean, median and standard deviation of height, weight and mid upper arm circumference of preschool children attending Anganwadi.

	Mean	**Median**	**Standard deviation**
Height	96.48	96.00	12.88
Weight	15.59	15.60	1.853
Mid-arm Circumference	12.88	12.90	.351

This data presented in Table showed that mean of height is 96.48, weight 15.59 and mid upper arm circumference is 12.88. Median of height is 96.00, weight 15.60 and mid upper arm circumference is 12.90 Standard deviation of height is 12.88, weight 1.853 and mid upper arm circumference is .351

Table-2: Mean, median and standard deviation of development of preschool children attending Anganwadi.

	Mean	Median	Std. Deviation
Below Average	96.48	96.00	2.642
Average	15.59	15.60	1.853
Above Average	12.88	12.90	.351

Table 2 describes the mean of Below Average 96.48, Average 15.59, Above Average 12.88. Median of Below Average 96.00. Average 15.60, Above Average 12.90. Standard deviation of Below Average 2.642, Average 1.853, Above Average .351 of preschool children attending Anganwadi. There is a correlation between growth and development of preschool children attending Anganwadi.

RESULTS

The demographic findings revealed that most children were aged between 3.7 and 3.9 years, and the majority were male. Most children belonged to nuclear families and had moderate monthly family income. A significant proportion of fathers had secondary-level education and were employed in the private sector, while most mothers were homemakers. Anthropometric assessment showed that 59.3% of children had average height, 72.7% had average weight, and 86.0% had average mid-upper arm circumference. However, 34.7% of children had below-average height and 14.0% had below-average mid-upper arm circumference. Developmental assessment indicated variable performance across different domains, with most children demonstrating age-appropriate gross motor, fine motor, cognitive, language, and psychosocial skills. Statistical analysis revealed significant associations between height and fathers' education and meal pattern; weight and age of the child and family income; and mid-upper arm circumference with age, birth order, and family income. Significant associations were also observed between developmental domains and selected demographic variables such as age, parental education, occupation, and dietary practices. Correlation analysis showed a positive relationship between growth and development of preschool children.

DISCUSSION

The findings of the present study indicate that while the majority of preschool children attending Anganwadi centres exhibited average growth and developmental status, a notable proportion showed evidence of growth faltering and suboptimal development. These findings are consistent with previous studies conducted in rural settings, which have reported persistent undernutrition and developmental delays among preschool children despite the availability of ICDS services. The significant association between growth parameters and parental education, family income, and meal pattern highlights the critical role of socioeconomic and nutritional factors in child health. Similarly, the association between developmental domains and

demographic variables underscores the importance of a stimulating home environment and parental involvement in early childhood development. The positive correlation between growth and development observed in this study supports the concept that physical growth and functional development are interrelated processes.

CONCLUSION

The study concludes that growth and development of preschool children are significantly influenced by demographic and nutritional factors. Regular monitoring, early identification of deviations, and strengthening of Anganwadi-based interventions are essential to promote optimal growth and holistic development among preschool children in rural areas.

RECOMMENDATIONS

Regular growth and developmental monitoring should be incorporated into routine Anganwadi services. Health education programmes for parents should focus on nutrition, feeding practices, and early stimulation. Similar studies with larger samples and comparative rural–urban designs are recommended.

NURSING IMPLICATIONS

The findings have implications for nursing practice, education, administration, and research. Nurses play a vital role in growth monitoring, parental education, early identification of developmental delays, and community-based child health promotion.

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