Nutritional Status And Development Of Under-Five Children In Jenu Kuruba Population

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Abstract:
The early years are the most significant years for human growth, development and learning for all children including those with special needs due to disability conditions. The study was conducted with an objective of to assess the nutrition status and development of under-five children. Experimental research design was used to test the effect of intervention programme. A cross-sectional study was conducted in Jenu Kururba Tribal Haadies of H.D Kote and Hunsuru Talukas of Mysore district to assess the relationship between maternal factors and nutritional status of children. A random sampling technique was used to recruit 1307 young children (birth to 5 years) and their mothers for the study. Self-structured questionnaire was used to elicit personal information of children and their mothers and WHO growth reference was used to grade the nutrition status of the children and Denver-II developmental assessment scale was used to assess the development of under-five children. The study revealed that among 1307 children, 54.25% were males, with 53.94% being second or later born. A significant portion (68.41%) of mothers lacked formal education, and 46.75% had an income below ₹5000 per month. The majority (78.57%) engaged in traditional occupations like honey gathering, with 54.48% of families earning less than ₹8000 monthly. Developmental delays were prevalent, with 50.88% showing gross motor delays and 68.86% facing personal-social delays, while 47.09% of children were severely underweight, indicating widespread malnutrition.

Keywords: *Nutrition status, development, delay*

Introduction

The Jenu Kuruba tribal community, a marginalized group in India, faces several socio-economic challenges that impact child health and development. Traditional livelihoods such as honey gathering and root and tuber collection provide limited economic stability, often resulting in inadequate nutrition and healthcare access (Sachdev, 2012). Furthermore, studies have shown that maternal education and employment status significantly influence child well-being, with lower maternal education levels associated with higher rates of malnutrition and developmental delays (Victora et al., 2010).

Early childhood is a crucial stage of life in terms of children's intellectual, emotional, physical, social development and ability to interact successfully with the world around them in early and later years of life. Nutrition plays a vital role, as inadequate nutrition during earl childhood years lead to malnutrition, growth retardation and poor mental health and holistic development among children (Prabhakar and Gangadhar in 2009). The early years are the most significant years for human growth, development and learning for all children including those with special needs due to disability conditions. Research in neurosciences has highlighted that this is the stage for rapid and extensive brain development. Environmental conditions during early years substantially affect the growth of children's neural pathways. Providing optimal stimulation at the right time is the key to the networking of brain cells, which shape the way individuals behave, think and learn for the rest of their lives. The multiple functions of the brain operate in a richly coordinated way and lead to the acquisition of skills and abilities in all areas of development (Early childhood education, NCERT). A home in which the child gets an opportunity to listen to good stories, play with verities of objects and play materials (Nayak and Pujar., 2019). Young children, spend most of their time in the home. Within the home, children have interactions. with the members of their family, availability and quality of resources for learning largely determine the nature of these interaction. Availability of stimulating play materials, toys and books within the home are critical indicators for the overall quality of home environment. The ecological system theory also views the child as developing within a complex system of relationships affected by multiple levels of surrounding environment, the inner most being the micro system involving the family and parents. Adults act as a role model by influencing their children's behaviour, personality and way of thinking. Hence, the present study is an attempt to focus on "Nutritional status and development of under-five children in Jenu Kuruba population" with the following objectives,

- To assess the development of under-five children.
- To assess the nutrition status

Methods

A community based cross sectional study was undertaken in Jenu Kuruba tribal areas of Mysore district. The self-prepared questionnaire was used to elicit the information regarding personal information of the children and their mothers. The investigator visited 57 Jenu Kuruba Haadis located in H.D Kote Hunsuru and Periapatna Taluks of Mysore district. A dyad sampling technique was used to recruit the children and their mothers for the study. On the whole, 1307 children were considered as respondents including both the genders (709 males and 598 females). The researcher recorded the anthropometric measurements of children such as length/height, weight, mid upper arm circumference, skin fold thickness. The anthropometric data were further used to calculate indices such as BMI-for-age, Height-for-age and Weight-for-age according to child growth reference of WHO. Denver development assessment scale was used to assess the children's development such as, gross motor, fine motor, language and personal social development.

Results and discussion

Table 1: Distribution of samples based on age, gender and birth order N=1307

Variables		No.	%
Gender	Males	709	54.25
	Females	598	45.75
Age	<1 year	120	9.18
	1+ years	412	31.52
	2+ years	323	24.71
	3+ years	261	19.96
	4+ years	191	14.61
Birth Order	1st born	602	46.06
	Second and later born	705	53.94

Table 1 indicated the distribution of respondents based on age, gender and birth order. Among 1307 children, more than half (54.25%) of them were males and rest of them were females (45.75%). About 31.52% of the children seen in the age group of 1+ years followed by 2+ years (24.71%), 3+ years (19.96%), 4+ years (14.61%) and 9.18% of the children were of one year of age. More than half (53.94%) of the children were second and later born and rest of them were first born (46.06%).

Table 2: Details about mothers N=1307

Details	No.	%
Mother's age		
18-21 years	673	51.49
≥22 years	634	48.51
Education		
Not educated	894	68.41
Primary	413	31.59
Working status		
Not-working/ Housewives	417	31.91
Working	890	68.09
Nature of occupation		
Daily wagers	608	46.52
Other (Cooks, cleaners)	282	21.57
Income in Rupees (Per month)		
<5000	611	46.75

≥5000	279	21.35

Table 2 reflects the detail information about the mothers. Regarding mothers' age, the findings indicated that 51.49% of mothers were in the age range of 18-21 years, while 48.51% were 22 years and above 22 years of age. According to education levels, majority of mothers (68.41%) were not literate and 31.59% had educated up to primary level. About 31.91% of mothers were housewives whereas 46.52% of mothers were engaged in daily wage works and 21.57% were involved in other occupations, such as cooks or cleaners. Most of them (46.75%) were getting Rupees below 5000/- per month whereas 21.35% of the mothers earning Rupees ≥5000/- per month.

Table 3: Family Background information of the children N=1307

Details		No.	%
Type of family	Nuclear	523	40.02
	Joint	463	35.42
	Extended	321	24.56
Size of the family	3-5 members	782	59.83
	6-8 members	525	40.18
Type of residence	Patrilocal	1307	100
Traditional language	Jenunudi	1307	100
Language known	Kannada	1307	100
Religion	Hindu	834	63.81
	Christian	473	36.19
Traditional occupation	Honey gathering	1027	78.57
	Gathering roots and tubers	280	21.43
Involvement in traditional occupation	Yes	1103	84.39
	No	204	15.61
Number of earning members	1-2 member	803	61.44
	3 members	504	38.56
Source of income	Daily wages	941	71.99
	Daily wages and agriculture	366	28.01
Family income	<8000	712	54.48
	8000-12000	595	45.52

Table 3 indicated family background information; it was observed that the community exhibited a diverse range of family structures. Nuclear families constituted 40.02% of the total, while Joint and Extended families accounted for 35.42% and 24.56% respectively. When considering family size, 59.83% of households comprised 3-5 members, with 40.18% having 6-8 members. This diversity in family size highlighted the Jenu Kuruba community varied household compositions. Regarding residence patterns, it was found that all families (100%) practiced the patrilocal system, showcasing a strong adherence to traditional customs within the community. The linguistic aspect revealed a complete proficiency in the traditional language, Jenunudi, with 100% of respondents reporting fluency. Additionally, all surveyed individuals (100%) were well-versed in Kannada, emphasizing the linguistic unity prevalent in the community. Religious demographics showed a majority practicing Hinduism (63.81%), while 36.19% identified as Christian, underscoring the religious diversity within the community. Economically, traditional occupations played a significant role. Honey gathering was the primary occupation for 78.57% of respondents, whereas 21.43% were engaged in Gathering roots and tubers. A substantial 84.39% of the population was involved in traditional occupations, highlighting the community's reliance on these practices for their livelihoods. In terms of the number of earning members per family, 61.44% had 1-2 earners, while 38.56% had 3 members contributing to the family income. Daily wages were the primary income source for 71.99% of households, with 28.01% combining daily wages with agriculture for their livelihoods. More than half (54.48%) of families reported an income of less than Rupees 8000, indicating a significant portion of the community facing financial challenges. In contrast, 45.52% fell within the Rupees 8000-12000 income per month.

Table 4: Development among under-five children N=1307

Aspects of developments	Normal		Delay		Total (%)
	No.	%	No.	%	
Gross motor	642	49.12	665	50.88	1307 (100)
Fine motor	563	43.08	744	56.92	1307 (100)
Language	498	38.11	809	61.89	1307 (100)
Personal social	407	31.14	900	68.86	1307 (100)

Table 4 provides a comprehensive overview of the developmental aspects among under-five children. Almost half of the children (49.12%) exhibited normal gross motor development, while 50.88% experienced delay. Fine motor skills, crucial for tasks such as grasping objects and hand-eye coordination, were found to be within the normal range for 43.08% of the children. The significant portion (56.92%) faced delays in fine motor development. Language skills are pivotal for communication and cognitive development. Nearly forty percent (38.11%) of the children displayed normal language development, whereas 61.89% faced delays. Personal social development, encompassing skills related to interacting with others and forming relationships, exhibited normal progression in 31.14% of the children. Alarmingly, 68.86% faced delays in this domain.

Table 5: Distribution of children based on anthropometric measurements

Anthropometric measurements	No.	%
Weight-for-age		
Normal	208	15.91
Mild	311	23.79
Moderate	412	31.52
Severe	376	28.77
Height-for-age		
Normal	198	15.15
Mild	213	16.30
Moderate	531	40.63
Severe	365	27.92
BMI		
Obese	23	1.77
Overweight	78	5.97
Normal	344	26.31
Mild underweight	178	20.6
Moderate underweight	278	32.25
Severe underweight	406	47.09

Table 5 presents a detailed distribution of children based on anthropometric measurements of under-fivers. According to weight-for-age, 15.91% of children have a normal weight for their age, a substantial portion faces malnutrition. Mild, moderate, and severe levels of underweight constituted by 23.79%, 31.52%, and 28.77% respectively. According to height-for-age, an indicator of stunted growth, showed that 15.15% of children have a normal height for their age. Mild, moderate, and severe levels of stunted growth represented by 16.30%, 40.63%, and 27.92% respectively. Only 1.77% are classified as obese, while 5.97% are overweight. A significant portion, 47.09%, falls into the category of severe underweight, indicating acute malnutrition. Mild and moderate underweight percentages were 20.6% and 32.25% respectively, demonstrating the prevalence of undernutrition among the studied children. The finding in line with study conducted by Pujar et al., 2016 reported that 23.9% of tribal children were suffering from Grade-III type of malnutrition followed by Grade-II and 43% of the tribal children were suffering from chronic energy deficiency.

Conclusion

The findings of this study underscore the pressing challenges faced by the Jenu Kuruba tribal community in ensuring optimal early childhood development. High rates of malnutrition, stunted growth, and developmental delays highlight the urgent need for targeted nutritional and health interventions. Socio-economic factors such as maternal education, household income, and traditional occupational practices play a significant role in determining child well-being. The study reveals that a considerable proportion of children exhibit delays in gross

motor, fine motor, language, and personal-social development, which can have long-term implications for their overall growth and cognitive abilities. Moreover, the prevalence of undernutrition, particularly severe underweight conditions, suggests an urgent requirement for community-based nutritional programs and healthcare services tailored to the needs of tribal populations. To address these challenges, it is essential to implement multi-sectoral strategies that focus on improving maternal literacy, increasing economic opportunities, and ensuring better access to healthcare and nutritional resources. Strengthening government policies and integrating culturally sensitive health interventions can significantly enhance child development outcomes within this community. Future research should explore sustainable models of intervention that effectively bridge the gap between traditional practices and modern healthcare approaches, fostering a holistic and inclusive developmental framework for under-five children in tribal areas.

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