

# A Comparative study on developmental pattern of children across the place of residence

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## ABSTRACT

The geographical location has an impact on child's development. The areas in which the child lives impact the domains of development. The exposure to different situation varies with the places, so the present study was planned to observe the differences among the children of different areas in their selected domains of development. The sample of the study comprises of 3 years of children age from the rural and urban areas of the state Uttarakhand and state Haryana of India. The children were assessed in physical and cognitive parameters and to assess the physical development of the children, the anthropometric measurements was used and for the cognitive development of the children Bayley scale of infant and toddler development was used. The data elucidated that there were no significant differences in almost all the physical parameters of the respondents of rural and urban areas. However, a significant difference was observed in cognitive development of children of state Haryana where to some extent the cognitive ability of urban children was better than those of the rural children.

**Keywords:** Physical, Cognitive, Rural, Urban

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## INTRODUCTION

The maximum of brain's development takes place in the early years of the childhood and it shapes their overall behaviour (Adrienne and Nelson 2013). Children learn and develop in conducive environment. According to Bioecological theory by Uri Bronfenbrenner the environment plays a very significant role in development of children. The child spend the maximum of the time with the parents and the immediate surroundings in which he/she lives, so each and every factor of the society has an impact on overall development of the child. The development depends on various factors, one of the eminent factor is the area in which the child is living (Ferguson et al 2013). Children are born ready and eager to explore their physical world. Jean Piaget's cognitive development theory focuses on exploring new world and based on that Gandy (2007) recommend that children begin developing their sense of place during early childhood. Equipped with inquisitiveness and active five senses, young children discover and manipulate materials in their environment to understand the world around them. The study suggested that low socio-economic status of rural children leads to an unhealthy lifestyle, which is directly related to an unhealthy diet, and to a high prevalence of overweight and obesity (Bella et al 2016). People live in different geographical areas: some lives in city or town or some in the countryside or the villages. Both the areas have their distinct features which make the individual living in these areas different from each other. The rearing and caring of the children in the rural area is different from the children of urban areas. The accessibility to better health services to urban area children has given the privilege over rural areas children. Discrepancies in child education between the urban and rural areas are so prevalent. The urban children grow faster than those in the rural areas (Nguyen et al 2013). On contrary, the studies also showed that the boys and girls in the rural areas were taller than their counterparts. Keeping all the things in mind the following study was planned.

### Objectives:

1. To assess the physical and cognitive development of the children.
2. To compare the physical and cognitive development of the children across place of residence.

## REVIEW OF LITERATURE

**Clementine et al. (2014)** in their study emphasized the nutritional status and growth of preschool children in Anambra State using vertical anthropometric measurements. A cross sectional survey research design was used for the study to collect sampled data of 1280 preschool children in Anambra state. These data were organized and tested with inferential

statistics of t-Test. The weights and heights were compared with the WHO/NCHS standards using graphs. The results showed that children aged 3-5 years plus in the urban areas indicated higher weight and height than those in the rural areas. These preschool children aged 3 - 5 years plus in both urban and rural locations had weights and heights that are higher than that of WHO/NCHS standards for their age. Based on the findings of the study, the researchers recommended that prevention of malnutrition should be given high priority in the implementation of the ongoing Primary Health Care programmes with particular attention paid to the rural population.

**Burchi (2012)** found that mother’s education play an important role in child’s development. One year of mother’s education increases their children’s height-for-age and weight-for-age z-scores by nearly 0.025 and 0.015. The presence of another literate household member has a significant, though limited, effect on child height while it has no influence on child weight which means the educational level of the family is directly proportional to the better nutritional status of the children. The study also showed that household wealth plays a central role in enhancing the nutritional status of the child. Family having more economic resources permits purchasing a larger amount and higher-quality food, access to health services when they are not free, and owning a house with a safe water system which leads to better nutritional health.

**Paciorek et al. (2013)** in their study revealed that urban children are taller and heavier than their rural counterparts in almost all low-income and middle-income countries which suggested that the place of residence has an impact on nutritional status of children.

**Choudhary et al. (2014)** conducted a study on relevance of mid arm circumference measurement among 13-60 months of children at urban field practice area of Alluri Sita Ramaraju academy of medical sciences, Eluru and found that out of 133 individuals, the prevalence of severe malnutrition among 13-60 months children was 7.5%; prevalence of mild to moderate malnutrition was 24%. Among the severe malnutrition individuals, 60% from labourer occupation. Classification of mid arm circumference of 2-5 years children compared with World Health Organization weight standards, 87.9% were shown as normal and 70% matching of results with severe malnutrition individuals.

### METHODOLOGY

**Locale of the study:** The study was conducted in the Uttarakhand and Haryana states due to easy accessibility.

**Selection of area:** The sample was collected from the Anganwadis of urban and rural areas of two states namely Haryana and Uttarakhand. To draw the rural sample selected villages were approached as sample size did not meet from a single village then the adjacent villages having anganwadis were added to meet the sample size. From the selected villages, all anganwadis centers were considered in order to avoid age variations. Similarly, for urban sample the anganwadis were approached from both the selected areas of both the states.

**Selection of sample:** The sample comprises of children of age 3 ( $\pm 15$  days). To draw rural sample from both the states, a list of children of anganwadis was prepared and 50 children were selected randomly, similarly to draw urban sample from both the states, a list of balwadis /urban anganwadis was prepared and irrespective of their gender 50 children were selected randomly. Thus, the total numbers of the samples were 200 children for the present study.

**Measurement of Variables:** A self-structured questionnaire was prepared to gather all the socio-personal information of the respondents. To measure the physical development of the children the anthropometric measurement was used. The cognitive development of the children was measured by the Bayley scale of infant and toddler development (2006).

### RESULT AND DISCUSSION

**Table 1: Comparison of physical and cognitive development of children of Uttarakhand across the place of residence**

Variables	Uttarakhand		
	n=100		
	Rural	Urban	Z –test
Height (cm)	87.30 $\pm$ 5.42	89.26 $\pm$ 5.04	1.90
Weight (kg)	12.34 $\pm$ 2.26	13.30 $\pm$ 2.20	2.08*
Mid arm circumferences (cm)	10.68 $\pm$ 2.01	11.75 $\pm$ 2.29	2.54*

Head circumferences(cm)	44.68±3.04	44.86±2.53	0.33
Chest circumferences(cm)	40.05±2.62	40.39±2.63	0.68
Cognitive development	156 ± 6.33	157 ± 6.50	0.78

\*Significant at 5% level of significance

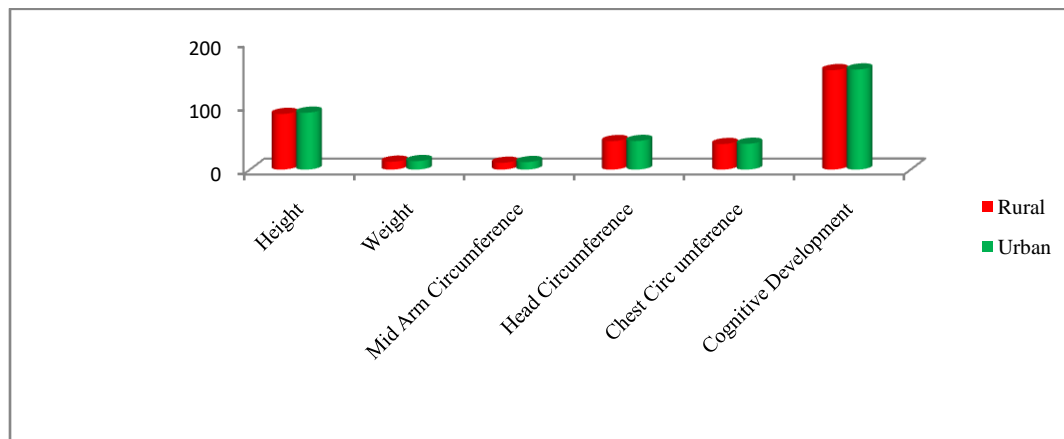


Table 1 unveils comparison of physical and cognitive development of Uttarakhand children across place of residence. Statistically significant differences were observed in weight of the children across place of residence ( $Z=2.08$ ) at 0.05 level of significance. Further mean scores depicted that urban children ( $M= 13.30$ ) had more weight than rural children ( $M=12.34$ ).

Comparison of arm circumferences against place of residence data revealed that significant differences was observed in arm circumferences against place of residence ( $Z=2.54$ ) at 0.05 level of significance. Mean scores depicted that urban area children had more arm circumference than rural area children. Statistically non significant differences were observed in height of children against place of residence. It means children were of almost similar height in both rural and urban area.

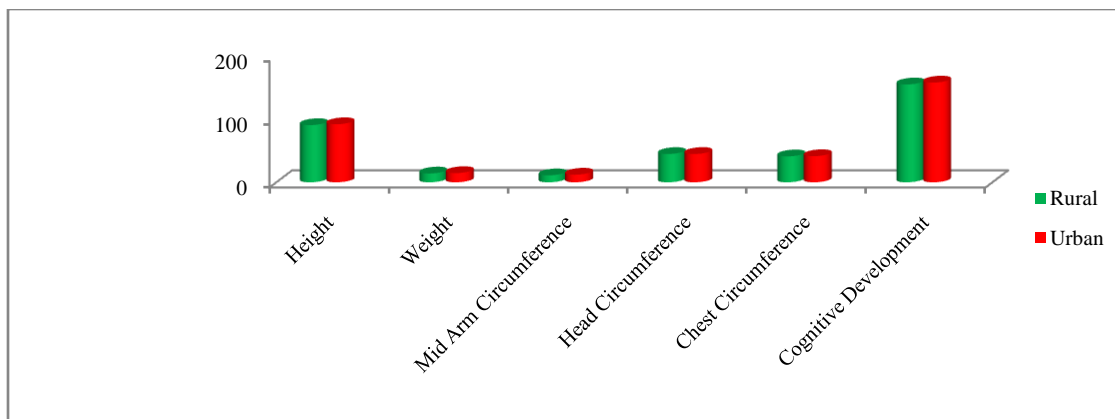
There were no significant differences in head circumferences ( $Z= 0.33$ ) against place of residence. It means children of both rural and urban area had similar arm circumferences. Further mean scores depicted that urban children ( $M=44.86$ ) had slightly more head circumferences than rural children ( $M=44.68$ ). Statistically non significant differences were observed in chest circumferences of children against place of residence ( $Z= 0.68$ ). Mean scores shows that urban children had more chest circumference ( $M= 40.39$ ) than rural children ( $M= 40.05$ ).

Moving towards comparison of children in cognitive development against place of residence data highlighted that statistically non significant differences was observed in cognitive development against place of residence ( $Z= 0.78$ ). Further mean score depicted that urban children are better in cognitive development ( $M=157$ ) than their rural counterpart ( $M=156$ ).

**Table 2: Comparison of physical and cognitive development of children of Haryana across the place of residence**

Variables	Haryana		n=100
	Rural	Urban	Z –test
Height (cm)	90.58±6.05	91.98±6.43	1.12
Weight (kg)	13.99±2.32	14.66±2.19	1.55
Mid arm circumferences (cm)	11.05 ±1.85	12.12±2.54	2.54*
Head circumferences(cm)	44.77±2.46	44.88±2.34	0.20
Chest circumferences(cm)	41.02±2.78	41.40±2.76	0.70
Cognitive development	155±6.93	158±6.08	2.30*

\*Significant at 5 % level of significance



Comparison of children across physical and cognitive development status against place of residence of Haryana state has been portrayed in table 2. Comparison revealed that statistically non significant differences were observed in height of the children against place of residence ( $Z= 1.12$ ). Mean scores revealed that urban children ( $M= 91.98$ ) had more height than rural children ( $M= 90.58$ ).

Comparison of weight against place of residence shows that no significant differences were observed in weight against place of residence ( $Z= 1.55$ ). It means almost both area children had similar weight. Further mean scores depicted that urban children were having more weight ( $M= 14.66$ ) than rural children ( $M=13.99$ ).

Statistically significant differences was observed in arm circumferences against place of residence ( $Z=2.54$ ) at 0.05 level of significance. Further mean scores depicted that urban children ( $M=12.12$ ) had more arm circumferences than rural children ( $M=11.05$ ). Further table shows that no significant differences was observed in head circumferences against place of residence ( $Z = 0.20$ ). Mean scores depicted that urban children had slightly more head circumference ( $M= 44.88$ ) than rural children ( $M= 44.77$ ).

Statistically non significant differences was observed in chest circumferences against place of residence ( $Z=0.70$ ) at 0.05 level of significance. Mean score depicted that urban children ( $M= 41.40$ ) had slightly more chest circumference than rural children ( $M= 41.02$ ). Further table clearly unveils that there were significant difference in cognitive development of children against place of residence ( $Z=2.30$ ) at 0.05 level of significance. Mean score further depicted that urban children ( $M= 158$ ) had more cognitive development than rural children ( $M= 155$ ).

## CONCLUSION

There were many cultural difference in both the states however, the present study suggest that the children were at par in term of physical development whereas in some parameters the urban children were better than rural children the reason may be due to the accessibility and the exposure to the various activities and things that aid in proper development of the children of urban area. Also, it was noted that the children from the urban area were slightly better than the rural children in cognitive development. The reason may vary like the family income, the parental education and occupation as it was considerably more in urban areas in compare to the rural areas.

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