

## **INFLUENCE OF HOME ENVIRONMENT ON URBAN AND RURAL INFANTS PHYSICAL GROWTH STATUS**

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### **ABSTRACT**

The influence of home environment on infant developmental outcomes was studied on a total sample of 40 mothers of infants (birth to two years) each from rural & urban area. The sample was recruited through well baby clinics in urban areas and by door to door survey in the rural area. Home observation for measurement of the environment (HOME) using the inventory developed by Caldwell and Bradley (1984), Nutritional anthropometry, Agarwal's (2005) Socio-economic status scale were the tools employed. Chi-square and 't' test was used for the analysis of the data. The results revealed that the mean score of home environment was significantly higher among urban infants than the rural infants. Urban infant's nutritional status was better compared to rural infants. Child's age, ordinal position affected the home environment. Infants from better home environment had better developmental outcomes than those from poor home environment.

**KEYWORDS:** Home Environment, Infants, Socio Economic Status, Infant Developmental Outcomes

### **INTRODUCTION**

In the beginning, parents and children are the inseparable components of family. Proper relationship between parents and children is of greater importance as proverb says "Home is first school and mother is first teacher". Home is external school of life. It is pointed out that "house is a place on which sun shines, while home is a place in which son or daughter shines. Family is most ancient and enduring social institution which helps in growth and development of family system, which plays a significant role in bringing up new generation and nurturing them to full adulthood.

Each child is born with certain characteristics and abilities that he/she inherits from parents. Though each child is unique, children's development follows a universal pattern. Child development is also influenced by the experiences he/she has in the family and neighborhood. The ecological systems theory also views the child as developing within a complex system of relationships affected by multiple levels of surrounding environment, the innermost being the Microsystems involving the family and parents. During infancy, two major kinds of development takes place, one is the mental development and the other motor development. Motor development is the development of control over body movements which results in increasing coordination between various parts of body.

Through the sensory and motor experiences in the first few months, the child develops perceptual abilities and motor skills. Delay in achievement of various motor and mental abilities affects the child in many ways.

Malnutrition is widely recognized as a major health problem in developing countries.

Growing children, in particular are most vulnerable to its consequences. Therefore, good nutrition in childhood is of significant importance in fostering the physical, mental and emotional growth of populations. Since 50 percent of brain growth takes place by the age of 2 years, nutrition is crucial during early years of life. There are evidences that nutrition in childhood impairs permanently physical growth, exerts detrimental influence on learning ability and behavior and probably leads to irreversible mental and emotional damage. So the present study is undertaken with an objective to know the influence of home environment on infant developmental outcomes.

## **MATERIALS AND METHODS**

### **a) Population and Sample**

The urban population consisted of mothers having infants under age group of birth to 24 months who registered in well baby clinics in Dharwad City. Two well baby clinics from Dharwad city were selected. The rural population consisted of Dharwad Taluk. From the taluk, two villages were selected which were within a radius of 10-15km from the research center. Infants in the age group of birth to two years were categorized into two age cohort viz birth to one year and one to two years. From each age cohort, a sample of 20 infants was selected, from each village/well baby clinics thus a total of 40 each from rural & urban area constituted the sample. The sample was selected through well baby clinics in urban areas and by door to door survey in rural area. Mothers of the infants were the respondents of the study.

### **Tools Used for the Study**

**Home observation for measurement of the environment (HOME) inventory** developed by Caldwell, and Bradley (1984) was used for the study the scale consists of six components viz Parental Sensitivity, Acceptance of Child, Organization of the environment, Learning materials, Parental Involvement, Variety in experience. There were 31 items. Each item has a minimum score of 1 and maximum 2. The summated scores were classified as follows as stated by author.

### **2. Nutritional Anthropometry**

The Anthropometric parameters such as circumference of the Head and Chest, height/length and weight parameters were considered the height/length and weight was measured using anthropometric rod/infant meter and weight by Tansy bar weighing scale. Non stretchable measuring tape was used to measure circumference of head and chest. The children were classified as below. Using Gomez method for weight and Water-lows method for height/length

#### **a) Gomez Method**

- $\geq 90\%$  weight for age: Normal
- 76-90% weight for age: Grade I malnutrition
- 46-75% weight for age: Grade II malnutrition
- $< 60\%$  weight for age: Grade III malnutrition

### b) Waterloo's Classification

- >95% expected height for age: Normal
- 90-95% expected height for age: Marginal
- 85-90% expected height for age: Moderate malnutrition

### 3. Socio Economic Status

Aggarwal et al.'s (2005) scale was used to assess the socio-economic status of the family. The scale consists of 22 statements. Based on total score, SES was classified as follows.

Sl. No.	Classification	Score
1	Upper High	>76
2	High	61-75
3	Upper middle	46-60
4	Lower middle	31-45
5	Poor	16-30
6	Very poor	<15

## RESULTS AND DISCUSSIONS

The results are represented under following headings

- Home environments of infants
- Physical growth status
- Influence of home environment on rural and urban infants physical growth status.

### Home Environment of Infants

The frequency distribution of infants by the level of home environment and mean scores are presented in Table 1a and 1b. It is seen from the table that urban mothers provided a better home environment (92.5) compared to rural mothers. Similar findings are reported by Rohani *et al.* (1989) She reported that the mental abilities of the children was associated with the availability of appropriate play materials, variety of stimulation, organization of the physical environment and availability of language and academic stimulation within the home environment. Very few (7.5) infants were in low level of home environment. Chi-square analyses revealed significant association between locality and home environment. When the mean score was compared between infants of urban and rural (50.4). through 't' test the results revealed a significant difference indicating the home environment of urban infants was better than rural infants.

Table 2 shows the frequency distribution of infants by the levels of Home environment and their personal characteristics viz age, gender, ordinal position. Infants who were between age group of 0-6 were equally distributed in high and low level of home environment whereas infants who were between age group of 12-24 months had lower level of home environment in both rural and urban areas. However Chi-square analysis revealed non significant association between child's ages with home environment among rural children but a significant association in case of urban group (6.47).

With respect to child's gender rural mothers who were having both male and female infants had low level of home

environment (10%) while those who had only male infants had by high level of home environment (90%). Mothers who were having only female infants had lower level of home environment (64.3). In case of urban area cent percent of the infants had high level of home environment.

With respect to ordinal position, in rural areas infants who were first born had low level of home environment (34.6%) followed by those who were later born (65.4%). In case of urban group first born infants had higher level of home environment (96.2%) and very few (3.8%) had lower level. of home environment. In case of infants who were later born, majority of them had lower level of home environment (14.3%). Chi-square test revealed significant association between child's 'age, child's gender and ordinal position with home environment. NICHD (2001) reported that infants from home environments which were more stimulating and well organized, had better vocabularies, advanced attention and memory skills and got along better with peers. Daulta (2008) observed that good quality of home environment had more significant positive correlation with high level of scholastic achievement in boys than girls of age. However chi-square analysis revealed non-significant association between Childs ordinal position and home environment in case of both rural and urban group.

### Physical Growth Status of Infants

The mean scores of height/length and weight and physical growth status of rural and urban infant's is presented in Table 3. Urban infants mean height (69.34) was higher than rural (63.7) infants. However on statistical analysis ('t' test) the results revealed that there was no significant difference between rural and urban infants in height. Mean weight of urban infant (8.18) was higher than rural infants, The 't' test also revealed significant difference.

The infants head and chest circumference of rural and urban infants was almost equal and there was no significant difference as revealed by 't' -test. Majority of the infants in rural area fell under malnutrition compared to the infants of urban area. The probably reason may be in rural area mothers were not well educated and they were unaware of nutritious food and to introducing at the optimum age. Similar findings are reported by Medhin *et al.* (2010) there was a high prevalence of under nutrition in the first year of infancy in the rural Ethiopia population. Aziz *et al.* (2012) also found that rural children had higher prevalence of under nutrition compared to the urban children but the prevalence of obesity was same in both areas.

Nutritional status of rural and urban infants using height parameter. (Table 4a) revealed that in rural area 40 per cent of infants were stunted followed by normal (25), and wasted and stunted category (22.5). Very few infants (12.5) were in wasted category in urban area. Majority (52.5) of infants were under stunted followed by normal (37.5), wasted (5) and wasted! Stunted categories. Similarly, Oninla *et al.* (2006) comparative study on nutritional status among urban and rural Nigerian school children, (366 rural and 383 urban children) also depicted that mean nutritional indices, weight for age, weight for height and height for age were significantly lower in rural than urban children.

Nutritional status of rural and urban infants using weight parameter is shown in table 4b. About 30 per cent of infants from rural area fell under normal nutritional status followed by Grade I malnutrition (17.5). Equal numbers of infants (20) were under Grade III and grade N malnutrition and very few (10) infants belonged to grade I malnutrition. In urban area majority of infants (42.5) were under normal category followed by grade I malnutrition (20) and 17.5 per cent infants fell under grade N malnutrition, while equal number (10) of infants fell under grade I and grade II malnutrition. The

probable reason may be urban mothers are educated about supplementary foods for their infants. Nutritional status of infants may be influenced by socio-economic status. Similar findings was found by Madhavan and Townsend (2007) who highlighted the importance of parental living arrangements, parental financial support, birth order and the composition of sibling sets and life time residential patterns in facilitating access to nutrition.

Nutritional status using head/chest circumference ratio is presented in table 4c. Majority of the infants (80%) from rural area fell under malnutrition category followed by normal (20%). From urban majority of infants (60%) fell under malnutrition followed by normal (40%).

### **Influence of Home Environment on Physical Growth Status of Infants**

Table 5a shows the Influence of home environment and Nutritional status (weight) of rural and urban infants. In both rural and urban area, infants who had good Home environment fell under normal category and infants who had low level of Home environment very few of them fell under normal nutritional status.

Table 5b shows the Influence of Home environment and Nutritional status (length) of rural and urban infants. In rural area infants who had good home environment fell under normal and infants who had low level of home environment fell under wasted and stunted and wasted category. In urban area similar trend was observed. Chi-square result also revealed significant association with home environment and nutritional status. The reason may be parent's involvement with child in proper feeding practices provision of appropriate play materials and acceptance of child's behavior might be associated with better nutritional status in terms of underweight, wasting, and stunting. It is in inline with Februhartanty *et al.* (2007) who found that well-nourished children in terms of WF A, (weight for age) WHA, (weight for height) and HFA (height for age) tended to have greater total HOME scores than their underweight, wasting, and stunting counterparts.

Table 6 shows the influence of home environment on infant developmental outcomes among rural and urban mothers. From the table it is observed that there was non significant relationship between home environment and child's developmental outcome viz. weight/length.

## **CONCLUSIONS**

It can be concluded that urban infants were provided better home environment compared to their counterparts. Urban infants' nutritional status was better compared to rural infants. Hence it is necessary to provide educational intervention to rural mothers to improve the home environment of their infant nutritional status which promotes a better and healthy world.

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