



## Research Article

# AUDITORY, EXPRESSIVE AND LANGUAGE DEVELOPMENT AMONG PRESCHOOL CHILDREN

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**Abstract:** The study was conducted in UAS Dharwad with the aim to study the auditory and expressive language development among preschool children. A sample of 240 children (47 boys and 73 girls) from urban, (45 boys and 75 girls) from rural areas with an age cohort of 2-3, 3-4 and 4-5 years were selected from preschools viz., nursery, LKG and UKG sessions. Differential design and correlational design were employed to know the relation between language development of urban and rural children. To measure the auditory and expressive language development, Preschool Language Scale-5 (PLS-5) was used. Chi-square and t-test were used to know the association between language development of children with locality, age and gender. The results revealed that, auditory comprehension, expressive communication and overall language development among preschoolers were highly associated with locality and gender. In overall language development, urban children found better compared to rural children (rural M=78.65 and urban M=89.22) which may be due to lack of quality child care, less provision for age appropriate play materials and less exposure to resources due to lower socioeconomic status in rural areas. Girls were better in auditory, expressive and overall language development compared to boys in both rural and urban preschools. 23.3 percent of rural children were found in low category but in urban no children were found in this category. Both in urban and rural area, children of 2-3 years were better compared to the 3-5 years. In rural area, there was no facility for the children to improve upon their language at home as well as in schools. Hence, there is a need to provide necessary intervention programme to improve auditory and expressive language development of children through parents.

**Keywords:** Auditory, Expressive, Language, Development, Preschool Children

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## Introduction

Children's language skills are vital to their overall development that lay a foundation for a successful future. Cognition, social interaction, oral-motor development is some of the key factors that influence a child's language development. Listening, understanding and using spoken language are the most important components of language. It is also important to note that each child develops at his or her own pace.

## Materials and Methods

### Research design

A differential design was used to compare language development of preschool children between rural and urban areas of Dharwad taluk. A correlation design was employed to know the relation between language development of preschool children among rural and urban areas

### Population and sample

Population of the study comprises of children in the age group of 2-5 years selected from preschools of rural and urban areas of Dharwad taluk. A sample of 240 children, (45 boys and 75 girls) from rural, (47 boys and 73) girls from urban areas with an age cohort of 2-3, 3-4 and 4-5 years were selected randomly from Nursery, LKG and UKG sessions.

### Data collection procedure

Permission was obtained from the preschool teachers to carry out the research work in selected four schools from urban and four schools from rural areas. In each school 30 children were selected randomly according to age cohort (2-3, 3-4 and 4-5 years) to assess the auditory, expressive and language development.

## Tools used for the study

### Preschool Language Scale-5

The scale is an individually administered instrument that assesses the auditory, expressive and language developmental functioning of preschool children between 0 months to 84 months of age. It consists of two dimensions, auditory comprehension and expressive communication. The auditory comprehension scale (65 items) includes evaluation of attention, semantics, and language structure e.g. comparison and inference. The expressive communication scale (67 items) includes evaluation of vocal development, social communication, semantics and language structure.

Children are observed on the activities they perform and are scored "1" for performing the activity "0" for not performing. Raw score is obtained by adding total points. After obtaining raw scores it is converted to scaled scores as per the age of the child. The scaled score is then converted to percentile. Based on percentile children are categorized in to

Range	Categories
130>	Highly above average
115-129	Above average
86-114	Average
78-85	Mild
71-77	Low
<70	Very low

## Statistical analysis

Chi-square, t-test and ANOVA were used to know the significant difference between auditory and expressive language development with gender, age and locality of children.

Table-1 Association between language development of rural and urban preschool children

Dimensions		Locality			$\chi^2$
		Rural (n=120)	Urban (n=120)	Total (n=240)	
Auditory comprehension	Average (86-114)	19(15.83)	89(74.16)	108 (45.00)	88.96**
	Mild (78-85)	77(64.16)	31(25.83)	108 (45.00)	
	Low (71-77)	24(20.00)	-	24 (10.00)	
	Total	120(100.00)	120(100.00)	240 (100.00)	
Expressive communication	Average (86-114)	23(19.16)	84(70.00)	107 (44.58)	71.53**
	Mild (78-85)	68(56.66)	35(29.16)	103 (42.91)	
	Low (71-77)	29(24.16)	1(0.83)	30 (12.50)	
	Total	120(100.00)	120(100.00)	240 (100.00)	
Language development	Average (86-114)	14(11.66)	78(65.00)	92 (38.33)	83.32**
	Mild (78-85)	78(65.00)	42(35.00)	120 (50.00)	
	Low (71-77)	28(23.33)	-	28 (11.66)	
	Total	120(100.00)	120(100.00)	240 (100.00)	

Figure in parenthesis indicates percentage, \*\* 0.01 level significant

Table-2 Association between language development among boys and girls of rural and urban preschool children, N=240

Dimensions	Gender		Total	$\chi^2$	Levels	Urban (n=120)		Total	$\chi^2$
	Levels	Rural (n=120)				Boys (n=45)	Girls (n=75)		
Auditory comprehension	Average (86-114)	1(2.12)	18(24.65)	15.50**	Average (86-114)	26(57.77)	63(84.00)	89(74.16)	10.09**
	Mild (78-85)	31(65.95)	46(63.01)		Mild (78-85)	19(42.22)	12(16.00)	31(25.83)	
	Low (71-77)	15(31.91)	9(12.32)		Total	45(100.00)	75(100.00)	120(100.00)	
	Total	47(100.00)	73(100.00)		Average (86-114)	25(55.55)	59(78.66)	84(70.00)	8.02*
Expressive communication	Average (86-114)	5(10.63)	18(24.65)	4.94NS	Mild (78-85)	20(44.44)	16(21.33)	36(30.00)	
	Mild (78-85)	27(57.44)	41(56.16)		Total	45(100.00)	75(100.00)	120(100.00)	
	Low (71-77)	15(31.91)	14(19.17)		Average (86-114)	20(44.44)	58(77.33)	75(62.50)	13.37**
	Total	47(100.00)	73(100.00)		Mild (78-85)	25(55.55)	17(22.66)	45(37.50)	
Language development	Average (86-114)	1(2.12)	13(17.80)	12.69*	Total	45(100.00)	75(100.00)	120(100.00)	
	Mild (78-85)	31(65.95)	47(64.38)		Average (86-114)	20(44.44)	58(77.33)	75(62.50)	
	Low (71-77)	15(31.91)	13(17.80)		Mild (78-85)	25(55.55)	17(22.66)	45(37.50)	
	Total	47(100.00)	73(100.00)		Total	45(100.00)	75(100.00)	120(100.00)	

Figure in parenthesis indicates percentage, \*\* 0.01 level significant, 0.05 level significant, NS- Non significant

## Results and Discussion

[Table-1] depicts the association between locality and language development of preschool children. In auditory comprehension, majority (64.16%) of rural children had mild, followed by low (20.00 %), average (15.83 %) and none of children belonged to highly above average, above average and very low categories. About 74.16 per cent of urban children had average, followed by mild (25.83 %) and none of children belonged to highly above average, above average, low and very low categories. Chi-square analysis revealed that auditory comprehension was significantly associated to locality ( $\chi^2=88.96$ ). With regard to expressive communication, most of the children were in mild (56.66%), followed by low (24.16 %), average(19.16 %)and none of children belonged to highly above average, above average and very low categories. Among urban area, majority of children (70.00%) were in average, followed by mild (29.16 %) categories and none of children belonged to highly above average, above average low and very low categories. Statistical analysis revealed that, expressive communication was significantly associated to locality ( $\chi^2=71.53$ ).With respect to rural area, language development of preschool children (65.00%) had mild, followed by low (23.33 %),average(11.66 %)and none of children belonged to highly above average, above average and very low categories. With regard to urban area, majority (65.00 %) of children had average, followed by mild (35.00 %) and none of children belonged to highly above average, above average, low and very low categories. Chi-square analysis revealed that language development significantly associated to locality ( $\chi^2=83.32$ ). The reason may be lack of child care, education of teacher's, less provision for age appropriate play materials, low socioeconomic status and poor home environment which might have resulted in low level of language development of rural preschool children. Vinutha and Khadi (2017) reported that rural infants were in high proportion in delayed level of language than urban infants while on average and advanced level urban toddlers were in higher proportion than rural toddler's language development [1]. Kornilov *et al.* (2016) found that rural children language significantly underperformed ( $p=0.0135$ ) on compared to urban children [2]. The urbanization factor significantly ( $p=0.492$ ) not interacted with language group. [Fig-1] showed comparison of mean scores indicated that significant difference between auditory comprehension ( $M=79.95$  and  $M=90.05$ ,  $t=12.93^{**}$ ), expressive communication ( $M=79.81$  and  $M=89.95$ ,  $t=11.06^{**}$ ), language development ( $M=78.65$  and  $M=89.22$ ,  $t=13.20^{**}$ ) with rural and urban areas of preschool children.

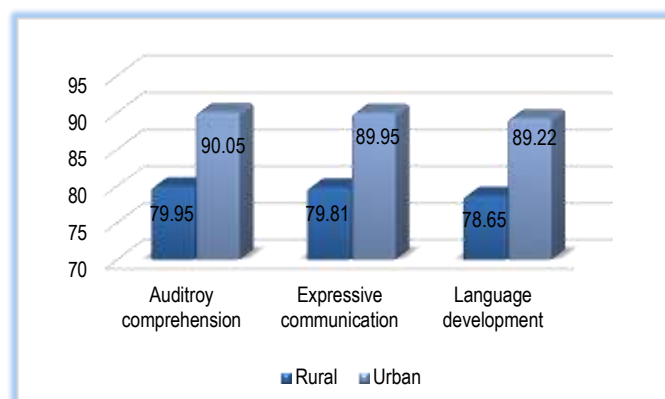


Fig-1 Comparison of mean scores of language development of preschool children by locality

## Influence of gender and language development of rural and urban preschool children

[Table-2] depicts the association of rural and urban preschool children with gender. In rural area, auditory comprehension of boys (65.95 %) had mild level, followed by low (31.91 %) and average levels. In girls, majority of children were in mild (63.01 %), followed by average (24.65 %) and low (12.32 %).Chi-square test revealed that, auditory comprehension was significantly associated with gender ( $\chi^2=15.50^{**}$ ).With respect to urban children, majority of boys and girls were in average (57.77 % boys and 84.00 % girls respectively) and (42.22 % boys and 16.00 % girls respectively) mild level of auditory comprehension of preschool children. Association of auditory comprehension was significantly related to gender ( $\chi^2=10.09^{**}$ ). With regard to expressive communication in rural boys were in mild (57.44 %), followed by low(31.91 %)and average (10.63 %).In girls, majority children were in mild (56.16 %), followed by average (24.65 %)and low level (19.17 %).Chi-square analysis revealed that expressive communication was not significantly associated with gender ( $\chi^2=4.94NS$ ).In urban area majority of them had average (55.55% boys and 78.66 % girls, respectively) and mild level (44.44% boys and 21.33% girls, respectively) of expressive communication.

Table-3a Association between language development of rural and urban preschool children with different age cohorts, N=240

Dimensions	Age of the child											
	Levels	Rural (n=120)			Total	$\chi^2$	Levels	Urban (n=120)			Total	$\chi^2$
		2-3 years (n=40)	3-4 years (n=40)	4-5 years (n=40)					2-3 years (n=40)	3-4 years (n=40)		
Auditory comprehension	Average (86-114)	9(22.50)	5(12.50)	5(12.50)	19(15.83)	9.15 NS	Average (86-114)	36(90.00)	33(82.50)	20(50.00)	89(74.16)	18.87**
	Mild (78-85)	28(70.00)	25(62.50)	24(60.00)	77(64.16)		Mild (78-85)	4(10.00)	7(17.50)	20(50.00)	31(25.83)	
	Low	3(7.50)	10(25.00)	11(27.50)	24(20.00)							
	Total	40(100.00)	40(100.00)	40(100.00)	120(100.00)		Total	40(100.00)	40(100.00)	40(100.00)	120(100.00)	
Expressive communication	Average (86-114)	20(50.00)	1(2.50)	2(5.00)	23(19.16)	69.06**	Average (86-114)	38(95.00)	29(72.50)	17(42.50)	84(70.00)	29.18**
	Mild (78-85)	6(15.00)	29(72.50)	33(82.50)	68(56.66)		Mild (78-85)	2(5.00)	11(27.50)	23(57.50)	36(30.00)	
	Low	14(35.00)	10(25.00)	5(12.50)	29(24.16)							
	Total	40(100.00)	40(100.00)	40(100.00)	120(100.00)		Total	40(100.00)	40(100.00)	40(100.00)	120(100.00)	
Language development	Average(86-114)	12(30.00)	1(2.50)	1(2.50)	14(11.66)	26.53**	Average (86-114)	35(87.50)	28(70.00)	15(37.50)	78(65.00)	22.63**
	Mild (78-85)	18(45.00)	32(80.00)	28(70.00)	78(65.00)		Mild (78-85)	5(12.50)	12(30.00)	25(62.50)	42(35.00)	
	Low	10(25.00)	7(17.50)	11(27.50)	28(23.33)							
	Total	40(100.00)	40(100.00)	40(100.00)	120(100.00)		Total	40(100.00)	40(100.00)	40(100.00)	120(100.00)	

Figure in parenthesis indicates percentage, \*\* 0.01 level significant, NS- Non significant

Table-3b Comparison of mean scores of language development and age of rural and urban preschool children, N=240

Dimensions	Age of the child					Age of the child				
	Rural (n=120)			F-value		Urban (n=120)			F-value	
	2-3 years (n=40)	3-4 years (n=40)	4-5 years (n=40)			2-3 years (n=40)	3-4 years (n=40)	4-5 years (n=40)		
	Mean $\pm$ SD	Mean $\pm$ SD	Mean $\pm$ SD			Mean $\pm$ SD	Mean $\pm$ SD	Mean $\pm$ SD		
Auditory comprehension	82.12 $\pm$ 5.03	80.45 $\pm$ 9.90	80.12 $\pm$ 6.61	6.02*		93.55 $\pm$ 6.25	95.65 $\pm$ 7.77	94.17 $\pm$ 6.96	23.29**	
Expressive communication	79.60 $\pm$ 5.06	79.25 $\pm$ 3.68	78.25 $\pm$ 3.95	0.36 NS		91.35 $\pm$ 6.27	89.92 $\pm$ 6.98	89.85 $\pm$ 6.15	32.21**	
Language development	78.12 $\pm$ 5.52	79.75 $\pm$ 3.02	77.57 $\pm$ 3.90	2.80 NS		85.25 $\pm$ 4.09	84.30 $\pm$ 3.27	83.65 $\pm$ 3.58	33.86**	

Table-4a Inter-correlation of language development with selected factors among rural preschool children

SN	Factors/ language development	Auditory comprehension	Expressive communication	Language development	Gender	Age
1	Auditory comprehension	1				
2	Expressive communication	0.388**	1			
3	Language development	0.810**	0.852**	1		
4	Gender	0.359**	0.207*	0.337**	1	
5	Age	-0.302**	-0.045	-0.206*	-0.042	1

\*\*Correlation is significant at the 0.01 level (2 tailed), \* Correlation is significant at the 0.05 level (2 tailed)

Table-4b Inter-correlation of language development with selected factors among urban preschool children

SN	Factors/ language development	Auditory comprehension	Expressive communication	Language development	Gender	Age
1	Auditory comprehension	1				
2	Expressive communication	0.749**	1			
3	Language development	0.922**	0.946**	1		
4	Gender	0.299**	0.237**	0.283**	1	
5	Age	-0.515**	-0.596**	-0.602**	0.461**	1

\*\*Correlation is significant at the 0.01 level (2 tailed), \* Correlation is significant at the 0.05 level (2 tailed)

None of the children were belonged to highly above average, above average, low and very low level of expressive communication. Chi-square analysis revealed that, expressive communication was significantly associated with gender ( $\chi^2=8.02^*$ ). With respect to rural boys, majority of (65.95%) children were in mild, followed by low (31.91 %) and average. In girls were in mild (64.38 %), followed by average (17.80 %) and low level of language development. Language development was significantly associated with gender ( $\chi^2=12.69^*$ ). Among urban area, boys were mild (55.55 %), followed by average (44.44 %). With respect to girls were in average (77.33 %), followed by mild (22.66 %). Chi-square analysis revealed that, language development was significantly associated with gender ( $\chi^2=13.37^{**}$ ). Hegde and Khadi (2018) found that significant difference between male and female young children ( $t=2.83^*$ ) was found for the expressive communication [3]. Female children scored higher scores ( $M=32.58$ ) compared to male children scores ( $M=29.65$ ) in language development. Eriksson *et al.* (2012) found that girls were slightly ahead of boys in early communicative gestures, in productive vocabulary and in combining words also girls were ahead [4]. The effect of gender was not statistically significant ( $p=0.034$ ). Influence of age on language development of rural and urban preschool children [Table-3]. showed that information regarding association of rural and urban preschool children on dimensions of language development by their age. With respect to auditory comprehension in the age group of 2-3 years, majority (70.00%) of children were in mild level, followed by average and low level (22.50% and 7.50% respectively). In the age group of 3-4 and 4-5 years, majority of children (62.50% and 60.00% respectively) were in mild, followed by (25.00% and 27.50% respectively) low and age group of 3-4 and 4-5 years were in average (12.50%) level of auditory comprehension. Chi-square test revealed that auditory comprehension was not

significantly associated with the age ( $\chi^2=9.15NS$ ). Among urban area, 2-3, 3-4 and 4-5 years of age group, most of the children had average (90.00%, 82.50% and 50.00% respectively) and mild level (10.00%, 17.50% and 50.0%, respectively). Auditory comprehension was significantly associated with the age ( $\chi^2=18.87^{**}$ ).

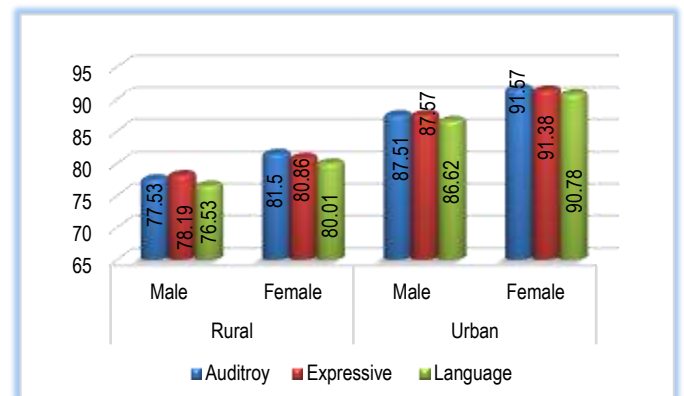


Fig- 2 Comparison of mean scores of language development of rural and urban preschool children by gender

[Fig-2] comparison of mean scores indicated that significant difference between auditory comprehension (rural  $M=77.53$  and  $81.50$ , urban  $M=87.51$  and  $M=91.57$ , respectively), expressive communication (rural  $M=78.19$  and  $M=80.86$  urban  $M=87.57$  and  $91.38$  respectively), language development (rural  $M=76.53$  and  $M=80.01$ , urban  $M=86.62$  and  $M=90.78$  respectively) with gender.



With regard to rural area the age group of 2-3 years were in average (50.00 %), followed by low (35.00 %) and mild level (15.00 %). In the age group of 3-4 and 4-5 years, majority of them had mild (72.50% and 82.50% respectively), followed by low level (25.00% and 12.50 % respectively), and average (2.50% and 5.00% respectively). Statistical analysis revealed that expressive communication was significantly associated between age ( $\chi^2=69.06^{**}$ ). In urban area 2-3 and 3-4 years age group had average (95.00% and 72.50 % respectively), followed by mild (5.00 % and 25.00 % respectively) level. Age group of 4-5 years children were in mild (57.50 %) and average (42.50 %). Chi-square analysis revealed that, expressive communication significantly associated with age ( $\chi^2=29.18^{**}$ ).

With respect to language development of rural area, age group of 2-3 years children, majority of them had (45.00%) mild, followed by average (30.00 %) and low level of language development (25.0 %). In the age group of 3-4 and 4-5 years most of the children had mild (80.00 % and 70.00% respectively) followed by (17.50 % and 27.50 % respectively) low and average level (2.50 % respectively). Chi-square analysis revealed that significantly association between age and language development was also seen ( $\chi^2=26.53^{**}$ ). Among urban area, 2-3 and 3-4 years of age children had average (87.50 % and 70.00 %) and mild level (12.50 % and 30.00%) of language development. In the age group of 4-5 years children were in mild (62.50 %) and average (37.50 %) level of language development. language development was significantly association between age ( $\chi^2=22.63^{**}$ ). The reason may be due to maturational factors i.e. language development increases with the age wise. The role of preschool, home environment and social engagement may have also reason of language development. Pasek *et al.* (2015) found that child age at the 24 months observation, ratings of communication foundation quality accounted as statistically significant and substantially variant in 36 months expressive language.

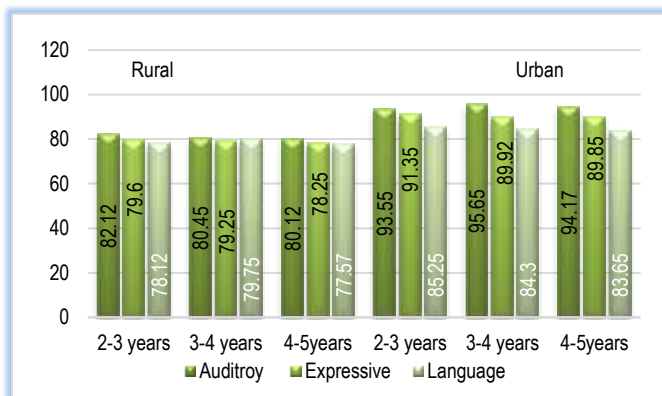


Fig-3 Comparison of mean scores of language development of rural and urban preschool children by age

Fig-3 indicated that comparison of mean scores was significant difference between auditory comprehension ( $F=6.02^*$ ) and age of the rural area. Expressive communication ( $F=0.36$  NS) and language development ( $F=2.80$  NS) was non-significant difference between age of 2-5 years. Among urban area, auditory comprehension ( $F=23.29^{**}$ ), expressive communication ( $F=32.21^{**}$ ) and language development ( $F=33.86^{**}$ ) was significant difference between age.

#### Inter-correlation of language development with selected factors among rural and urban preschool children

With respect to rural and urban area, auditory comprehension was significantly correlated to expressive communication, language development and gender. With regard to expressive communication, it was positively correlated to auditory comprehension, language development and gender. Language development of preschool children was positively correlated to auditory, expressive and gender, but age was negatively correlated to auditory and language development. Among urban children, age was negatively correlated to auditory, expressive and language development of preschool children. In rural area, age was not correlated with expressive and gender. Longobardi *et al.* (2016) reported that the interaction between gender and language development stimulation and multi lingual utterances were significant for both positive,  $\beta = -0.17$ ,  $t = -2.81$ ,  $p = 0.005$  and negative items,  $\beta = -0.12$ ,  $t = -2.01$ ,  $p = 0.045$  [5-7].

#### Conclusion

Auditory, expressive and language development were significantly associated with the locality and gender. Both in rural and urban areas, females were better than males in auditory, expressive and language development. Children with 2-3 years were found significantly better compared to 3-4 and 4-5 years, may be due to reason that early entering to the school improves their language skills. In rural area, there was less facilities for the children to improve upon their language both at home as well as in schools. Hence, there is a need to provide necessary intervention programme to improve auditory, expressive and language development of children through parents.

**Application of research:** The study helps in analyzing the auditory, expressive and language development among preschool children of rural and urban areas of Dharwad District. The results of the study revealed that there is a need to provide necessary intervention programme to improve auditory, expressive and language development of children through parents in rural areas.

**Research Category:** Human Development and Family studies.

**Abbreviations:** PLS- Preschool language scale

LKG- Lower Kinder Garden, UKG- Upper Kinder Garden

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**Author statement:** All authors read, reviewed, agreed and approved the final manuscript. Note-All authors agreed that- Written informed consent was obtained from all participants prior to publish / enrolment

**Study area / Sample Collection:** College of Community Science, Dharwad, 580 005, Karnataka, India

**Cultivar / Variety / Breed name:** Nil

**Conflict of Interest:** None declared

**Ethical approval:** This article does not contain any studies with human participants or animals performed by any of the authors.

Ethical Committee Approval Number: Nil

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