

# A Study of Delay Speech among Preschool Children in Anbar Governorate

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## Abstract

**Objective:** To show the main etiological factors of speaking delay among preschool children in Anbar district and to study some related attributed factors. **Patient and Method:** A cross-sectional descriptive study was done on preschool children who visited a different health center in the Anbar district starting from January 2019. The diagnosis depended on the American Psychiatric Association (APA), Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-5). Data collected from children include age, gender, mother's education, family history of delayed speech, and hours spent of the child with his mother, and hours spent on TV or mobile device per day. Referring children to an audiologist or pediatric psychiatry depends on the suspension of hearing problems or autism. **Results:** 348 children were diagnosed with the delayed speech, 97 (27.9%) with familial speech delay, 89 (25.6%) intellectual disability, 31(9%) autism, 122 (35%) isolated expressive language disorder, and 9 (2.5%) hearing impairment. 243 (69.8 %) of those children were boys and 105 (30.2 %) were girls. 206 (59.2%) of cases were from 2-3 years, 121 (34.8%) from 3-4, and only 21(6%) from 4-5. 129 (37 %) of cases had a positive family history. Watching TV or a mobile device for more than 4 hours was reported as a risk factor. **Conclusion;** Delayed speech is an important problem. Prolong watching of TV and the mobile device was a big risk factor. Efforts are needed to diagnose and treat this condition.

**Keywords:** Delayed speech, Children, Risk factors, Ramadi city.

## INTRODUCTION

Most children can learn their native language without specific guidance or interference only on exposure to the social language. Normally speech and language development reverse the child's ability for hearing seeing understanding remembering and also his ability to interacting with other people<sup>[1]</sup>.

The reported prevalence of speech delay in children aging from two to seven years ranges from 2.3 to 19 percent <sup>[2]</sup>. Many risk factors may affect speech delay in children including gender preterm labor genetic factors autism mental handicap chromosomal anomalies hearing diseases and attention deficit and hyperactivity disorder Other environmental factors may include poor or impairment of social communication between parents and their children and spending more time watching TV or electronic machines <sup>[3,4]</sup>. Severe speech and language disorders in early childhood can adversely affect their later educational performance and that children with speech delay have increasing difficulty in reading in elementary schools <sup>[5,6]</sup>.

Assessment of delayed speech in children includes the assessment of child hearing if there is a general health problem

and if there is poor communication with parents or caregivers These need a precise history careful physical examination and testing of hearing by an audiologist <sup>[7]</sup>.

Management of delayed speech child may sometimes need just an explanation advice and reassurance of the family However early detection and interference of children with speech delay will prevent or at least reduce the educational emotional and social problems that may occur Referring to speech therapy may be recommended The success of treatment depends on the underlying cause of speech delay and if there are associated problems such as hearing problems Prognosis also depends on the cause of the speech delay and early diagnosis and interference <sup>[8,9]</sup>.

## PATIENT AND METHOD

A descriptive cross-sectional study was done from January 2019

on children who visited the first sector for primary care health centers in Ramadi city Anbar governorate west of Iraq Informed consent was taken from the parents or caregivers after giving them a full explanation about the purpose of the study Ethical approval was taken from the Anbar research committee All preschool children with a delayed speech were included in this study.

### Exclusion criteria

1. Children with cerebral palsy
2. Children with chromosomal anomalies
3. Ages below 2 or more than 5 years

The diagnosis of delayed speech was done according to the American Psychiatric Association (APA), Diagnostic and Statistical Manual of Mental Disorders Fifth Edition (DSM-5) [10]. For all diagnosed children with delayed speech a list of questions and information were taken directly from the families and suspected children with hearing problems were sent to the audiologist and all those suspected with autism were sent to pediatric psychiatry A telephone number was taken to communicate with families and following up with patients to reach a definitive diagnosis Data collected including.

1. Age of the child, which divided into 3 groups (from 2-3 years, from 3-4 years, and from 4-5 years)
2. Gender
3. Family history of delayed speech
4. Hours spending on TV or mobile device if less than 4 hours per day or more
5. Mother or caregiver spending time with the child if less than 2 hours per day or more
6. Educational state of mother or caregiver
7. Provisional diagnosis of the child

### Statistical analysis

Statistical analysis of the data was done by using the Statistical Package for Social Sciences (SPSS). The P-value was calculated after checking the Chi-squared test. P-value was regarded as significant if the level 0.05.

## RESULTS

Of (348) studied children with the delayed speech in this period, 97 (27.9%) children were diagnosed with familial speech delay, 89 (25.6%) children were diagnosed with intellectual disability, 31(9%) children were diagnosed with autism, 122 (35%) children were diagnosed with an isolated expressive language disorder, and 9 (2.5%) of them were diagnosed with hearing impairment. Boys were diagnosed in 243 (69.8 %) and girls were diagnosed in 105(30.2 %) with male to female ratio (2.3;1). Mostly observed among boys diagnosed with isolated expressive language disorder and intellectual disability, with a significant p-value. Table 1.

206 (59.2%) of delayed speech children were from 2-3 years old age group, 121 (34.8%) were from 3-4 years old age group and only 21(6%) delayed speech children were from 4-5 years old group. The p-value was significant with lower age groups among all types. Table 2.

227 (65.2 %) of delayed speech children were spending more than 2 hours on TV or mobile device per day. The p-value was highly significant among children diagnosed with autism and isolated expressive language disorder. Table 3.

193 (55.5 %) of delayed speech children were spending more than 4 hours with their mothers or caregivers in a day. The p-value was non-significant among all types of delayed speech. Table 4.

129 (37 %) of delayed children had a positive family history of the same condition. Figure 1.

The educational state of the mother or caregiver reveals that most of the cases were from intermediate/secondary school educational levels 197(56.6%) and that 83(23.9%) were from illiterate/primary school educational levels and only 68(19.5%) were from university educational levels. Figure 2.

**Table 1:** Gender distribution of delayed speech children

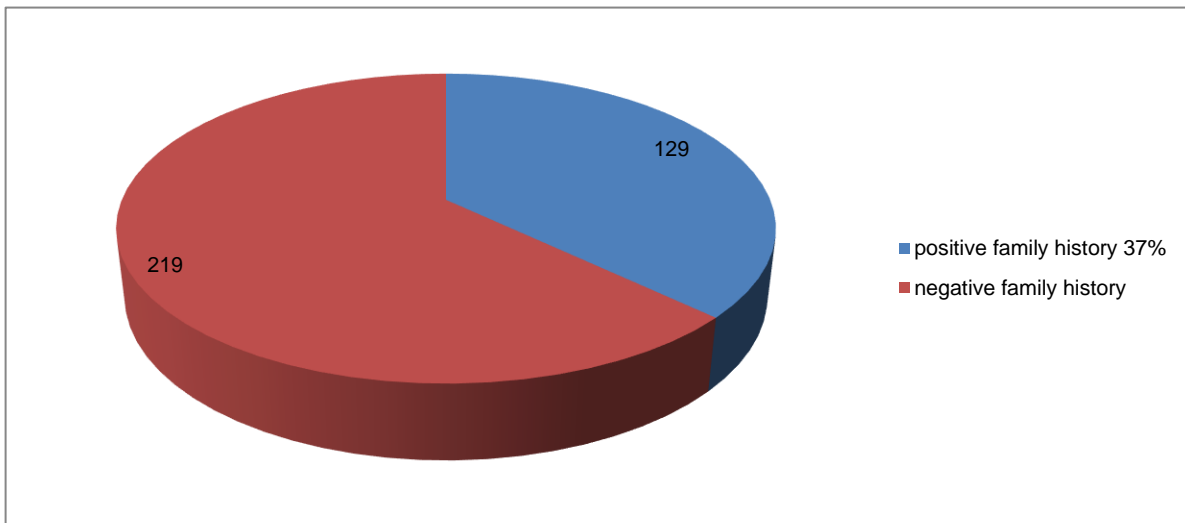
Variable	Number	Boys	Girls	P-value
Familial speech delay	97	61(62.9%)	36(37.1)	= 0.072
Intellectual disability	89	61(68.5%)	28(31.5%)	= 0.0134
Isolated expressive language disorder	122	98 (80.3%)	24 (19.8%)	= <0.0001
Autism	31	18(58%)	13(42%)	=0.525
Hearing impairment	9	5(55.6%)	4(44.5%)	=0.458
Total	348	243 ( 69.8 %)	105(30.2 %)	= < 0.0001

**Table 2:** Age distribution of delayed speech children

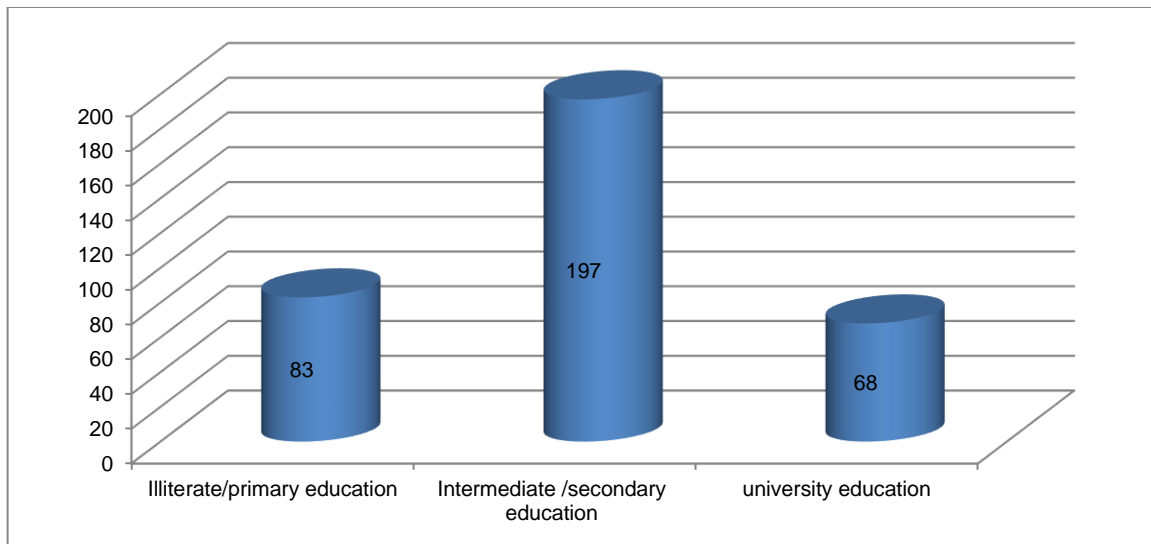
Variable	Number	2-3 year	3-4 year	4-5 year	P-value
Familial speech delay	97	65 (67%)	29 (29.9%)	3 (3.1%)	= 0.0046
Intellectual disability	89	45 (50.6%)	38 (42.7%)	6 (6.7%)	=0.0077
Isolated expressive language disorder	122	63 (51.6%)	47 (38.5%)	12 (9.9%)	=0.0038
Autism	31	24 (77.4%)	7 (32.6%)	0	=<0.001
Hearing impairment	9	9 (100%)	0	0	=<0.001
Total	348	206 (59.2%)	121 (34.8%)	21 (6%)	= <0.0001

**Table 3:** Distribution of diagnosed delayed speech children among hours spending time on TV or mobile device per day

Variable	Number	Spend >4 hr on TV or mobile per day	Spend <4 hr on TV or mobile per day	p-value
Familial speech delay	97	54 (55.7%)	43 (44.3%)	=0 .429
Intellectual disability	89	42 (47%)	47 (53%)	= 0.708
Isolated expressive language disorder	122	104 (85%)	18 (15%)	= <0.0001
Autism	31	26 (84%)	5 (16%)	=0.0076
Hearing impairment	9	1 (11%)	8 (89%)	=<0.0001
Total	348	227 (65.2%)	121 (34.8%)	=0 .0059



**Figure 1:** Family history of delayed speech



**Figure 2:** Educational levels of delayed speech children's mothers

**Table 4:** Distribution of cases among spending time with their mothers

Variable	Number	Spend >2 hours with their mothers	Spend <2 hours with their mothers	p-value
Familial speech delay	97	61 (62.9%)	36 (37.1%)	=0.072
Intellectual disability	89	54 (60.7%)	35 (39.3%)	=0.155
Isolated expressive language disorder	122	67 (54.9%)	55 (45.1%)	=0.442
Autism	31	8 (25.8%)	23 (74.2%)	=0.057
Hearing impairment	9	3 (33.3%)	6 (66.7%)	= 0.47
Total	348	193 ( 55.5 % )	155 (44.5%)	=0.310

## DISCUSSION

Common causes of delayed speech reported in this study were isolated expressive language disorder which was the most reported etiology familial speech delay intellectual disability autism and the least reported was hearing impairment. Boys with speech delays were reported in 69.8% of cases and the highest difference was found among children diagnosed with an isolated expressive language disorder Studies in Australia <sup>[11]</sup> and in Brazil <sup>[12]</sup> suggest that speech disorders affect more boys than girls in the USA study <sup>[13]</sup> showed that boys are 3 times more likely to have delayed language development compared with girls. This may reasonably be explained by slow nervous system development in boys or may be analyzed by the theory of the effect of testosterone which makes proper connection difficulty which leads to a negative influence on the development of brain areas involving language competence <sup>[14]</sup>.

In the present study most, cases were significantly diagnosed in lower age groups the same results were obtained in Saudi Arabia <sup>[14]</sup> and United Arab Emirates <sup>[15]</sup> studies. Researches on speech delay report that 20% of 2-year-olds of preschool children may have delayed onset of speaking and that by age of 5 years about 6% of children may have a speech delay <sup>[16]</sup>. Children with isolated expressive language disorder late talker syndrome had delayed in their speaking onset without any

underlying disabilities or developmental delays Those children have age-appropriate interested language and social abilities. Once they start to talk their speech is fine <sup>[17]</sup>.

The positive influence of a family history of delayed speech was found in 37% of cases in this study a similar result was obtained in another USA study <sup>[18]</sup>. Studies of delayed speech on families reveals that nearly 40% to 60% of families with a delayed speech sibling will report impairments in a speech to other immediate family member and other studies report that monozygotic twins show a higher concurrence rate for speech disorders in compared to dizygotic twins <sup>[19]</sup>.

This study reports that most mothers or caregivers of delayed speech studied children were of intermediate and secondary school education this may reflect the situational state of our community in which the majority of women belong to this class. But this was different from that reported in USA <sup>[20]</sup> and India <sup>[21]</sup> studies which regard that low education mothers are a risk for delayed speech children.

Regarding the effect of watching TV or electronic games on children's speech in the present study, there was a significant relationship between delayed speech and more than 4 hours of watching TV or mobile device in a day Many other similar studies also found a significant relation between TV hours watching or

mobile devices per day In Korea [22], a study on the relationship between 2-year-old children's extra watching to TV or other media and speech delay found a significant adverse relation. Studies have reported that educational media having a beneficial effect on words acquisition in young children [23,24]. However specially made educational media differ from general TV or other media device programs in its content and not all these programs consequently help in language acquisition of young children [25]. Communication is an action in which a speaker and listener share their information and thoughts [26]. The exchange of information with TV or other media device is unilateral. So it is unlikely watching TV facilitates children's communication [22].

In the present study there was no significant relation between hours spent by mothers with their children and delayed speech. This study however is against many other studies [27,28], which proved that maternal interaction with their children will increase the vocabulary acquisition and intellectual growth of the child. Also these studies showed that the interaction of mothers in a proper social playing with their children and using expressive language such as labeling have children with higher receptive communication arts and terminologies [29,30]. In our study the cause of this difference may be due to defects in how mothers spend time with their children. The time that spends for children should mostly be in communication playing and telling stories not only with caring and feeding. Another study should focus on the quality of parent-child communication and its benefit on early speaking.

## CONCLUSION

Most of diagnosed delayed speech children were from isolated expressive language disorder. Boys were affected more than girls. Prolonged watching of TV and a mobile device was a risk factor for delayed speech. Recommendations for pediatricians are to advise parents about preventive measures for example stimulating children to use language play with language reading, sing rhyme and classifying words in everyday activities. Sessions in health centers to families for early detection of speech delay for their children is recommended in addition to the explanation about the serious effects of the content of most TV programs and the amount of exposure on speech development. Other researches on the effect of parent's interaction with their children during early life on speech are recommended.

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## Conflict of Interest

The authors declare that there is no conflict of interest.

## REFERENCES

1. Mark D. Simms. Nelson's textbook of pediatrics; 21st ed. Philadelphia. chapter 52(Language Development and Communication Disorders), 2020;273-83.
2. Maura R McLaughlin. Speech and Language Delay in Children; Am Fam Physician. 2011;83(10):1183-88.
3. Farahat T, Mahrour O. Risk factors of language delay among preschool children in a rural area of Menofia. The Egyptian Journal of Community Medicine. 2012;30(1):59-69.
4. Byeon H, Hong S. Relationship between television viewing and language delay in toddlers: Evidence from a Korea national cross-sectional survey. PLOS ONE. 2015;10(3):e0120663.
5. Pennington BF, Bishop DVM. Relations among speech, language, and reading disorders. Annual Review of Psychology. 2009;60:283–06.
6. Magdalena Janus, Chantal Labonté. The impact of speech and language problems kindergarten on academic learning and special-education status in grade three; November. International Journal of Speech-Language Pathology. 2017;21(1):1-14.
7. McLaughlin MR; Speech and language delay in children. Am Fam Physician. 2011;1583(10):1183-8.
8. Keegstra AL, Post WJ, Goorhuis-Brouwer SM. Effect of different treatments in young children with language problems. Int J Pediatr Otorhinolaryngol. 2009;73(5):663-6.
9. Law J, Garrett Z, Nye C. Speech and language therapy interventions for children with primary speech and language delay or disorder. Cochrane Database Syst Rev. 2003;(3):CD004110.
10. Widiger TA, Costa PT, American Psychological Association, editors. Personality disorders and the five-factor model of personality. Washington, DC: American Psychological Association. 2013;285–10.
11. Eadie P, Morgan A, Okoumunne OC, Even KT, Wake M, Reilly S, *et al.* Speech sound disorder at 4 years: Prevalence, comorbidities, and predictors in a community cohort of children. Developmental Medicine and Child Neurology. 2015;57(6):578–84.
12. Goulart BN, Chiari BM. Prevalence of speech disorders in schoolchildren and its associated factors. Revista de Saúde Pública. 2007;41:726-31.
13. Zubrick SR, Taylor CL, Rice ML, Slegers DW. Late language emergence at 24 months: An epidemiological study of prevalence, predictors, and covariates. 2007;50:1562-92.
14. Al-Fadhli KY, Al-Bunaian NA. Prevalence and social influences of delayed language development in preschool-age Saudi children. Int J Sci Res. 2017;6(8):1712-20.
15. Eapen V, Zoubeidi T, Yunis F. Screening for language delay in the United Arab Emirates. Child: Care, Health, and Development. 2004;30(5):541-49.
16. Schachinger-Lorentzon U, Kadesjö B, Gillberg C, Miniscalco C. Children screening positive for language delay at 2.5 years: Language disorder and developmental profiles. Neuropsychiatric Disease and Treatment. 2018;14:3267.
17. Weismer SE. Typical talkers, late talkers, and children with specific language impairment: A language endowment spectrum?. In:Language disorders from a developmental perspective. 2017;83-01.
18. Wallace I, Berkman N, Watson L, Coyne-Beasley T, Wood C, Cullen K, *et al.* Screening for speech and language delay in children 5 years old and younger: a systematic review. Pediatrics. 2015;136(2):e448-e462.
19. Choudhury N, Benasich A. A family aggregation study. Journal of Speech, Language, and Hearing Research. 2003;46(2):261-72.
20. Campbell TF, Dollaghan CA, Rockette HE, Paradise JL, Feldman HM, Shriberg LD, *et al.* Risk factors for speech delay in three-year-old children. Child Development. 2003;74:346–57.
21. Sunderajan T, Kanhere SV. Speech and language delay in children: Prevalence and risk factors. J Family Med Prim Care.

2019;8(5):1642-46.

22. Byeon H, Hong S. Relationship between television viewing and language delay in toddlers: Evidence from a Korea national cross-sectional survey. *PLOS ONE*. 2015;10(3):e0120663.
23. Krcmar M, Grela B, Lin K. Can toddlers learn vocabulary from television? An experimental approach. *Media Psychology*. 2007;10:41–63.
24. Werker JF, Fennell CT, Corcoran KM, Stager CL. Infants' ability to learn phonetically similar words: Effects of age and vocabulary size. *Infancy*. 2002;3:1–30.
25. KanakoOkumaMasakoTanimura. A preliminary study on the relationship between characteristics of TV content and delayed speech development in young children; *Infant Behavior and Development*. 2009;32(3):312-21.
26. Hoff E. *Language Development (5th Ed)*. MA: Cengage Learning, 2013.
27. Scott MA. *Assessing the effects of parent-child interactions on child communication skills*. Iowa State University. 2008.
28. Landry SH, Smith KE, Swank PR, Assel MA, Vellet S. Does early responsive parenting have a special importance for children's development or is consistency across early childhood necessary?. *Developmental psychology*. 2001;37(3):387.
29. Warren SF, Walker D. Fostering early communication and language development. *Handbook of research methods in developmental science*. 2005:249-70.
30. Andersen CE, Marinac JV. Using an observational framework to investigate adult language input to young children in a naturalistic environment. *Child Language Teaching and Therapy*. 2007;23(3):307-24.

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