Delayed Speech among Children from Two to Five Years Old in Ramadi City, West of Iraq

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KEY WORDS
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Abstract: Speech and language is a tool for sharing and exchanging information, thought, feeling and so on with others. To find the common causes of delayed speech among children from 2-5 years old in Ramadi city and some related risk factors. A descriptive cross-sectional study was done on children who visited Ramadi Teaching Hospital for Maternity and Childhood and some health centers in Ramadi city from October 2018. The diagnosis of cases depends on the American Psychiatric Association (APA), Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-5). Data collected from children include age, gender, maternal level of education, socioeconomic status, family history of the same condition, hours spending of the child with his mother and hours spent on TV or mobile device per day and the definitive diagnosis of the condition. Referring children to an audiologist or pediatric psychiatry depends on the suspension of hearing problems or autism. A telephone number was taken from all children for following up. The 348 children were diagnosed with the delayed speech in this study, 97 (27.9%) diagnosed with familial speech delay, 89 (25.6%) intellectual disability, 31 (9%) autism, 122 (35%) isolated expressive language disorder and 9 (2.5%) hearing impairment. The 243 (69.8%) of delayed speech children were boys and 105 (30.2%) were girls. Total of 206 (59.2%) of cases were from 2-3 years, 121 (34.8%) from 3-4 and only 21 (6%) from 4-5 years. Round about 129 (37%) of cases had a positive family history. Watching TV or a mobile device for >2 h was reported as a risk factor while a low economic state was not. Most of the mothers were from intermediate and secondary school education. Delayed speech is an important problem in our community. Watching TV and the mobile device wasa big risk factor. The effort is needed to diagnose and treat this condition.

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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[1].

The reported prevalence of speech delay in children aging from 2-7 years ranges from 2.3-19%[2]. 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[3, 4]. 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[5, 6].

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[7].

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[7, 8].

Aim of the study:
- To identify the common causes of delayed speech among children from 2-5 years old in Ramadi city
- To identify the relation of the disease with some social and environmental factors

MATERIALS AND METHODS

A descriptive cross-sectional study was done in October 2018 on children who visited the consultant department of Maternity and Childhood Teaching Hospital in Ramadi city and some health centers. Informed consent was taken from the parents or care giver after giving them a full explanation about the purpose of the study. All children with a delayed speech from 2-5 years old were included in this study.

Exclusion criteria:
- Children with cerebral palsy
- Children with chromosomal anomalies

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)[9], according to the age of child starting from 2-5 years. 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 for the audiologist and all those suspected with autism were sent for pediatric psychiatry. A telephone number was taken to communicate with families and following up with patients to reach a definitive diagnosis. Data collected including:

- Age of the child
- Gender
- Family history of delayed speech
- Socioeconomic state of the family
- Hours spending on TV or mobile device, if <2 h day⁻¹ or more
- Mother or caregiver spending time with the child if <2 h day⁻¹ or more
- Educational state of mother or caregiver
- Provisional diagnosis of the child

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 child with delayed speech, 97 (27.9%) child were diagnosed with familial speech delay, 89 (25.6%) child were diagnosed with intellectual disability, 31 (9%) child were diagnosed with autism, 122 (35%) child were diagnosed with an isolated expressive language disorder and 9 (2.5%) of them were diagnosed with hearing impairment (Table 1).

Of (348) diagnosed children with speech delay in this study, 243 (69.8%) of them were boys and 105 (30.2%) were girls (Table 2).

The 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 (Table 3).
Variables Number and percentage
Familial speech delay 97(27.9%) 54(55.5%)
Intellectual disability 89(25.6%) 38(42.7%)
Isolated expressive language disorder 122(35.3%) 71(58.0%)
Autism 31(9.0%) 18(58.0%)
Hearing impairment 9(2.5%) 3(33.3%)
Total 348 243(69.8%) 105(30.2%)

Table 2: Gender distribution of delayed speech children
Variables No. Boys Girls p-values
Familial speech delay 97 61(63.2%) 36(36.8%) =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 3: Age distribution of delayed speech children
Variables No. 2-3 3-4 4-5 p-values
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%) =0.0003
Autism 31 24(77.4%) 7(22.6%) 0 =0.0001
Hearing impairment 9 9(100%) 0 0 =0.0001
Total 348 206(59.2%) 121(34.8%) 11(6.2%) =0.0001

Table 4: Distribution of diagnosed delayed speech children among hours spenting time on TV or mobile device per day
Variables No. Spend >2 h on TV or mobile/day Spend <2 h on TV or mobile/day p-values
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 14(85%) 18(15%) ≤0.0001
Autism 31 26(84.2%) 5(15.8%) =0.0076
Hearing impairment 9 9(100%) 0 0 ≤0.0001
Total 348 227(65.2%) 121(34.8%) =0.0005

Table 5: Distribution of cases among spending time with their mothers
Variables No. Spend >2 h with their mothers Spend <2 h with their mothers p-values
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 2(33.3%) 6(66.7%) =0.47
Total 348 193(55.5%) 155(44.5%) =0.310

Table 6: Distribution of cases on mother educational state
Variables Number and percentage
Mother or care giver education Number of delayed speech children
Illiterate/primary education 83(23.9%) 20(16.4%)
intermediate/secondary education 197(56.6%) 123(98.5%)
university education 68(19.5%) 19(15.1%)
Total 348 243(69.8%) 105(30.2%)
p<0.0001 significant on intermediate/secondary schools education

About 227 (65.2%) of delayed speech children were spending >2 h on TV or mobile device per day (Table 4). About 193 (55.5%) of delayed speech children were spending >2 h with their mothers or caregivers in a day. (Table 5).

The 129 (37%) of delayed children had a positive family history of the same condition (Fig. 1). The socioeconomic state of families with delayed speech children showed that most of the patients 226 (64.9%) belong to middle economic status families and that 73 (21%) belonged to poor families and only 49 (14.1%) belonged to rich families (Fig. 2).

Educational state of mother or caregiver reveals that most of the cases were from intermediate/secondary education 197 (56.6%) and that 83 (23.9%) were from illiterate/primary educational mothers and only 68 (19.5%) were from university educational mothers (Table 6).
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[10] and in Brazil[11] suggest that speech disorders affect more boys than girls. In the USA, study[12] 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 analyze 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[13].

In the present study, most cases were significantly diagnosed in lower age groups, the same results were obtained in Saudi Arabia[13] and United Arab Emirates[14] 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[15]. 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 language and social ability. Once they start to talk, their speech is fine[16].

The positive influence of a family history of delayed speech was found in 37% of cases in this study, similar results were obtained in other USA study[17]. Studies of delayed speech on families reveals that nearly 40-60% 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[18].

Regarding the effect of socioeconomic status on delayed speech children, the present study showed that most families belong to middle economic status, this may reflect the economic situation of Ramadi city in which most families are from the middle economy. However, a study in Pakistan[19] reports a significant effect of low economic status on delayed speech children. This study even reports that most mothers or caregivers of delayed speech studied children were of intermediate and secondary school education, this also may reflect the situational pattern of our community in which the majority of women are from this class. But this was different from that reported in USA[20] and India[21] 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 >2 h 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[4] 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 onwards acquisition in young children[22, 23]. 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[24]. Communication is an action in which a speaker and listener share their information and thoughts[25]. The exchange of information with TV or other media device is unilateral. So, it is unlikely watching TV, facilitates children’s communication[4].

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[26, 27] 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 proper social playing with their children and using expressive language, such as labeling, have children with higher receptive communication arts and terminologies[28, 29]. In our study, the cause of this difference may due to defects in how mothers spend time with their children. The time that spends with children should mostly be in communication playing and telling stories, not only with caring and feeding. Other studies should focus on the quality of parent-child communication and its benefit on early speaking.

CONCLUSION

From the above results we conclude the following:

- Most of diagnosed delayed speech children were from the isolated expressive language disorder
- Boys were affected more than girls
- Most of the cases were from 2-3 years old
- Watching TV and a mobile device was a risk factor for delayed speech
- Positive family history of delayed speech was present in 37% of patients
RECOMMENDATIONS

For pediatricians, advise of parents on preventive measures, for example, stimulating children to use language, play with language, reading, singing, rhyming and classifying words in everyday activities. Sessions in health centers to families for early detection of speech delay for their children.

Information should be given to families including an explanation of the serious effects of the content of 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 is recommended. Community based study is recommended to show the prevalence of delayed speech among children in our city.

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REFERENCES


25. Hoff, E., 2013. Language Development. 5th Edn., Cengage Learning, Boston, Massachusetts, USA.