

Prevalence and Risk Factors of Primary Speech and Language Delay in Children Less than Seven Years of Age

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Abstract

Background: Normal language ability is a complex function that widely distributed across the brain through interconnected neural network, respiratory system and auditory system. Speech and language is tool for sharing and exchanging information, thought, idea, feeling and so on. Speech means the sounds that come out of a person's mouth, delay means defect in (voice, articulation and fluency). Language disorder when a person has trouble in understanding (receptive language) or sharing thought, idea, feeling (expressive language).

Objective: To assess the frequency of primary speech-language delay in children less than seven years of age. To find risk factors of primary speech-language delay.

Method: Cross-sectional study conducted from 1st May 2016 to thirty of January 2017. 353 children was studied, sample constitute children attending pediatric psychiatry clinic of Central teaching hospital of pediatric in Baghdad city, the study was carried out by interview with families of children, the children were assessed for hearing, motor, cognitive, speech and language according to Center control and prevention Developmental milestone.

Results: In this study 353 children studied, 42 children were primary speech-language delay, the frequency of primary speech-language delay was 11.9%. Among the total of 353 children less than seven years old 265 (75.1%) male and 88 (24.9%) female. Association of primary speech-language delay with gender was significant (p=0.037), male was risk factor of delay. The association between primary speech-language delay and family history of delay was significant (p=0.0361). No significant association between primary speech-language delay and age of children (p=0.58) No significant association between primary speech-language delay and postnatal complication (p=0.931). No significant association between primary speech-language delay and TV (television) watching (p=0.58).

Conclusion: Data from our study suggest that developmental primary speech-language delay common in children less than seven years of age. Male and family histories of speech language delay are risk factors. Analytic study need to explore the causal relationship between risk factors and delay.

Keywords: Prevalence; Primary speech-language delay; Risk factors

language problems, low parental education, lack of support for learning in the home [3].

Introduction

Speech is the production of intelligible sound [1], the verbal means of communicating, consists of the following: Articulation (how speech sounds are made) Voice (Use of the vocal folds and breathing to produce sound) Fluency (the rhythm of speech) [2]. Types of speech-language delay Receptive language disorder: When a person has trouble understanding others expressive language disorder: problem in sharing thoughts, ideas, and feelings [2]. Speech difficulties can be the result of motor speech disorders (e.g., dysarthria), structural differences (e.g., cleft palate), or sensory deficiencies (e.g., hearing impairment). However, the cause of articulation phonological speech sound disorders in most children was unknown [3]. Risk factors include male sex, ante and prenatal problems; oral sucking habits (e.g., excessive sucking of pacifiers or thumb), ear, nose, and throat problems, a more reactive temperament, family history of speech and

Delay in speech and language development is the most common developmental disorder in children aged three to six years. The prevalence of this disorder in the normal population ranges from one to thirty two percent and about sixty percent of cases of speech and language delay tend to resolve spontaneously in children aged under three years. This is because a delay in speaking could be either a normal (and temporary) stage in the child's development or the initial symptom of a psychiatric, neurological, or behavioral problem [3].

Delay in speech and language development in children can be defined as a "delay in speech and/or language development compared with controls matched for age, sex, cultural background, and intelligence [4], speech or language impairment is a communication disorder [5]. Many children require speech therapy to develop normal or acceptable speech [6].

Developmental language disorders affect about five to ten percent of children. They're characterized by serious difficulties in language acquisition without an identifiable cause such as general mental retardation, physical disability, hearing impairment, or over all communicative disorder.

Children with developmental language disorders are assumed to be at high risk of later academic, behavioral, and social difficulties. Early identification and early intervention may improve the outcome of affected children. To assess primary speech-language delay in children less than 7 years of age.

Materials and Methods

Cross-sectional study conducted from May 2016 to January 2017, the study sample constitute children attending pediatric psychiatry clinic of tertiary hospital (Central teaching hospital of pediatric) in Baghdad city, the study was carried out by interview with family of child, the children were assessed for hearing, motor, cognitive, emotional, speech and language development according to (Developmental Milestones CDC) Center control and prevention Developmental milestone [7,8].

The study was done using inclusive and exclusive criteria

Inclusive criteria which include child less than 7 years of age, having delay speech and language with normal hearing, motor, cognitive and emotional development.

Exclusive criteria which includes any developmental delay like motor delay, delay in cognitive also any hearing loss.

The study was done using different variable like age, gender, age of parent at child birth, details of parent education, family order and number of children in family, family history of speech- language delay, history of pregnancy, type of delivery, childhood history like term or preterm baby weight of baby at birth, any childhood disease, history of admission to hospital due to any event or disease and so on also was taking history about child behaviors, time of using mobile & I-pad, time of watching television.

Data were analyzed using SPSS statistical software version 20, using Chi-square test for association between selected factors and speech-language delay. P-value of 0.05 was considered significant.

Results

The frequency of primary speech and language delay was 11.9% listed in the Table 1. Age and gender distribution which listed in the Table 2. The distribution of age, gender in children of primary speech-language delay listed in the Table 3 speech-language delay more in male (88.1%).

Order of the child in family among all children assessed for the study the majority of children were of first order (33.3%), listed in the Table 4, parental age and education listed in the Table 5.

Speech- language delay	Frequency	Percentage (%)
non speech-language delay	311	88.1%
speech-language delay	42	11.9%
Total	353	100%

Table 1: The frequency of primary speech language delay.

Age	Frequency	Percentage (%)	Gender	Frequency	Percentage (%)
1-3 years	136	38.50%	male	265	65.10%
5 years	99	28.00%	Female	88	24.90%
>5 years	118	33.50%	-	-	-
Total	353	-	total	353	-

Table 2: Age gender distribution.

Age in years	Frequency	Percentage (%)	Gender	Frequency	Percentage (%)
3-Feb	4	9.50%	male	37	88.10%
4-Mar	12	28.60%	female	5	11.9%
5-Apr	8	19%	-	-	-
6-Apr	8	19%	-	-	-
7-Jun	10	23.8%	-	-	-
Total	42	-	Total	42	100%

Table 3: The distribution of age, gender in children of primary speech-language.

Order of child in family	Frequency	Percentage (%)
1	14	33.3%
2	13	31%
3	8	19%
4	3	7.1%
5	3	7.1%
6	1	2.4%
Total	42	100%

Table 4: Order of the child in family among all children.

Father age on child birth	frequency	Percentage (%)	Mother age on child birth	Percentage (%)	Father education	Percentage (%)
Less than 20	0	-	4	9.5%	Read and write	11.9%
20-29 years	9	21.4%	27	64.3%	Primary school	23.8%

30-40	27	64.3%	10	23.8%	Secondary school	28.6%
More than 40	6	14.3%	1	2.4%	Higher education	35.7%
Total	42	100%	42	100%	-	100%

Table 5: Mother and father age on child birth father and mother education.

Distribution of family history of delay speech listed in Table 6. Distribution of type of delivery, antenatal and postnatal history listed in the Table 7, speech-language delay more in post natal complication like premature, untreated jaundice more than 2 weeks (59.5%).

The daily television watching time and timing to used I-pad per day listed in the Table 8, delay speech more in children watching TV more than 2 hours per day (50%).

Family history delay speech	Frequency	Percentage (%)
negative family history	20	47.6%
positive family history	22	52.4%
Total	42	100%

Table 6: Family history.

Antenatal history	frequency	Percentage (%)	Type of delivery	Frequency	Percentage (%)	Postnatal history	frequency	Percentage (%)
Normal	37	88.1%	Vaginal delivery	31	73.8%	normal	17	40.5%
complicated	5	11.9%	C.S	11	26.2%	complication	25	59.5%
Total	42	100%	-	42	100%	-	42	100%

Table 7: Antenatal, type of delivery, postnatal delivery.

Association of primary speech-language delay with gender was significant (p-value 0.037), male was risk factor of delay, shown in Table 9.

The association between primary speech-language delay and family history of delay was significant p-value 0.0361 shown in the Table 10.

Time of watching T.V.	frequency	Percentage (%)	Time of using I-pad	frequency	Percentage (%)
NON	3	7.1%	non	22	52.4%
1-2 hours	18	42.9%	1-2 hours	7	16.3%
More than 2 hours	21	50%	More than 2 hours	13	31%
Total	42	-	-	42	100%

Table 8: Time of watching tv and time of using I-pad.

Gender	Speech-language delay	No delay	Total
Male	37	228	265
female	5	83	88
Total	42	311	353

Chi-square is 4.3212, df=1 p-value 0.037

Table 9: Association speech-language delay and gender.

Family history of delay speech	Delay	No delay	Total
Positive family history	22	111	133
Negative family history	20	200	220

Total	42	311	353
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Table 10: Association between speech-language delay and family history of delay.

Discussion

There is substantial variation in the rate of language acquisition between developmentally normal individuals; most children acquire good verbal communication by the age of three years (prevalence of delay speech in United Kingdom 1-19%) [9]. It is a common childhood problem that affects 3% to 10% of children. The disorder is three to four times more common in boys than in girls [10]. Speech and language delay 9.54% in the Pondicherry India, maximum delay is found 4-5 age; males are more affected and second born, no correlation with parental education [11]. The reported prevalence of language

delay in children two to seven years of age ranges from 2.3 to 19 percent [12].

In this study association of speech-language delay with gender was significant (p-value 0.037, male was risk factor of delay. The association between speech-language delay and family history of delay was significant p-value 0.0361. No significant between speech-language delay and age of children (p-value 0.58), postnatal (value 0.931), TV Watching (p-value 0.58).

The most consistently reported risk factors included a family history of speech and language delay, male gender, and perinatal factors. Other risk factors reported less consistently included educational levels of the mother and father, childhood illnesses, birth order, and family size [13]. The factors related to family and considered as risks for language impairment were being an only child and having a family history of speech and language disorders, as for the children's health, prematurity, hospitalization for a long period, and the presence of deleterious oral habits were also considered as risk factors [14]. Male gender was the only significant demographic factor and it had an unacceptably low specificity (52.5%). It is not possible to predict which children will have language delay at 30 months. Identification of this important disorder requires direct clinical contact with all families [9]. Negative home environment and family history of speech and language disorders are significant risk factors for speech and language delay [15]. Early recognize speech acquisition disorders, the regular use of pediatric routine diagnostic should be practiced. With regard to management, direct treatment of the child-especially when very young-should taken second place to training of the parents on language-furthering behavior [16].

The results suggest that the parent language report is a valid and efficient tool for assessing productive language abilities and judging expressive language delay in 2-year-old toddlers [17]. The most consistently reported risk factors included a family history of speech and language delay, male gender, and perinatal factors. Other risk factors reported less consistently included educational levels of the mother and father, childhood illnesses, birth order, and family size [13].

Children from positive families are indeed at greater risk of developing language delay compared to children from control families [18]. The significantly associated with speech and language delay were male gender, poor home environment and family history of speech and language delay [15].

In German problems of pronunciation were the most common developmental delay, In the domain of "speech", delays in "grammar" and "rhythm of speech" were less common, with all other types of impairment being far less frequent, boys and migrant children appear at high risk of developmental problems, which may warrant tailored intervention strategies. In this study delay speech more in children watching TV more than 2 hours per day (50%) but No significant between primary speech-language delay and T.V watching (p-value

0.58). Two-year-old Korean toddlers' average daily TV watching time of more than 2 hours was related with language delay.

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