

# Lifestyle profile of school-aged children suffering from pathological stuttering

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**Received** 02 May 2014

**Accepted** 21 November 2014

**The Egyptian Journal of Otolaryngology**  
2015, 31:61–70

## Background

Stuttering is a speech disorder that involves intraphonemic disruption, part-word repetitions, monosyllabic whole-word repetitions, prolongation, and silent fixations (blocks).

## Objective

The aim of the study was to investigate the lifestyle profile of children suffering from pathological stuttering and identify the factors that worsen or improve the condition of the child with pathological stuttering.

## Participants and methods

The study sample consisted of 60 children suffering from pathological stuttering as well as their mothers or caregivers who attended the previous setting. Data were collected using two tools. The first tool was a structured questionnaire that included biosocial characteristics of the children and biosocial data of mothers. The second tool was an observation checklist developed by the researcher to observe children suffering from pathological stuttering as well as their mothers during speech therapy.

## Results

It was found that 63.3% of children with stuttering were of a mean age of  $8.17 \pm 1.66$  years. Significant difference was found between the mean age of stuttering children and their socialization skills. Significant difference was found between the mean age of stuttering children and response to treatment.

## Conclusion

From the present study it can be concluded that pathological stuttering as a disease is easy to diagnose, difficult to treat, and has many negative impacts on the physical, psychological, social, and spiritual aspect of the child.

## Keywords:

intraphonemic disruption, monosyllabic, repetitions, stuttering

Egypt J Otolaryngol 31:61–70

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1012-5574

## Introduction

Stuttering is a speech disorder in which there is disruption in the normal flow of speech. Disfluency includes repetitions of a sound, syllable, or word, as well as silent blocks and prolongations. Certain behaviors such as eye blinks, facial twitches, and body movements may also accompany stuttering. Stuttering may become worse under stressful situations but may improve when speaking, reading aloud, or singing while alone. Stuttering is a communication disorder that begins in early childhood. When the disorder continues into later childhood and beyond, it may cause serious disturbances in both personal and professional pursuits [1].

Evidence from twin and family studies has clearly established a role for genetic factors in the development of stuttering. Seventy percent of the variance in stuttering could be attributed to additive genetic effects, and the remaining 30% to no shared environmental factors. Some examples of these factors include parental attitudes and expectations, the child's speech and language environment, and stressful life

events. This does not imply wrongdoing on the part of parents. Often, these aspects are not harmful to a child who does not stutter, but can aggravate stuttering in a child who has a tendency to stutter. Finally, the child's fear and anxiety of stuttering can cause it to continue and even worsen [2,3].

Familial history of stuttering has been extensively documented, with an increased incidence of 15% in first-degree relatives of probands, as compared with a 5% lifetime risk in the general population [4]. The onset of stuttering usually occurs in childhood, between the ages of 3 and 5 years; boys are three times more likely to suffer from stuttering than girls. Developmental stuttering most often occurs in children during the age at which they are developing their language and speech skills [5].

Acquired stuttering occurs in individuals who were previously fluent. In such cases the onset of speech disorder is not gradual; disfluency occurs rather abruptly, as it may be neurogenic or psychogenic. Neurogenic stuttering is caused by problems in signaling between

the brain and the various muscles and nerves used in generating speech. Psychogenic stuttering tends to occur after a trauma or period of extreme stress, or in individuals suffering from mental illness [6].

The cause of stuttering is unknown; there are three leading theories that propose how stuttering develops. The learning theory proposes that it is a learned behavior and that most normal children are occasionally disfluent. The second theory suggests that stuttering is a psychological problem that has an underlying problem that can be treated with psychotherapy. The third theory proposes that the cause of stuttering is organic and that neurological differences exist between the brains of those who stutter and those who do not [7].

The mother plays an important role in the care of stuttering children, which helps in improving the quality of life and facilitates the child's and family's adaptation to this illness. It is very important for the mother to study the lifestyle of stuttering children for effective accomplishment of her role [8]. She should help the child live a satisfactory life and be a productive member in the society [9].

The objective of this work was to study the lifestyle profile of children suffering from pathological stuttering and identify the factors that worsen or improve the condition of the child with pathological stuttering. These data will have considerable importance when assessing the treatment strategies for this disorder.

## Participants and methods

### Participants

This study was conducted in the Unit of Phoniatics, ENT Department, Tanta University Hospital. The study sample was composed of 60 school-aged children: 30 were suffering from pathological stuttering and 30 were normal controls. Their mothers or caregivers who attended the previous setting were also included in the study. The duration of the study was 12 months. Children were of both sexes and their ages ranged from 6 to 15 years. They were free of other speech-related disorders and were undergoing speech therapy. The children with mild stuttering had been receiving therapy sessions for 2 months, and those with moderate and severe stuttering had been receiving therapy sessions for 3 months at least.

### Methods

#### Administrative process

(1) Children and their mothers were selected by means of a simple random method based on a review of the literature.

(2) The consent of children and their mothers was obtained before enrolling them in this study.

#### Development of study tools

Two tools were designed and used in this study: a questionnaire and an observation checklist.

#### Tools of data collection

*Tool I:* A structured questionnaire was developed to obtain the following information:

- (1) Biosocial data of stuttering children, such as:
  - (a) age, sex, birth order, educational level.
  - (b) Development history such as recognition of family members, sitting, walking, talking, bladder control, and development of language.
- (2) Biosocial data of mothers, such as:
  - (a) Age, educational level, occupation, family size, number of siblings.
  - (b) Family history of stuttering.
  - (c) Presence of parental consanguinity.
- (3) The three main categories of health-promoting lifestyle profiles:
  - (a) Survival skills (information on speech therapy per week and its effect, schedule for speech therapy, and data from psychological assessment of school-aged children during the speech session).
  - (b) Health maintenance skills (Physical exercise such as different types of sports, social relations of the stuttering child such as developing friendly relations with classmates and neighbors and participating in activities with others, and behavior in groups, in the school or in the club).
  - (c) Health promotion skills (counseling of the school-aged children suffering from pathological stuttering and their mothers so as to help them change their attitude).

*Tool II:* An observation checklist to observe school-aged children suffering from pathological stuttering and their mothers during speech therapy (Appendix).

#### The actual study

- (1) Children and their mothers/caregivers were interviewed using a questionnaire in the outpatient speech therapy program to assess their knowledge. Every child and his or her mother or caregiver were interviewed for 20–30 min.
- (2) The researcher observed children and their mothers/caregivers while undergoing speech therapy with regard to the following:

- (a) Speech production of school-aged children, such as:
- (i) Frequency of occurrence (always, sometimes, never) and duration (stuttering less than normal speech, equal to normal speech, more than normal speech) and consistency of stuttering (always, sometimes, never).
  - (ii) Intraphontric disturbance as repetition of first sound of word or the word or the whole sentence (always, sometimes, never).
  - (iii) Presence of any other speech disorder and symptoms during therapy.
- (b) Language skills:

The following information was evaluated:

- (i) Syntactic skills:  
The child has difficulty to remember and to use relevant terms.  
The child has difficulty making word associations or comparisons.
- (ii) Social pragmatic skills:  
The child is cooperative and attentive.  
The child uses poor eye contact.  
The child has difficulty using language for communicative purposes.

### Statistical analysis

The collected data were organized, tabulated, and statistically analyzed using SPSS (version 19; SPSS Inc., Chicago, Illinois, USA) software. Numerical variables were presented as mean and SD. The Student *t*-test was used for categorical variables. The number and percentage distribution was calculated and the difference was tested using the Monte Carlo exact test. Spearman's correlation was used to test the association between stuttering and total socialization score. The level of significance was fixed at *P* value less than 0.05.

### Results

The results of the current study are divided into three main parts as follows:

- (1) *Part I*: Biosocial characteristics of stuttering children and their mothers/caregivers.
- (2) *Part II*: The three main categories of health-promoting lifestyle:
  - (a) Survival skills.
  - (b) Health-maintenance skills.
  - (c) Health-promoting skills.
- (3) *Part III*: Observation of the children and their mothers/caregivers during the therapy session.

Table 1 shows the percentage distribution of stuttering children according to biosocial characteristics (age in years, sex, birth order, and educational level). Young boys constituted the highest percentage.

Table 2 presents the percentage distribution of stuttering children according to developmental milestones (recognition of family members, sitting, walking, talking, and control sphincters). It is clear

**Table 1 Percentage distribution of stuttering children according to biosocial characteristics**

Characteristics of children	<i>N</i> (%) ( <i>n</i> = 60)
Age (years)	
6	38 (63.3)
8	9 (15.0)
10–12	13 (21.7)
Mean ± SD	8.174 ± 1.66
Sex	
Male	39 (65.0)
Female	21 (35.0)
Birth order	
1st	22 (36.7)
2nd	26 (43.3)
3rd	11 (18.3)
4th	1 (1.7)
Mean ± SD	1.854 ± 0.78
Educational levels	
First and second primary education	40 (66.7)
Third and fourth primary education	8 (13.3)
Fifth and sixth primary education	12 (20.0)

**Table 2 Percentage distribution of stuttering children according to developmental milestones**

Developmental milestones	<i>N</i> (%) ( <i>n</i> = 60)
Recognition of family	
4 months	5 (8.3)
6 months	31 (51.7)
8 months	22 (36.7)
10+ months	2 (3.3)
Starting sitting	
6 months	27 (45.0)
8 months	21 (35.0)
10+ months	12 (20.0)
Starting walking	
12 months	19 (31.7)
14 months	25 (41.7)
18+ months	16 (26.7)
First sentence	
18 months	20 (33.3)
20 months	20 (33.3)
24 months	20 (33.3)
Control of sphincters	
2 years	18 (30.0)
3 years	25 (41.7)
4–5 years	17 (28.3)
Delayed language development	
Yes	33 (55.0)
No	27 (45.0)

that about 55% of children with stuttering suffer from delayed language development.

Table 3 shows the percentage distribution of mothers/caregivers of stuttering children according to their biosocial characteristics (age in years, educational level, occupation, family size, accommodation, and family residence). It is clear that more than half of the sample were housewives, had 3–4 family members, and lived in urban areas.

Table 4 shows the percentage distribution of stuttering children according to family history. A positive family history for stuttering was found in 25% of the sample.

Table 5 shows the correlation between percentage of stuttering children according to psychological state and age during speech session. It is clear that about half of the sample suffered from anxiety levels and a significant difference was observed between children's age and response to speech therapy ( $P = 0.017$ ).

Table 6 shows the percentage distribution of study participants on the basis of frequency of stuttering and severity of stuttering (moderate, mild, or severe). Three-quarters of the sample had a very slow or very fast speech rate; any other additional behavior when speaking was recorded.

Table 7 reveals the percentage distribution of stuttering children in terms of social relations and communication. More than half of the sample had friendly relations and participated in school activities.

Table 8 reveals the percentage distribution of stuttering children according to communication skills, difficulty in remembering, and speech content: slightly more than half of the sample had limitations in these aspects. Half of the sample used immature vocabulary.

Table 9 gives the percentage distribution of children in terms of maternal support, such as facilitating environmental communication, reducing communication stress, dissuading others from taunting their children, and turning to doctors for advice.

Table 10 shows the correlation between stuttering children's socialization skills and mothers' age. A significant difference was observed between mothers' age and children having interaction with doctors ( $P = 0.017$ ). The table illustrates no significant difference between mothers' age and the child being cooperative with others.

Table 11 shows the correlation between stuttering children's socialization skills and mothers' education. It is clear that mothers' educational level has no

**Table 3 Percentage distribution of stuttering children according to mothers' characteristics**

Characteristics of mothers of stuttering children	N (%) (n = 60)
Age (years)	
25	11 (18.3)
30	24 (40.0)
35	13 (21.7)
40	9 (15.0)
45+	3 (5.0)
Mean ± SD	34.92 ± 5.56
Educational level	
Illiterate or can read and write	8 (13.4)
Primary and preparatory	16 (26.7)
Secondary or technical institute	15 (25)
University	21 (35.0)
Occupation	
Housewife	38 (63.3)
Employee	22 (36.7)
Family size	
1–2	14 (23.3)
4–3	33 (55.0)
6–5	9 (15.0)
7+	4 (6.7)
Mean ± SD	3.60 ± 1.62
Accommodation type	
Shared house	6 (10.0)
Private house	40 (66.7)
Rented house	14 (23.3)
Residence	
Urban	35 (58.3)
Rural	25 (41.7)

**Table 4 Percentage distribution of stuttering children according to family history**

Family history	N (%) (n = 60)
Positive family history for stuttering	
Yes	15 (25.0)
No	45 (75.0)
Relationship to family history	n = 15 (25.0%)
Positive uncle	6 (40.0)
Positive aunty	5 (33.3)
Positive cousins	4 (26.7)
Negative	45 (75)
Start of stuttering	
<2 years	17 (28.3)
2 years	12 (20.0)
3 years	21 (35.0)
4+ years	10 (16.7)
Start of illness	
Gradual	38 (63.4)
Sudden	22 (36.7)
History of parental consanguinity	
Yes	15 (25.0)
No	45 (75.0)
Sibling history of stuttering	
Positive	10 (16.7)
Negative	50 (83.3)
Causes of stuttering	
Yes	17 (28.3)
No	43 (71.7)

**Table 5 Percentage distribution of stuttering children regarding psychological state, age, and education during speech therapy**

Responses to treatment	Children's age (years) ( <i>n</i> = 60) [ <i>N</i> (%)]		<i>P</i>
	6<8 ( <i>n</i> = 38)	8–12 ( <i>n</i> = 22)	
Response to speech therapy treatment	36 (94.7)	16 (72.7)	0.017*
Psychological state of children during speech session			
Anxiety	18 (47.4)	12 (54.5)	0.983
Anger	13 (34.2)	6 (27.3)	
Avoidance	7 (18.4)	4 (18.2)	
Response to speech therapy treatment	1–3 grade ( <i>n</i> = 40)	>3rd grade ( <i>n</i> = 20)	0.050*
	38 (95)	14 (70)	

\*Statistically significant difference between response to speech therapy treatment and children's age and education [ $P < 0.05$ ].

**Table 6 Percentage distribution of stuttering children according to observation of stuttering**

Observations of stuttering in children	<i>N</i> (%) ( <i>n</i> = 60)
Frequency of stuttering	
Always	14 (23.3)
Sometimes	45 (75)
Never	1 (1.7)
Severity of stuttering	
Mild	18 (30)
Moderate	24 (40)
Severe	18 (30)
Child has a very fast speech rate	
Always	12 (20)
Sometimes	39 (65)
Never	9 (15)
Child has a very slow speech rate	
Always	36 (60)
Sometimes	12 (20)
Never	12 (20)
Child repeats the first capital word	
Always	18 (30)
Sometimes	42 (70)
Never	0 (0)
Child repeats whole words	
Always	7 (11.7)
Sometimes	32 (53.3)
Never	21 (35)
Child repeats whole phrases	
Always	7 (11.7)
Sometimes	8 (13.3)
Never	45 (75)

**Table 7 Percentage distribution of stuttering children regarding social relation and communication**

Communication items	<i>N</i> (%) ( <i>n</i> = 60)
Child communicates with friends	47 (78.3)
Child participates in school activity	31 (51.7)
Child plays in groups	42 (70)

significant effect on children being cooperative with others and their interaction with doctors ( $P = 0.983$ ).

## Discussion

Stuttering is one of the most controversial diseases. It has several definitions and several theories in terms of

etiology. The line of treatment also differs greatly and produces variable degrees of improvement. The aim of treatment is not only to reduce dysfluency but also to replace stuttering with natural speech production with a normal rate. The lifestyle profile can be generally divided into survival skills, health-maintenance skills, and health-promoting skills [5].

This study aimed to investigate the lifestyle profile of children suffering from pathological stuttering and identify the factors that worsen or improve the condition of the child with pathological stuttering. The study was conducted at a speech therapy session covering a period of 5 months. A convenient sample of 60 children with pathological stuttering and their mothers/caregivers were recruited into the study. The children were aged 6–15 years and were undergoing speech therapy.

Two tools were used to collect the necessary data. The first tool was a structured questionnaire that included biosocial characteristic of the children, such as age, sex, birth order, educational level, and development history, and biosocial data of the mothers, such as age, educational level, occupation, family size, number of siblings, and family history of stuttering. This tool assessed the three main categories of health-promoting lifestyle: survival skills, health-maintenance skills, and health-promoting skills.

The second tool was an observation checklist developed by the researcher to observe children suffering from pathological stuttering as well as their mothers during speech therapy. It covered speech production of children with stuttering, communication skills, vocalization, and social pragmatics.

As regards age, the present study showed that the number of children with stuttering was inversely proportional to age. The mean age of the children was  $8.17 \pm 1.66$  years, and of them 63.3% were between 6 and 8 years old. This finding is in agreement with that of Craig *et al.* [10], who found the highest prevalence rate of 1.40–1.44% in young children and the lowest rate of 0.53% in adolescents [10,11].

**Table 8 Percentage distribution of stuttering children according to communication skills**

Communication skills observations	N (%) (n = 60)
Child has difficulty remembering and using relevant terms	
Always	23 (8.3)
Sometimes	31 (51.7)
Never	6 (10)
Methods of communication	
Verbal	31 (51.7)
Non verbal	5 (8.3)
Both verbal and nonverbal	24 (40)
Child uses immature vocabulary	
Always	30 (50)
Sometimes	29 (48.3)
Never	1 (1.7)
Child has difficulty making word association or comparisons	
Always	17 (28.3)
Sometimes	36 (60)
Never	7 (11.7)

**Table 9 Percentage distribution of stuttering children according to mothers' support for their children**

Mothers' support for their children	N (%) (n = 60)
Mothers dealing with children	49 (81.7)
Dealing with child normally	47 (78.3)
Adaption to the environment to facilitate communication	37 (61.7)
Reduces communication stress	35 (58.3)
Be a good listener	40 (66.7)
Allow time for the child to speak	42 (70)
Do not ask the child to talk when he is under stress	29 (48.3)
Do not allow others to tease, joke about the child's speech	58 (96.7)
Child follow-up visits	41 (68.3)
Document child condition	53 (88.3)
Refer to doctors for advice	35 (58.3)
Maintenance follow-up at home	11 (18.3)
Reason for irregular follow-up	
Not able	7 (14.3)
No time	18 (36.7)
Do not find any assistance	17 (34.7)
Child refusal	7 (14.3)

The male to female ratio in this study was 65%:35%. This result is in agreement with that of Mansson [12], who found a boy to girl ratio of 1.65:1%. Boys generally have more speech disorders because girls begin to speak earlier than boys and they have better speech and language skills, especially for social purposes [12,13].

As regards family history of stuttering, the present study revealed a positive history of stuttering among 25% of children. This explains the importance of counseling for prevention, especially in case of positive family history. This finding is in agreement with a study by Andrews and Harries [14], who found that 25–60% of stutterers had relatives who stuttered.

As regards developmental milestones in stuttering children, this study showed that 51.7% of children started recognizing family members at 6 months of age and 36.7% recognized at 8 months. This result is in agreement with the differentiation phase described by Mahler [15], who reported that the infant identifies characteristics that differentiate his mother from self and from others at age 6–10 months [15].

However, more than a quarter of the sample spoke their first sentence at 18, 20, and 24 months. This result is in agreement with Piaget's theory; he stated that the child forms his first sentence at 2 years [16].

The results of the present study revealed that 55% of stuttering children have a history of delayed language development. This is in agreement with the observation of Peters and Guitar [17] who found that stuttering children were associated with concomitant problems like delayed language development.

With regard to the psychological state of children during speech sessions, more than half of the sample had anxiety, about 30% had anger-related issues, and nearly 5% of the sample had avoidance issues. Information on speech therapy and psychological assessment (anxiety, anger, and fear) is necessary to help those children understand the nature of their problems, method of therapy, and treatment details of stuttering. This may help reduce dysfluency, replace stuttering with natural speech production having a normal rate, and improve communication and social adjustment, resulting in increased self-confidence, as much as possible [12]. There was significant difference between child age and educational level and child response to treatment ( $P = 0.017$  and  $0.05$ , respectively). Young children and those with primary education responded better to speech therapy because they were still unaware about their problem.

The present study showed that the majority of the sample had a speech rate that was too slow or too fast. This result is in agreement with that of Dell [11], who found that stuttering was associated with speaking very rapidly. The majority of the sample had intraphonemic disruption (pathological stuttering), which needed speech therapy, whereas repetition of syllables and words (physiological stuttering) occurred in 25% and needed counseling only. Our finding is in agreement with that of Yairi and Ambrose [18], who found frequent repetition of sounds and syllables. This is useful in distinguishing between fluent and dysfluent speech.

In the present study more than three-quarters of children preferred to communicate with others, as

shown previously by Bijleveld [19]. Only 51.7% of the sample was participating in different school activities; the remaining 48.3% did not like participating or they were not allowed to participate. This result may be attributed to the child's fear of occurrence of any problem that may trigger stuttering. School age and adolescence are periods of social interaction, development of relations, and development of self-identity. Stuttering negatively affects the relation of the child with family, peers, and colleagues. Participation in school activities helps develop and promote the child's physical, social, and behavioral skills [10,12].

**Table 10 Correlation between stuttering children's socialization skills and mothers' age**

Socialization items	Mothers' ages (n = 60) [N (%)]		P
	<35 years (n = 35)	≥ 35 years (n = 35)	
	Child prefers a routine structure		
Always	15 (42.9)	8 (32)	
Sometimes	10 (28.6)	10 (40)	
Never	10 (28.6)	7 (28)	
Child prefers to spend more time alone rather than in a group			0.750
Always	15 (42.9)	10 (40)	
Sometimes	10 (28.6)	9 (36)	
Never	10 (28.6)	6 (24)	
Child has interaction with doctors			0.017*
Always	16 (45.7)	5 (20)	
Sometimes	19 (54.3)	18 (72)	
Never	0 (0)	2 (8)	
Child participates with other children during session			0.200
Always	21 (60)	12 (48)	
Sometimes	11 (31.4)	7 (28)	
Never	3 (8.6)	6 (24)	

\*Statistically significant difference between the child's interaction with doctors and mother's age [ $P < 0.05$ ].

With respect to the mothers' support of their children, it was found that about 81.7% of mothers dealt effectively with their children, 61.7% changed the environment surrounding the child to facilitate communication, 66.7% were good listeners, 96.7% did not allow others to joke about the child's speech disorder, 58.3% reduced communication stress, and 70% allowed time for the child to speak.

There was a statistically significant correlation between mothers'/caregivers' age in years and the child's response to treatment. Also, a statistically significant correlation was found between the child's age in years, educational level, and response to treatment (speech therapy session). The rest of the parameters concerning the children and their mothers'/caregivers showed no significant correlation.

## Conclusion

On the basis of the result of this study it can be concluded that pathological stuttering as a disease can be easily diagnosed, is difficult to treat, and has many negative impacts on the physiological, psychological, social, and spiritual aspect of a child's life.

Stuttering is a controversial disease; it is unpredictable and stutterers are often interrupted. People suffering from stuttering often have financial problems, low self-esteem, and dependency. Furthermore, their stuttering decreases their social and scholar activity and leads to frustration.

## Recommendations

(1) This study recommends searching for the root cause of stuttering to tailor therapy to each case accordingly.

**Table 11 Correlation between the socialization skills of stuttering children and mothers' education**

Socialization items	Mothers' educations (n = 60) [N (%)]			P
	Primary (n = 24)	Secondary (n = 15)	University (n = 21)	
Child prefers a routine structure				0.817
Always	10 (41.7)	6 (40)	7 (33.3)	
Sometimes	9 (37.5)	5 (33.3)	6 (28.6)	
Never	5 (20.8)	4 (26.7)	8 (38.1)	
Child prefers to spend more time alone rather than in a group				0.900
Always	12 (50)	5 (33.3)	8 (38.1)	
Sometimes	6 (25)	6 (40)	7 (33.3)	
Never	6 (25)	4 (26.7)	6 (28.6)	
Child has interaction with doctors				0.983
Always	9 (37.5)	5 (33.3)	7 (33.3)	
Sometimes	14 (58.3)	10 (66.7)	13 (61.9)	
Never	1 (4.2)	0 (0)	1 (4.8)	
Child participates with other children during session				0.183
Always	14 (58.3)	9 (60)	10 (47.6)	
Sometimes	4 (16.7)	6 (40)	8 (38)	
Never	6 (25)	0 (0)	3 (14.3)	

No significant difference between the child's socialization skills and mother's age [ $P > 0.05$ ].

- (2) Simple booklets containing an explanation of the disorder, advice about communication with others, and methods to reduce stuttering severity are necessary for children undergoing maintenance speech therapy. It should be available at the speech therapy center.
- (3) Mothers/caregivers should make an effort to enhance the child's school achievements by cooperating with school authorities and speech centers in framing suitable schedules of speech sessions to prevent communication problems.
- (4) Mothers/caregivers should discuss with school personnel to create recreational activities and suitable hobbies for children who stutter. This can improve the psychological state of such children.
- (5) Mothers/caregivers should encourage the parents of children receiving maintenance speech therapy session to improve communication.

## Acknowledgements

### Conflicts of interest

There are no conflicts of interest.

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## Appendix

### أستمارة الملاحظة

يتم ملاحظة الطفل و الأم أثناء اخذ الجلسة من خلال...

### ملاحظة طريقة أخراج كلام الطفل

١- حدوث وتكرار التلعثم

" ١. دائما ( ) , ٢. بعض الوقت ( ) , ٣. أبدا ( ) ."

٢- شدة حدوث التلعثم

" ١. أقل من الطبيعي ( ) , ٢. متساويين ( ) , ٣. أكثر من الطبيعي ( ) ."

٣- نمط كلام الطفل سريع

" ١. دائما ( ) , ٢. بعض الوقت ( ) , ٣. أبدا ( ) ."

٤- نمط كلام الطفل بطيء

" ١. دائما ( ) , ٢. بعض الوقت ( ) , ٣. أبدا ( ) ."

٥- يقوم الطفل بتكرار بداية اول حرف من الكلمة

(Continued)



(Continued)

- " ١. دائما ( ) , ٢. بعض الوقت ( ) , ٣. أبدا ( ) ."
- ٦- يقوم الطفل بتكرار بداية الكلمة بأكملها
- " ١. دائما ( ) , ٢. بعض الوقت ( ) , ٣. أبدا ( ) ."
- ٧- يقوم الطفل بتكرار الجملة بأكملها
- " ١. دائما ( ) , ٢. بعض الوقت ( ) , ٣. أبدا ( ) ."
- ٨- يقوم الطفل بالبعد عن الحروف التي تحدث التلعثم
- " ١. دائما ( ) , ٢. بعض الوقت ( ) , ٣. أبدا ( ) ."
- ٩- يستخدم الطفل بعض السلوك أثناء التحدث مع الآخرين
- " ١. دائما ( ) , ٢. بعض الوقت ( ) , ٣. أبدا ( ) ."
- ١٠- عند الإجابة بأحيانا أو بعض الوقت .. ما هو السلوك
- " ١. حركات غير ارادية في اليد ( ) , ٢. مص الشفاة ( ) , ٣. قفل العين ( )  
٤. أخر يذكر ( ) ."
- ١١- عندما يتكلم الطفل يصاحب التلعثم أنواع أخرى من اضطرابات الكلام
- " ١. دائما ( ) , ٢. بعض الوقت ( ) , ٣. أبدا ( ) ."
- ١٢- أثناء الجلسة يحدث تغير في تنفس الطفل
- " ١. دائما ( ) , ٢. بعض الوقت ( ) , ٣. أبدا ( ) ."
- ١٣- أثناء الجلسة يحدث تغير في لون الطفل
- " ١. دائما ( ) , ٢. بعض الوقت ( ) , ٣. أبدا ( ) ."
- ١٤- تستطيع الأم تطبيق التمرينات التي تم اعطائها بواسطة الطبيب
- " ١. دائما ( ) , ٢. بعض الوقت ( ) , ٣. أبدا ( ) ."

#### ملاحظة مهارات الاتصال

يتم تقييم القدرة علي استخدام الاتصال اللفظي و الغير لفظي عن طريق

#### الألفاظ مثل

١٥- يجد الطفل صعوبة في التذكرو استخدام بعض المصطلحات في المكان المناسب

" ١. دائما ( ) , ٢. بعض الوقت ( ) , ٣. أبدا ( ) ."

١٦- يستخدم الطفل في التعامل مع الاخرين طريقة الاتصال

(Continued)

١. لفظي ( عن طريق الكلام ) ( )  
 ٢. غير لفظي ( عن طريق الإشارات ) ( )  
 ٣. الاثنين معا ( )

١٧- يستخدم الطفل الألفاظ غير متكاملة

" ١. دائما ( ) , ٢. بعض الوقت ( ) , ٣. أبدا ( ) ."

١٨- يجد الطفل صعوبة في عمل ترابط أو مقارنة بين الكلمات

" ١. دائما ( ) , ٢. بعض الوقت ( ) , ٣. أبدا ( ) ."

الاجراء الاجتماعي مثل

١٩- يكون الطفل متعاون مع الآخرين

" ١. دائما ( ) , ٢. بعض الوقت ( ) , ٣. أبدا ( ) ."

٢٠- يستخدم الطفل الاتصال عن طريق العين

" ١. دائما ( ) , ٢. بعض الوقت ( ) , ٣. أبدا ( ) ."

٢١- من السهل تشتيت الطفل

" ١. دائما ( ) , ٢. بعض الوقت ( ) , ٣. أبدا ( ) ."

٢٢- من السهل ان يصاحب الطفل الإحباط

" ١. دائما ( ) , ٢. بعض الوقت ( ) , ٣. أبدا ( ) ."

٢٣- يجد الطفل صعوبة في استخدام اللغة للأغراض المراد التعبير عنها

" ١. دائما ( ) , ٢. بعض الوقت ( ) , ٣. أبدا ( ) ."

٢٤- يفضل الطفل استخدام الروتين المنظم

" ١. دائما ( ) , ٢. بعض الوقت ( ) , ٣. أبدا ( ) ."

٢٥- يفضل الطفل أن يقضي معظم الوقت وحده أكثر من أن يكون في جماعة

" ١. دائما ( ) , ٢. بعض الوقت ( ) , ٣. أبدا ( ) ."

٢٦- الطفل يتفاعل مع الطبيب بطلاق

" ١. دائما ( ) , ٢. بعض الوقت ( ) , ٣. أبدا ( ) ."

٢٧- الطفل يشارك مع الزملاء اثناء الجلسة

" ١. دائما ( ) , ٢. بعض الوقت ( ) , ٣. أبدا ( ) ."