Impact of Speech Disorders on Psychosocial Status of School Age Children

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Abstract

Children with speech disorders frequently experience peers victimization and rejection which make them susceptible for psychosocial disturbances. **Aim of the study**: This study aimed to assess the impact of speech disorders on psychosocial status of school-age children. **Subjects and method**: a case-control study design was used to perform this study. It was conducted on a total of 104 speech disordered children attending the Unit of Phoniatrics at both Assiut and Beni-Suef University Hospitals and a control group composed of 80 normal school-age children. Data were collected by utilizing five tools; **Tool (1)**:- A Structured Interview Questionnaire, **Tool (2)**:- The Children's Manifest Anxiety Scale, **Tool (3)**: Children Depression Inventory Scale, **Tool (4)**: Self-Esteem Inventory Scale, and **Tool (5)**: Introverted Behavior Scale. **Results**: The highest percentage of the studied speech disordered children had severe anxiety, moderate depression, moderate self-esteem disturbance and severe introverted behavior. On the other hand, the highest percentage of the control group subjects had moderate anxiety, no depression, mild self-esteem disturbance and mild introverted behavior. **Conclusion**: speech disorders affect the psychosocial status of school-age children. **Recommendations**: Workshop training programs for nurses on how to help caregivers to cope appropriately with their children to reduce the emergence of psychosocial problems.

Key words: Speech Disorders - School Age - Psychosocial Status & Nursing Care Plan.

Introduction

Speech disorder is as a type of communication disorders, where normal speech is disrupted. Speech disorders refer to problems in producing the sounds of speech (**National Institute on Deafness and Other Communication Disorders (NIDCD), 2010**). Speech disorders include dyslalia, stuttering, nasality and dysarthria. In many cases, the cause of speech disorders is unknown. However, speech disorders may result from a variety of etiologies such as neurological disorders, brain injury, cleft palate and hearing impairment (**National Dissemination Center for Children with Disabilities, 2013**).

The prevalence of speech disorders in young children is 8 to 9 %. Incidence of dyslalia is 1% among boys, and 2% among girls. There are no known figures indicating the incidence of dysarthria and nasality in the general population. Stuttering occurs early in childhood and rarely after adolescence with an incidence of 4% of children under age of 12 years (**NIDCD, 2010**).

Three key considerations exist for assessment of psychosocial impact of speech disorders. First, assessment should be holistic, incorporating psychological and social factors and the consequences of these factors for the individual and those within his immediate environment. Second, one should consider the impact of the speech disorder in the context of other medical, environmental, and personal factors. Finally, assessments should be valid and reliable providing credible outcome data (**Lowit & Kent, 2011**).

Plans of care should include individualized communication strategies so that the caregiving staff, health care providers, families, and significant others know the most effective way to enhance communication with persons with speech disorders (**Ebersole et al., 2014**).

Significance of the study

Children with speech disorders have poor conversational skills, poor non-verbal skills and poor social perception, all of which can hinder their ability to form friendships with their peers and may lead them to become marginalized and isolated. So, they often experience anxiety and depression which can affect their psychosocial status. These problems can become exacerbated with age if they remain unidentified and untreated, and are likely to result in poorer outcomes for the children concerned. Children with speech disorders tend to avoid interaction with unfamiliar people or speaking in front of others. The affected child appears embarrassed, socially withdrawn, self-conscious, and anxious if asked to interact with strangers

Aim of the study

To assess the impact of speech disorders on psychological and social status of school-age children.

Study question

Do speech disorders have an impact on psychosocial status of school-age children?

Subjects & Methods

Research design

A cross sectional case-control design was utilized to conduct this study.

Setting

Data were collected from school-aged children with speech disorders attending the Unit of Phoniatrics at Assiut University Hospital and the Phoniatrics Outpatient Clinic at Beni-Suef University Hospital. The control group subjects were attending Abu-Bakr El-sedeek primary school at Beni-Suef City.

Sample

A convenient sample of 104 school-age children suffering from speech disorders were included in the study. The study subjects with speech disorders were selected if they had a speech disorder e.g. dyslalia, stuttering, nasality or dysarthria. The study contained a convenient sample representing the control group selected from Abu-Bakr El-sedeek primary school at Beni-Suef City. The study was carried out during the period from the beginning of April 2015 to the end of September 2015.

Tools:-

Tool (1): A structured Questionnaire Interview Sheet:

It was divided into two parts:-

 Part I: - **Socio-demographic Data Questionnaire –** To obtain data related to the studied child (the child's name, age, gender... etc.).

Part II: Socio-Economic Scale of the Family: This scale was developed by **Abd El-Tawab (2004)** to assess the socio-economic status of the family.

After calculating the total score of each child, categorization of the selected children was done as follows:

- Calculation of the mean and standard deviation for the total scores of the studied sample.
- Children having scores higher than the mean plus one SD are classified as high socio-economic class.
- Children having scores lower than the mean minus one SD are classified as low socio-economic class.
- Children in between are classified as middle class.

Tool (2): The Children's Manifest Anxiety Scale (CMAS);

It was adopted from the Arabic Version of the CMAS by **El-beblawy (1987)**. This scale was consisted of 53 sentences. Each sentence had a score, 0 for no and 1 for yes. The total score was calculated and the studied children were categorized accordingly. Those who obtained a score equal to or less than (18) were considered having mild anxiety. Children who obtained a score from 19 to 28 were considered having moderate anxiety. While those who obtained a score equal to or more than (29) were considered having severe anxiety.

Tool (3): Children Depression Inventory (CDI) Scale

This scale was adopted from the Arabic version of the CDI by **Ghareeb & Beshai (1988)**. It included 27 sentences. Each sentence had a score ranging from 0-2 according to the child's answer; 0 for no and 1 for sometimes and 2 for yes. The studied children were categorized according to the total score. Those who obtained a score equal to or less than 14 were not considered having depression. Children who obtained a score from 15 to 22 were considered having mild depression. Children who obtained a score from 23 to 29 were considered having moderate depression. Children who obtained a score equal to or more than 30 were considered having severe depression.

Tool (4) Self-Esteem Inventory (SEI) Scale

This scale was adopted from the Arabic version of the SEI by **Mosa & El-dosoky (1987)**. The Short School Form included 17 items to measure self-esteem of school age children, and evaluate attitudes toward the self in social academic, family and personal areas of experience. Each sentence had a score ranging from 0-1; 1 for applied and 0 for not applied. The total score was calculated and the studied children were categorized regarding their self-esteem disturbance. Children who obtained a score equal to or less than 5 were considered having a mild self-esteem disturbance. Children who obtained a score from 6 to 11 were considered having a moderate self-esteem disturbance. Children who obtained a score equal to or more than 12 were considered having a severe self-esteem disturbance.

Tool (5): Introverted Behavior Scale

This scale was developed by **Abd El-Hamid, (1995)**. It included 30 sentences for assessing shyness, social isolation and negativity. Each sentence has a score ranging from 0-2; 0 for no, 1 for sometimes and 2 for yes. After calculating the total score, the studied children were categorized accordingly. Those who obtained a score equal to or less than 29 were considered having a mild introverted behavior. Children who obtained a score from 30-39 were considered having a moderate introverted behavior. Children who obtained a score equal to or more than 40 were considered having a severe introverted behavior.

Method of data collection

- **Administrative design**: Permission was obtained from both directors of Assiut and Beni-Suef University Hospitals.
- The tools used for the study were ensured to be valid and reliable before the beginning of data collection.
- **A pilot study** was carried out on 10 % children who fulfilled the criteria of the study to evaluate the applicability and clarity of the tools and to estimate the length of the time needed to fill the sheet. Analysis of the pilot study revealed that modifications are required such as multiplying the monthly family income variable by 3.5 to accommodate the rate of inflation at the time of conducting the study. These modifications were done and children included in the pilot study were excluded from the total sample.
- **Ethical considerations:** An informed consent was taken from the child's parents. Clarification of the nature and aim of the study was done on initial interview with each child's parents with an emphasis that the study yields no harm to the studied children. The obtained data were available only to the researcher.
- **Field of the work:** The researcher interviewed each participated child and his parents individually to obtain the necessary information to assess psychosocial status through using the previously

mentioned five tools of the study. The researcher first introduced herself to them and gave them a complete background about the study. Throughout the interview, related information was recorded in the designed sheet depending upon the response of the participant. Data were collected during the period from the beginning of April 2015 to the end of September 2015. Data were collected two days each week from the selected settings and four days in the final semester vacation. The study was conducted in the morning shift. The time used for filling each sheet ranged between 35-55 min.

Statistical Analysis

All the statistical analysis was performed using SPSS package version 20. The collected data were coded and analyzed. Data were presented using descriptive statistics in the form of frequencies and percentages for qualitative variables and mean and standard deviations for quantitative variables. Qualitative variables were compared using Chi-square and ANOVA tests. Spearman correlation coefficient test was used to test correlation between variables. Statistical significance was considered at P. value < 0.05.

Results

Table (1): Socio-demographic characteristics of the studied children.

Items	Children with speech disorders (n= 104)		Children without speech disorders (n= 80)	
	No	%	No	%
Age				
6 - <9 years	66	63.46	38	47.50
≥9 - 12 years	38	36.54	42	52.50
Mean± SD	8.31 ± 2.13		9.17 ± 2.27	
Gender				
Male	66	63.46	32	40.00
Female	38	36.54	48	60.00
Residence				
Rural	60	57.69	38	47.50
Urban	44	42.31	42	52.50
Level of child's education				
Illiterate	14	13.46	0	0.00
Read and write	14	13.46	6	7.50
Primary school	76	73.08	74	92.50

Table (2): Percentage distribution of socio-economic levels among the studied children.

Socio-economic level	Children with speech disorders		Children without speech disorders		P. value
	No.	%	No.	%	
Low	20	19.23	10	12.50	
Middle	64	61.54	60	75.00	0.585
High	20	19.23	10	12.50	
Mean± SD	22.98 ± 6.92		23.48 ± 4.75		

Table (3): The relationship between levels of anxiety, depression, self-esteem disturbance and introverted behavior.

Items	Depression		Self-esteem disturbance		Introverted behavior	
	r	Sig	r	Sig	r	Sig
Children with speech disorders						
Anxiety	0.836	0.000**	0.384	0.000**	0.833	0.000**
Depression	--	--	0.604	0.000**	0.855	0.000**
Self-esteem	--	--	--	--	0.321	0.004**
Introverted behavior	--	--	--	--	--	--
Children without speech disorders						
Anxiety	0.436	0.000**	0.451	0.000**	0.470	0.000**
Depression	--	--	0.579	0.000**	0.589	0.000**
Self-esteem	--	--	--	--	0.639	0.000**
Introverted behavior	--	--	--	--	--	--

Table (4): The relationship between children with and those without speech disorders related to their socio-demographic characteristics.

Item	Children with speech disorders n= 104		Children without speech disorders n= 80		P. value
	No.	%	No.	%	
Age / years					
6 - <9 years	66	63.46	38	47.50	0.008*
≥ 9 -12 years	38	36.54	42	52.50	
Gender					
Male	66	63.46	32	40.00	0.001**
Female	38	36.54	48	60.00	
Residence					
Rural	60	57.69	38	47.50	0.171
Urban	44	42.31	42	52.50	
Level of child's education					
Illiterate	14	13.46	0	0.00	
Read and write	14	13.46	6	7.50	0.001**
Primary school	76	73.08	74	92.50	
Socio economic level					
Low	20	19.23	10	12.50	
Middle	64	61.54	60	75.00	0.585
High	20	19.23	10	12.50	

Table (5): The relationship between children with and those without speech disorders related to levels of the psychosocial problems.

Item	Children with speech disorders n= 104		Children without speech disorders n= 80		P. value
	No.	%	No.	%	
Anxiety level					
Mild	20	19.23	32	40.00	0.000**
Moderate	26	25.00	34	42.50	
Severe	58	55.77	14	17.50	
Depression level					
No depression	18	17.30	56	70.00	0.000**
Mild	24	23.08	18	22.50	
Moderate	38	36.54	6	7.50	
Severe	24	23.08	0	0.00	
Self-esteem disturbance Level					
Mild	0	0.00	44	55.00	0.000**
Moderate	88	84.62	30	37.50	
Severe	16	15.38	6	7.50	
Introverted behavior level					
Mild	32	30.77	48	60.00	0.000**
Moderate	26	25.00	24	30.00	
Severe	46	44.23	8	10.00	

*Statistically significant difference ($p \leq 0.05$).
** Highly Statistically significant difference ($p \leq 0.01$).

Table (1):- shows that the highest percentage of the studied children with speech disorders (63.46 %) was aged between six and less than nine years old with a mean age of 8.31 ± 2.13 years. As well, boys were more than girls (63.46 % and 36.54 % respectively). According to the level of education, the majority of them (73.08 %) were in the primary school and more than half of them (57.69 %) were from rural areas. Regards the studied children without speech disorders, more than half of them (52.50 %) were aged were aged between nine and twelve years old with a mean of 9.17 ± 2.27 and an equal percentage were from urban areas. More than half of them (60.00 %) were males. As well, the majority of them (92.50 %) were in the primary school.

Table (2):- shows that the highest percentage of the studied children with speech disorders (61.54 %) was from the middle socio-economic class with a mean of 22.98 ± 6.92. Similarly, the highest percentage of the studied children without speech disorders (75.00 %) was from the middle socio-economic class with a mean of 23.48 ± 4.75.

Table (3):- shows that there was a highly statistically significant positive correlation between levels of anxiety and both depression, and introverted behavior. A weak positive correlation was present between levels of anxiety and self-esteem disturbances in both the study and the control groups. A positive correlation was found between levels of depression and self-esteem. There was a positive correlation. A weak positive correlation was found between levels of self-esteem and introverted behaviors in children with speech disorders but it was moderate in children without speech disorders.

Table (4):- shows a statistically significant difference ($P \leq 0.05$) between the children with and without speech disorders as regards age. Besides, there was a highly statistically significant difference ($P \leq 0.01$) between the different types of speech disorders as regards gender and level of child's education.

Table (5):- shows a highly statistically significant difference ($P \leq 0.01$) between the different types of speech disorders regarding levels of anxiety, depression, self-esteem disturbance and introverted behavior.

Discussion

Children with speech disorders frequently experience peers victimization. Children who are chronically victimized by their peers have been found to be at risk for undesirable psychosocial and academic outcomes, including anxiety, depression, impaired concentration, somatic symptoms, impaired self-esteem, absenteeism, academic under-achievement, and suicidal ideation (**Redmond, 2011**).

According to the studied children's age, the highest percentage of the studied children with speech disorders was aged between six and less than nine years old with a mean age of 8.31 ± 2.13 years. This finding is consistent with results of **Farag, (2009)** who found that more than half of the studied school-age children with speech disorders were aged between six and less than nine with a mean age of 9.2 ± 2.1.

As regards the studied children's gender, the present study results showed that males were more affected with speech disorders compared to females. This finding agrees with a study carried out by **McKinnon et al., (2007)**; **Keating et al., (2008); and Pestel, (2012)** who found a higher prevalence of speech disorders in males than in females. This result also agrees with the results of a study carried out by **Dave et al., (2013)** who studied 60 Indian patients for speech disorders and results showed that speech disorders were more prevalent in males as compared to females.

Regarding the family socio-economic status of the studied sample, it was observed that the highest percentage of the studied children both with and without speech disorders were from the middle socio-economic class. This result agrees with **Keating et al., (2008)** whose results showed that children with a speech disorder were no more likely to come from a low socio-economic background than their counterparts without a speech disorder. This finding is inconsistent with **Beitchman et al., (2010)** who found that the majority of the studied sample had a low family socio-economic status. This may be attributed to the difference in the methods used for collecting data in the two studies.

According to anxiety levels in speech disordered children, the present study revealed more than half of the studied children with speech disorders had severe anxiety while the highest percentage of the control group children had moderate anxiety. This may be explained by feelings of uncertainty and unpredictability about speech dysfluencies and due to failure in achieving fluent speech.

The study results showed that levels of depression were higher in speech disordered children than children without speech disorders. This may be explained that numerous failed trials of correcting speech lead to a feeling of helplessness and hopelessness which in turn leads the child to be depressed.

Regarding the level of self-esteem disturbances, the majority of the studied children with speech disorders had moderate self-esteem disturbances. This agrees with findings of a longitudinal exploratory study carried out by **Rannard & Glenn (2009)**, who examined self-esteem in children with speech disorders using the Pictorial Scale of Perceived Competence and Acceptance three times during a school year. Most children scores higher self-esteem disturbances at the end of the school year than at the beginning.

The results of the present study showed that the highest percentage of the studied children with speech disorders had a severe introverted behavior. This may be interpreted by that children with speech disorders are at a particularly high risk for being bullied by peers so they prefer social isolation over being extroverted especially in the school setting. This finding is in agreement with **Snowling et al., (2006)** who found that there was a raised incidence of social difficulties in children with speech disorders.

The present study results support the study hypothesis and add to the growing body of evidence that supports the negative psychosocial effects of speech disorders. The study results agree with a study carried out by **Snowling et al., (2006)** who studied psychosocial outcomes at 15 years of children with a preschool history of speech-language impairment using a psychiatric interview and the Child Behavior Checklist and The Early Language Milestones Scale (*ELMS*), social difficulties questionnaire and found that there was a raised incidence of attention and social difficulties in children with speech disorders.

Conclusion & recommendations

The present study revealed that speech disorders negatively affect the psychosocial status of affected school-age children.

Based upon findings of the current study, Workshop training programs for nurses on how to help caregivers to cope appropriately with their children with speech disorders to reduce the emergence of psychosocial problems are highly recommended. Collaboration between speech pathologists and psychologists is required to develop and implement a comprehensive assessment and treatment programs for psychosocial disorders among children with speech disorders.

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