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of fear as a barrier against a negative life event and getting effective communication[32]

Ezrati- Vinacour, Levin reported that anxiety is a trait of CWS. The anxiety from social communication is related directly to stuttering severity.[33] Blumgart et.al, believed that the higher the severity, the greater the impact on quality of life,[34] whereas others didn't believe that.[35][36]

The CWS was perceived negatively by their families[37] and was rejected;[38] they were exposed to negative social experiences with their families and peers.[4] The SE was affected by Parental attitudes.[39] Wischner reported that a good familial SE in CWS whose parents waited patiently during a child's stuttering.[40]

Conclusion:

Understanding of behavior, social competency, anxiety, and SE levels in SWC helps in management planning, as well as parental attitudes. There is a critical need for interdisciplinary teams working with CWS. Behavior therapy is mandatory for those children, besides ordinary speech intervention therapy.

Limitations of the study:

Our study had several limitations.

1. First, we focused on the relationship between stuttering and psychological symptoms without follow- up after rehabilitation.
2. Second, the sample size was small. So we couldn't determine the details of psychological symptoms.
3. Third, the study done during pandemic COVID-19, the children were affected already from the lockdown and isolation.
4. Fourth, the instruments used either the Coppersmith self- esteem Inventory or the Children manifest anxiety scale were not validated in Egyptian population.
5. Fifth, the occurrence of pandemic of COVID-19 and subsequent periods of lockdown and associated fear from seeking medical advice in hospitals led to slowing of collection of data.

Recommendation:

Application of multidisciplinary approaches to stuttering diagnosis and management, including ordinary speech therapy, child psychiatry, behavioral therapist.

Conflict Of Interest

There is no conflict of interest.

List Of Abbreviations:

Arabic Stuttering Severity Instrument (A- SSI), Auditory Perceptual Assessment (APA), Children who stutter (CWS), Cognitive behavior therapy (CBT).

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Table (6) Distribution of Children manifest anxiety scale scores in study group regards stuttering severity index

		Stuttering Severity Index				ANOVA	
		Mild	Moderate	Severe	V.Severe	F	P- Value
Total Score Of Anxiety	Range	11- 28	9- 36	8- 20	25- 34	5.4	0.005* (S)
	Mean±SD	21.833± 5.184	25.583± 7.948	12.750± 5.252	30.333± 4.726		
Physiological	Range	1- 8	1- 8	0- 2	4- 6	4.7	0.009* (S)
	Mean±SD	4.750± 2.454	5.667± 1.923	1.250± 0.957	5.000± 1.000		
Symptomatic	Range	4-9	1-11	0-8	6-11	3.6	0.026* (S)
	Mean±SD	6.250± 1.485	7.250± 3.334	3.000± 3.559	9.333± 2.887		
Mental	Range	1-4	0-4	1-3	2-3	1.2	0.319
	Mean±SD	2.917± 0.996	2.417± 0.996	2.000± 0.816	3.000± 1.000		
Social	Range	1-5	0-5	0-3	4-4	1.9	0.148
	Mean±SD	2.250± 1.288	2.833± 1.528	1.750± 1.500	4.000± 0.000		
Behavioral	Range	0-6	2-6	2-4	3-6	1.6	0.200
	Mean±SD	4.250± 1.913	4.417± 1.564	2.500± 1.000	5.000± 1.732		
Negative expectation	Range	0-5	1-5	1-4	4-4	3.4	0.029*(S)
	Mean±SD	1.583± 1.505	3.000± 1.348	4.000± 1.500	2.250± 0.000		

This table showed a comparison between scores of children manifest scale in the study group regards stuttering severity index and revealed a significant difference in the total score of anxiety, physiological anxiety, symptomatic anxiety, and negative expectation as regards stuttering severity.

Discussion:

The main aim of this study was to detect the self- esteem and anxiety among Egyptian CWS and its relation with stuttering severity. The control group in the study was selected to be age and gender- matched with the stuttering group. Our results showed no significant difference between both groups according to age and gender Table (1).

Gender is one of the strongest predisposing factors for stuttering. The gender of CWS hasn't been linked to stuttering severity in this study, as shown in Table (2). The male to female ratio was (3: 1) in this study, and this is matched to Nogueira et.al, who reported that the ratio was (3.72: 1).[19]

This study was done during pandemic COVID-19; these explained the scores of a control group (non- stuttering children) were elevated in Coopersmith self- esteem inventory (SEI)& Children manifest anxiety scale. During this COVID-19 pandemic, the children and adolescents show increased anxiety and depression due to lockdown.[20] In addition to fear and worry about their family members,[21] the interrupted academics and an unknown future caused stress.[22]

1. Evaluation of self- esteem among CWS by (SEI): A significant difference Table (3) between both groups regards total score of SE (p< 0.001), social SE (p< 0.001), general SE (p= 0.002)& school SE (p= 0.005), but in school self- esteem, both groups had good SE. There was a non- significant difference in home SE (P= 0.099), although it was affected in the control group, and this explained that the study done during pandemic COVID-19 and was affected on the psychological behaviors of children.

   The good general self- subscale is> 18.64; CWS had (14.548± 3.659) in this study. The good Social Self- Peer subscale is> 5.67, but in this study, CWS had (3.774± 1.668). The good Home- Parents- subscale is> 4.96, but in this study, they had (4.677± 1.922). The good School- Academic subscale is> 4.12, but in this study, they had (4.677± 1.558). The total SEI score above 66 is considered high self- esteem; between (33- 66) is moderate self- esteem, and below 33 is low self- esteem; in this study, it was (56.323± 14.358). So CWS scores ranged from moderate to high self- esteem. All items of (SEI) were affected in this study with stuttering except the School- Academic subscale. Pearsoet& Zuckner reported that the self- esteem was affected negatively in CWS,[23][24] while others found that the SE wasn't affected comparing to control samples.[4][5][25][26] Familial attitudes were the important risk factors associated with CWS.[6] Positive parental support can help CWS[27] Cherif et.al, shared the findings that CWS has low SE on the General self- subscale.[28] In spite, Cherif et.al, revealed that the CWS had low SE in the school- Academic subscale and good SE in other domains, contrary to our results[28] CWS will not be suffered from low SE until the advanced stage of stuttering. Cherif et.al, reported that the first domains affected in stuttering were the General and academic SE.[28] The SE state is important in the clinical management of stuttering.[26] CWS exposed to frequent negative parental and social criticism, so SE is based on the social experience.

2. Evaluation of anxiety among CWS by Children manifests anxiety scale: The results showed in Table (4) that the CWS had a significant score in items of Children manifest anxiety scale, but not detected statistically except the negative expectation had significant difference. As regards the total score of anxiety measured as follows: less than 18 means low anxiety level, while a score between (18& 28) is considered a medium level of anxiety, while a level higher than 28 is considered higher than normal anxiety. So, the CWS in this study get (23.290± 7.542), that is means the cases were medium level of anxiety.

   Anxiety is considered the most common behavioral problem in CWS.[6] In spite, Van der Merwe et.al, reported that the CWS was not affected by the negative behaviors and explained that any changes in a child's anxiety level occur due to increased chronological age and stuttering chronicity.[29] Fears have been appeared to be higher in children; these feelings increase with age.[30]

Kaddah et.al, explained that the higher anxiety levels in CWS compared to control subjects due to early- onset and longer duration of stuttering.[31] Cherif et.al, revealed that trait and state anxiety are linked to CWS.[28]

Stuttering severity affects and gets statistically significant differences with total score SE, general SE, and home SE, total score anxiety, symptomatic, physiological and negative expectation as shown in Tables (5)& (6). The CWS with moderate to severe stuttering perceives the feeling

symptoms which appear with anxiety- like anger, nightmares and it is composed of 13 questions.

c. The mental manifestations of anxiety& assess the effect of anxiety on mental functions; it is composed of 4 questions.
d. The social manifestations of anxiety, which may appear as social misinterpretation& problems in relation with parents, social manifestations of anxiety assessed by five questions.
e. The behavioral manifestations of anxiety- like withdrawing& it is composed of 7 questions.
f. The negative expectations are associated with anxiety and are composed of 5 items. Every answer with yes in the 42 questions of anxiety gives one in the total score. A total score that is less than 18 means a low anxiety level, while a score between 18 and 28 is considered a medium level of anxiety, while a level higher than 28 is considered high anxiety.

Statistical Analysis:

The tabulated data were presented, and analysis was done by (SPSS 15.0 for windows; SPSS Inc., Chicago, IL, 2001). We use One- Sample Kolmogrovo- Smirnov to evaluate normal distribution parameters. Pearson Correlations were used to assess the strength of association between two quantitative variables. At the same time, Qualitative data was evaluated using the Chi- Square test and Fischer's exact Chi- Square test. One- Way ANOVA test was used to assess the statistical significance of the difference between more than two study group means.

Results:

This study was conducted on 62 children, their age range was (8- 12) years. There were classified into study group, (children stutterer); thirty-one children (23 boys, eight girls), with a mean age (9.9± 1.48) years. The control group (fluent children) were 31 children (16 males, 15 females), with a mean age (10.19± 1.3) years.

Table (1) Demographic characteristics of the subjects

		Group		T- Test	
		Cases (31)	Control (31)	t	P- Value
Age (in Years) Mean± Sd Range (8- 12) years		9.935± 1.482	10.194± 1.302	-0.728	0.469 (NS)
				X^2	P- Value
Sex	Male	23 (74.19%)	16 (51.61%)	3.387	0.066 (NS)
	Female	8 (25.81%)	15 (48.39%)		
Consanguinity	Positive	10 (32.26%)	9 (29.03%)	0.076	0.783 (NS)

Table (2) Distribution of Stuttering Severity Index among study group regards the gender.

		Stuttering severity index (31)				X^2	P- Value
		Mil (12)	Moderate (12)	Severe (4)	V.Severe (3)		
Chi- Square		N (%)	N (%)	N (%)	N (%)		
Sex	Male	8 (66.67%)	10 (83.33%)	4 (100%)	1 (33.33%)	4.886	0.180 (NS)
	Female	4 (33.33%)	2 (16.67%)	0	2 (66.67%)		

This table shows the distribution of the Stuttering Severity Index among study group regarding to gender. It reveals that there was non-significant difference between gender and stuttering severity.

Table (3) Distribution of Coopersmith self- esteem inventory (SEI) items among both groups

	Group		T- Test	
	Cases	Control	t	P- Value
A score of self- esteem (SE*2)= 100	56.323± 14.358	67.742± 11.727	-3.430	0.001*(HS)
General self- esteem= 26	14.548± 3.659	17.581± 3.766	- 3.215	0.002*(S)
School self- esteem= 8	4.677± 1.558	6.000± 1.966	- 2.936	0.005*(S)
Social self- esteem= 8	3.774± 1.668	5.161± 1.241	- 3.716	<0.001*(HS)
Home self- esteem= 8	4.677± 1.922	5.355± 1.170	- 1.676	0.099(NS)

This table shows a comparison between cases& control regarding the Cooper smith self- esteem inventory and revealed a highly significant difference (p< 0.001) between both groups regards total score of SE and social SE. A significant difference between both groups in general SE p= 0.002& school SE p= 0.005. There was a non- significant difference in home SE (P= 0.099).

Table (4) Distribution of Children manifest anxiety scale among both groups

	Group		T- Test	
	Cases (Mean± SD)	Control (Mean± SD)	t	P- Value
Total Score Anxiety	23.290± 7.542	22.935± 7.737	-0.183	0.856 (NS)
Physiological	4.387± 1.647	4.677± 2.386	0.558	0.579 (NS)
Symptomatic	5.516± 2.657	6.516± 3.065	1.373	0.175 (NS)
Mental	2.355± 1.404	2.613± 0.989	0.837	0.406 (NS)
Social	3.032± 1.402	2.581± 1.432	-1.255	0.215 (NS)
Behavioral	4.290± 1.465	4.161± 1.734	-0.316	0.753 (NS)
Negative Expectation	3.194± 1.302	2.452± 1.546	-2.044	0.045* (S)

Table showed a comparison between cases& control regarding the anxiety scale and revealed that all items showed non- significant differences except negative expectation which showed a significant difference between both groups.

Table (5) Distribution of Self- esteem (SE) scores in study group regards stuttering severity index

		Stuttering Severity Index				ANOVA	
		Mild (12)	Moderate (12)	Severe (4)	V.Severe (3)	F	P-Value
A score of self- esteem	Range	30- 72	32- 66	58- 82	30- 54	4.369	0.012*
	Mean±SD	60.000± 11.314	52.500± 13.433	70.000± 11.776	38.667± 13.317		
General Self- Esteem	Range	9- 19	8- 18	16- 22	11- 16	3.789	0.022*
	Mean±SD	15.250± 2.832	12.833± 3.689	18.750± 3.202	13.000± 2.646		
School Self- Esteem	Range	0- 7	2- 6	4- 6	2- 3	2.575	0.075
	Mean±SD	5.000± 1.758	4.583± 1.311	5.500± 1.000	2.667± 0.577		
Social Self- Esteem	Range	3- 6	1- 6	3- 7	1- 3	2.854	0.056
	Mean±SD	4.000± 1.128	3.667± 1.826	5.000± 1.826	1.667± 1.155		
Home Self- Esteem	Range	2- 7	2- 7	4- 6	0- 5	3.121	0.042*
	Mean±SD	5.250± 1.815	4.500± 1.624	5.500± 1.000	2.000± 2.646		

This table showed a comparison between Self-esteem (SE) scores in the study group regards stuttering severity index and revealed a significant difference of total score of SE, general SE, and home SE as regards stuttering severity

Introduction:

Stuttering is a speech disorder with variable emotional, physiological, and behavioral reactions to speech disruptions.[1] Children who stutter (CWS) is usually clumsy, nervous, emotionally unstable, and unable to communicate fluently in daily life.[2]

Briley et.al[3] reported that the feelings of hopelessness and frustration were considered psychological health impairment with the stutterer, as a result of stuttering itself or difficulty in connecting sounds and syllables in speech.[3] CWS were exposed to negative social experiences such as bullying and teasing.[4] These behavioral problems interfere negatively with the self- esteem (SE) and anxiety.[5] Anxiety is the most frequent psychological problem associated with stuttering.[6] Bleek et.al, reported that there is no evidence that the personality was affected.[7]

In CWS, the anxiety was negatively affecting on their social interactions.[8] Many studies explained that the quality of life of CWS was affected negatively by physical and emotional fatigue due to continuous monitoring of their speech.[9][10]

Blumgart et.al[11] explained that the stutterer who had higher the stuttering severity, get the greater impact on their quality of life, whereas Koedoot et.al[12] found contradictory data. Although until now the relationship between stuttering severity and its impact on quality of life is vague.

According to Freud's theory of psychoanalysis, stuttering is viewed as merely an overt symptom of something else unconscious, deep- seated neurotic disorders.[13]

Aim of the study:

The current work aims to detect the self- esteem and anxiety in Egyptian children who stutter and their relation with stuttering severity.

Materials and Methods

Type of study:

A case- control study was done on sixty- two children at the national hospital. The study conducted on two groups of children during a period of 2 years.

Participants:

The total number of recorded cases- 200 CWS- registered in special needs centre in Ain Shams University. The study was conducted on thirty one stutterer children who fulfill the inclusion and exclusion criteria.

This study included study group (SG): (stuttering children); thirty- one Egyptian children (23 males, eight females), Control group: (fluent children) (FG): thirty- one Egyptian fluent children (16 males, 15 females). Their age ranged from (8- 12) years old. The stuttering children were collected from phoniatric clinics at national hospital, when receiving speech therapy. All parents agreed to undergo the assessment and had the informal consent. Children were assessed from June 2019 till June 2021. The Ethical Committee agreement was obtained.

- Inclusion criteria were:
  1. Their age ranged (8- 12) years.
  2. The children were selected to have an average IQ, which done routinely to all children there.
  3. The diagnosis was done by a phoniatrician.
  4. The stuttering children weren't receiving speech therapy session for management of stuttering
  5. No history of language disorders.
- Exclusion criteria were:
  1. All children hadn't any neurological and psychological disorders.
  2. Children under the age of 8 and above 12 years.

Assessment:

The children in the study group were subjected to a multidimensional protocol for objective and subjective assessment of stuttering, including:

1. Parent's interview and full history taking.
2. Auditory perceptual assessment was obtained by a high- quality recorded speech for both automatic speech and spontaneous speech to detect the core behavior of stuttering.
3. Assessment of the stuttering severity was done for at least one hundred words or reading a specific reading text. This assessment is done by Arabic versions of the stuttering severity instrument (A- SSI).[14] which was adapted from the original version of the Stuttering Severity Instrument (SSI).[15] A stuttering severity scored as following: (0- 20) very mild, (21- 24) mild, (25- 31) is moderate, (32- 35) severe, and (36- 45) very severe.
4. Coopersmith self- esteem inventory (SEI) forms were used to measure Self- esteem (SE) in general and in specific contexts; the age ranged (8- 15) years.[16] It is a 50 item self report instrument to which each subject responds "like me" or "unlike me". The SEI is divided into:
   a. General SE (twenty- six items), measure the personal worth perceptions.
   b. Academic or School- Related SE (eight items), measure the ability at school.
   c. Parent- related SE (eight items), measure the children's status at home and parents' reactions.
   d. Social SE (eight items), measure the peer relationships.
   e. Total SE ranging between (0- 100) after duplicate the score. CWS has good SE if the General self- subscale is> 18.64, the Social Self- Peer subscale is> 5.67, the Home- Parents- subscale is> 4.96, and the School- Academic subscale is> 4.12. The total SEI score> 66 is considered high self- esteem; between (33- 66) is moderate self- esteem and below 33 is low self- esteem.
5. Children manifest anxiety scale: The Children manifest anxiety scale, the Arabic version which was prepared by Veola Albeblawy[17] based on the original scale which was developed by Castaneda, et.al[18] It was developed to evaluate the nature and the degree of anxiety in children and adolescents& it was published by Egyptian Anglo Library. It assesses six items related to anxiety.
   a. Physiological manifestations which accompany anxiety were assessed by eight questions.
   b. The symptomatic manifestation of anxiety and reflects the

Study of self-esteem and presence of anxiety in a sample of Egyptian children with stuttering

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Summary

Background: Children who stutter often exhibit behavioral changes in school and in relationships with parents and colleagues. Stuttering may lead to development of anxiety and lower self- esteem.

Aims: The study aims to detect the self- esteem and anxiety in Egyptian children who stutter and their relation with stuttering severity.

Materials& Methods: A case- control study, including thirty- one children who stutter and thirty- one control (fluent children). After full- filling the inclusion and exclusion criteria, Stuttering Severity Instrument- Arabic form (SSI- A) was applied on stuttering children to confirm the diagnosis and detect the stuttering severity to such cases. The Coppersmith self- esteem Inventory and the children manifest anxiety scale were administrated to evaluate the self- esteem and anxiety symptoms, respectively.

Results: Compared with controls, according to the (Coppersmith self- esteem Inventory), the children who stutter had a significant difference in the general domain (p= 0.002) and in the academic domain (p= 0.005). A highly significant difference between both groups regards the total score of self- esteem (SE) (p<0.001), social SE (p<0.001), although both groups had good academic SE. There was a non- significant difference in home SE (P= 0.099), in spite it was low SE. According to the revised children manifest anxiety scale, the stuttering group showed a significant score, but not detected statistically except the negative expectation had significant difference (p= 0.045). Stuttering severity gets statistically significant differences with total score SE, general SE, home SE, Total score anxiety, symptomatic, physiological and negative expectation.

Conclusions: Stuttering is a speech disorder associated with low self- esteem and anxiety. This study highlights the need for multidisciplinary approaches to stuttering diagnosis and management, including ordinary speech therapy, child psychiatry, and good family guidance.

Keywords: Stuttering- anxiety- stuttering severity- Self- esteem.

دراسة الثقة بالنفس ووجود القلق في عينة من الاطفال المصريين المصابين بالتأتأة

المقدمة: دائما ما يصاب الأطفال المصابين بالتأتأة بتغيرات سلوكية في علاقتهم مع أقرانهم وآبائهم وأمهاتهم. وتوجد أسباب كثيرة تجعلنا نتوقع وجود قلق وانخفاض في الثقة بالنفس لديهم.

الهدف: دراسة وجود القلق وتقييم التغيرات السلوكية فى الأطفال والمراهقين المصابون بالتأتأة بالاضافة لدراسة درجة شدة التلعثم وعلاقتها بدرجة شدة وجود أعراض القلق والتغيرات السلوكية.

طريقة البحث: هى دراسة الحالات والشواهد اشتملت علي ٣١ طفل مصاب بالتأتأة و٣١ طفل غير مصابين بالتأتأة بعد استيفائهم لمعايير الاشتمال والتاكد من خلوهم من معايير الاستبعاد. تم اختبار هؤلاء الاطفال بتطبيق مقياس شدة التلعثم للتأكد من وجود التأتأة وقياس درجة شدتها وتم بعد ذلك قياس القلق بتطبيق اختبار القلق (فيولا البيلاوى) وقياس الثقة بالنفس بتطبيق اختبار كوبرسميث لقياس الثقة بالنفس.

النتائج: ولوحظ من هذه الدراسة ارتفاع معدلات الاطفال المصابين بدرجات عالية من القلق بين الأطفال الذين يعانون من التأتأة عن مثيلهم من الأطفال الذين لا يعانون من التأتأة، وانخفاض معدلات الثقة بالنفس بين الأطفال الذين يعانون من التأتأة عن الأطفال الذين لا يعانون من التأتأة. وانخفاض كفائة الأطفال الذين يعانون من التأتأة قي المجالات الخاصة بالأنشطة والدراسة والمجال الاجتماعي عن نظرائهم الذين لا يعانون من التأتأة بالاضافة الي وجود اختلافات بين سلوكيات الأطفال الذين يعانون من التأتأة عن نظرائهم الذين لا يعانون من التأتأة وتصل هذه الاختلافات الي نسب مرضية في أوجه متعددة لدي الاطفال المصابين بالتأتأة. كما تبين وجود معدلات أكثر ارتفاعا من القلق لدي الطفال المصابون بدرجة شديدة جدا من التأتأة عن نظرائهم من الأطفال يعانون من درجات بسيطة الي شديدة من التلعثم. ووجود اختلافات بين سلوكيات الأطفال الذين يعانون من درجات شديدة جدا من التلعثم وسلوكيات الأطفال الذين يعانون من درجات بسيطة الي شديدة من التلعثم.

الاستنتاج: ونستنتج من هذه النتائج وجود تأثير للتلعثم بالاضافة لتأثير ناتج عن شدته علي سلوكيات الأطفال المصابين به وعلي ثقتهم بانفسهم ومعدلات القلق لديهم.

الكلمات الدالة: التأتأة- القلق- الثقة بالنفس.