

Comorbid Psychiatric Symptoms in Childhood Stutterers: An Egyptian Sample

Original Article

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ABSTRACT

Introduction: Stuttering is a fluency disorder in which an individual can produce speech effortlessly and automatically and it is seriously compromised. Although the spontaneous recovery rate is high in children, stuttering will become an intractable problem for some of them. In Egypt, it occurs at the Prevalence of 0.29- 0.55%. Stuttering is one of the speech disorders which is characterized by developmental histories often marked by bullying, poor peer relationships, and many negative social interactions. Therefore, it is clear that stuttering carries a significant risk of comorbid psychiatric symptoms; these psychiatric symptoms appear in children and persist into adulthood. The theories behind stuttering and mental health disorders are complex.

Aim: The current study aimed to determine comorbid psychiatric symptoms in stutterers.

Patients and Methods: A cross-sectional study was done on forty- seven stutterers. They were classified into three groups: children group: their age ranged 6 - 9.7 years (7.4 ± 1.3), preadolescents group: their age ranged 10 - 11.8 years (10.6 ± 0.6) and adolescents group: their age ranged 13.1- 17.2 years (15.1 ± 1.5), who were diagnosed with stuttering. Child Behavior Checklist (CBCL) and Arabic Stuttering Severity Instrument (A- SSI) were applied to all of them.

Results: Comorbid psychiatric symptoms were associated with stuttering. It was found that psychiatric co-morbidities aggravated the stuttering severity. These psychiatric symptoms appeared in children, preadolescents and became more prominent in adolescents.

Conclusion: The current study demonstrated stuttering as a heterogeneous group of disorders. Cognitive behavior therapy (CBT) is mandatory for stutterers in addition to the ordinary management program, which includes speech assessment and intervention. On the other hand, CBT should be used as a prophylactic therapy in stutterers without comorbid psychiatric symptoms.

Key Words: CBCL, CBT, co-morbidity, stuttering.

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INTRODUCTION

Stuttering is a speech disorder that causes an inability to express their wants and ideas^[1]. Stuttering disorder is a heterogeneous disorder associated with secondary behaviors that the stutterers use to escape speech situations^[2]. The stuttering prevalence rate was 1%, and its incidence rate was 4-5%^[3]. The prevalence of stuttering was 0.72% across the whole population, with the highest and lowest prevalence rates having been in younger children (1.4-1.44) and adolescents (0.53)^[4]. Stuttering can be presented by sounds or syllables disruption that might be associated with some auxiliary practices, including eye & jaw twitching^[5,6]. Speech disruptions are related to physiological, behavioral, and emotional reactions^[7].

Based on *Raghavendra et al.*, the stutterer's life was affected not by the stuttering itself but due to their social limitations^[8]. Several endogenous and exogenous factors

should be minded. Stutterers had impaired psychological health outcomes compared to typically fluent speakers^[9].

The mental variables created stuttering, for example, nervousness, as opposed to a physiological cause. Even though it was trusted that suspicion brought on stuttering, there is no proof supporting this^[8]. Stutterers are emotionally unstable and unable to communicate freely in their life^[10], there are multiple emotional reactions like nervous, insecure, tense, fearful, shyness, escape behavior, hesitant, and depressed^[11].

It was stated that the negative perspective of stutterers might be aggravated with age when the child becomes more anxious about people's disapproval^[5,6]. Stutters had poor adaptive functions regarding internalizing, externalizing behavior, general anxiety, and depression^[13]. Stutterers usually react to their disfluency by denial, guilt, shame, anxiety, depression, and anger. Their parents reported that

they typically have behavioral problems with them and with school peers^[14]. Anxiety in stutterers may increase over time till it became more evident in adolescents.^[15]

Stuttering's psychosocial aspect is one of the significant components of this disorder that needs special attention in treatment. Stuttering is accompanied by destructive feelings of frustration, anger, guilt, and humiliation^[16]. The degree of the impact of stuttering on a person's life differs among individuals^[17]. Previous studies discussed anxiety and its social effect in detail, as were the most common mental disorders in adolescents' stuttering population.

According to Freud's theory of psychoanalysis, stuttering is viewed as merely an overt symptom of something else unconscious, deep-seated neurotic disorders^[18]. The current work measured the effect of eight psychological, mental symptoms (anxiety, withdrawn, social problems, thoughts problems, attention problems, aggressive behavior, rule-breaking habits & somatic complaints) among childhood stutterers. The authors summarized how these psychological health outcomes are considered features related to secondary manifestations of stuttering in the childhood stage.

OBJECTIVES:

The current study aimed to determine comorbid psychiatric symptoms in children, preadolescent and adolescent stutterers and highlight the correlations of different factors in stuttering patients.

PATIENTS AND METHODS:

3.1. study design

A cross-sectional study was done on forty-seven patients. The stutterers were chosen according to the inclusion and exclusion criteria. All parents agreed to undergo the assessment and had informal consent. The study was approved by the Ethics Committee of the Faculty of Postgraduate Childhood Studies (FPGCS), Ain Shams University, and protocol no. RHDIRB2020110401.

This study included forty-seven Egyptian stuttering patients presented in three groups: children group: their age ranged 6 - 9.7 years, preadolescents group: their age ranged 10 - 11.8 years and adolescents group: their age ranged 13.1- 17.2 years, complaining of inability to talk fluently as expected for their age. The study included thirty-six males and eleven females. The authors classified the participant into three groups according to age: Group 1: (children's stutterers); 16 patients. Group 2: (preadolescent stutterers); 17 patients. Group 3: (adolescent stutterers); 14 patients.

3.2. Assessment:

3.2.1. History

A detailed history was taken, including:

A) Personal and family to exclude the hereditary factor of stuttering.

B) Past History to exclude any psychiatric disorders.

3.2.2. Inclusion criteria

- 1- Diagnosis of stuttering.
- 2- They diagnosed at a minimum of 12 months ago of dysfluency.
- 3- The children were all selected to have an average IQ and no history of previous speech therapy.
- 4- The native speaker is Arabic, and the age is between 6 and 18 years old.

3.2.3. Exclusion criteria

Any psychological illness that interferes with stuttering

Any history of language or speech disorders.

3.3. Procedures:

1- Auditory perceptual assessment (APA) was done for both automatic speech and spontaneous speech to detect stuttering's core behavior. The audiovisual record was performed, composed of at least 100 words, and reading passages, with a Sony digital camcorder and a tripod.

2- Assessment of the stuttering severity was done by Arabic versions of the stuttering severity instrument (A-SSI)^[19], which was adapted from the original version of the Stuttering Severity Instrument (SSI)^[20,21]. A stuttering severity scored as following: (0-20) is very mild, (21-24) is mild, (25-31) is moderate, (32-35) is severe, and (36-45) is very severe.

3- The child behavior checklist (CBCL) is a reliable and valid tool. The Arabic version of the CBCL (6- 18y) questionnaire was answered by the parents and scored manually by the pediatrician to detect different psychological problems. This Arabic version of CBCL was developed by^[22] and rated through the original English version of CBCL by^[23]. The Internalizing Domain measures emotional problems: Anxious/Depressed, Withdrawn/Depressed, and Somatic Complaints. The Externalizing Domain measures behavioral issues: The Rule-Breaking Behavior and Aggressive Behavior syndrome scales. Three

other Thought Problems, social problems, and attention problems.

3.4 Statistical analysis:

The tabulated data presented, and analysis was done by (SPSS 15.0 for windows; SPSS Inc., Chicago, IL, 2001). The authors used One-Sample Kolmogorov-Smirnov to evaluate normal distribution parameters. Pearson Correlations were used to assess the strength of association between two quantitative variables. While Qualitative data was evaluated using the Chi-Square test and Fisher's exact Chi-Square test.

RESULTS:

This study was conducted on forty-seven patients with stuttering; their age range was (6-18) years. There were classified into three main groups Group1: (children stutterers); 16 patients (15 boys, one girl), with a mean age (7.4 ± 1.3 years). Group2: (preadolescent stutterers); 17 patients (13 males, four females), with a mean age (10.8 ± 0.6 years). Group3: (adolescent stutterers); 14 patients (8 males, six females), with mean age (15.1 ± 1.5). Demographic characteristics of the subjects (Table 1).

Correlation analyses were done, there was an inverse correlation between age and percent of cases of stuttering with (normal) CBCL ($r = -0.61, p = <0.001$). A significant statistically (direct relation) correlation has been demonstrated between ages and A-SSI, percent of cases of borderline CBCL & percent of clinical cases of CBCL (Table 2).

This (Figure 1) revealed that (1) anxious/ depressed symptoms were much higher in preadolescents than in other age groups. (2) Withdrawn/ depressed symptoms were much higher in occurrence in adolescents than in different age groups. (3) Somatic complaint symptoms were much higher in adolescents than in other age groups (4) Rule-breaking behavior symptoms were much higher in preadolescents than in different age groups, with a marked decrease in adolescents. (5) Aggressive symptoms were much higher in occurrence in adolescents than in other age groups. (6). Social problem symptoms

were much higher in occurrence in preadolescents than in different age groups. (7) Thought problems were a much higher occurrence in preadolescents, with a marked decrease in adolescents. (8) Attention problems symptoms were much more significant in occurrence in preadolescents than in other age groups.

Figure 2, Showed the effect of age on the mean of stuttering severity and explained that the stuttering severity was increased directly with age.

There were statistically highly significant differences between the degree of stuttering severity and different age (Table3).

According to ages (children, preadolescents & adolescents), there was a highly significant correlation in (anxious/ depressed, withdrawal/ depressed, somatic complaints, thought problems & social problems, rule-breaking behavior), and significant in (aggressive behavior) & non-significant with attention problems (Table 4).

Intra analysis and Correlation between SSI and CBCL items in each age group showed that there were highly significant direct correlations between SSI and anxiety, withdrawal, social problems, thoughts problems, and attention problems among the children group. There were significant direct correlations between SSI and rule-breaking habits, aggressive behavior and no correlation between A-SSI and somatic complaints. Among preadolescent group: there were no correlations between SSI and anxiety, withdrawal, social problems, thoughts problems, and attention problems; there were direct correlations between SSI and rule-breaking habits, aggressive behavior. There were no correlations among adolescents' stutterers (Table 5).

Among all age groups, there were highly significant correlations between A-SSI severity and anxiety, withdrawal. There were significant direct correlations between A-SSI and social problems, thoughts problems, aggressive behavior, and no correlation between A-SSI among children who stutter. There weren't correlations between SSI and attention problems, rule-breaking habits, and somatic complaints (Table 6).

Table 1: Demographic characteristics of the subjects

	Children (n=16)	Preadolescent (n = 17)	Adolescent (n =14)
Age (years), mean \pm SD	7.4 \pm 1.3 years	10.8 \pm 0.6 years	15.1 \pm 1.5 year
Sex (n)			
Male (n=36)	15	13	8
Female (n=11)	1	4	6

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Table 2: Correlation between all age groups with A- SSI and percentage of cases as regards (normal, borderline, and clinical)

		ASSI	Normal%	Borderline%	Clinical%
	<i>r</i>	0.71	-0.61	0.36	0.56
Age	<i>P value</i>	<0.001**	<0.001**	0.014*	<0.001**
	<i>Sig.</i>	HS	HS	S	HS

Pearson correlation, **=HS, *=S

Table 3: Distribution and correlation of stuttering severity degree across all age groups

Degree of stuttering	Children (n=16)	Preadolescent (n=17)	Adolescents (n=14)	X ²	<i>P-Value</i>	Sig.
Mild	5 (31.3%)	0	0	24.23	<0.001	HS
Moderate	10 (62.5%)	8 (47.1%)	2 (14.3%)			
Severe	1 (6.3%)	2 (11.8%)	4 (28.6%)			
Very severe	0	7 (41.2%)	8 (57.1%)			

Fisher's Exact Test Chi-Square Test

Table 4: Distribution and correlations of psychiatric symptoms among three age groups

	Children (n=16)	Preadolescents (n=17)	Adolescents (n=14)	X ²	<i>P-Value</i>	Sig.
Anxious						
<i>normal</i>	13 (81.3%)	1 (5.9%)	0	31.44	<0.001	HS
<i>Borderline</i>	1 (6.3%)	1 (5.9%)	2 (14.3%)			
<i>Clinical</i>	2 (12.5%)	15 (88.2%)	12 (85.7%)			
Withdrawn						
<i>normal</i>	8 (50.0%)	1 (5.9%)	0	16.64	0.001	HS
<i>Borderline</i>	3 (18.8%)	5 (29.4%)	1 (7.1%)			
<i>Clinical</i>	5 (31.3%)	11 (64.7%)	13 (92.9%)			
Somatic complaints						
<i>normal</i>	16 (100.0%)	12 (70.6%)	5 (35.7%)	15.47	0.001	HS
<i>Borderline</i>	0	1 (5.9%)	1 (7.1%)			
<i>Clinical</i>	0	4 (23.5%)	8 (57.1%)			
Social problems						
<i>normal</i>	11 (68.8%)	3 (17.6%)	4 (28.6%)	14.34	0.005	HS
<i>Borderline</i>	4 (25.0%)	4 (23.5%)	2 (14.3%)			
<i>Clinical</i>	1 (6.3%)	10 (58.8%)	8 (57.1%)			
Thought problems						
<i>normal</i>	16 (100.0%)	8 (47.1%)	5 (35.7%)	21.92	<0.001	HS
<i>Borderline</i>	0	3 (17.6%)	8 (57.1%)			
<i>Clinical</i>	0	6 (35.3%)	1 (7.1%)			
Attention problems						
<i>normal</i>	14 (87.5%)	9 (52.9%)	7 (50.0%)	6.09	0.185	NS
<i>Borderline</i>	1 (6.3%)	3 (17.6%)	3 (21.4%)			
<i>Clinical</i>	1 (6.3%)	5 (29.4%)	4 (28.6%)			
Rule-breaking habits						
<i>normal</i>	15 (93.8%)	8 (47.1%)	11 (78.6%)	11.29	0.008	HS
<i>Borderline</i>	1 (6.3%)	2 (11.8%)	2 (14.3%)			
<i>Clinical</i>	0	7 (41.2%)	1 (7.1%)			
Aggressive behavior						
<i>normal</i>	14(87.5%)	8 (47.1%)	6 (42.9%)	8.66	0.047	S
<i>Borderline</i>	1 (6.3%)	2 (11.8%)	2 (14.3%)			
<i>Clinical</i>	1 (6.3%)	7 (41.2%)	6 (42.9%)			

Fisher's Exact Test Chi-Square Test

Table 5: Intra analysis and Correlation between SSI and CBCL in each age group

SSI		anxious	withdrawn	somatic complaints	social problems	thoughts problems	attention problems	rule-breaking habits	aggressive behavior
	<i>r</i>	0.80	0.77	0.46	0.76	0.74	0.73	0.57	0.62
Children	<i>P Value</i>	<0.001**	0.001**	0.071	0.001**	0.001**	0.001**		0.011*
	<i>Sig.</i>	HS	HS	NS	HS	HS	HS	S	S
	<i>r</i>	0.23	0.10	-0.13	0.24	0.37	-0.05	0.50	0.49
Pre-adolescents	<i>P Value</i>	0.367	0.701	0.632	0.349	0.143	0.849	0.040*	0.044*
	<i>Sig.</i>	NS	NS	NS	NS	NS	NS	S	S
	<i>r</i>	0.40	0.11	-0.09	-0.10	0.14	-0.05	-0.14	0.13
adolescents	<i>P Value</i>	0.151	0.702	0.760	0.729	0.638	0.858	0.624	0.669
	<i>Sig.</i>	NS	NS	NS	NS	NS	NS	NS	NS

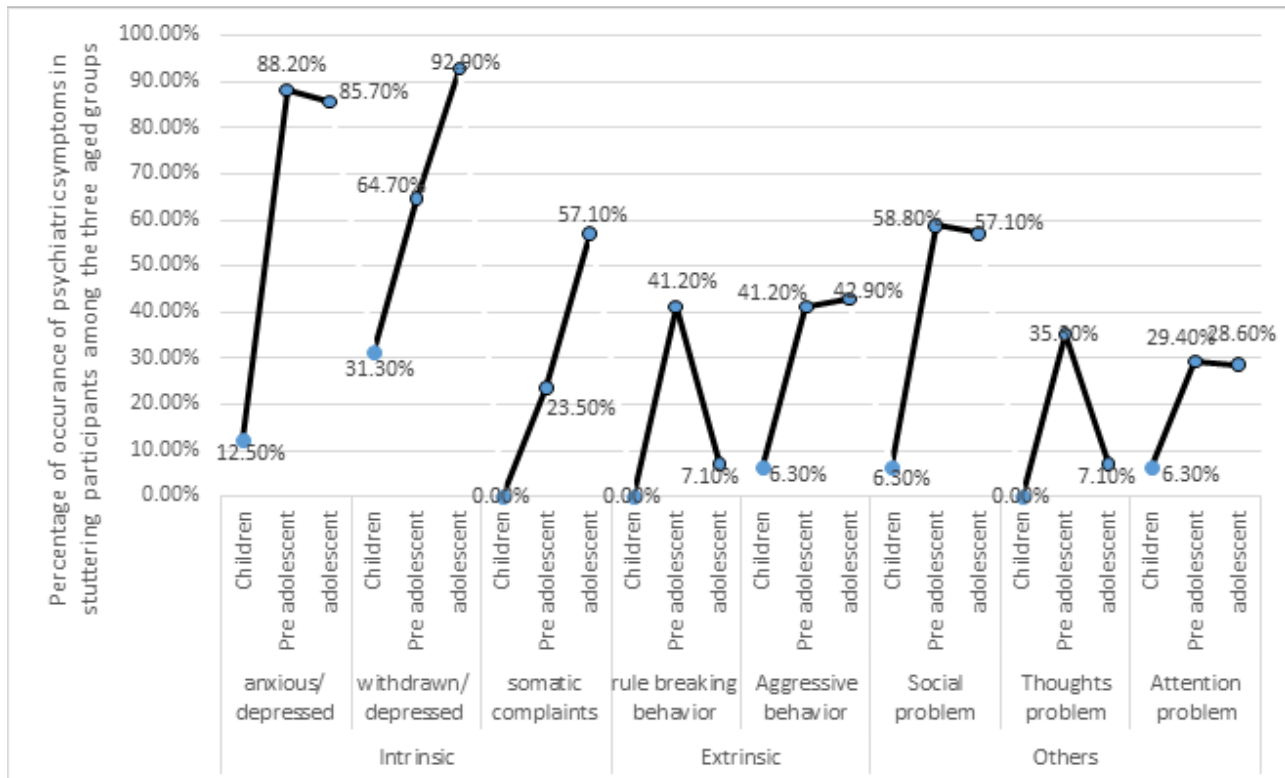
Pearson correlation, **=HS, *=S

Table 6: The inter Comparison and correlation between ASSI severity among all ages and CBCL items

		Mild (n=5)	Moderate (n=20)	severe (n=7)	Very Severe (n=15)	X ²	<i>P-Value</i>	<i>Sig.</i>
Anxious	normal	5 (100.0%)	9 (45.0%)	0	0	23.60	<0.001	HS
	borderline	0	2 (10.0%)	1 (14.3%)	1 (6.7%)			
	clinical	0	9 (45.0%)	6 (85.7%)	14 (93.3%)			
Withdrawn	normal	5 (100.0%)	4 (20.0%)	0	0	21.23	<0.001	HS
	borderline	0	5 (25.0%)	0	4 (26.7%)			
	clinical	0	11 (55.0%)	7 (100.0%)	11			
Somatic complaints	normal	5 (100.0%)	15 (75.0%)	4 (57.1%)	9 (60.0%)	4.67	0.632	NS
	borderline	0	1 (5.0%)	0	1 (6.7%)			
	clinical	0	4 (20.0%)	3 (42.9%)	5 (33.3%)			
Social problem	normal	5 (100.0%)	9 (45.0%)	2 (28.6%)	2 (13.3%)	13.34	0.020	S
	borderline	0	4 (20.0%)	3 (42.9%)	3 (20.0%)			
	clinical	0	7 (35.0%)	2 (28.6%)	10 (66.7%)			
Thoughts problem	normal	5 (100.0%)	15 (75.0%)	4 (57.1%)	5 (33.3%)	12.37	0.026	S
	borderline	0	4 (20.0%)	3 (42.9%)	4 (26.7%)			
	clinical	0	1 (5.0%)	0	6 (40.0%)			
Attention problem	normal	5 (100.0%)	14 (70.0%)	4 (57.1%)	7 (46.7%)	4.87	0.559	NS
	borderline	0	3 (15.0%)	1 (14.3%)	3 (20.0%)			
	clinical	0	3 (15.0%)	2 (28.6%)	5 (33.3%)			
Rule breaking behaviour	normal	5 (100.0%)	16 (80.0%)	6 (85.7%)	7 (46.7%)	6.78	0.259	NS
	borderline	0	2 (10.0%)	0	3 (20.0%)			
	clinical	0	2 (10.0%)	1 (14.3%)	5 (33.3%)			
Aggressive behaviour	normal	5 (100.0%)	14 (73.7%)	4 (57.1%)	4 (26.7%)	11.78	0.032	S
	borderline	0	2 (10.5%)	0	3 (20.0%)			
	clinical	0	3 (15.8%)	3 (42.9%)	8 (53.3%)			

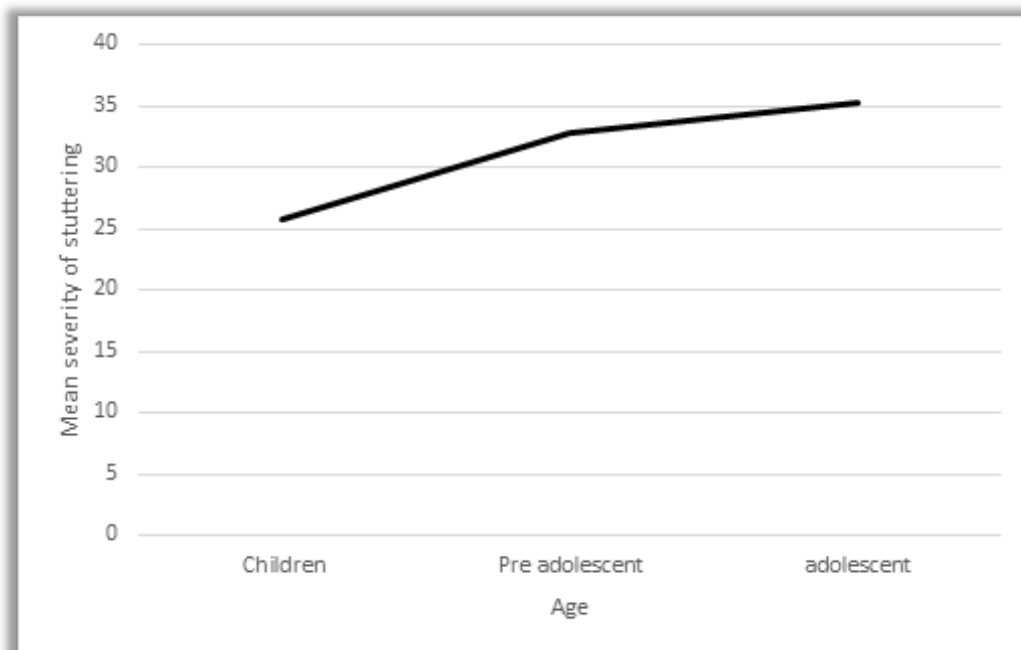
Among all age groups, there were highly significant correlations between A-SSI severity and anxiety, withdrawal. There were direct significance correlations between A-SSI and social problems, thoughts problems, and aggressive behavior, and no correlation between A-SSI among children who stutter. There weren't correlations between SSI and attention problems, rule-breaking habits, and somatic complaint

Fig. 1: Distribution of the percentage of occurrence of psychiatric symptoms among stuttering participants according to their age groups.



This figure (1) revealed that (1) anxious/depressed symptoms were much higher in preadolescents than in other age groups. (2) Withdrawn/depressed symptoms were much higher in occurrence in adolescents than in different age groups. (3) Somatic complaint symptoms were much higher in adolescents than in other age groups (4) Rule-breaking behavior symptoms were much higher in preadolescents than in different age groups, with a marked decrease in adolescents. (5) Aggressive symptoms were much higher in occurrence in preadolescents than in other age groups. (6) Social problem symptoms were much higher in occurrence in preadolescents than in different age groups. (7) Thought problems were a much higher occurrence in preadolescents, with a marked decrease in adolescents. (8) Attention problems symptoms were much more significant in occurrence in preadolescents than in other age groups. Showed the distribution of the percentage of occurrence of psychiatric symptoms among stuttering participants according to their age groups.

Fig. 2: Distribution of the mean of stuttering severity among the three age groups



Showed the effect of age on the mean of stuttering severity and revealed that the stuttering severity was increased directly with age.

DISCUSSION

The psychological health trajectory is unclear. The aim was to assess and determine comorbid psychiatric symptoms in childhood stutterers and highlight the correlations of different factors in stuttering patients.

Stuttering and psychiatric symptoms have different identities, but they may have some consequent relation. There is a hypothesis that stuttering and psychiatric disorders are various specific disorders; however, they may meet at an undefined point. A standard association that stuttering patients being anxious from some particularized situations may vary from one stutterer to another and increase their non-fluency condition. This anxiety feeling is induced by the stuttering situation or related to speaking situations^[24].^[7,25] discussed the behavioral and social aspects of stutterers. Other studies provide comparative results with stutterers^[14]. However, this study is the first one to target children, preadolescents, and adolescents. Preadolescence is almost a transitional zone between children and adolescents. Individuals face much ignorance, as it is much filled with emotion liability, responsibility, and hormonal disturbance.

The male- to- female ratio is matched with^[4]; present, the male- to- female ratio ranged from 2.3:1 in younger children to 4:1 in adolescents, with the ratio of 2.3:1 registered across all ages. Interestingly, the incidence and recovery from stuttering are related to gender. At the age of onset, more boys stutter than girls, about a two- to- one-sex ratio.

There was a highly significant statistical negative correlation between age and cases of stuttering, but (normal) CBCL ($r = -0.61$, $p = <0.001$) meaning that the increase of age aggravated psychiatric symptoms, and the percent of cases with free of psychiatric symptoms decrease. Despite this, there was a direct correlation. Psychiatric co-morbidity with stuttering is associated with a more severe and more prolonged illness duration^[2]. Adverse reactions and thoughts against stuttering start when a child notices his speech differences^[26-27] and continues throughout life^[28]. Participants with stuttering demonstrate avoidance behaviour's, anxiety, aggression, with conflicts existing in most of them due to the listeners' adverse reactions and negative attitude to their speeches^[29-30]. These negative experiences lead to feelings of embarrassment, shame, and lack of academic achievement. The probability of having psychological, behavioural, and emotional disorders is higher among them^[31-32].

Concerning behavior, the intra- group analysis was related to comorbid psychiatric symptom in the

present study shown in (Figure 1) was discussed as classification of CBCL (Internalizing problems, externalizing problems and others) as follow:

Internalizing problems: Regarding anxiety/withdrawal, its clinical range presents 91.8% in adolescents, 64.7% in preadolescents, and 31.3% in children. Stutterers' behavior was in agreement with previous studies^[33,11,12,34]. Despite stutterers being afraid of the listener's negative reaction, they need more effort to be perceived more expectedly and cause an inability to communicate effectively in daily life^[11].

In anxious/depressive symptoms (children=12.5%, preadolescents = 88.2%, adolescents = 85.7%), and *Abdelhamid et al.*, study showed that 68.6% of stutterers have an anxiety disorder as proved by a subjective anxiety test^[35]. In a Portuguese study, anxiety/depression was 28.1%^[14]. In contrary to the current study, a study found 7.7% of stuttering children had anxiety^[2]. Decrease incidence of anxiety and withdrawal symptoms among children group. This is explained by that children who stutter haven't been aware of their conditions, so no need for fear and withdrawal symptoms^[36]. It was claimed that anxiety in stuttering people might increase over time until exceeding normal limits in adolescents and adults.

The present study's somatic complaints were 57.1% in adolescents, 23.5% in preadolescents, while children didn't suffer from somatic complaints due to lack of awareness. *GiorgettiMde et al.*, report that (3.1%) with no statistical difference between the stuttering and non-stuttering studied groups, suggesting that children did not make any effort to control their stuttering; thus, either fatigue or somatic symptoms were not noticed by their parents^[14]. That's came in contrary to *Craig et al.*, where the studied group was adult stutterers who reported that the trials to adjust stuttering could cause physical and emotional fatigue^[37].

As regards externalizing problems:

- Aggressive behavior was more manifested in preadolescents and adolescents (41.2% and 42.9%, respectively), while in children, they were least displayed (6.3%), while in the Portuguese study, it was 12.5% in the studied group^[14].

- Rule-breaking behavior presented (41.2% of preadolescents, 7.1% of adolescents), while this behavior wasn't in all children of the current study. In contrary, it was 3.1% in the Portuguese study in all the studied groups^[14]. Regarding externalizing symptoms, parents of the stutterers noticed comorbid aggressive behavior is more common than rule-breaking behavior.

- Social problems scores in the social field or difficulties in social interactions^[25, 38] were clinical scores in the present study (57.1% in adolescents, 58.8% in preadolescents, and 6.3% in children). It was clinical in 9.4 % of Portuguese studies and 34.4% was subclinical. Stuttering can cause impaired social interactions^[38,39,40]. Features related to social affection in stutterers were described as escape behavior or fear and avoidance of social interactions^[12]. Social problems were more prevalent than both thought and attention problems. Therefore, aggressive and social problems may be considered essential changes in stutterers.

These problems become more complex in adolescence, including anxiety, social communication, and educational difficulties^[41].

In the current study attention problems were presented in preadolescents and adolescents (29.4% and 28.6%, respectively). This study also showed a positive correlation, but it did not reach a significant value. That meant that attention problems and stuttering have no etiological relationship, but the existence of one disorder may influence the other, while in children, they were the least manifested (6.3%). While in the Portuguese study, it was 3.1% in the studied group.^[14]

Lastly, as regards thought problems, preadolescents were the more affected group (35.3%), in adolescents 7.1% only was affected while all the children were spared. While in the Portuguese study, it was 6.2% in the studied group^[14].

In comparing the stuttering and non- stuttering groups regarding all scores of CBCL, there was a statistically significant difference as 90.6% of the stuttering group showed clinical scores as regards all scores while this percentage was 53.1 in the non-stuttering group^[14].

The high prevalence of all comorbid psychiatric symptoms in stutterers in the current study compared with the foreign studies may be explained by the lack of cognitive behavior therapy in Egypt in the ordinary management program of stuttering, including speech assessment and intervention.

In present study, as regards the timing of psychiatric symptoms associated with stuttering, anxious/ depressed symptoms increased with the age of the stutterers to be most manifested in preadolescents (88.2%), adolescents (85.7%), and least displayed in children (12.5%).

Among the children group: 62.5% of stutterers were moderate in severity. As the severity increased, there

were variant symptoms that may be accomplished with them, except somatic complaints. It needed more experience and suffering to internalize the secondary reaction towards stuttering. Among the preadolescent group, 41.2% were very severe cases of stuttering, which explains that. There weren't correlations between SSI and symptoms except for rule- breaking habits, aggressive behavior, which may explained by emotional disturbances for puberty changes. There were no correlations among adolescents' stutterers as 57.1% were very severe with no specific symptoms for them as they passed along all ages and all signs.

There were highly significant correlations between stuttering severity and all psychological symptoms except attention problems, rule-breaking habits, and somatic complaints among all age groups. As explained that, there was no direct correlation between severity and these symptoms. Still, they related to the community they lived in a defense mechanism from stuttering and linked to changes in stuttering frequency^[42].

In summary, these findings contributed to classifying stutterers' behavior and social competency and would point to a better understanding of the impact of stuttering on their social life.

CONCLUSION

Understanding of behavior and social competency of stutterers may help the management understand the multidimensionality of stuttering, and behavior therapy (CBT) is mandatory for those stutterers alongside with the ordinary management program, including speech assessment and intervention. On the other hand, CBT should be used as prevention in stutterers without comorbid psychiatric symptoms.

LIST OF ABBREVIATIONS

Arabic Stuttering Severity Instrument	(A- SSI)
Auditory Perceptual Assessment	(APA)
Child Behavior Checklist	(CBCL)
Cognitive behavior therapy	(CBT)
Intelligence Quotient	(IQ)
Stuttering Severity Instrument	(SSI)

CONFLICT OF INTEREST

There are no conflicts of interest.

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