Effect of Acceptance and Commitment Training Program on Social Anxiety and Self-esteem among Adolescents with Stuttering

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Abstract

Background: Stuttering in adolescents considers a common health problem associated with social anxiety and low self-esteem. Acceptance and commitment training program is approved as one of the most advanced management for variety of psychosocial health problems. **Aim of the research:** was to evaluate the effect of acceptance and commitment training program on social anxiety and self-esteem among adolescents with stuttering. **Research design:** Quasi-experimental research design with two groups (one study group, one control group, and follow-up) was conducted. **Setting:** The research was conducted in the outpatient clinic for children and adolescents at the Psychiatric Health Hospital and Addiction Treatment and Teaching Hospital in Benha City and in the speech therapy clinic at Benha University Hospital. **Subject:** A purposive sample of (60) adolescents with stuttering were selected. **Tools of data collection:** I: A structured Interview Questionnaire, II: Social Anxiety Scale, III: Self-esteem Scale. **Results:** t-test indicated that there was significant difference in social anxiety and self-esteem between the study and control group post and follow up intervention ($p < 0.05$) of the acceptance and commitment training program than before intervention. There was a highly statistically significant negative correlation between adolescent's total mean score of social anxiety and total mean score of self-esteem among study group post and follow up program implementation. **Conclusion:** The acceptance and commitment training program applied in the current study has significant effect on the decreasing social anxiety and enhancing self-esteem among adolescents with stuttering. **Recommendations:** It is greatly recommended to utilize acceptance and commitment training program for all adolescents with stuttering due to its beneficial effect in decreasing social anxiety and enhancing adolescents' self-esteem.

Keywords: Acceptance And Commitment, Social Anxiety, Self-esteem and Stuttering

Introduction

Stuttering is a communication disorder characterized by repetitive, involuntary stretching, pauses, or involuntary stuttering of sounds, syllables, and phrases that interferes with the melodic and smooth flow of speech. Adolescents with stuttering disorders often experience psychological problems such as social anxiety, low self-esteem, social isolation, poor school performance and perceptive speech problems **(Berchiatti et al., 2023).** Moreover, adolescents who stutter also suffer from social anxiety, which is particularly noticeable in social situations where they worry about acting in a way that would be embarrassing or socially unacceptable. These symptoms can also be so severe that they can result in other debilitating conditions like depression and alcohol or drug addiction **(Nemati et al., 2023).**

Adolescents with social anxiety problems and stuttering tend to avoid social education, which can seriously hinder educational achievement, social interaction, and development of healthy relationships. This can result in low self-esteem. Adolescents with stuttering frequently have unpleasant social interactions with both their relatives and friends. These problems have a detrimental impact on improving self-esteem **(Ezabadi et al., 2024).**

One of the main challenges faced by adolescents with stuttering is having low self-esteem. Self-esteem refers to adolescents' overall perception of their worth. Among adolescents, this worth involves various dimensions, including social self-esteem, which refers to how they perceive the quality of their peer relationships; academic or school-related self-esteem, which indicates how they believe others perceive their capacity to succeed in

school; and parent-related self-esteem, which refers to how they feel about their status at home and includes subjective opinions about how their parents view them **(Najafi et al., 2020)**. Numerous research have examined the connection between stuttering and self-esteem, demonstrating that stuttering has a negative impact on self-esteem, which is essential for understanding and treating stuttering **(Schneider et al., 2023).**

One treatment approach that has been proposed for adolescents with stuttering disorder is the acceptance and commitment approach. Experts are now interested in this strategy, which is founded on the ideas of acceptance and commitment therapy (ACT), a cognitive-behavioral approach that emphasizes cultivating commitment to one's own values and behaviors as well as raising awareness and acceptance of challenging experiences **(Bergman & Keitel, 2020)**.

Acceptance and commitment therapy is mindfulness-based behavior therapy that uses the six core processes of acceptance, cognitive defusion, mindfulness, self as context, values, and committed action - that help people learn how to interact with their thoughts and feelings in ways that are consistent with their own values and objectives. Adolescents who have stuttering may find this approach particularly helpful since it can help them develop greater acceptance of their stuttering and learn how to follow their values and goals in spite of obstacles **(Bardel et al., 2022).**

Psychiatric mental health nurse has an important role when giving holistic care for adolescents with stuttering. The nurse playing an important role not only on speech issues but also communication and participation in social activities by using cognitive behavioral therapy that helps adolescents deal with stress, anxiety, or self-esteem issues related to stuttering, work to increase self-esteem through sports activity, providing health education to parents about how to deal with their stuttering adolescents by being patient when communicating with the adolescent, listening carefully instead of interrupting, checking in on their progress and feelings and avoid comparing the child to siblings or friends **(Kefalianos et al., 2022).**

Significance of the research

Stuttering is one of the most prevalent health problems among adolescents. Stuttering had an incidence rate of 4.5 percent and a prevalence rate of 1%. Overall, 0.72% of whole population, with younger children (1.4–1.44) and teenagers (0.53) having the greatest and lowest incidence rates, respectively. Children with stuttering between the ages of 6 to 17 in Egypt have a prevalence of 0.29 to 0.55% **(Fahiem et al., 2022)**. Adolescents with stuttering may face social rejection, social isolation, and peer harassment and may be less popular than their peers who do not stutter. These negative effects may lead to social anxiety, embarrassment, low self-esteem, shame, and poor academic achievement **(Eggers et al., 2022).**

Considering that inappropriate thoughts and beliefs regarding stuttering are linked to cognitive aspects of anxiety and the existence of such ideas can induce and worsen anxiety, depression, and stress, as well as lower the self-esteem of those who stutter. In order to improve the lives of adolescents with stuttering and to increase their psychological flexibility, ACT that focuses on these ideas and beliefs may be beneficial **(Hashemi et al., 2022).** On the other hand, because there is a dearth of research on the impact of the ACT method on adolescents with stuttering, the current research is conducted with the objective to evaluate the effect of acceptance and commitment training program on social anxiety and self-esteem among adolescents with stuttering.

Aim of the research:

The aim of this research was to evaluate the effect of acceptance and commitment training program on social anxiety and self-esteem among adolescents with stuttering.

Research hypotheses

H1: Adolescents with stuttering who will receive the acceptance and commitment training program (study group) will experience lower social anxiety on post and follow up test compared to those who didn't receive training program (control group).

H2: Adolescents with stuttering who will receive the acceptance and commitment

training program (study group) will experience improved self-esteem on post and follow up test compared to those who didn't receive training program (control group).

Subject and Methods

Research Design:

A quasi-experimental research approach with two groups (one study group, one control group and follow-up).

Research setting:

The present study was conducted at the three sites:

1. At outpatient clinic of children and adolescents in Psychiatric Health Hospital and Addiction treatment at Benha city, Qaluobia Governorate.
2. At outpatient clinic of children and adolescents in Teaching Hospital at Benha city, Qaluobia Governorate.
3. At Speech Therapy clinic in Benha University Hospital, in Qaluobia Governorate.

Research Sample:

A purposive sample consisting of 60 adolescents with stuttering disorders, aged 15 to 19 years, was included. A total of thirteen adolescents were chosen from the outpatient clinic for children and adolescents in the psychiatric health hospital and addiction treatment in Benha City, seventeen adolescents were chosen from the outpatient clinic for children and adolescents in the Teaching Hospital in Benha City, and thirty adolescents were chosen from the speech therapy clinic at Benha University Hospital. The following formula was used to determine the sample size: N = 2SD2 [Z/2 + Z] 2 / d2 at an 80% power and 95% confidence level. As a result, an estimated 60 adolescents in total were randomly divided into two equal groups, the study group and the control group, each of which had 30 participants. The inclusion criteria were as follows: adolescents with stuttering diagnoses who are willing to participate in the research, have no history of neurological or psychological disorders, and have not participated in the ACT program during the previous six months.

Tools of data collection:

The data was collected using the following tools:

Tool (I): A structured Interview Questionnaire Sheet: was developed by the researchers and consisted of two parts:

Section (A): Demographic data about the adolescents under research, including age, sex, grade level, number of siblings, birth order, family income monthly, relationship between parents, family support, and residence.

Part (B): Clinical data about the adolescents under research, including onset of the disease, forms of stuttering, the adolescent' condition get worsen and improved when he, family history for stuttering and history of previous speech therapy.

Tool (II): Social Anxiety Scale:

This scale was developed by (**La Greca & Stone, 1993**), and adopted by the researchers to assess social anxiety among adolescents. It consisted of 18 items, divided into three subscales, eight items on fear of negative evaluation (FNE), six items on social avoidance and distress specific to new situations or unfamiliar peers (SAD-New), and four items on social avoidance and distress related to peers more generally (SAD-General). A 5-point Likert scale, with 1 denoting "not at all" and 5 denoting "all the time" was used to rate each item.

Scoring system:

- Low social anxiety: 18 – 42
- Moderate social anxiety: 43 - 66
- High social anxiety: 67 - 90

Tool (III): Self-esteem Scale:

Rosenberg (1965) created this scale and adopted by the researchers. This scale was used as screening technique for measured the self-esteem among the adolescents with stuttering under research. There were ten items on the scale. There were both positive and negative statements on the scale. Scores were calculated as follows: for items 1, 3, 4. 7. 8 and 10: Strongly agree= 3, Agree= 2, Disagree= 1, Strongly disagree= 0 & for items 2, 5, 6 and 9 (which are reversed invalence): Strongly agree=

0, Agree= 1, Disagree= 2, Strongly disagree= 3. The scale ranges from 0-3.

Scoring system of self-esteem scale:

- 0-14: indicate low self- esteem.
- 15-20: indicate moderate self-esteem.
- 21-30: indicate high self-esteem.

Validity of the tools:

To make sure the instruments were relevant and comprehensive; a panel of five experts from the faculty of nursing who specialize in psychiatric and mental health nursing evaluated each one for their face and content validity. According to their opinion, no changes had been made.

Reliability of the tools:

The internal consistency of the instruments was determined using Cronbach's alpha coefficients. The instruments' dependability was evaluated using test-retest reliability, and the results indicated that it was 0.904 for the social anxiety scale and 0.831 for the self-esteem scale.

Administrative Approval:

The Scientific Research Ethics Committee of the Faculty of Nursing granted formal approval for the research before it was carried out, with code number REC.PSYN.P23. Following clarification of the research's purpose, the Dean of Benha University's Faculty of Nursing addressed an official letter to the Director of Hospitals.

Ethical consideration:

Each participant provided informed consent to participate in the research after being told of its objectives and assured that all information collected would be kept completely private. The authors of the research were careful to emphasize that participation was completely voluntary and that participants' privacy was protected by coding the data. Additionally, the participants were made aware that they might discontinue the research at any time.

Pilot study

Six adolescents (10%) participated in pilot research to evaluate each tool's use, objectivity, practicality, and clarity. Estimating the time required for data collection and identifying any tool administration-related issues were also done, and the necessary adjustments were then made. The current research did not use any of the data from the pilot research.

Field of work

The actual research was conducted in four stages: assessment, planning, implementation, and evaluation.

Assessment phase:

Once the permission was given, the intended investigation could be continued. The interviewers were positioned in a private, peaceful area. The goal and scope of the research were explained to the participants. 60 adolescents were assessed using the aforementioned research instruments. The average duration of each participant's interview was roughly 45 minutes. Pre-testing takes a month to complete. After that, they were divided into two equal groups using a coin toss: the study group (30 participants) who received training, and the control group (30 participants) who did not get training.

Planning phase:

The goal of this phase was to create a training program for acceptance and commitment. It was designed in the Arabic language using relevant recent literature reviews. Creating acceptance and commitment training concepts, goals, and practice techniques are all included in this step.

Implementation phase:

When the researchers initially met the study group, they divided them into five smaller groups, with six adolescents in each subgroup. These groups each attended eleven sessions, including an introduction to the program, three theoretical and six practical sessions, and a final session for adolescents to review the program's content and obtain a summary of all the sessions and their goals. Eleven sessions were held for each subgroup, with two sessions extended to two days of the week, on Sunday and Tuesday, from 10 to 11.30 AM. Each session had a 30–35 minute theoretical component and a 60–90 minute practical component. The training sessions for acceptance and commitment carried out from early May 2024 and the end of November 2024.

A range of learning techniques, such as lectures, seminars, brainstorming sessions, and examples, modeling, re-demonstrations, and demonstrations, were used to accomplish this. A data show, video, pictures, and a booklet were used as the media to aid in the explanation and to act as a guide for them. A summary, participant comments, additional clarifications of any unclear material, and homework assignments from the researchers marked the end of each session.

Acceptance and Commitment training program sessions:

Session 1 (Introduction): The researchers introduced themselves to the participants and asked the adolescents to introduce themselves to others to know each other. The researchers clarified the aim of the study, scheduled interventions sessions, and gave instructions and activities that would be performed during these sessions.

Session 2: Overview about stuttering: The main objective of this session was to enhance adolescents with stuttering knowledge about definition, etiology, signs and symptoms as well as the negative effects on them.

Session 3: Characterizes of adolescent with high self-esteem: The aim of this session was acquired adolescent knowledge about high self-esteem, including its important and characteristics.

Session 4: Social anxiety and its manifestations: This session was aimed to enable adolescents to recognize signs and symptoms of social anxiety. The researchers explained how this adolescent complained when facing social situations such as oral exams, communicating with unfamiliar people, defending himself when he made a mistake, and expressing negative feeling including fear and anxiety. They also explored the reaction of people to this adolescent, such as rejection, insult, mockery, and laughing.

Session 5: Increase awareness of how a certain behavior affects: The purpose of this session was to assess the members' distressing thoughts and emotions and ascertain whether the unsuccessful client used coping strategies to address these emotions and ideas. Adolescents with stuttering encouraged to make decisions that will help them fulfill their ideals and reach their long-term goals.

Session 6: Being present; elaborating the practice of mindfulness, or being present in the moment, without judging the experience. The goal of this session was to help adolescents observe themselves and remain in the present without being mired in the past or the future.

Session 7: Explaining the concept of acceptance: The goal of this session was to accept unpleasant experiences for what they are, without trying to change or avoid them. It facilitates the acceptance of challenges ideas, feelings, and sensations and provides chances for the acceptance of unpleasant experiences and feelings. Acceptance is emphasized more than avoidance.

Session 8: (**Defusing of negative Thoughts**):- The purpose of this session was to teach adolescents to think in a negative thought, write it down, and then ask them how it makes them feel. Encourage them to imagine it evaporating after that. Adolescents should be instructed to visualize their thought drawings on a cloud to help them see them moving away.

Session 9: "Self as context." The statement conveys the idea that a person is more than the sum of their thoughts, feelings, and experiences. However, it offers an alternative perspective that implies a self-separate from the current experience. We are more than the things that happen to us. We are impacted by what happens to us, not the other way around.

Session 10: Commit actions in line with the value. The goals are to assist adolescents in discovering their inner values and acting on them, despite the difficulties they are currently facing.

Session 11: Summary of the main points of the program's content.

Evaluation Phase:

Following the program's implementation, the studied adolescents who participated once more filled out a post-test sheet, which was identical to the pre-test, to gauge how effectively the training program had affected their social anxiety and self-esteem. Using the same instruments, a follow-up test was conducted two months after the post-test to examine the program's efficacy.

Statistical Design

Data was statistically analyzed using the Statistical Package for Social Science (SPSS) version 22. The correlations that were discovered were examined using analysis of variance; quantitative variables were analyzed using Pearson correlation; research variable predictors were analyzed using linear regression analysis; and the differences and similarities between research variables were examined using descriptive (mean & SD) and t-test methods. A significant probability (p-value) was defined as less than 0.05, and a highly significant one as less than 0.001.

Results:

Table (1) Shows that (43.3 % & 36.7 %) of adolescent with stuttering were age 15-16 for control and study group respectively and first secondary grade, the mean age of them are (15.21± 2.16 and 16.11±2.23) for control and study group respectively. As regard to sex (53.4% & 56.7 %) of them were male for control and study group respectively. In addition, (50.0% & 60.0%) of them have one sibling respectively. Also (40.0%) of adolescents are the first birth order in his family in control group, while (46.6%) of them are the second birth order in his family for study group. Furthermore (56.7% & 53.4%) of adolescent families have fairly sufficient income monthly in control and study group respectively and (50.0% &73.6%) of adolescent has good relation between parent and (63.3% & 90.0%) of adolescent live in rural areas among control and study group respectively.

Table (2) Illustrates that (70.0% & 66.6%) of adolescents with stuttering are gradually onset of disease among control and study group respectively. Also (43.3% & 50.0%) of them have prolongation forms of stuttering among control and study group respectively. Additionally (43.3%) of adolescents get worsen when he talking with strangers for control group while (33.4 %) of adolescents get worsen when he talking with strangers and discussion in classroom for study group. Furthermore, (63.4% & 43.3%) of adolescents conditions improve when he talking with family among control and study group respectively. Also, (80.0% & 86.8%) of adolescents not have family history of stuttering and (70.0% & 80.0%) of them have history of previous speech therapy among control and study group respectively.

Table (3): illustrates that there is a highly statistical significant difference between social anxiety symptoms among adolescents with stuttering pre, post and follow up program implementation ($p<0.001$) among study group. While, there no a highly statistical significant difference between social anxiety symptoms among adolescents with stuttering pre, post and follow up among control group.

Figure (1): shows that; the percentage of studied adolescents with moderate social anxiety among the study group decrease from 60% before the intervention to (43.3% & 36.7%) post and follow up the intervention, and the percentage of studied adolescents with high social anxiety decrease from 30% before the intervention to (6.7%) post and follow up program implementation. However, the percentage of studied adolescents with low social anxiety increase from 10% before the intervention to (50% & 56.6%) post and follow up program implementation.

Figure (2): shows that; the percentage of studied adolescents with low self-esteem among the study group decrease from 60% before the intervention to (13.3% & 16.7%) post and follow up the intervention. However, the percentage of studied adolescents with moderate self-esteem increase from 40% before the intervention to (60% &56.7%) post and follow up program implementation and the percentage of studied adolescents with high self-esteem increase to (26.7% & 26.6%) post and follow up program implementation.

Table (4): reveals that, there is a highly statistical significant relationship between family support and both total mean score of social anxiety and self-esteem. Also this table

illustrates that there is a statistical significant relationship between total mean score of self-esteem and family income monthly post implementation among study group.

According to Table (5), there is no statistically significant relationship between total mean score of clinical data of adolescents with stuttering, social anxiety and self-esteem post implementation among study group.

Table (6): reveals that, there is highly statistically significant negative correlation coefficient between adolescent's total level of social anxiety and total level of self-esteem among study group post and follow up program implementation (P <0.001).

Table (1): Distribution of socio-demographic characteristics of adolescents with stuttering among control and study group (n=60)

Items	Control group (n=30)		Study group (n=30)	
	No	%	No	%
Age				
• 15-16	13	**43.3**	11	**36.7**
• 17-18	11	36.7	11	36.7
• ≥19	6	20.0	8	26.6
Mean ± SD	15.21±2.16		16.11±2.23	
Sex				
• Male	16	**53.4**	17	**56.7**
• Female	14	46.6	13	43.3
Grade level				
• First secondary grade	13	**43.3**	11	**36.7**
• Second secondary grade	11	36.7	11	36.7
• Third secondary grade	6	20.0	8	26.6
Number of sibling				
• None	10	33.4	5	16.7
• One	15	**50.0**	18	**60.0**
• Two	3	10.0	5	16.7
• More than that	2	6.6	2	6.6
Birth order				
• First	12	**40.0**	10	33.4
• Second	11	36.7	14	**46.6**
• Third	5	16.7	6	20.0
• More than that	2	6.6	0	0.0
Family income monthly				
• Insufficient	10	33.4	10	33.4
• Fairly sufficient	17	**56.6**	16	**53.4**
• Sufficient	3	10.0	4	13..2
Relation between parent				
• Good	15	**50.0**	22	**73.6**
• Conflicted	11	36.7	4	13.2
• Father is controlling	3	10.0	2	6.6
• Mather is controlling	1	3.3	2	6.6
Family support				
• Present	20	**66.6**	17	**56.7**
• Not present	10	33.4	13	43.3
Residence				
• Rural	19	**63.3**	27	**90.0**
• Urban	11	36.7	3	10.0

Table (2): Distribution of clinical data of adolescent with stuttering among control and study group (n=60)

Items	Control group (n=30)		Study group (n=30)	
	No	%	No	%
Onset of the disease				
• Sudden	9	30.0	10	33.4
• Gradually	21	**70.0**	20	**66.6**
Forms of stuttering				
• Prolongation	13	**43.3**	15	**50.0**
• Repetition	10	33.4	11	36.7
• Blocking	7	23.4	4	13.3
Adolescents condition get worsen when he				
• Talking to strangers	13	**43.3**	10	**33.4**
• Discussion in classroom	9	30.0	10	**33.4**
• Talking in phone	5	16.7	6	20.0
• Anger or irritation	3	10.0	4	13.2
Adolescents condition improved when he				
• Talking with family	19	**63.4**	13	**43.3**
• Reading	8	26.6	9	30.0
• Memorized speech	0	0.0	5	16.7
• Slowly speaking	3	10.0	3	10.0
Family history				
• Yes	6	20.0	4	13.2
• No	24	**80.0**	26	**86.8**
History of previous speech therapy				
• Yes	21	**70.0**	24	**80.0**
• No	9	30.0	6	20.0

Table (3) Mean score of social anxiety symptoms of adolescents with stuttering pre, post and follow up program implementation among both groups (n=60)

Social anxiety	Control group (n=30)			Study group (n=30)		
	Pre program	Post program	Follow up	Pre program	Post program	Follow up
	Mean ±SD	Mean ±SD	Mean ±SD	Mean ±SD	Mean ±SD	Mean ±SD
Fear from negative evaluation	2.10±0.66	2.10±0.66	2.10±0.66	2.23±0.67	1.53±0.57	1.53±0.57
F	--------			**39.40**		
P				**<0.001****		
Social avoidance and distress specific to new situation	2.13±0.68	2.13±0.68	2.13±0.68	2.06±0.63	1.46±0.57	1.40±0.56
F	----------			**35.62**		
P				**<0.001****		
Social avoidance and distress that experienced generally with peers	2.16±0.69	2.16±0.69	2.16±0.69	2.26±0.69	1.56±0.62	1.46±0.50
F	----------			**40.78**		
P				**<0.001****		
Total	2.03±0.61	2.03±0.61	2.03±0.61	2.06±0.63	1.40±0.65	1.46±0.57
F	---------			**37.60**		
P				**<0.001****		

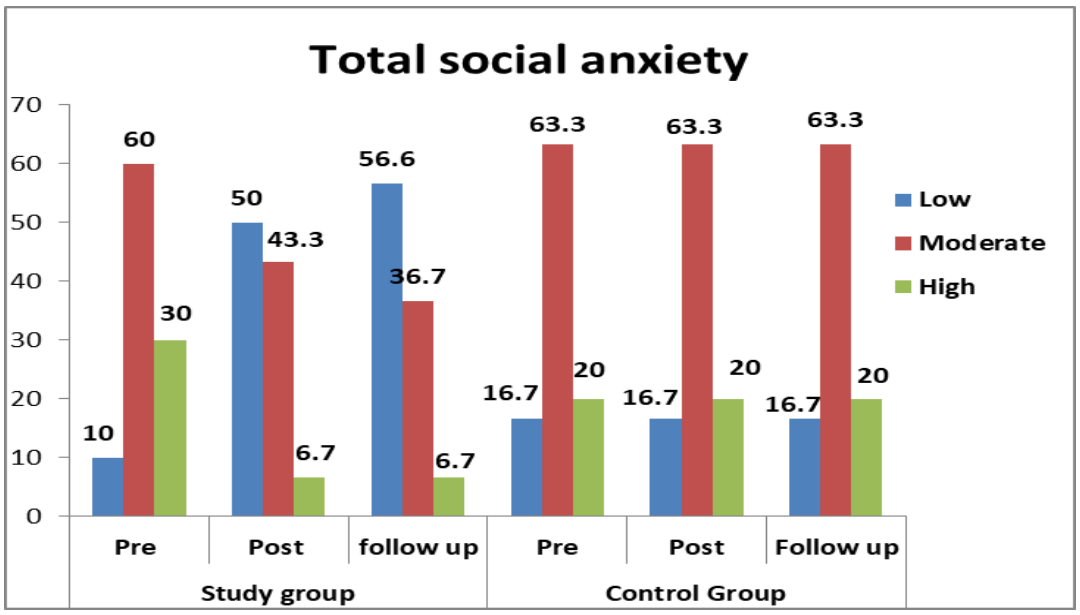

Figure (1): Distribution of total social anxiety of adolescents with stuttering pre, post and follow up program implementations among both groups.

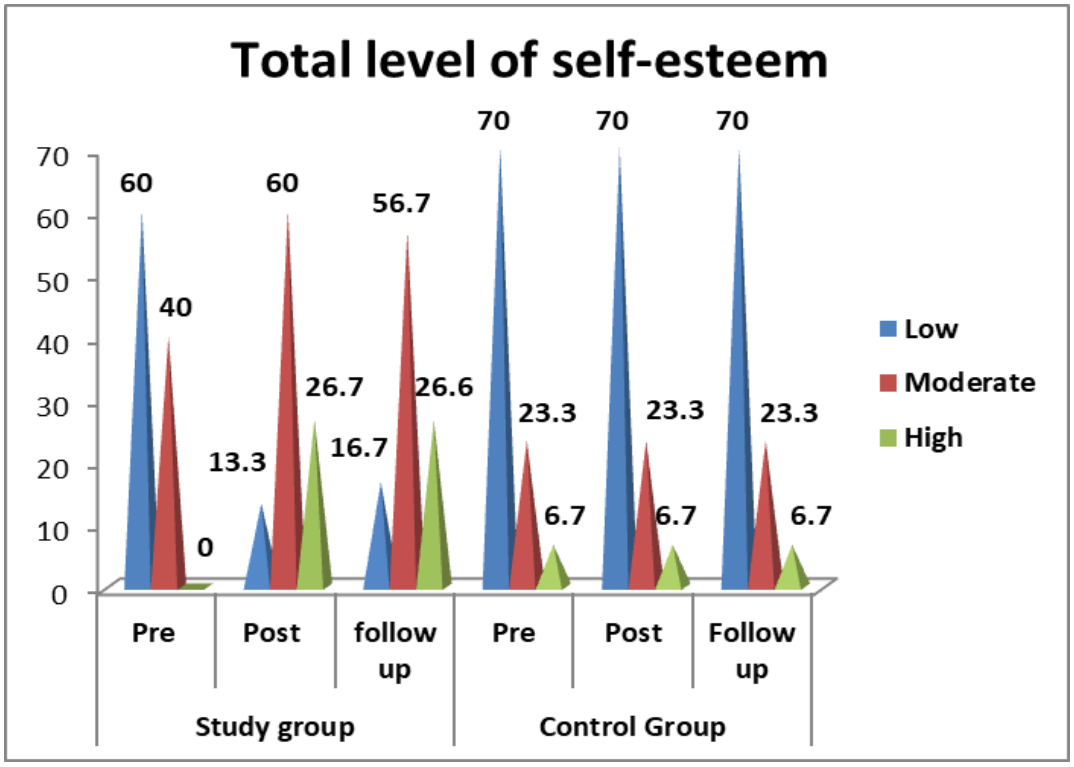

Figure (2): Distribution of total level of self-esteem of adolescents with stuttering pre, post and follow up program implementations among both groups.

Table (4): Relation between total mean score of socio -demographic characteristics of adolescents with stuttering, social anxiety and self-esteem post implementation of program among study group (n =30)

Socio-demographic characteristics	Total social anxiety		Total self-esteem	
	Mean ± SD	Test of sig P value	Mean ± SD	Test of sig P value
Age				
• 15-16	1.72 ± 0.46	F= 5.97	2.00 ± 0.63	F =0.12
• 17-18	1.36 ± 0.50	P >0.05	2.27 ± 0.64	P >0.05
• ≥19	1.62 ± 0.91		2.12 ± 0.64	
Sex				
• Male	1.52 ± 0.62	T =0.94	2.29 ± 0.46	T = 4.18
• Female	1.61 ±0.65	P >0.05	1.92 ± 0.75	>0.05
Grade level				
• First secondary grade	1.72 ± 0.46	F= 5.97	2.00 ± 0.63	F =0.12
• Second secondary grade	1.36 ± 0.50	P >0.05	2.27 ± 0.64	P >0.05
• Third secondary grade	1.62 ± 0.91		2.12 ± 0.64	
Number of sibling				
• None	1.00 ± 0.00	F = 0.11	2.00 ± 0.70	F = 1.52
• One	1.88 ± 0.58	P >0.05	2.05 ± 0.53	P >0.05
• Two	1.20 ± 0.44		2.60 ± 0.54	
• More than that	1.00 ± 0.00		2.00 ± 1.41	
Birth order				
• First	1.40 ± 0.51	F = 0.85	2.10 ± 0.56	F = 1.96
• Second	1.17 ± 0.61	P >0.05	2.00 ± 0.55	P >0.05
• Third	1.50 ± 0.83		2.50 ± 0.83	
• More than that	0.00 ± 0.00		0.00 ± 0.00	
Family income monthly				
• Insufficient	1.70 ± 0.67	F = 0.29	2.10 ± 0.26	**F =2.87**
• Fairly sufficient	1.56 ± 0.62	P >0.05	2.12 ± 0.61	**P <0.05***
• Sufficient	1.25 ± 0.50		2.25 ± 0.95	
Relation between parent				
• Good	1.59 ± 0.66	F =0.47	2.13 ± 0.63	F = 0.23
• Conflicted	1.50 ± 0.57	P >0.05	2.25 ± 0.50	P >0.05
• Father is controlling	0.10 ± 0.00		2.50 ± 0.70	
• Mather is controlling	2.00 ± 0.00		1.50 ± 0.70	
Family support				
• Present	1.59 ± 0.63	**T = 3.50**	2.14 ± 0.66	**T = 3.79**
• Not present	1.33 ± 0.57	**P<0.001****	2.00 ± 0.00	**P <0.001****
Residence				
• Rural	1.46 ± 0.66	T = 0.00	2.15 ± 0.55	T =0.90
• Urban	1.64 ± 0.60	P >0.05	2.11 ± 0.69	P >0.05

Table (5): Relation between total mean score of clinical data of adolescents with stuttering, social anxiety and self-esteem post implementation of program among study group (n =30)

Clinical data	Total social anxiety		Total self-esteem	
	Mean ± SD	Test of sig P value	Mean ± SD	Test of sig P value
Onset of the disease				
• Sudden	1.30±0.48	T = 1.38	2.20±0.63	T = 0.08
• Gradually	1.70±0.65	P >0.05	2.27 ± 0.64	P >0.05
Forms of stuttering				
• Prolongation	1.36±0.50	F =0.12	2.36±0.50	F = 0.39
• Repetition	1.80±0.67	P >0.05	1.93±0.70	>0.05
• Blocking	1.25±0.50		2.25±0.50	
Adolescents condition get worsen when he				
• Talking to strangers	1.60±0.51		1.80±0.63	
• Discussion in classroom	1.90±0.69	F= 0.14	2.20±0.63	F =2.08
• Talking in phone	1.66±0.81	P >0.05	2.50±0.54	P >0.05
• Anger or irritation	1.75±0.50		2.25±0.50	
Adolescents condition improved when he				
• Talking with family	1.43±0.51		2.31±0.60	
• Reading	1.37±0.51	F = 2.79	1.87±0.64	F = 1.21
• Memorized speech	2.25±0.95	P >0.05	2.25±0.50	P >0.05
• Slowly speaking	2.00±0.00		1.50±0.70	
Family history				
• Yes	1.25±0.50	T = 0.58	1.75±0.95	T = 3.09
• No	1.61±0.63	P >0.05	2.19±0.56	P >0.05
History of previous speech therapy				
• Yes	1.61±0.66	T = 0.43	2.14±0.57	T =0.70
• No	1.44±0.52	P >0.05	2.11±0.78	P >0.05

Table (6): Correlation between total level of social anxiety of adolescents with stuttering and their total level of self-esteem post and follow up program implementation among study group

Total social anxiety	Total self esteem			
	Post program		Follow up program	
	r	P	r	P
• **Post program**	**-0.62**	**<0.000****	**-0.91**	**<0.000****
• **Follow up program**	**-0.91**	**<0.000****	**-0.70**	**<0.000****

Discussion

Adolescents with stuttering view their speech impairment negatively and believe they have been incompetent since their childhood. These adolescents are reserved, lonely, and avoid crowds out of fear of ridicule, particularly from their peers. They find it difficult to communicate with friends and family **(Bauerly, 2024)**. The acceptance and commitment approach is one kind of treatment that has been suggested for adolescents with stuttering disorder. Adolescents who have stuttering may find this approach particularly helpful since it can help them develop greater acceptance of their stuttering and learn how to follow their values and goals in spite of obstacles **(Bardel et al., 2022).**

So, the present study is conducted with the objective to evaluate the effect of acceptance and commitment training program on social

anxiety and self-esteem among adolescents with stuttering.

The current research was conducted on two groups (30 control group and 30 study group) adolescents with stuttering, ages 15 to 19 years with approximately more than half were male. According to the research, stuttering in adolescents usually started gradually and commonly manifested as prolongations, word repetitions, and blocking during conversations among both groups.

In this research, the first hypothesis was that adolescents with stuttering who will receive the acceptance and commitment training program (study group) will experience lower social anxiety on post and follow up test compared to those who didn't receive training program (control group). In line with the hypothesis, the researchers found that there was a highly statistical significant difference between social anxiety symptoms among study group pre, post and follow up program implementation ($p<0.001$). Compared to control group, there was n't a highly statistical significant difference between social anxiety symptoms pre, post and follow up among adolescents with stuttering. Also, regarding the level of social anxiety symptoms, this study revealed that there was a reduction in moderate and high levels of social anxiety, while, there was an increase in low level of social anxiety post and follow up program implementation among the study group.

From the perspective of the researchers, this result might not have come as a surprise because the adolescent stage is associated with significant social and psychological changes, including increased self-consciousness that makes adolescents more sensitive to how others view them, particularly those who stutter. It also coincides with significant hormonal and physical changes in the body and brain. As a result, individuals are more likely to have a poor self-perception of their voice and way of speaking, which could exacerbate social anxiety at that time. This finding supported the findings of **El-Haleem et al., (2022)** and indicated that a greater proportion of the stuttering group than the non-stuttering group suffered from anxiety disorders.

On the other hand, the acceptance and commitment training program could increase psychological flexibility due to its underlying mechanisms - acceptance, awareness-raising, present-moment awareness, observation without judgment, and refraining from empirical avoidance - which in turn enhanced the adolescents' ability to cope with social anxiety after the implementation of the study group's post and follow-up program. This outcome demonstrated that the ACT was successful in lowering the social anxiety of the groups under research, which was consistent with **Nemati et al., (2023); Salehpoor et al., (2023)**. Furthermore, the researchers were in accordance with **Hashemi et al., (2022)** and found that the ACT-based treatment program has successfully decreased social anxiety and improved speech fluency in stuttering adolescents.

In addition, **Nekooei et al., (2022)** showed that ACT increased children's self-efficacy and decreased anxiety by enhancing psychological flexibility and decreasing dysfunctional reactivity. Additionally, **Obiweluozo et al., (2021)** discovered that following the cognitive behavioral play therapy intervention program, the social anxiety scores of individuals with stuttering deficits decreased. This finding supported the assertion made by **Naz & Kausar, (2020)** and found that ACT was a successful psychosocial intervention when combined with speech management. Additionally, the client was able to learn to accept his stuttering, distance himself from negative ideas and emotions, commit to using controlled speech in his communication, and set achievable life goals to live meaningful life.

These findings also support **Babaie & Saeidmanesh, (2019)** conclusion that the ACT method helped adolescents with stuttering stop thinking of themselves as part of the thoughts and feelings associated with stuttering. This process is made easier by observer practice, which helps the person become an outside observer who is distinct from their body, thoughts, and emotions. Therefore, in addition to stuttering, this exercise promotes acceptance. This finding was consistent with **Zemestani et al., (2018)** and discovered that mothers of children with ADHD saw a significant

reduction in anxiety and depression following ACT treatment.

Furthermore, **Salehi et al., (2018)** asserted that the reasons for this effect of ACT was the beginning of awareness-based exercises, the development of creative helplessness in comparison to previous solutions from the first sessions, the change in the clients' attitudes toward the cause of irrational thoughts, the negative and defective cycle of these thoughts, and the goal of treatment. In actuality, this approach of treating stress, anxiety, and depression uses acceptance, increased focus, and values-based behavior as a mediator of change.

The second hypothesis in this research was that, adolescents with stuttering who will receive the acceptance and commitment training program (study group) will experience improved self-esteem on post and follow up test compared to those who didn't receive training program (control group). In line with the hypothesis, the researchers found that there was a reduction in low level of self-esteem, while, there was an increase in moderate and high levels of self-esteem post and follow up program implementation among the study group. This could be because adolescents with stuttering had a worse attitude about their communication than their non-stuttering peers before the training program was put into place. The adolescent's self-esteem may have been impacted by the unfavorable opinion of his communication skills.

However, following the ACT, the adolescents were given the opportunity to use role-playing and exercise to examine and resolve their internal conflict. The adolescent also demonstrated the positive effects of the ACT by learning how to understand one's own strengths and weaknesses, which are the primary means of boosting self-esteem and reducing social anxiety. This result was in agreement with **Younis et al., (2021)** and found that a highly statistically significant improvement of self-esteem after the implementation of the program. Also, there was a highly statistically significant difference before and after the intervention. Additionally, the researchers were in accordance with **Saeidmanesh & Babaie, (2017)** and discovered that group therapy centered on acceptance and commitment helped stuttering teenagers feel less anxious and improved self-esteem.

After the study group participated in the ACT program, the researchers found a highly statistically significant relationship between family support and the total mean score of social anxiety and self-esteem among adolescents with stuttering. Additionally, after the program was implemented, there was a statistically significant correlation between the monthly family income and the overall mean score of self-esteem. The researchers thought that these findings might be explained by the fact that adolescents who feel more supported by their families typically have higher self-esteem and lower levels of social anxiety. According to these findings, family support is essential for boosting the psychological advantages of the ACT program for adolescents with stuttering. Additionally, socioeconomic circumstances may affect the impact or efficacy of psychological interventions like ACT, possibly as a result of stability and access to supportive services.

This finding was consistent with **Younis et al., (2021)** that discovered a statistically significant correlation between income level and the overall mean score of anxiety. After the intervention, the overall mean score for social anxiety was higher for those with low incomes than for those with high and moderate incomes. Conversely, after the intervention, the overall mean score for self-esteem was greater in those with high and moderate incomes than in those with low incomes. This outcome ran counter to the findings of the research **AL Bdour et al., (2022**) which found no statistically significant changes in the level of self-esteem among people with stuttering or other speech disorders that were related to the family's monthly income.

The results of the research showed no statistically significant relation between the study group's total mean score of clinical data from adolescents with stuttering, social anxiety, and self-esteem after implementation the program. The researchers hypothesized that these findings would be explained by the fact that post-intervention psychological outcomes were not significantly impacted by individual

clinical variables, such as the length or severity of stuttering. These findings could suggest that ACT can be widely beneficial for a range of clinical profiles, underscoring its potential as a universally applicable intervention for adolescents with stuttering.

Furthermore, the results demonstrated a highly statistically significant negative correlation coefficient between adolescent's total level of social anxiety and total level of self-esteem among study group post and follow up program implementation (P=<0.001). This suggested that as social anxiety decreased, self-esteem increased among the study group. These results demonstrated the efficacy of ACT in promoting long-term improvements in psychological well-being and highlight the inverse relationship between social anxiety and self-esteem in adolescents with stuttering. This finding supported the findings of **Younis et al., (2021)** and demonstrated a negative correlation between stuttering children's social anxiety and self-esteem. The degree of anxiety rises when self-esteem declines. Also, this result was consistent with **Saeidmanesh & Babaie, (2017)** that discovered a negative correlation between the research group's overall level of self-esteem and the adolescents' overall level of anxiety.

Conclusions:

The current research's findings showed that the acceptance and commitment training program applied in the current study has significant effect on the decreasing social anxiety and enhancing self-esteem among adolescents with stuttering.

Recommendations

- Generalization of the acceptance and commitment training program across schools and speech therapy centers due to its proven effectiveness in reducing social anxiety and enhancing self-esteem among adolescents with stuttering.
- Acceptance and Commitment training program should be incorporated into psychological, educational, and speech-language interventions to promote a holistic and collaborative approach in addressing stuttering and its psychological consequences.
- For psychologists and speech-language pathologists, specialized training and capacity-building workshops are advised to guarantee the skillful and moral application of ACT methodologies.
- Awareness and guidance programs for families should be developed to empower parents in providing emotional and motivational support, thereby enhancing the outcomes of acceptance and commitment - based interventions.
- Longitudinal studies are required to evaluate the effect of ACT as a therapeutic intervention for various psychosocial problems among children.

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