Research Paper

Investigating the Effectiveness of Verbal Self-education Training on Academic Procrastination and Symptoms of Attention Deficit/Hyperactivity Disorder in Adolescent Boys With Attention-deficit/Hyperactivity Disorder

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ABSTRACT

Objective: This research aims to study the effectiveness of verbal self-instruction training on symptoms of attention-deficit/hyperactivity disorder (ADHD) and academic procrastination in male teenagers with ADHD.

Methods: This was a quasi-experimental study with a pre-test, post-test, and follow-up with a control group. The statistical population included all male teenagers with ADHD in Tabriz City, Iran. A total of 30 male teenagers with ADHD were selected via the purposive sampling method and were randomly assigned to experimental and control groups. The research tools were the child symptom inventory-4 questionnaire and the Solomon and Rothblum academic procrastination scale. Descriptive statistical indices and the analysis of covariance tests were employed for data description and testing of the research hypotheses.

Results: The F ratio of the univariate analysis of covariance for dependent variables showed a significant difference in the variables of academic procrastination and ADHD symptoms between the experimental and the control (P>0.001) group. Accordingly, verbal self-instruction is effective in improving academic procrastination and ADHD.

Conclusion: The results showed that verbal self-instruction training affects symptoms of ADHD and academic procrastination.

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Highlights

• Verbal self-instruction training affects emotional control and delays the immediate response to environmental stimuli in adolescents with attention deficit/hyperactivity disorder (ADHD) symptoms.

• Verbal self-instruction training affects the academic procrastination of male adolescents with ADHD. This technique allows learners to acquire skills to solve adaptive problems.

Plain Language Summary

ADHD is a cognitive disorder in which a person is not able to keep focus to follow activities and especially cognitive activities. This causes these people to procrastinate in doing tasks, especially academic tasks. This study examines the effect of verbal self-instruction on the symptoms of ADHD to see if this treatment has a positive effect on improving the symptoms of the disorder. Based on our findings, verbal self-instruction is effective to reduce procrastination and improve the symptoms of ADHD in adolescents.

1. Introduction

Attention deficit/hyperactivity disorder (ADHD) has been described as an ongoing pattern of hyperactivity, impulsivity, and inattention that often begins before the age of 12 years and is more severe compared to patterns attributed to normal growth (American Psychiatric Association, 1980). According to the fifth edition of the diagnostic and statistical manual of mental disorders-5th Edition (DSM-5), the main symptom of this disorder is an ongoing pattern of attention deficit or hyperactivity disorder that interferes with a person's functioning and manifests its inattention in unfinished behaviors. Hyperactivity refers to the increase of motor tasks in inappropriate situations and similar circumstances (American Psychiatric Association, 1980). The disorder continues into adulthood in the majority of clinical clients who have been diagnosed with this problem in childhood (Knopf, 2021). Although the disorder has been described as a disproportionate change in attention, ADHD children show deficits in other areas. For example, research in recent decades (Knopf, 2021) suggests that the disorder, especially in attention problems, often continues into adulthood. Without effective treatment, children and adolescents with ADHD are at major risk for behavioral and educational problems, mood and anxiety disorders, and physical injury (Sedgwick et al., 2019). The early symptoms of this disorder lead to other concurrent problems, such that these children have lower grades in education compared to others, and suffer from significantly lower levels of academic achievement. In addition, these children are suspended from school because of indiscipline and problematic behaviors. Accordingly, the study of Hadan and McAliffe (Lesch, 2018), after 3 years, showed that 31% of these children were suspended. Meanwhile, these children are often excluded from social groups and turn to illicit drug abuse. These children have few friends and low self-esteem and others like them to a lesser extent (Lesch, 2018); in addition, studies have shown various concurrent disorders, such as oppositional defiant disorder, anxiety disorders, conduct disorder, tic, and mood disorders (Nielsen et al., 2021).

Besides these problems and disorders, various studies have reported a relationship between the symptoms of ADHD and procrastination, and people with this disorder show signs of procrastination (Sedgwick et al., 2019). Procrastination is an anti-motivational process that results from a lack of interest and motivation to conduct tasks (Ryan & Deci, 2000) and is the act of delaying or putting off tasks and decisions (Schraw et al., 2007). Procrastination is a complex process that includes emotional, cognitive, and behavioral components. According to some scholars, procrastination is considered a defect in self-regulation (Steel, 2007). Procrastination occurs as a motivational problem because these individuals dislike the task, and as a cognitive problem because they are overly optimistic about their ability to complete the tasks in the future. Procrastination is a behavioral problem in that these people engage in other activities that have a greater strengthening effect (Karimi, 2022). Different signs of procrastination are strongly associated with ADHD. In addition, case studies have shown a relationship between ADHD and procrastination. People with ADHD show more procrastination. Other evidence of a relationship between the disorder and procrastination is provided by the American Psychiatric Associa-

tion's description of problems associated with ADHD as follows: daily activities, difficult tasks, and decisions require effort and unpleasant activities and it is likely to be avoided or delayed by people with this disorder. In addition, they have academic and work problems, such as forgetting homework, difficulty in completing long-term projects, studying for exams, and organization of duties, which are closely related to procrastination and their clinical signs can lead to procrastination, distractibility, forgetfulness, and disorganization in people with ADHD (Devi & Dhull, 2017). When these individuals are confronted with difficult situations, they are more likely to use maladaptive oppositional strategies, such as procrastination and avoidance, which in turn strengthens their negative thoughts, and this process is continually repeated (Knopf, 2021). Therefore, avoidance/procrastination may be viewed as a compensatory strategy to deal with challenging tasks that these subjects experience unpleasantly and beyond their ability (Karimi, 2022).

Various treatments have been prescribed for ADHD. One of the most common treatments is medication. Although these medications can help reduce the symptoms of ADHD, they have various side effects (Lesch, 2018). The commonly reported side effects of methylphenidate are headache, nausea, pain, and insomnia. Methylphenidate should also be used with caution in children with motor tic, as there are reports of increased tic frequency in treatment with methylphenidate in some children. These medications also decrease appetite and cause insomnia and irritability in children. In addition, the side effects of the medication include weight loss, sleep disorders, delusions and hallucinations, depression, and involuntary jerky movements (Ryan & Deci, 2000). A patient may develop tolerance to medication and in child patients in addition to medication tolerance, the medication may affect slightly. Given the adverse side effects of medications, tutorials, and psychological therapeutic methods have been offered as an alternative option for patients. Studies indicate that the use of a cognitive-behavioral approach has been effective in decreasing the symptoms of hyperactivity, impulsivity, increasing societal behaviors, and social cognition along with improving relationships with peers (Daunic et al., 2006).

One model of the cognitive-behavioral approach is verbal self-instructional training. It was developed by the psychologist, Donald Meichen-baum, in the early 1970s. The conceptualization of verbal self-instruction stems from the works of psychologists such as Luria and Vygotsky (Moradi et al., 2009). Luria theorizes that children acquire the capacity to control their behavior by internalizing adult commands and instructions (that is, through self-directed speech). In other words, self-control is regulated through subtle speech or inner speech. According to these scholars, the development of self-control of speech includes 3 primary phases and through these phases, speech motor control is organized. If these speech developmental stages fall outside the normal range of development in children, they may exhibit behaviors, such as hyperactivity and impulsivity. To reduce this undesirable behavior, it is necessary to repeat the normal growth sequence. Based on this theoretical perspective, Meichenbaum proposed a model for internalizing speech. Accordingly, the way we think can intentionally and relatively directly affect how we feel, and the internal monologue (a series of speeches) affects thoughts, beliefs, and behavior. Verbal self-instruction training is a type of cognitive therapy that assumes that the abnormal behavior of ADHD children is because of a lack or deficit in appropriate cognitive processes, including attention and inhibition. Hence, the goal is to enable ADHD children to plan and think before acting. Moradi et al. have shown in research that the therapy has been effective on ADHD and several other variables, of people with ADHD (Moradi et al., 2009); however, no research has investigated the effectiveness of this training on procrastination. ADHD has negative consequences on children's lives and some of these symptoms in adulthood have destructive effects on the lives of these people. Adolescents, as a group that must prepare for adulthood and be trained to enter the world of work and education, are of particular importance and must have sufficient mental health; however, ADHD can be an important deterrent for this population. Hence, verbal self-teaching is a useful and effective method that does not have the side effects of methods such as drug therapy. So far, no study has independently investigated and followed up on the effectiveness of verbal self-teaching on ADHD symptoms in adolescents (12 to 18 years old); accordingly, we investigated this treatment in the present study.

The present study investigates the effectiveness of verbal self-instruction training on the procrastination of adolescents with ADHD. Accordingly, this study intends to answer the question of whether verbal self-instruction training affects the academic procrastination of male adolescent boys with ADHD.

2. Materials and Methods

This was a quasi-experimental study with one experimental group and one control group with a pre-test/post-test design. In this research, the experimental and control groups were measured 3 times as follows: once before

the start of the training, the second time after the completion of the training, and the third time in the follow-up phase. The statistical population included adolescents suffering from ADHD (age range=12 to 18 years) who were referred to Imam Khomeini Psychiatric Center and Sheikh Al Raees Clinic in Tabriz City, Iran (1400). According to DSM-5, these subjects were diagnosed by a child and adolescent psychiatrist. The sample size was equal to 30 people who were selected from the clients of the mentioned centers and were randomly assigned to experimental (acceptance and commitment training) and control groups. We used the purposeful sampling method, according to the purpose of the research. All 15 participants in the experimental group cooperated with the researchers until the end of the course. No replacement occurred in the experimental or the control group. The criteria for entering the research for the participants were a satisfaction to take part in the research and providing written consent from the teenagers' and students' parents to use the treatment in the research, having an average intelligence score of 90 and above based on the Raven test, and scores above the average in the procrastination test. Meanwhile, the exclusion criterion was having a concurrent psychiatric disorder, brain injury, neurological, and sensorimotor problems (the criteria were determined by the psychiatrist who examined the children).

Study instruments

Children's sick symptoms questionnaire (CSI-4)

Child symptom inventory-4: The children sickness symptoms questionnaire was compiled by Spirafagin Vegado to screen 18 behavioral and emotional disorders of 5 to 12 year-old children. This tool was later revised according to the changes in DSM, and in 1994, with the publication of DSM-IV, it was published with a slight revision under the name of children symptom inventory-4 (CSI- 4) (Gadow & Sprafkin, 1997). This scale includes two teacher and parent forms. Group A of this questionnaire is related to ADHD and includes 3 subgroups, namely attention deficit, hyperactivity-impulsivity, and mixed. In this study, we used the teacher's version for assurance. Subjects who scored above the cut-off point were included in the study. Several studies have been conducted on the reliability and validity of this questionnaire, all of which indicate its validity. The validity and reliability of this scale, based on the studies, were 0.89 and 0.70, respectively (Gadow & Sprafkin, 1997). In Iran, a study has estimated the reliability of the parent-teacher form via the retesting method with a 2-week interval for ADHD disorder at 0.93 and reported its content validity at 0.79 (Ismaeil et al., 2002).

Solomon and Rothblum academic procrastination scale

The Solomon and Rothblum academic procrastination scale was created by Solomon and Rothblum (1984). This tool has 27 items that examine 4 areas as follows: studying for exams, including questions 1 to 6 (area 1); keeping up with reading assignments, including questions 9 to 17 (area 2); performing administrative tasks, including questions 20 to 25 (area 3); and performing school activities in general, including questions 27-26-19-18-8-7 for Iranian students (area 4). For each academic area, students completed 3 rating scales, indicating the degree to which they procrastinate on the task (1=never procrastinate to 5=always procrastinate), whether procrastination on the task is a problem for them (1=no problem at all to 5=always a problem), and whether they want to decrease their procrastination on the task (1=do not want to decrease to 5=definitely want to decrease). The scale reliability in Solomon's study, based on Cronbach α, was 0.64. Regarding the validity of the scale, Solomon obtained a coefficient of 0.84 using the internal consistency validity. In Iran, in various research, such as the study by Qara Aghaji et al., the reliability and validity of the questionnaire were obtained at 0.88 and 0.91, respectively (AghajiQara et al., 2016). Rashidzadeh et al. (Rashidzade et al., 2018) and Diant et al. (Dayant et al., 2018) have also confirmed the validity and reliability of the questionnaire in research.

Raven progressive matrices

The Raven progressive color matrices (Raven, 1949) consist of 36 questions, divided into 3 series, each containing 12 questions. An item in this series consists of a single pattern or matrix consisting of a pattern with a missing piece. Six patterns are printed under the matrix and should be placed in the open slot of the above design. There are 6 options for the subjects and the subjects have to choose the one that matches the most. This test is used to measure the general intelligence of elementary school students. A reliability coefficient of 0.85 and a validity of 0.64% was obtained in the studies of Riven et al. (Raven & Court, 1998). In Iran, in a study conducted by Fashtami et al., to determine the validity of the scale, the Cronbach α coefficient was 0.84 and the reliability was obtained at 0.75 (Rasouli Foshtami et al., 2022).

Data analysis

To analyze the data, descriptive statistical methods, such as frequency, Mean±SD, and inferential statistical methods, including analysis of covariance, were applied.

Meanwhile, Hashemi's verbal self-instructional treatment guide was used to develop the treatment protocol, which was developed based on Michael Baum's approach. The entire treatment process was divided into 8 sessions.

3. Results

Table 1 shows what the researchers and clients have done in each session and what areas have been worked on.

Table 2 shows the demographic characteristics of the participants.

Table 3 shows the descriptive indices of ADHD and procrastination variables, including the Mean±SD in the two experimental and control groups and the 3 stages of the test. By comparing them, the influence of verbal self-teaching on dependent variables was measured.

According to Table 3, the mean values in the pre-test did not indicate much difference between the scores of attention deficit and hyperactivity in the experimental and control groups, while in the post-test and follow-up, the mean was different between the two groups. Also, the mean and follow-up (after 3 months) of the experimental group were lower than the control group. A brief overview of these indicators suggests that in the experimental group, verbal self-instruction training has created significant changes in the indicators of dependent variables, i.e., attention deficit and hyperactivity, procrastination, and given areas ($P<0.05$). Finally, in the control group that was not exposed to any instructional intervention, no significant change was observed in any of the dependent variables and the comparison of these indicators with the pre-test indicates that over time and without any instructional interventions, a significant change in this group is not included in the statistical indicators.

Table 1. Summary of verbal self-teaching intervention program

Meetings	Content
1st	Evaluation and interview with subjects and implementation of necessary tools
2nd	Explaining the logic of treatment and cognitive modeling
3rd	Overt or external guidance of adolescents
4th	Explicit self-directed practice with adolescents
5th	Explicit self-directed practice with adolescents
6th	The disappearance of obvious self-direction
7th	Hidden self-teaching practice (inner speech)
8th	Hidden self-teaching practice (inner speech)

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Table 2. Demographic characteristics of the participants

Variables		No. (%)
Age (y)	12-14	12(0.40)
	14-16	10(33.34)
	16-18	8(26.66)
Gender	Boy	30(100)
The economic status of the family	Medium	20(66.66)
	Good	8(26.66)
	Great	2(6.66)

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Table 3. Statistical description of pre-test and post-test scores, follow-up of subjects in the variables of symptoms of hyperactivity and procrastination

Variables		Groups	Mean±SD	
			Verbal Self-Instructional	Control
Attention deficit and hyperactivity disorder	Attention deficit	Pre-test	24.1±4.54	23.8±4.06
		Post-test	15.8±2.62	24.8±1.73
		Follow-up	19.19±2.11	23.21±2.21
	Hyperactivity	Pre-test	25.24±1.11	24.4±1.6
		Post-test	13.35±2.23	24.2±1.28
		Follow-up	15.58±1.68	23.98±1.9
Procrastination	Keeping up with reading assignments	Pre-test	14.87±3.08	17.28±3.14
		Post-test	28.11±3.24	17.65±3.11
		Follow-up	25.68±3.09	1.71±3.15
	Studying for exams	Pre-test	11.23±3.11	12.60±2.34
		Post-test	18.57±2.18	13.57±2.36
		Follow-up	17.68±2.41	12.89±2.42
	Performing administrative tasks	Pre-test	10.86±2.58	11.15±2.44
		Post-test	16.86±2.19	10.11±2.42
		Follow-up	15.79±2.07	11.28±2.36
	Uncomfortable feeling for procrastination and will to change	Pre-test	21.48±2.64	22.27±2.43
		Post-test	26.78±1.76	22.65±2.42
		Follow-up	26.13±1.58	21.89±2.39

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To test the research hypotheses, the analysis of covariance at the significance level of α=0.05 was applied. Before performing the analysis, at first, the homogeneity of the variance of the groups and the normality of the data for the variables of ADHD-related symptoms and procrastination (studying for exams, keeping up with reading assignments, performing administrative tasks, uncomfortable feeling for procrastination, and will to change) was investigated using the Levene test. The results indicated that the variance of the groups is homogeneous and the homogeneity of the variance is established in both experimental and control groups at both scales. After calculating the Levene test, the assumption of uniformity of regression slope was calculated. This hypothesis examines the lack of interaction between groups and the pre-test scores. Given that the regression slope is the same in all variables, no interaction exists between groups and the pre-test scores (P<0.05). According to Table 4, using the covariance analysis method, we measured the effect of verbal self-education on the symptoms of ADHD.

Table 4 indicates the results of the covariance analysis of the effect of verbal self-instructional training on ADHD-related symptoms. The ratio of P observed at the level of 0.05 indicates a significant difference between the post-test of the mean scores of attention deficit and hyperactivity in the experimental and control groups. Therefore, it can be acknowledged that verbal self-instructional training has improved the ADHD-related symptoms in the experimental group. Based on the data in Table 4 and the square values of Eta in the present study, the effect size was strong. According to Table 5, using the covariance analysis method, we measured the impact of verbal self-education on academic procrastination.

Table 4. Analysis of covariance to assess the effect of verbal self-instructional training on adhd-related symptoms

Model	Dependent Variables	Total Squares	d_f	Mean Squares	F	Sig.	Squared Eta
Group	ADHD	1745.8	1	1745.8	11.25	0.001	0.245
		1672.42	1	1673.42	10.58	0.001	0.218
Error	ADHD	2351.73	26	90.45			
		2468.32	26	94.93			
Total	ADHD	5638.65	29				
		6539.83	29				

ADHD: Attention deficit hyperactivity disorder.

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Table 5 indicates the covariance analysis results on the effect of verbal self-instructional training on academic procrastination. The ratio of F observed at 0.05 level indicated a significant difference between post-test and follow-up mean scores of academic procrastination (studying for exams, keeping up with reading assignments, performing administrative tasks, and performing school activities) for the experimental and control groups. Therefore, verbal self-instructional training has an effect on academic procrastination (studying for exams, keeping up with reading assignments, performing administrative tasks, and performing school activities) in the experimental group. Based on the data in Table 5 and the squared values of Eta in the present study, the effect size is strong.

4. Discussion

The data analysis demonstrated that verbal self-instructional training has an effect on ADHD-related symptoms in male adolescents with ADHD. This finding is consistent with the findings of Gharibi et al. (Gharibi et al., 2017) and Moradi et al. (Moradi et al., 2009). Applying verbal self-instructional training allows children with ADHD to learn to control their emotions and achieve behavioral arousal through internal motivation. On the other hand, the practical approach helps adolescents with ADHD judge and reason effectively to immediate stimuli and events, enhance their feedback to future events, and engage in positive behaviors. Also, the training helps adolescents with ADHD to be active through internal speech until they exhibit late behavior modification and

Table 5. Findings of multivariate analysis of covariance (MANCOVA) to investigate the impact of verbal self-instructional training on academic procrastination

Model	Dependent Variables	Total Squares	d_f	Mean Squares	F	Sig.
Group	Studying for exams	1431.16	1	1431.16	7.24	0.001
	Keeping up with reading assignments	1408.58	1	1408.58	9.02	0.001
	Performing administrative tasks	1378.42	1	1378.42	8.75	0.001
	Uncomfortable feeling for procrastination, and will to change	1532.74	1	1532.74	9.32	0.001
Error	Studying for exams	4266.51	26			
	Keeping up with reading assignments	5135.47	26			
	Performing administrative tasks	5120.4	26			
	Uncomfortable feeling for procrastination, and will to change	6839.42	26			
Total	Studying for exams,	6028.25	29			
	Keeping up with reading assignments,	5831.62	29			
	Performing administrative tasks,	6183.18	29			
	Uncomfortable feeling for procrastination, and will to change	7463.74	29			

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choose realistic answers. They pursue their goals through self-motivation actions and change their self-motivation by relying on internal dependencies (self-determination) finally their achievement lead to multiple casual actions and increases purposeful creativity (Gharibi et al., 2017).

In addition, verbal self-instructional training helps adolescents with ADHD to avoid behaviors with immediate feedback to enhance delayed feedback. In this regard, they learn to avoid behaviors that lead to negative feedback. In addition, practical verbal self-instructional training helps adolescents with ADHD learn to make sense of time, predict the future, and analyze the past. Giving attention to the feedback causes a conductor state in adolescents with ADHD without any objective and external rewards. In other words, in the process of verbal self-instructional training, adolescents with ADHD learn to set short-term and long-term goals with self-expression, thereby manipulating and controlling their arousal states. In addition, the application of this training causes self-directed speech intervention as a self-regulatory mediator of emotional and motivational states and ultimately leads to cause purposeful behaviors (Moradi et al., 2009).

The most important application of verbal self-instructional training is to enable the subjects in using self-directed speech and helps people to control their behavior through private speech (self-expression) and organize behavioral dependencies over time. In this regard, the use of rules, plans, and programs plays a key role because these factors help people to conduct self-regulatory, future-oriented, and purposeful behaviors, additionally, these capabilities delay enthusiasm. Verbal self-instructional training leads to verbal thought through which individuals develop internal personal standards for behavior to predict the future and enhance long-term feedback (Karimi, 2022).

In the process of verbal self-instructional training, internal speech helps adolescents with ADHD and enables them to control impulsive behaviors. This means that interpersonal speech helps adolescents with ADHD to engage in behavioral control by internal commands, and through this, self-evaluate and self-reinforce actions and provide feedback. Presenting positive and negative verbal feedback to their functions provides the ground for their correction and continuation. In other words, verbal self-instructional training enables adolescents with ADHD by a secondary signaling system without an environmental signaling system to control their behavior (Rashidzade et al., 2018). In addition, according to the theory of Meichenbaum and Goodman (1984), verbal self-instructional training provides the basis for the internal control system in the form of self-talk, and the behavior of adolescents with ADHD changes to self-control. Thus, with self-talk through verbal self-instructional training, the behavior of adolescents with ADHD changes to a self-commanded one, and through conceptualizations, speech creates symbolic representations. Representations create mental environments, goal-setting, and behavioral regulation, and these help adolescents with ADHD to exercise self-control and self-command behaviors and control impulsive behaviors (Hasar et al., 2015).

Other findings of the present study which indicated that verbal self-instructional training influences the academic procrastination of male adolescents with ADHD are consistent with the findings of research by Rashidzadeh et al. (Moradi et al., 2009) and Hesar et al. (Hasar et al., 2015).

Verbal self-instructional training is a multidisciplinary intervention technique used to instruct individuals with ADHD to control ADHD-related symptoms, compare what has been done with what should be done, and present depended on self-reinforcing. It is a form of self-control that enables individuals with ADHD to control their thoughts and actions in a way that reduces the reliance on external conditions and relies more on internal self-control (Schraw et al., 2007). On the other hand, this technique allows learners to acquire skills that solve adaptive problems. Accordingly, verbal self-instructional training learners refer to it as a problem-solving approach, because in the process of instruction, learners organize their thinking patterns and inappropriate habits that hinder proper functioning and cause dysfunctional emotions and interdependence-related activities (Steel, 2007). On the other hand, the teachings of this strategy assist learners to determine a set of specific behavioral and cognitive strategies closely related to homework, and by implementing these strategies, they achieve remarkable success and increase their self-efficacy feelings about that task. Therefore, the application of this instructional method makes it possible for learners to encounter successive successes in the process of academic activity, and in this regard, their self-efficacy beliefs also change positively (Hasar et al., 2015).

The present study faced some limitations, one of which was the application of the study to a few samples of students with ADHD in Tabriz City, Iran; therefore, it is not possible to generalize to other communities. Generalization to other cities or girls with ADAH should be done cautiously.

Therapists are advised to apply verbal self-instructional training methods to treat ADHD-related symptoms and to reduce students' procrastination.

5. Conclusion

Improving the academic procrastination of adolescents with ADHD is influenced by improving the mechanisms for the regulation and management of memory, language, motivation, and emotion. Since each of these processes (memory, language, motivation, and emotion) play a fundamental role in academic activities, the activation of these mechanisms allows students with ADHD to be active and useful in the classroom. In this way, they should exercise the necessary supervision over their academic activities, and by self-supervision, they should improve their activities and avoid procrastination.

Ethical Considerations

Compliance with ethical guidelines

The research participants were given a full explanation regarding the overall purpose and confidentiality of the data. The information was used after receiving their informed consent letter. In addition, the subjects were free to withdraw from the process of research at any time.

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Authors' contributions

Supervision: Saeed Bakhtiarpour; Investigation and data collection: Masoumeh Rostami; Data analysis, Fariba Hafezi; Formal analysis: Fariba Hafezi; Writing the manuscript: Saeed Bakhtiarpour and Masoumeh Rostami; Writing review and editing: Fariba Hafezi.

Conflict of interest

The authors declared no conflict of interest.

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