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The Effectiveness of Social Component Intervention Program on School Burnout and Academic Self-Regulation in Students with ADHD

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Abstract

Objectives: The aim of this study was to evaluate the effectiveness of social competence intervention program on burnout and academic self-regulation of students with ADHD.

Methods: This research was a quantitative, quasi-experimental study in the form of a pre-test-post-test psycho-educational group and follow-up with an experimental and control group. Follow-up was done two months apart. The statistical population of the present study was female students in the second grade of an elementary school in Sabzevar. The research sample consisted of 40 people who were randomly selected from the willing people who had the conditions for entry and exit, and were randomly assigned to two groups (experimental and waiting). In order to collect information, a school burnout list (Salmela-Aro et al., 2009) and an academic self-regulation questionnaire (Ryan and Connell, 1989) were used. Data analysis was performed by repeated-measures analysis of variance.

Results: The results showed that the social competence intervention program had a significant effect on burnout and academic self-regulation of students with ADHD ($P<0.01$).

Conclusion: These results suggest that a social competence intervention program can help reduce burnout and increase academic self-regulation in students with ADHD.

Keywords: Social Component Intervention Program, Attention Deficit, Hyperactivity, School Burnout, Academic Self-Regulation

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Introduction

Among disorders during childhood, attention-deficit / hyperactivity disorder (ADHD) is considered as one of the most common disorders (Chen, Hartman, Haavik, Harro et al., 2018). In fact, ADHD is considered as a chronic and common disorder in children and adults. So, its prevalence has been reported in approximately 5% of primary school children and 2.5% of adults (American Psychiatric Association, 2013). This disorder has significant behavioral symptoms, which are known with inappropriate developmental activity level, intolerance of deprivation, impulsive behaviors, disorganized behaviors, anxiety and inability to maintain attention and concentration, and its prominent feature is the continuous pattern of inattention or hyperactivity / impulsive behaviors or a combination of these two expressed more frequently and intensely than others who are at the same level of development. The disorder is classified as a neurodevelopmental disorder in the Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-5) (Bulgan and Çiftçi, 2017; American Psychiatric Association, 2013; Rayan, Haroon and Melvin, 2015). The symptoms of ADHD are common and affect cognition, behavior, academic, social, and interpersonal functioning (Houck, Kendall, Miller, Morrell & Wiebe, 2011). Those with this disorder may have difficulty paying close attention to detail. They also make mistakes in assignments, work, and other activities. They often have no order in their activities and perform their tasks carelessly and impulsively. They also have no ability to maintain attention in playing with peers and can hardly focus on getting assignments done (Abikoff et al., 2009).

In this regard, one of the problems faced by students with ADHD is academic burnout (Polat and Karakas, 2018). The term burnout has been introduced in the scientific literature as follows: failure, burnout, or fatigue with a lot of energy, strength, or sources (Thomas, Bantz & McIntosh, 2019). Burnout was first seen as an injury in the field of work, but school is also a place where students considered as its employees have certain assignments at a certain time (Madin Et al., 2011). Academic burnout, which is a response to students' difficulties in coping with these pressures, is the result of a mismatch between educational resources and their own and others' expectations for academic success (Salmela-Aro, Kiuru, Leskinen & Nurmi, 2009). The students with burnout have no motivation to cooperate and participate in school activities and show behaviors such as absenteeism, early class leaving, thus do not participate in group activities and have no sense of responsibility (Chang, Lee, Byeon, Seong & Lee 2016).

In addition to academic burnout, ADHD can also cause problems with emotion regulation and academic self-regulation (Giannopoulou, 2019). Studies have shown that children with ADHD not only have poor academic performance and social challenges, but also have problems in the construct of academic self-regulation (Reid, Lienemann & Hagaman, 2013). Self-regulation is defined as a person's ability to evaluate, correct, and actively strive to achieve his goals in accordance with behavioral standards and social norms (Moilanen, Rasmussen, & Padilla-Walker, 2014). Self-regulation is defined as the ability to modify behavior through a combination of cognitive flexibility with attention, behavior, working memory, and skill control. Self-regulation is considered as one of the most important abilities of students to prepare for school as well as their academic achievement (Albelbisi & Yusop, 2019). Although there are different definitions of self-regulation, it seems most of them believe that self-regulation is the capacity to try, maintain, and direct that effort while instantaneous impulses are controlled. Thus, emotion regulation is defined as the process of defining and recognizing emotions as well as understanding and controlling them in a given situation, which includes re-evaluation for active recognition of an emotional-cognitive event. On the other hand, academic self-regulation refers to the optimal use of cognitive-

metacognitive-managerial strategies of resources to maximize learning (Lawson, Vosniadou, Van Deur, Wyra & Jeffries 2019).

Regarding many problems caused by ADHD (American Psychiatric Association, 2013), many treatments have been developed to improve ADHD. The most important treatments with significant effectiveness on children with ADHD include 1) medication; 2) parent training and 3) the use of social and behavioral techniques and methods for these children (Barkley, 2006). But sometimes their effectiveness has been accompanied by challenges and criticisms, and for this reason researchers have sought to test the clinical applicability of others. In this regard, one of the treatments used for this disorder and its associated problems can be the treatment of social competence intervention program that has proven its effectiveness and clinical applicability for various disorders in recent studies (Leung, Chan, Yeung & Tsui 2019; Goertz-Dorten, 2019). Social competence includes a person's abilities and capabilities for personal independence and social responsibility (Gresham & Elliott, 2016). In fact, social competence is defined as interpersonal, communication and interactive skills in relation to others or emotional, practical and emotional intelligence of a person. Social competence is a complex system of cognition, motivations, abilities, traditions, skills and social experiences (Lianos, 2015; Kasabi et al., 2015).

The terms in the field of social competence are not fully designed. The reason for this is not the difference in the perceived content of the concept of social competence, but this can be attributed to the difference between different psychological tools for evaluating social competence (Gebauer-Bukurov, Markovic, Sekulic & Bozic 2015). Felner et al. (1990) in pioneering studies have defined four categories of cognitive skills including decision-making, judgmental skills including the ability to learn and obtain essential information, behavioral skills including discussion, role-playing, courage, support, discussion skills to start and continue discussion and kind behavior skills, emotional competence including regulating and controlling emotional arousal, emotional capacity to establish positive relationships with others such as the capacity to build constructively positive relationships with others, build and develop trust and mutual supportive relationships, and finally motivational and expectation sets including three separate fields of individual value structure, level of moral growth, and sense of effectiveness and control as four main dimensions of social competence. Successful completion of childhood and adolescence requires social competence in these four dimensions, the lack of which is a major cause of maladaptation and adaptation problems (Krohling, 2016).

Unlike traditional social skills training programs, the Social Competence Intervention Program (SCIP) combines the results of recent studies in the field of neuropsychology and creative drama aimed to improve children's perceptual disabilities and integration. This program has been providedaimed to adapting children with behavioral disorders as an innovative and multi-sensory approach that by combining theoretical topics and treatment strategies in a group context, intervention activities can be powerful and engaging tools to promote changes in children's life with social disabilities, including children with ADHD (Guli et al., 2019). This treatment has been proven to be effective in many studies. For example, Arënliu, Strohmeier, Konjufca, Yanagida & Burger (2019) in a study investigated the effectiveness of the social competence intervention program on empowering peer groups to prevent bullying in schools. The results of their study showed the effectiveness of the social competence intervention program on empowering the peer group to prevent bullying compared to the control group. In another study, Chan et al. (2018) investigated the effectiveness of the social competence intervention program on problems of adolescents with autism. The results of their study showed that the social competence intervention program was more effective on the problems of adolescents with autism in the experimental group

compared to the control group. Goertz-Dorten et al. (2017) also investigated the effectiveness of the social competence intervention program on the problems of children with oppositional defiant disorder and behavioral problems. The results of their study also show that the social competence intervention program had an effect on reducing aggression and improving social skills. But, Gradinger, Yanagida, Strohmeier & Spiel. (2016) conducted a study to evaluate the effectiveness and sustainability of the effect of the social competence intervention program to prevent cyber attacks and cyber victimization. The results of their study indicate that the social competence intervention program was effective on preventing cyber attacks and cyber victimization. Also, the effectiveness of this treatment has been confirmed using a six-month follow-up. A study by Carter et al. (2014) aimed to investigate the promotion of social competence and its effectiveness on peer relationships for adolescents with autism spectrum disorder also showed the effectiveness of the social competence intervention program. Finally, Guli et al. (2013), as the designers of this project, in a pilot and pioneering study, investigated the effectiveness of the social competence intervention program on the social problems of the youth with autism, learning disabilities and ADHD. The results of their studies showed the effectiveness of the social competence intervention program on the social problems of the youth with these disorders. But the social competence intervention program has proven its clinical applicability like international studies in few national studies in recent years. For example, Visani and Shahini Yilagh (2019) in a study investigated the effectiveness of the social competence intervention program on the symptoms of ADHD in male students. The results of their study showed that the social competence intervention program significantly reduced the symptoms of ADHD and the subscales of attention-deficit and hyperactivity.

Also, Tavakolizadeh et al. (2015) in another study investigated the effectiveness of the social competence intervention program on increasing self-esteem and reducing shyness of students with multiple disabilities. The results of their study showed that a significant difference was found between the experimental and control groups after the implementation of the social competence intervention program and the mean self-esteem of the experimental group was significantly higher than the control group and the mean of feeling shy was significantly reduced compared to the control group. As shown in the above studies, the applicability of the social competence intervention program has been confirmed. However, the small number of national studies is an important research gap that has led the researchers of the present study to further continue the program. On the other hand, the power of the social competence intervention program has not been evaluated in both national and international studies on problems of academic burnout and self-regulation of students with ADHD, so this point also necessitates conducting such studies. According to previous studies and the above, the aim of the present study was to investigate the effectiveness of the social competence intervention program on academic burnout and academic self-regulation of students with ADHD. In addition, studies indicate that people with attention deficit and hyperactivity disorders are faced with many problems. These children have problems with social skills and relationships with peers (Mikami et al., 2017). Regardless of gender, their problems may persist into adulthood and negatively affect their academic outcomes and quality of life and career (Bajrum et al., 2017). Therefore, social skills training is an effective treatment for solving social, emotional and educational problems of these children and is of great importance (Dibo & Prince, 2007).

In other words, as one of the positive points of conducting such researches is to solve the problems of this group of children and adolescents, and if such areas are neglected by researchers in this field, many negative consequences will be noticed by a talented group of people. Because

this group of society should play a social and occupational role in the near future and their psychological vulnerability makes them unable to manifest appropriate social, psychological and educational functions, which indicates the necessity of this study. Therefore, considering the issues raised and researches on the effect of education of different programs on improving psychological, emotional and behavioral problems, and on the other hand, considering the research gap in this field, conducting a research entitled the effectiveness of social competency intervention program on academic burnout and academic self-regulation in students with ADHD with the aim of reducing some of the sufferings and problems of these children and measuring the application. The ability of this treatment seems to be necessary.

Method

This study was a quantitative, quasi-experimental study in the form of a pre-test-post-test psycho-educational group and follow-up with experimental and control groups. 2-month follow-up was done. The research plan diagram is as follows:

Table 1. Research plan diagram

group	pre-test	Independent variable	post-test	follow-up
Experimental group R	T1	SCIP	T2	T3
Control group R	T1	-	T2	T3

The statistical population of this study was female second grade elementary school students in Sabzevar. The research sample consisted of 40 people who were randomly selected from the willing people who had the study inclusion and exclusion criteria, and were randomly assigned to two experimental and control groups. In order to perform the sampling process, all elementary school female students who referred to Sabzevar Education Counseling Center and were diagnosed with ADHD by a psychiatrist or clinical psychologist. They were also selected based on the study inclusion and exclusion criteria. It should be noted that to ensure ADHD in students diagnosed with the disorder, the criteria of the fifth revised version of the Diagnostic and Statistical Manual of Mental Disorders were used for clinical interviews. The sample consisted of 40 people from the statistical population, n= 20 in the experimental group and n = 20 in the control group, and the experimental group received social competence intervention programs in 16 sessions of 45 min. The study inclusion criteria included studying in the second grade of elementary school; having ADHD based on the diagnosis of a child psychiatrist; complete the informed consent form; no chronic mental disease; lack of disorders associated with ADHD; lack of experience in attending a workshop or training class on ADHD; and the ability of participants to attend 16 training sessions. The study exclusion criteria also included not doing the specified assignments or expressing unwillingness to continue cooperation. It should be noted that to analyze the data, descriptive statistics were used to summarize and display the data, and in inferential statistics, Mixed ANOVA Between-Within Subject interaction was used. It should also be noted that SPSS25 software was used to analyze the data. It is necessary to explain that in order to observe the ethical principles of the research, the mentioned treatment, after confirming its effectiveness on the experimental group, was performed on the control group after the completion of the research process.

Measurement tools

School Burnout Inventory (SBI)

This inventory was developed by Salmela-Aro et al. (2009) that measures the three dimensions of school fatigue, pessimism, and feelings of inadequacy. It has 9 questions and its total Cronbach's alpha is 88%; and 80%, 80% and 67% for subscales, respectively. It was validated for the first time by Badri et al. (2012) on secondary school students and its total Cronbach's alpha was 80%; and 85%, 84% and 89% for the mentioned subscales, respectively.

Academic Self-Regulation Questionnaire (SRQ-4)

This questionnaire was prepared by Ryan and Connell (1989) and has 31 questions and 4 subscales of external self-regulation, internal self-regulation, cognitive self-regulation and internal motivation. The total Cronbach's alpha has been reported 91% and 62-82% for its subscales (Ryan and Connell, 1989). This questionnaire has been investigated in Iran in a study by Shahidi et al. (2015) and its total Cronbach's alpha has been reported 81% and 75%, 85%, 88% and 88% for the mentioned subscales, respectively.

Table 2. Summary of content of Social Competency Intervention Program (Guli et al., 2013)

Sessions	Objectives	Descriptions
1	Become familiar with members and build relationships and trust	Perform pre-test; introducing members; and provide groups for discussion and group activities, especially groups whose members can easily express their emotions and personality traits with their friends without any mask
2	Active listening	Discuss to pay attention to important parts of a discussion when interacting with others; practice concentrating and controlling attention both visually and audibly; take and give clues to the other party during the discussion; and increase trust and cohesion between group members
3	Recognize feelings and emotions	Discuss and practice about emotions and how they affect our life, investigating the meaning and concept of different emotional words and expressions, and strengthening and developing the ability to visualize
4	Familiarity with body language	Discuss and practice to understand the feelings of others by receiving gestures; and interprete the emotions of others based on facial expressions and body language as live and by showing the film
5	Physical self-awareness	Improve physical control and self-awareness through practicing creative movements, continuing to discuss strategies and exercises to enhance reading ability, facial clues, and nonverbal expression
6	Recognize the feelings of others	Discuss how others express their feelings by tone of voice; practice expressing similar sentences with different emotions and sentences with the same emotions; and the same sentence by emphasizing its different words
7	Understand others	Discuss what the tools of a successful relationship are in real life; understand facial expressions, tone of voice and body language at the same time; express and interpret visual and auditory clues together in a group activity; and engage in more complex activities such as improvisation with a group member
8	Group participation and the role of group members	Experience playing a role in the process of a show; provide and produce a main idea by combining the ideas of other members in a

		group activity; and practice group decision-making to select an activity
9	Recognize interpersonal conflicts and problem-solving power	Discuss and practice situations where visual and auditory clues are inconsistent and may be inconsistent with context; and develop strategies for dealing with ambiguous and conflicting situations
10	Acceptance of dissenting opinions and criticism	Discuss the difference between reality and belief; accept the views of others when they are different from ours and practice talking about different points of view on different topics
11	Give feedback to others and reflect feelings	Group activity to complete a project; practice using nonverbal clues to interact with peers and help each other divide these interactions into smaller parts and steps, and learn the skill of giving and receiving feedback on important and significant non-verbal clues
12	Self-exploration and mindfulness	Collective activity of filming a discussion including important and basic non-verbal content; watch a recorded video of interactions with other band members; and discuss over what these films can convey to others; practice giving skills and getting feedback from nonverbal communication in social interactions
13	Role of self-confidence in interpersonal relationships	Discuss the factors preventing the start of an initial discussion; increase self-confidence in the initial discussion; practice starting and continuing a discussion; strengthen and develop cognitive strategies to deal with negative self-reflection when talking to others
14	Correct interpretation and lack of hasty judgment and prejudice	Re-providing a framework for interpretations of what might happen and what has happened in the past; and then play a role when such situations occur using appropriate strategies and through impromptu labeling
15	Review of skills learned so far	Review the skills learned so far to express memorable moments and events while active together to make positive predictions about the future by creating friendly statues
16	Final celebration and post-test	Discuss group experiences, give positive feedback to peers and get positive feedback from them; performing a post-test and holding a celebration on the occasion of familiarity with each other and saying goodbye

Results

The present study, which sought to investigate the effectiveness of social competence intervention program on academic burnout and self-regulation of students with ADHD, studied 40 female second grade primary school students, with 33% 10-year-old students, 40% 11-year-old students, and 27% 12-year-old students in the fourth, fifth, and sixth grades of the primary school, respectively. The descriptive and inferential results will be reported below.

Table 3. Mean and standard deviation of scores of experimental and control groups in pre-test, post-test and follow-up of research variables (n = 40)

statistical index		Pre-test		Post-test		Follow-up	
variable	Group	M	SD	M	SD	M	SD
Academic burnout (total score)	Experimental	25.25	3.1	47.95	7.76	48.8	6.81
	Control	25.35	3.30	26.20	3.20	25.70	7.16
fatigue	experimental	13.10	1.48	16.55	1.43	16.55	1.43
	Control	12.90	1.48	13.10	1.48	13.10	1.48
Pessimism about school	Experimental	9.5	1.1	13.2	1.50	13.10	1.48
	Control	9.4	1.1	9.7	1.0	10.1	1.80
Feeling lack of competence at school	Experimental	12.50	1.80	16.0	2.15	16.30	2.12
	Control	12.65	1.40	12.75	1.61	12.40	1.70
Academic self-regulation (total score)	Experimental	71.10	2.27	85.30	5.33	86.85	4.55
	Control	70.90	2.0	69.1	3.39	72.15	3.78
External regulation	Experimental	15.1	1.14	22.80	3.41	22.80	3.15
	Control	12.20	1.32	15.35	1.22	14.95	1.23
Internal regulation	Experimental	16.70	2.02	24.0	2.80	24.50	3.10
	Control	16.55	2.37	17.50	2.10	16.85	2.40
Specified regulation	Experimental	13.40	1.93	22.20	4.11	21.15	4.93
	Control	13.75	2.33	13.35	1.95	13.35	1.81
\inherent motivation	Experimental	13.50	1.90	21.40	4.54	21.41	1.60
	control	13.80	2.35	13.05	1.82	13.1	5.70

As shown in the Table 3, mean and standard deviation of the subjects in the research variables of academic burnout and self-regulation along with its subscales are presented at three stages of pre-test, post-test and follow-up by the group. As shown, the mean of the components at the post-test and follow-up stages of the experimental group has increased.

In order to investigate and ensure no statistically significant difference in the research variables between the experimental and control groups at the pre-test stage, t-test with two independent groups was used (Table 4).

Table 4. Results of t-test with two independent groups to compare the variables in the experimental and control groups at the pre-test stage

		Levene's test		t-test			
variable	Sub-scale	F	sig	t	df	Sig	Mean difference
Academic burnout	fatigue	0.002	0.969	0.426	38	0.672	0.20
	Pessimism about school	0.00	1.000	0.295	38	0.770	0.10
	Feeling of lack of competence at school	0.973	0.330	0.296	38	-0.769	-0.15
Academic self-regulation	External regulation	1.37	2.50	-0.383	38	0.704	-0.15
	Internal regulation	0.871	0.357	0.215	38	0.831	0.15
	Specified regulation	1.220	0.276	-0.516	38	0.609	-0.35
	motivation	2.15	0.150	-0.443	38	0.660	-0.30

As shown in the Table 4, no statistically significant difference was found between the experimental and control groups at the pre-test stage in any of the research subscales. It should be noted that the use of parametric statistics of repeated measures analysis of variance requires some assumptions, which include; 1) normal data distribution, 2) homogeneity of variances, 3), homogeneity of variance-covariance matrix, 4) normality of multivariate data distribution and 5) data independence. All assumptions have been tested and confirmed and, therefore, there is no obstacle to further analysis.

Table 5. Results of Wilks' lambda to investigate the multivariate effects of the intragroup factor and the interaction between research variables (n = 40)

Variables	Effect	Eigenvalue	F	Df	Error	Sig	n^2	Statistical power
Academic burnout (total score)	intragroup	0.15	98.80	2	37	0.001	0.84	1.000
	interaction	0.16	96.64		37	0.001	0.83	1.000
Fatigue	intragroup	0.18	39.81		37	0.001	0.82	1.000
	interaction	0.38	39.07		37	0.001	0.71	1.000
Pessimism about school	intragroup	0.31	42.05		37	0.001	0.69	1.000
	interaction	0.42	25.40		37	0.001	0.58	1.000
Feeling lack of competence at school	intragroup	0.55	15.40		37	0.001	0.45	0.999
	interaction	0.53	16.72		37	0.001	0.48	0.999
Academic self-regulation (total score)	intragroup	0.20	72.55	2	37	0.001	0.80	1.00
	interaction	0.23	63.23		37	0.001	0.77	1.00
External regulation	intragroup	0.27	49.95		37	0.001	0.73	1.00
	interaction	0.26	52.62		37	0.001	0.74	1.00
Internal regulation	intragroup	0.35	33.74		37	0.001	0.65	1.00
	interaction	0.41	26.48		37	0.001	0.59	1.00
Specified regulation	intragroup	0.40	27.51		37	0.001	0.60	1.00
	interaction	0.36	33.26		37	0.001	0.64	1.00
Motivation	intragroup	0.43	24.25		37	0.001	0.57	1.00
	interaction	0.34	35.49		37	0.001	0.66	1.00

As shown in the Table 5, the results of Wilks' lambda show the multivariate effects of the intragroup factor and the consistency of the regression slope on the interaction between intragroup and intergroup factors in academic burnout and self-regulation. Since the interactive effect is significant, the analysis is done by the group and interactive factor.

Table 6. Results of Wilks' lambda to investigate the multivariate effects of the intragroup factor of research variables (n = 40)

Variables	Effect	Eigenvalue	F	Df	Error	Sig	n^2	Statistical power
Academic burnout (total score)	experimental	0.97	105.315	2	18	0.001	0.92	1.00
	control	0.68	4.494		18	0.026	0.33	1.00
Fatigue	experimental	0.18	39.80		18	0.001	0.82	1.00
	control	0.98	0.19		18	0.825	0.02	0.07
Pessimism about school	experimental	0.11	73.55		18	0.001	0.89	1.00
	control	0.90	1.05		18	0.369	0.10	0.20
Feeling of lack of competence at school	experimental	0.28	22.94		18	0.001	0.72	1.00
	control	0.98	0.16		18	0.857	0.02	0.07
Academic self-regulation (total score)	experimental	0.07	127.12		18	0.001	0.93	1.00
	control	0.36	15.91		18	0.001	0.64	0.99
External regulation	experimental	0.12	64.51		18	0.001	0.87	1.00
	control	0.95	0.49		18	0.622	0.05	0.11
Internal regulation	experimental	0.13	62.59		18	0.001	0.87	1.00
	control	0.89	1.06		18	0.365	0.11	0.21
Specified regulation	experimental	0.17	44.58		18	0.001	0.83	1.00
	control	0.98	0.22		18	0.806	0.02	0.08
Motivation	experimental	0.17	44.32		18	0.001	0.83	1.00
	control	0.92	0.77		18	0.478	0.08	0.16

As shown in the Table 6, the results of Wilks' lambda show the multivariate effects of the intragroup factor on academic burnout and academic self-regulation along with their subscales. According to this Table, the three stages of pre-test, post-test and follow-up are compared with each other and by the group. The results of the above Table show that academic burnout and self-regulation along with all its subscales are significant in the experimental group ($p < 0.05$), but not significant in the control group ($p > 0.05$).

Table 7. Bonferroni test to compare research variables at three stages of the experimental group

Variables	Stage I	Stage J	Comparison of stages		
			Mean difference (I-J)	Standard error	Sig
Academic burnout (total score)	pre-test	post-test	-22.70	1.85	0.001
	pre-test	follow-up	22.70	1.86	0.001
	pre-test	follow-up	-0.85	0.46	0.252
Fatigue	pre-test	post-test	-3.45	0.41	0.001
	pre-test	follow-up	3.45	0.41	1.000
	pre-test	follow-up	-0.15	0.55	0.001

Pessimism about school	pre-test	post-test	-3.70	0.45	0.001
	pre-test	follow-up	3.70	0.45	0.001
	pre-test	follow-up	0.10	0.57	1.000
Feeling lack of competence at school	pre-test	post-test	-3.50	0.60	0.001
	pre-test	follow-up	3.50	0.60	0.001
	post-test	follow-up	-0.30	0.63	1.000
Academic self-regulation (total score)	pre-test	post-test	-15.20	1.15	0.001
	pre-test	follow-up	15.20	1.15	0.001
	post-test	follow-up	-1.55	0.50	0.016
External regulation	pre-test	post-test	-7.75	0.79	0.001
	pre-test	follow-up	7.75	0.79	0.001
	pre-test	follow-up	0.00	0.69	1.000
Internalized regulation	pre-test	post-test	-7.30	0.69	0.001
	pre-test	follow-up	7.30	0.69	0.001
	post-test	follow-up	-0.50	0.55	1.000
Specifed regulation	pre-test	post-test	-8.80	1.00	0.001
	pre-test	follow-up	8.80	1.00	0.001
	post-test	follow-up	1.05	1.34	1.000
Inherent motivation	pre-test	post-test	-7.90	1.15	0.001
	pre-test	follow-up	7.90	1.19	0.001
	post-test	follow-up	0.00	1.66	1.000

As shown in the Table 7, the intervention is effective on academic burnout and self-regulation along with their subscales in the experimental group and this effect remains until the follow-up stage ($p < 0.05$).

Discussion and conclusion

The present study was conducted to determine the effectiveness of social competence intervention program on academic burnout and academic self-regulation of students with ADHD. The results of quantitative data analysis with 95% confidence interval showed that the social competence intervention program had a significant effect on reducing academic burnout and increasing the academic self-regulation of students with ADHD. The effects of this approach on follow-up were also preserved. The first finding of this study indicated that the social competence intervention program had a positive effect on reducing academic burnout in students with ADHD. This finding is consistent with the study results of Arënliu et al. (2019); Chan et al. (2018); Goertz-Dorten et al. (2017); Gradinger et al. (2016); Carter et al. (2014); Guli et al. (2013); Visani and Shahini Yilagh, (2019) and Tavakolizadeh et al. (2018). Explaining this finding, it can be said that according to the results of previous studies, the fact that compliance with the social competence intervention program has been significantly associated with a reduction in academic burnout, seems reasonable.

In fact, more attention is paid to mental health issues and constructive adaptation for growing children, especially children with ADHD, in the social competence intervention program, which is

age-appropriate not only for successful compliance during childhood development, but also as an essential basis to acquire more advanced competencies and abilities essential to the successful development of growth stages can be traced to these interventions (Gradinger et al., 2016). On the other hand, social competence is associated with a variety of positive developmental consequences that can act to reduce academic burnout, and lack of growth of social competence is associated with negative developmental consequences, such as rejection by peers and aggressive behaviors (Guli et al., 2013).

The negative consequences are seen in children with ADHD problems and the social competence intervention program will take steps to resolve them, and this in turn leads to a reduction in academic problems such as academic burnout. In this way, children with ADHD learn how to avoid distraction while performing important assignments by the social competence intervention program. In this method, children will objectively understand how to act in order to understand the clues and receive key points in educational and social situations, and which parts of the text are at the desired level and which parts can solve the problems (Visani and Shahni Yilagh, 2019), which improves their academic skills and eliminates their academic burnout. The student community, and especially students with ADHD who suffer from academic burnout in the school, feel pessimistic and apathetic about their assignments and feel overwhelmed by the academic demands and requirements leading to lack of competence (Maslach, Schaufeli and Leiter, 2001).

The social competence intervention program with emphasis on social skills such as cooperation, responsibility for assignments as games, and self-control of children with externalized disorders (such as ADHD) who often have poor social competence and in interpersonal situations often feel lack of social competence, teaches how to increase academic achievement by expressing behaviors with a sense of responsibility, high self-control, self-supervision and empathy (Guli et al., 2013) and takes steps to increase academic achievement and reduce academic burnout. Social competence training actually helps children with ADHD to be able to organize and develop individual, environmental and social resources. As those who have introduced the social competence intervention program believed (Guli et al., 2008), one of the main causes of educational problems in children with ADHD is lack of concentration in these children during the social competence intervention program sessions by technique of visual memory, visual sequence and auditory memory, which are the main elements of maintaining concentration and attention (Visani and Shahni Yilagh, 2019) to solve problems such as academic burnout.

The second finding of the present study was that the social competence intervention program had a positive effect on the academic self-regulation of students with ADHD. This finding is also consistent with the study results of Arënliu et al. (2019); Chan et al. (2018); Goertz-Dorten et al. (2017); Gradinger et al., 2016; Carter et al. (2014); Guli et al. (2013); Visani and Shahini Yilagh (2019); and Tavakolizadeh et al. (2018). Explaining this finding, it can be said that the social competence intervention program can identify destructive emotions that lead to aggression in children by discussing and practicing emotions and how those emotions affect a person's life and help to eliminate aggressive behaviors and regulate their emotions. In this program, the child learns that there are more powerful and appropriate tools for communication and the child will pay more attention to points such as tone of voice and facial expressions, try to emphasize more appropriate emotions and behaviors instead of focusing on aggressive behaviors and emotions such as hatred and anger to achieve the goal (Guli et al., 2008). This program teaches a child with ADHD that aggression and impulsive behaviors are not the best solution if they fail, and the child will learn to accept the views of others when they differ from his or her own and respect them as different

perspectives (Guli et al., 2013). In fact, the social competency model, by identifying the underlying cognitive emotions and emotionally disordered behaviors of children with behavioral problems, especially ADHD, takes steps to improve social competence and promote positive outcomes during treatment (Chan et al., 2018). So that throughout the treatment sessions, there is a discussion and practice about emotions and how they affect life.

This approach by investigating the meaning of different emotional words and terms, discussing and practicing perception of the emotions of others by receiving facial clues, and interpreting one's own and others' emotions based on facial clues and body language as live and showing videos and discussions about how others express their emotions by tone of voice, and finally practicing expression of similar sentences with different emotions and different sentences with the same emotions to children with ADHD helps a lot in their academic self-regulation (Visani and Shahni Yilagh, 2019; Guli et al., 2013; 2008). In the social competence intervention program, children with ADHD learn, while trying to achieve personal goals, to maintain positive and respectful relationships with others at all times and places, because this focuses on teaching four main aspects of the reduction in impulsive behaviors and the increase in self-control: 1) accurate social cognition; 2) lack of maladaptive behaviors and instead the formation of adaptive behaviors; 3) recognition of effective social behaviors and 4) development of constructive and positive relationships with others (Jackson and Cunningham, 2015).

Also, the social competence intervention program teaches ADHD children how to regulate their emotions and feelings, and children learn what they are feeling at the moment and how to express that emotion appropriately (Guli et al., 2008). This regulates emotion and increases control, and studies show that children with high self-control have the capacity to positively regulate their emotions and do not express their negative emotions in the form of aggression and impulsive behaviors (Eisenberg et al., 1998).

In general, the study results emphasized the importance of the social competence intervention program to increase academic self-regulation and reduce academic burnout. In particular, the skills learned in the social competence intervention program are necessary for a successful life and can promise success and increasing progress of students with behavioral problems. Conducting the above study in Sabzevar and sample homogeneity (sample limitation) were among the limitations of the present study, which limits the generalization of results to other cultures. The use of self-report tools was another limitation of the present study. Also, the high number of questions in the questionnaire reduced attention and accuracy when responding the questions in children with ADHD. Based on the mentioned limitations, it is suggested to repeat the present study in other cultural contexts and among other classes and compare the results with each other.

It is also suggested to study the two groups of girls and boys and compare the results with each other in future studies. Finally, it is suggested to repeat the present study by tools other than questionnaires (including the use of structured and semi-structured interviews). Regarding the effectiveness of the social competence intervention program on academic self-regulation and burnout, it is suggested that school psychologists and counselors use this educational method in order to improve the level of well-being and social and emotional competence of students in general and students with behavioral problems (such as children with ADHD) in particular. Also, due to the increasing problems of behavioral, emotional and educational aspects of students with ADHD, it is suggested that the interventional method of social competency be considered as part of the educational activities and courses of students in schools in order to correct many emotional and educational behavioral disorders of these students.

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