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Examining the Effectiveness of Emotional Intelligence Training on Alexithymia Components in Students

Raziyeh. Kahani¹⁽⁰⁾, Davoud. Manavipour^{2*}⁽⁰⁾, Mojtaba. Sedaghati Fard²⁽⁰⁾

¹ PhD student, Department of Psychology, Garmsar Branch, Islamic Azad University, Garmsar, Iran ² Associate Professor, Department of Psychology, Garmsar Branch, Islamic Azad University, Garmsar, Iran

* Corresponding author email address: manavipor53@yahoo.com

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ABSTRACT

Objective: Emotional intelligence is the most crucial factor in decision-making and the selection of future goals, as well as the substitution of goals in various situations and circumstances. The purpose of this article was to determine the effectiveness of emotional intelligence training on alexithymia components in students.

Methods and Materials: This study was applied, quantitative, and of a quasiexperimental pre-test - post-test design with a control group and training. The population consisted of 30 students suffering from alexithymia, selected from 5 treatment centers, with 15 students allocated to the control group and 15 to the training group. The data collection tool in this research was the Toronto Alexithymia Scale (TAS-20), and Goleman's (1996) emotional intelligence training protocol was used for the experimental group. Data were analyzed using SPSS software and multivariate analysis of covariance method.

Findings: The F-value in the univariate analysis of covariance for the subscale of identifying emotions (F=13.266, P=0.000), for the subscale of describing emotions (F=19.917, P=0.000), and for the subscale of external-oriented thinking (F=11.108, P=0.000) were significant. These findings indicate that there is a significant difference between the emotional intelligence training group and the control group in the dependent variables (alexithymia components).

Conclusion: It can be concluded that the use of emotional intelligence training is beneficial for improving alexithymia in students with learning disabilities. Keywords: Emotional Intelligence, Alexithymia, Students.

Introduction 1.

he term "learning disabilities" was first introduced by Samuel Kirk in 1962 (D'Angiulli & Siegel, 2003; Yousefi & Hashemian Nejad, 2021). Kirk identified learning disabilities as a type of cognitive impairment that affects students in various mental areas such as understanding speech, writing, listening, reading, or arithmetic (Johnson et

al., 2023). The prevalence of learning disabilities is reported to be between 2 to 10 percent (Tarazi et al., 2020). Learning disabilities encompass a much broader range than just academic difficulties and require attention to social, familial, emotional, and behavioral aspects of a child's life (Movahedi & Esmaeili, 2015; Swanson & Jerman, 2007; Yousefi & Hashemian Nejad, 2021). Some children with learning disabilities have significant emotional and social problems

and are more at risk of emotional issues compared to their peers. These children are more prone to peer rejection and have a weaker self-concept (Abedini & Yarmohammadian, 2016; Donolato et al., 2022). Research indicates that between 38 to 78 percent of children with emotional impairments also have learning disorders (Donolato et al., 2022). Alexithymia refers to the inability to process and regulate emotional information and includes difficulties in identifying feelings, describing feelings, and externaloriented thinking (Oussi et al., 2023). Individuals with alexithymia have difficulty expressing their emotions and feelings in three dimensions: identifying feelings, describing feelings, and external-oriented thinking (HojjatKhah et al., 2019). In discussing the importance of emotional intelligence, it is believed to be the most critical factor in decision-making, goal selection, and goal replacement in various situations and circumstances. Thus, it is predictable that there is a specific and significant connection between emotional intelligence and various life dimensions (Navabinejad et al., 2023). Emotional intelligence can be defined as the ability to perceive, describe, understand, and control emotions (Parsakia et al., 2023). Emotional intelligence models are either ability-based or a combination of abilities and personality traits. In these models, emotional intelligence comprises four abilities: perception, facilitation, understanding, and management of emotions, which are hierarchical. Perception of emotions is the simplest and management of emotions is the most complex level. The mixed models define emotional intelligence as a combination of mental abilities and personality traits (Peter Salovey et al., 1999; P Salovey et al., 1999; Salovey & Sluyter, 1997). Salovey and colleagues (1997) believe that emotional intelligence is a significant factor in determining individual success in life and directly affects variables related to the self (Peter Salovey et al., 1999; P Salovey et al., 1999; Salovey & Sluyter, 1997). Emotional intelligence facilitates appropriate processing of emotionally laden information and its use in guiding cognitive activities (Hoshmandi et al., 2019). Skills or abilities that enable selfawareness, awareness of others' emotional states, and the ability to regulate or use emotions to positively impact performance and role (AghaDavoud Marnani et al., 2022; Mattingly & Kraiger, 2019). Emotional intelligence is theoretically and empirically related to the ability to manage and regulate personal emotions (Zysberg & Raz, 2019). Many of the problems faced by students are not solely due to cognitive and intellectual disabilities but also due to motivation (Pourseyed et al., 2019). Motivational issues,

beliefs, and cognitions determine whether an individual can successfully perform a task or is unable to do so. Some students have learned to see themselves as incapable in academic tasks or to undervalue their work for life and education. Therefore, they relate educational content less to their future life, have less confidence in their abilities, exert less effort when facing challenges, and their efficiency and productivity decrease. Thus, one of the problems in educational institutions is the decrease in motivation. Considering the above, the current research aims to examine the effectiveness of emotional intelligence training on alexithymia components in students.

2. Methods and Materials

2.1. Study Design and Participants

The present study employed a quasi-experimental design with one experimental group and one control group, using a pre-test and post-test approach. The research population consisted of all students with learning disabilities and alexithymia in Tehran during the 2021-2022 academic year. A total of 30 students with learning disabilities and alexithymia were conveniently selected from counseling centers in Tehran, with 15 students assigned to the experimental group and another 15 to the control group. The study involved pre-test and post-test stages.

2.2. Measures

2.2.1. Alexithymia

Toronto Alexithymia Scale (TAS-20) was developed by Taylor in 1994 and revised by Bagby and colleagues in 1994. It contains 20 items and aims to assess the level of alexithymia or difficulty in expressing emotions, comprising scales for difficulty in identifying feelings, difficulty in describing feelings, and externally oriented thinking. It uses a Likert-type response scale. Cronbach's alpha coefficient for alexithymia was 0.85, and for the three subscales, it was 0.82, 0.75, and 0.72, respectively, indicating internal consistency (Bagby et al., 2020; Bagby et al., 1994; Besharat, 2013). Another study by Besharat et al. examined the psychometric properties of the Persian version of this scale, obtaining Cronbach's alpha coefficients for the total TAS-20 score and its subscales as follows: 0.83, 0.80, 0.73, and 0.71, and in this study, 0.71, 0.74, 0.69, and 0.68, respectively. The test-retest reliability of this questionnaire was also examined by administering it twice to 63 patients (46 males, 17 females) at a 2-week interval, yielding Pearson



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correlation coefficients of 0.79 for the total score and between 0.62 to 0.69 for its subscales (Besharat, 2013).

2.3. Intervention

2.3.1. Emotional Intelligence

The experimental group sessions were organized in the afternoons (twice a week) in coordination with the counseling centers. The educational intervention for the experimental group was emotional intelligence training, conducted over 10 one-hour sessions, twice weekly. The emotional intelligence training package was derived from Goleman's (1996) program (Goleman, 1996), focusing on four components of emotional intelligence: self-awareness, self-management, social awareness, and relationship management. The program included role-playing, group discussions, question-and-answer sessions, and free discussions.

Session 1: Conducting pre-tests, introduction of members, introduction of working methods and teaching rules.

Session 2 and 3: Teaching emotional vocabulary (happiness, sadness, surprise, etc.), causes of emotions, how to recognize and express appropriate facial expressions.

Session 4: Teaching how to construct sentences expressing emotions and how to convey emotions to others.

Session 5 and 6: Active listening, reflecting emotions, echoing words, and sincere acceptance.

Session 7: Teaching methods to deal with emotional problems, analyzing problems before acting, exploring solutions and problem-solving, teaching self-correction instead of correcting others' behaviors, self-control, positive self-talk, and self-encouragement.

Table 1

The Results of Descriptive Statistics

Session 8: Discussing emotions and sharing unpleasant experiences, using self-talk techniques and role-playing, identifying distressing emotions, teaching responsibility for emotions, speech, and behavior.

Session 9: Familiarization with appropriate ways of expressing anger, examining reasons for anger and irritation (provocation, humiliation, frustration, etc.).

Session 10: Teaching how to recognize psychological pressure in oneself and others, identifying inappropriate ways of dealing with psychological pressures (aggression, isolation, self-criticism, etc.), teaching appropriate ways to reduce stress (relaxation exercises, writing negative emotions, and talking to express negative emotions).

Session 11: This session reviews the content taught in previous sessions and answers participants' questions.

Session 12: In this session, post-tests are conducted, and at the end, students and their parents are thanked for their participation in the project.

2.4. Data analysis

The data were then analyzed using SPSS software and covariance analysis.

3. Findings and Results

Demographically, in the control group, 27% of the participants were female and 73% male, while in the experimental group, 33% were female and 67% male. The mean and standard deviation of alexithymia components in both groups at pre-test and post-test stages are reported in the Table 1.

Groups	Stage	Mean (Identifying Emotions)	Mean (Describing Emotions)	Mean (External- Oriented Thinking)	Standard Deviation (Identifying Emotions)	Standard Deviation (Describing Emotions)	Standard Deviation (External-Oriented Thinking)
Control Group	Pre- test	35.4	26.4	42.13	0.914	0.888	0.814
Control Group	Post- test	39.27	28.13	44.8	0.61	0.511	0.57
Experimental Group	Pre- test	34.47	25.53	41.13	1.06	1.091	0.89
Experimental Group	Post- test	15.53	10.7	18.13	0.648	0.62	0.66

Before analyzing the data related to the hypotheses, the assumptions of covariance analysis were checked, including

linearity, multicollinearity, homogeneity of variances, and homogeneity of regression slopes. After confirming these



assumptions, multivariate analysis of covariance was conducted. The results are presented in Table 2.

Table 2

A Summary of the Results of Multivariate Tests

Effect	Test	Statistic	F	Significance Level	Effect Size
Groups	Pillai's Trace	0.48	9.603	0.000	0.240
Groups	Wilks' Lambda	0.543	10.706	0.000	0.265
Groups	Hotelling's Trace	0.797	11.818	0.000	0.285
Groups	Roy's Largest Root	0.737	22.343	0.000	0.424

As observed in Table 2, the results of the multivariate analysis of covariance (MANCOVA) in the emotional intelligence training and control groups show that there is a significant difference in at least one of the alexithymia components based on the Pillai's trace, Wilks' lambda, Hotelling's trace, and Roy's largest root tests. Therefore, the main hypothesis of the research is supported. To identify which subscale shows more effect, a univariate analysis of covariance was performed within the context of MANCOVA on the post-test scores of the alexithymia subscales, the results of which are presented in Table 3.

Table 3

The Results of Univariate Tests

Dependent Variable	SS	Df	MS	F	р	Effect Size
Identifying Emotions	81.371	1	40.685	13.266	0.000	0.223
Describing Emotions	169.933	1	84.966	19.917	0.000	0.302
External-Oriented Thinking	267.508	1	133.765	11.108	0.000	0.195

As seen in Table 3, the F-values of the univariate analysis of covariance for the subscales of identifying emotions (F=13.266, P=0.000), describing emotions (F=19.917, P=0.000), and external-oriented thinking (F=11.108, P=0.000) are significant. These findings indicate that there is a significant difference between the emotional intelligence training group and the control group in the dependent variables (alexithymia components).

4. Discussion and Conclusion

The aim of this study was to examine the effectiveness of emotional intelligence training on alexithymia components in students. This research explored the differences between emotional intelligence training, delivered in 10 sessions, for children with alexithymia. The findings indicated that emotional intelligence training, encompassing components like self-awareness, self-management, awareness of others' emotions or social awareness, and relationship management, differs from groups that did not receive such training. The results revealed significant differences between the experimental and control groups in alexithymia components. These outcomes are in line with the research of Jabbarzadeh Chaharbrod et al. (2023), who examined cognitive skills in male students with learning disabilities and also found that cognitive skills training impacts the level of students' learning disorders (Jabarzadeh Chaharbrod et al., 2023). Similarly, the results align with other studies, which investigated the relationship between alexithymia, expressivity style, emotional ambivalence, and emotional control with the mental health of high school students, showing that alexithymia, expressivity, and emotional ambivalence were stronger predictors for the variance in mental health (Dong et al., 2023; HojjatKhah et al., 2019; Karami & Lorestani, 2022; Oussi et al., 2023). The current findings underscore the detrimental role of alexithymia and emotional ambivalence on adolescents' mental health and highlight the necessity of early prevention through appropriate schooling-age training.

Bar-On (2000) considers emotional intelligence a crucial factor in developing individuals' abilities to achieve success in life, associating it with emotional health and overall mental well-being. He argues that cognitive intelligence is not the only major predictor of success (Bar-On, 2000). Emotional intelligence is a multi-faceted domain encompassing a set of skills and social competencies that impact an individual's ability to recognize, understand, and



manage emotions, solve problems, and adapt effectively to the needs, pressures, and challenges of life (Parsakia et al., 2023). According to Goleman (1996), any deficiency in emotional intelligence can lead to difficulties in marital life, child-rearing, or even physical health (Goleman, 1996). Regarding the acquisition of emotional intelligence, it can be said that learning emotional skills starts at home through parent-child interactions (Almunahi, 2018). Studies indicate that individuals with high emotional intelligence are more successful in interacting with their environment and handling stressful situations (Čikeš et al., 2018). Therefore, it seems logical that emotional intelligence training would be effective in influencing alexithymia in the experimental group members.

5. Limitations & Suggestions

The study faced several limitations that warrant consideration. Firstly, the sample size was relatively small and limited to a specific geographic area, which may affect the generalizability of the findings to a broader population. Additionally, the study design was quasi-experimental and lacked random assignment to the experimental and control groups, potentially introducing selection biases. The reliance on self-reported measures, particularly the Toronto Alexithymia Scale (TAS-20), might have introduced response biases, as participants' self-assessment may not accurately reflect their true emotional intelligence or alexithymia levels. Furthermore, the study only considered short-term effects of the training; long-term follow-up would be necessary to assess the sustainability of the outcomes. Lastly, the research did not account for potential confounding variables such as participants' socio-economic status, family background, and existing mental health conditions, which could have influenced the results.

It is recommended to implement long-term training courses for students with alexithymia issues. Additionally, examining differences in training between boys and girls is advised. Finally, it is suggested to explore other factors such as teaching methods for these students. Moreover, it is suggested that future research should expand the scope of investigation by including a larger and more diverse sample to enhance the generalizability of the findings. Implementing long-term training courses for students with alexithymia issues is indeed crucial, but these programs should be tailored to address the unique needs of various age groups and learning styles. In addition to examining differences in training effectiveness between boys and girls, it would be beneficial to explore the impact of cultural and socioeconomic backgrounds on the effectiveness of emotional intelligence training. It is also recommended to incorporate a multi-modal assessment approach, combining self-reports with objective measures such as behavioral observations and feedback from teachers and parents, to provide a more comprehensive understanding of the students' progress. Investigating the role of parental involvement in such training programs could offer insights into more holistic approaches to managing alexithymia. Moreover, future studies should consider employing a randomized controlled trial design to mitigate potential biases and enhance the validity of the findings. Finally, exploring innovative teaching methods, including digital tools and interactive activities, could potentially increase student engagement and the effectiveness of the training.

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Declaration of Interest

The authors of this article declared no conflict of interest.

Ethics Considerations

The study protocol adhered to the principles outlined in the Helsinki Declaration, which provides guidelines for ethical research involving human participants.

Transparency of Data

In accordance with the principles of transparency and open research, we declare that all data and materials used in this study are available upon request.

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Authors' Contributions

Raziyeh Kahani contributed to the research design, data collection, and coordination of the study. Davoud Manavipour provided expertise in research methodology, data analysis, and interpretation. Mojtaba Sedaghati Fard assisted in data analysis and overall research coordination.



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