

# The Effectiveness of Motivational Psychotherapy on Social-Emotional Competencies of Students with Type 1 Diabetes

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Received 2024 September 03; Accepted 2024 November 25.

## Abstract

**Background:** This study aimed to investigate the effectiveness of motivational psychotherapy on the social-emotional competencies of students with type 1 diabetes.

**Methods:** The research employed a mixed-method approach. The first phase involved qualitative and deductive content analysis. During a multi-step process, an educational package was developed and validated by the researchers using written sources and guidance from psychology experts and knowledgeable professors. The quantitative phase utilized a quasi-experimental pre-test and post-test design with a control group. The study population included all secondary school students in Gonabad during 2022 - 2023. Fifty male students were randomly selected and divided into two groups of 25 (experimental and control groups). The research instrument used was the Social-Emotional Competence questionnaire by Zuo and Ji (2012). The experimental group participated in eight 90-minute sessions of motivational psychotherapy, held twice a week, while the control group received no intervention. Data analysis was performed using SPSS-24 software and multivariate analysis of variance.

**Results:** The findings revealed that the motivational psychotherapy program significantly increased the social-emotional competencies of the experimental group compared to the control group ( $P < 0.01$ ). These results indicate that the educational package of motivational psychotherapy is an effective method for enhancing the social-emotional competencies of secondary school students with type 1 diabetes.

**Conclusions:** This study highlights the effectiveness of motivational psychotherapy in improving social-emotional competencies in students with type 1 diabetes. The findings underscore the importance of targeted interventions in fostering emotional and social skills among this demographic.

**Keywords:** Knowledge-Based Companies; Sports Industry; Brand Value; Effectiveness; Co-creation Factors; Innovation; Skills

## 1. Background

Having a healthy society depends on having healthy individuals. The collective effort of those involved in education aims to ensure the all-round development of individuals, particularly children and young people, who constitute the foundation of society. Over the years, psychologists have designed various methods to enhance children's well-being. Some methods focus on children themselves, others on parents, and some on educational environments. Schools are considered unique environments for promoting students' successful activities, as students spend approximately 5 to 9 hours daily in school (1).

Unfortunately, the rising prevalence of mental disorders, depression, anxiety, violence, high-risk behaviors, drug abuse, suicide, delinquency, school dropouts, and poor academic performance among students indicates

that schools have not been successful in addressing non-cognitive and non-academic aspects of education (2). Such issues can negatively impact all dimensions of students' lives.

Type 1 diabetes is a metabolic disorder caused by a lack of insulin in the body. Patients with this condition must inject insulin daily. Despite significant scientific advancements, the cause of this disorder remains unknown. Epidemiological studies indicate that the prevalence of type 1 diabetes has increased by approximately 2 to 5% globally. In the United States, the prevalence of type 1 diabetes is reported to be one in every 300 Americans over the age of 18. In Iran, the incidence of this disorder was 0.7 cases per 100,000 people in 2009 (3).

Uncontrolled type 1 diabetes can lead to microvascular and macrovascular complications such as cardiovascu-



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lar diseases, neuropathy, nephropathy, and retinopathy. Therefore, diabetes must be managed properly and promptly to prevent these complications. The primary goal of diabetes management is optimal blood glucose control and the prevention of diabetes-related complications. Poor blood glucose control and non-compliance with diabetes regimens increase the risk of complications, reduce patients' quality of life, and raise healthcare costs.

Type 1 diabetes is one of the most common chronic metabolic disorders in childhood and adolescence, with potentially devastating effects on life. The growing number of teenagers diagnosed with diabetes highlights the need for careful treatment planning. Simultaneously, assessing the impact of treatment on diabetes requires an evaluation of quality of life and its related factors (4). Among the critical factors influencing many of these issues are students' emotional and social skills (5).

Indeed, if students' social-emotional skills are underdeveloped, they become vulnerable to intrapersonal problems such as depression, social anxiety, and loneliness, as well as interpersonal issues like aggression, addiction, and delinquency. Moreover, their academic performance is likely to decline (6). Research indicates that students with stronger social-emotional competencies not only perform better in school but also achieve success at higher educational levels and in their adult lives compared to those lacking these skills (6).

Children's social-emotional competencies encompass the knowledge, attitudes, and essential skills required for emotional and social development. These competencies enable individuals to address personal and interpersonal needs and expectations effectively (7).

The overarching goal of any educational system is to nurture capable individuals who are self-aware, possess a clear understanding of their abilities, and maintain a positive belief in and perspective about themselves. Undoubtedly, individuals with these qualities can approach challenges and problems with logical and realistic solutions, demonstrating greater resilience and stability (8).

Motivational psychotherapy is a new generation of psychotherapy that removes all the limitations to change. It suggests that our lifestyle is the root cause of our psychological problems and, therefore, believes that there is no need for medication to treat diseases or life's stresses. Instead, people should change their lifestyle to perform better when facing various life challenges (9).

Like other developmental psychology approaches, motivational psychotherapy believes that humans grow throughout their lives and may experience significant changes at certain stages. From a traditional perspective, personality results from the interaction of two elements: Genetics and environment. Genetics provides us with a set of traits, and the environment activates those traits. Parents are the most crucial part of the child's environment, and their feedback plays a vital role in forming the child's personality.

The first feedback a child receives from their environ-

ment can shape the initial part of their personality. For example, when parents refer to their child using a particular adjective, the child interprets it based on their understanding of the parent's statement. This perception leads to a trait in the child, which may differ slightly from what the parents intend, but the child internalizes it. If the environment and parents repeatedly attribute this trait to the child, the child will gradually adopt that trait and eventually believe they possess it. Over time, the child will accept this trait as part of their personality (9).

Thus, the first step in forming the child's personality is taken. This process can be seen as a chain. In the initial link of this chain, the child's behavior is displayed, and then the environment, often the parents, reacts and provides feedback on the child's behavior. As a result of this feedback, certain personality traits are instilled in the child. If this process continues, the child internalizes these traits into their personality, and these traits become part of their identity. For example, when a four-year-old child behaves well at a party and you praise the behavior, describing them with terms like "good," "polite," or "personable," these qualities are imprinted on the child's mind. The child will try to behave in accordance with these labels to maintain a positive image in the eyes of their parents. As the child receives the same praise in subsequent experiences, they will increasingly internalize these attributes and believe them to be part of their personality. Eventually, the child will think of themselves as polite, personable, and good (10).

According to the aforementioned points, it seems that, more than ever, there is a need to design and validate treatment models to assist students in addressing educational and mental health-related problems. Based on the researcher's studies, no specific psychotherapy package has been designed or validated to address students' academic issues. Variables such as social-emotional competencies have been significantly neglected by researchers, and the lack of an effective treatment and educational package is still evident in this area. However, the critical issue is that many of these approaches are rooted in the culture and norms of western societies, which often conflict with the norms of Iranian society.

Furthermore, many studies indicate that cognitive-behavioral treatments and psychoanalysis, when applied to clients, face challenges such as relapse, treatment discontinuation, and prolonged treatment (11). Therefore, it is essential to apply and test an approach that is based on the characteristics of Iran's indigenous culture. In this context, the new approach of motivational psychotherapy, which is still in its early stages, has drawn the attention of researchers (11). Although there is limited research evidence supporting the effectiveness of this approach, the researcher's interest in this field has led to the formation of numerous hypotheses. Motivational psychotherapy posits that psychological disorders are the result of mentalities instilled by the environment, which individuals then internalize and deeply believe (12). In this approach,

by emphasizing the present moment and crafting life scenarios, clients are guided to change their stereotypical roles and discard false beliefs (13).

Motivational psychotherapy offers a new solution in which clients understand the origin of their false beliefs and how their illness is formed. Through this understanding, they gradually achieve stable internal changes by altering their body language (9, 12). Motivational psychotherapy, with its focus on change and goal setting, can help teenagers choose specific goals for themselves and work toward achieving them. This can keep teenagers away from dangerous and contradictory behaviors and provide them with proper motivation to engage in school lessons and activities (10).

Motivational psychotherapy is based on postmodern philosophy regarding personality formation. It asserts that personality is shaped during developmental stages and can be changed at any moment in life. Similar to other developmental psychology approaches, motivational psychotherapy believes that human personality continues to grow throughout life and may undergo significant changes at certain stages (9). Numerous studies have shown that educational styles have a significant impact on the mental and intellectual development of children and adolescents (14).

According to motivational psychotherapy, parents play a crucial role in shaping a child's environment, and their feedback is vital in forming the child's personality. The first feedback a child receives from their environment can shape the initial aspects of their personality. The result of this interpretation is an attribute that may slightly differ from the parents' desired traits, but the child internalizes it and repeats it in their mind (15).

Several studies have indicated the effectiveness of motivational psychotherapy in treating various disorders. For example, Gheisari et al. (10) demonstrated that motivational psychotherapy significantly reduces high-risk behaviors in teenagers. Fakoor et al. (13) showed its effectiveness in addressing children's anxiety and aggression. Additionally, the efficacy of this treatment method has been demonstrated in improving self-esteem in teenagers (16), quality of life in women (17), happiness and optimism in teenagers (18), student differentiation (19), readiness for suicide involvement and cognitive distortions in adolescents (15), mental health in women (14), and quality of life in women (20).

In the field of research variables, Sahebdel (21) investigated the effectiveness of motivational psychotherapy on the mental health of women with addicted husbands and found that motivational psychotherapy significantly improved mental health, depression, anxiety, physical symptoms, and social functioning in these women. Mohammadi Raouf and Mohammadi Raouf (22) demonstrated that motivational psychotherapy had an impact on reducing high-risk behaviors and increasing distress tolerance in students. Fakoor et al. (13) showed that parenting education based on motivational psychotherapy

reduces aggression in children with oppositional defiant disorder and can effectively decrease their aggressive behavior.

## 2. Objectives

Based on these findings, it appears that motivational psychotherapy can be an effective approach to helping students address academic and psychological problems. The present research aimed to design an educational package based on motivational psychotherapy for primary school students and to assess its effectiveness on the emotional-social skills of these students. The research questions are as follows:

1. What does the educational package of motivational psychotherapy for primary school students entail?
2. Is this package valid and reliable?
3. Is the educational package based on motivational psychotherapy effective in enhancing students' emotional-social competencies?

## 3. Methods

The research participants included 50 teenagers with diabetes who referred to the medical education centers of Gonabad University of Medical Sciences. The selection of participants was done through non-probability sampling in a continuous manner. The data collection tools consisted of a demographic and basic characteristics questionnaire and a quality of life tool for diabetic teenagers. The data were statistically analyzed using the independent t-test.

In the first part, a qualitative research design and deductive content analysis method were employed to develop an educational package based on motivational psychotherapy. The statistical population in this section included written sources, articles, theses, and authoritative scientific documents indexed and linked to databases. Sampling was done purposefully. In this method, the sample was selected based on the researcher's judgment and prior knowledge, rather than convenience. Sampling continued until no new issues emerged from the data and theoretical saturation was achieved. Additionally, for expert interviews, a number of expert professors in the field were selected using available sampling, and information collection continued until saturation. A total of 20 specialists in educational psychology, clinical psychology, and counseling were also selected using available sampling. All relevant sources were reviewed, and the collected information was analyzed to extract the components of the educational package.

In the second part, to investigate the effectiveness of the motivational psychotherapy educational package on students' emotional-social skills, a quasi-experimental study design with a pre-test and post-test and a control group was used.

The research statistical population included all secondary school students in Gonabad, while the convenience

sample consisted of 110 secondary school students from Imam Khomeini Farhang School in Gonabad during the 2022 - 2023 academic year. To determine the sample size, Gall, Borg, and Gall (2015, p. 385) proposed a guideline suggesting that for experimental and quasi-experimental research, 15 to 30 participants are recommended for each experimental and control group. Based on this guideline, a sample of 50 students was selected using purposive sampling, with participants randomly assigned to two groups: An experimental group (25 students) and an intervention control group (25 students).

The inclusion criteria for the study were interest in participation, being a student, family approval, and enrollment in the 10th, 11th, or 12th grades at Imam Khomeini Farhang School. Participants were allowed to withdraw from the study if they were no longer interested in cooperating, did not achieve better results during the training, or if they became fatigued.

To collect data, the Social-Emotional Competencies questionnaire by Zuo and Ji was used (23). For data analysis, the Multivariate Analysis of Variance (MANOVA) method was employed, which allowed for controlling the additional and continuous effects of the independent variable.

## 4. Results

### 4.1. How Is the Educational Package Based on Motivational Psychotherapy for High School Students?

To answer the question, a qualitative research method and deductive content analysis approach were used. In this method, the researcher aimed to capture information without any predefined definitions or generalizations before starting the analysis. A summary of this analysis was then presented. After selecting the resources, they were studied one by one, and the process continued until information saturation was reached. Finally, the components of the educational package based on motivational psychotherapy were summarized.

To analyze the qualitative data, the obtained data were compared with information collected from the study of theoretical foundations and literature reviews. After aligning the data, the factors related to the students and their primary themes were identified. Then, the initial framework of the qualitative model was formed. In the next step, to ensure the scientific accuracy of the research, the reliability strategy of research partner verification was used, allowing the extracted markers to be reviewed and approved by the research team.

After forming the initial package framework based on theoretical foundations and literature reviews, a list of key concepts was prepared. These concepts were related to the characteristics of adolescence and the school context and could be included in the package. The details of the treatment program are provided below. Eight group training sessions were conducted twice a week, with each session lasting 2 hours. During this period, no intervention was conducted for the control group. Both groups completed the questionnaires before and after the training sessions (Table 1).

**Table 1.** Summary of Motivational Psychotherapy Training Sessions

Subjects	S e s - sions	Description of the Meeting
<b>Introduction &amp; intervention</b>	<b>First session</b>	<b>Process of the meeting: Forming a collective environment - being familiarized with the process of teaching basic concepts - filling out the questionnaires</b>
<b>The concept of positive and negative assumptions</b>	Second session	Process of the meeting: Defining the concept of assumption and examining its effects on life
<b>Beautiful assumptions</b>	Third session	Process of the meeting: Redefining yourself with a new thought pattern
<b>Script and role</b>	Fourth session	Process of the meeting: Explaining the concept of the script and our role in life
<b>Selfishness</b>	Fifth session	Process of the meeting: Selfishness is equal to altruism...identifying one's destructive behaviors
<b>Conditions and limitations</b>	Sixth session	Process of the meeting: Identifying limitations and conditions and trying to break the false walls of description, powerlessness and fear
<b>Facing fear</b>	Seventh session	The process of meeting: Teaching the true meaning of success - that winning is not always success, but it is more important to enjoy the process of doing something and if it doesn't work, to look for deficiencies with more energy. Overcoming the fear of change and practicing new roles
<b>Ending</b>	Eighth session	The process of meeting: Reviewing the contents of past meetings - asking the opinion of the group - filling out the questionnaires

According to the Table 2, all items have a CVI higher than 0.8.

**Table 2.** Examining Content Validity Based on CVI

Variables	Clarity (Simplicity)		Relevancy	
	CVI	The Sum of Options 3 and 4	CVI	The Sum of Options 3 and 4
Environmental mind	0.85	17	0.8	16
Rich mind	1	20	1	20
Self-love	1	21	0.85	17
Limitations	0.9	18	1	20
Assumptions	0.9	18	0.8	16
Fears	0.9	18	0.95	19

#### 4.2. The Educational Package Based on Motivational Psychotherapy Increases Students' Emotional-Social Skills

To answer this hypothesis, we first examine the mean and standard deviation of the experimental and control groups in the components of social-emotional compe-

tencies.

Table 3 shows the mean and standard deviation of the experimental and control groups in the components of social-emotional competencies. As shown, all the components of social-emotional competencies increased in the post-test compared to the pre-test.

**Table 3.** Mean and Standard Deviation of Social-Emotional Competence Subscales in Pre-test and Post-test a

Components of Social-Emotional Competence	Control Group		Experimental Group	
	Post-test	Pre-test	Post-test	Pre-test
Self-awareness	13.32 ± 3.739	13.88 ± 4.658	18.24 ± 1.203	12.96 ± 4.188
Social awareness	14.96 ± 4.758	13.64 ± 5.522	17.80 ± 2.274	13.80 ± 5.377
Self-management	11.32 ± 4.479	10.29 ± 5.514	19.76 ± 3.786	9.72 ± 5.333
Relationship management	10.68 ± 4.326	11.24 ± 4.977	16.64 ± 2.079	10.32 ± 5.736
Responsible decision making	10.20 ± 5.901	11.36 ± 5.461	18.76 ± 2.025	12.40 ± 5.196
Total	8.458 ± 8.733	8.326 ± 21.406	20.91 ± 4.560	20.590 ± 21.812

<sup>a</sup>Values are expressed as mean ± SD.

To analyze the pre-test and post-test data of the two groups regarding the dependent variable of social-emotional competence, multivariate analysis of covariance (MANCOVA) was used. First, the necessary assumptions were checked for the use of multivariate analysis of covariance. One of the important assumptions of MANCOVA

is that the covariance matrices of each group of qualitative variables must be homogeneous. The homogeneity of these covariance matrices was assessed using the M's box test. The results of the M's box test are presented in Table 4.

**Table 4.** The Results of the M's Box Test in Social-Emotional Competencies

The Significance Level	df2	df1	F	M's Box
0.118	414.000	3	1.955	6.143
5.670	0.021	48	1	5.670

According to the table above, the value of M's Box is 6.143, and the value of the significance (sig) is 0.118, which is greater than 0.05. The results of the Lon's test show ( $P > 0.01$  and  $F = 5.670$ ), indicating that the F error level for all

components in the Lon's test is higher than 0.01. Based on these assumptions, multivariate analysis of covariance can be used.

In Table 5, the value obtained is ( $P < 0.01$  and  $F = 13.382$ ).

**Table 5.** The Results of Examining the Mean Linear Scores of the Two Groups

Traces	Values	F	Degrees of Freedom of the Hypothesis	Distribution Error	The Significance Level	Partial Eta Square
Pillai's trace	0.985	1516.19	2.000	47.000	0.000	0.985
Wilkes lambda	0.985	1516.19	2.000	47.000	0.000	0.985
Hotelling's trace	64.519	1516.19	2.000	47.000	0.000	0.985
Roy's largest root	64.519	1516.19	2.000	47.000	0.000	0.985
Pillai's trace	0.363	13.382	2.000	47.000	0.000	0.363

<b>Wilkes lambda</b>	0.637	13.382	2.000	47.000	0.000	0.363
<b>Hotelling's trace</b>	0.569	13.382	2.000	47.000	0.000	0.363
<b>Roy's largest root</b>	0.569	13.382	2.000	47.000	0.000	0.363

The results in Table 6 show a significant difference between the social-emotional competencies in the experimental and control groups in the post-test.

**Table 6.** The Results of Covariance Analysis of Social-Emotional Competencies of Two Groups in the Post-test

Effects	Sum of Squares	Degrees of Freedom	Mean Square	F	The Significance Level
<b>Pre-test</b>	6587.458	1	6587.458	191.690	0.000
<b>Experimental group</b>	12597.544	1	12597.544	366.578	0.000
<b>Error</b>	1615.166	48	34.365		
<b>Total</b>	29573.000	50			
<b>Total corrected</b>	14482.000	49			

Next, the univariate indices related to all the components of social-emotional competencies were examined in the post-test for both the experimental and control groups, and the following results were obtained (Table 7).

**Table 7.** The Results of Multivariate Analysis of Covariance of the Post-tests of the Components of Social-Emotional Competencies of the Two Groups

Dependent Variables	Sum of Squares	Degrees of Freedom	Mean Square	F	The Significance Level
<b>Self-awareness</b>	351.241	1	351.241	53.521	0.000
<b>Social awareness</b>	245.123	1	245.323	24.221	0.000
<b>Self-management</b>	821.233	1	821.233	98.544	0.000
<b>Relationship management</b>	412.255	1	421.255	54.254	0.000
<b>Responsible decision making</b>	401.122	1	401.122	54.544	0.000

According to the results obtained in the covariance analysis of the components of social-emotional competence, the indices of the variables related to all components of social-emotional competence were significant in the post-test. In other words, participants in the experimental group achieved higher scores in all components of social-emotional competence by the end of the intervention.

the pattern of the repeated observation test revealed that the trend of changes in the mean scores at the three test stages for both the intervention and comparison groups was statistically significant. Additionally, the t-test indicated that, immediately after training and three months after training, there was a significant difference between the means of the intervention and comparison groups, confirming the effectiveness of the empowerment program.

Table 8 shows that in the analysis of diabetes distress,

**Table 8.** Mean and Standard Deviation of the Distress Variable in Two Intervention Groups and Comparison of the Studied Subjects a

Variables and Groups	Pre-test	1st Post-test	2nd-Post test	RM-ANOVA		
				F	P-Value	P $\pi$
<b>Diabetes distress</b>						
<b>Intervention</b>	2.82 ± 0.85	2.47 ± 0.63	-	90.2	< 0.001	0.59
<b>Comparison</b>	3.11 ± 0.78	3.06 ± 0.75	3.03 ± 0.74	6.08	0.008	-
<b>t-test (P-value)</b>	NS	-5.00 (< 0.001)	-7.78 (< 0.001)	-	-	-

<sup>a</sup> Values are expressed as mean ± SD.

Table 9 demonstrates that there is a significant statistical difference between the intervention and comparison groups at both the pre-intervention stage and after the second post-test. The results of the Pearson correlation

test for the 2nd post-test of diabetes distress and HbA1C showed a direct and significant relationship between these two variables. This indicates that as diabetes distress decreases, the level of HbA1C also decreases.

**Table 9.** Examining the Changes in HbA1C Level Before and After the Second Test, Separated by Two Groups of Participants

HbA1c Variables	Intervention Group	Comparison Group	Result of Independent t-Test
<b>Before the intervention</b>	7.71 ± 0.62	7.91 ± 0.83	P < 0.001
<b>2nd post test</b>	7.51 ± 0.50	7.92 ± 0.82	
<b>Paired t-test result</b>	t = -3.54, P = 0.001	t = -1.41, P = 0.16	

The statistical tests revealed a statistically significant correlation between the diabetes distress scores in the intervention and comparison groups. Meanwhile, the hypothesis of patient empowerment in both groups was confirmed.

## 5. Discussion

The present paper investigated the effectiveness of social-emotional competence training on the social skills and psychological capital of students with type 1 diabetes. The results showed that social-emotional competence training had a significant impact on the social skills and psychological capital of these students. In this research, the educational package was designed according to the needs of teenagers and the requirements of real-life situations, especially the interactions within the school environment and the educational programs available in the motivational psychotherapy research literature.

The design and development of this educational package were based on theories, resources, references, and valid, influential findings from past research, incorporating the opinions of experts in educational psychology and counseling. The examined components included: Environmental mind, rich mind, self-love, assumptions, and limitations.

After explaining the conceptual framework, the study introduced a new approach that goes beyond traditional methods. It provides a guide for researchers to target and determine the approach, principles, foundations, content, and other elements of the educational package for teenagers. One of the key features of this educational package is its comprehensiveness, with attention to the aspects of a codified and standardized educational program. The content is organized with a subject-oriented approach and based on the research objectives. At the end of each session, students are assigned homework to consolidate their learning. Emphasizing growth and flourishing, this package presents a wide range of practical concepts for teenagers, unlike most previous research and educational programs, which focused on only one or a few limited concepts.

This package aligns with some of the previous research, such as Gheisari et al. (10) and Fakoor et al. (13), yet it differs from many educational or psychological programs used in past research, which were limited in scope. Notable examples include the studies by Seddighi et al. (24), Sahebdel (21), and Farkhundenejad (20).

The results of the research showed that the extracted indicators play an important role in improving teenagers' skills and their self-concept, which is why educational experts place great emphasis on them. As the results of covariance analysis demonstrated, motivational psychotherapy significantly increased the emotional-social competencies of the sample group. These findings are consistent with those of Sahebdel's research (21), which showed that motivational psychotherapy improves the

mental health of women with addicted husbands. Additionally, the results align with the findings of Gheisari et al. (10), which indicated that motivational psychotherapy can reduce high-risk behaviors in teenagers. Furthermore, these results are in line with the research by Fakoor et al. (13) and Rahmanpour et al. (15), which showed that motivational psychotherapy reduces spontaneous negative thoughts and the readiness to commit suicide in adolescents.

Motivational psychotherapy helps clients gain a proper understanding of their life situation by fully describing themselves during the treatment sessions and engaging in various exercises. Throughout the process, they realize that they have been defining themselves based on others' mentalities, which has trapped them in rigid, resistant patterns and caused harm to themselves (12).

During the therapy sessions, the sample group concluded that they were like actors in a movie who had rehearsed their roles and acted in such a way that the audience believed them. In life, they behaved in ways that others accepted as their true selves. Just as movie actors lie to the audience, people's roles in life can also be seen as a kind of lie, representing only one of several possible ways to live. Clients experience a sense of empowerment, realizing that it is possible to change patterns of thought and behavior without limits. The therapist guided the participants in this study to pursue greater goals for their lives, helping them facilitate change by practicing the rich mind concept. They initially viewed their problems as large and insurmountable, with minor issues causing frustration and filling their minds with trivial and irrelevant concerns. They also perceived depression as a powerful external force that was impossible to overcome. The rich mind approach helped them see their problems from a new perspective.

Another systematic study on the effect of an educational intervention program in diabetes showed that the intervention improved psycho-social outcomes, such as health beliefs, attitudes, and adaptation skills, in the care of type 1 diabetes. In line with the results of the present study, another research showed that individuals in the adaptive skills training intervention group experienced better metabolism and less psychological distress compared to the control group. Similarly, other study on the effect of a diabetes education program demonstrated that the trained group experienced less diabetes distress. All these findings are consistent with the results of the present study.

In motivational psychotherapy, external changes are crucial. External change is often easier to achieve than internal change. To overcome their lies and shed their roles, the sample group first had to change their appearance. Verbal changes, along with changes in dress and appearance, gradually altered the environmental feedback they received. Adjusting their speech tone helped them feel more powerful (13). Over time, they transformed from weak and withdrawn individuals into active, self-confi-

dent people who could assert their desires and pursue their goals with courage.

Students experienced a different environment in the motivational psychotherapy training classes—an environment that showcased their health and abilities. During these sessions, participants practiced new and healthier roles, learning all the features associated with these roles and gradually adopting new habits. They eliminated old, unhealthy habits and replaced a poor mindset with a rich one. They set more significant goals and focused on larger, more important issues rather than getting bogged down in trivial and low-value matters. Some participants had been consumed with thoughts of revenge, malice, and jealousy, while others had wondered why others treated them poorly. The rich mind provided them with a path to free their minds from these concerns by focusing on bigger goals. This shift helped reduce their anxiety, which had largely been related to interpersonal issues and everyday problems.

Based on the principle of self-love, the participants practiced self-love and chose new roles that made them feel good. They realized that those who had harmed them were also caught in false roles and were not in good spirits. Understanding this, they were able to forgive them, which had a positive impact on their social relationships and helped reduce interpersonal conflicts. The sample group in the present study gradually learned to focus on their personal growth and well-being, taking time for themselves rather than becoming preoccupied with the roles of others and allowing their minds to be consumed by them (9, 10).

### 5.1. Conclusions

The concepts of motivational psychotherapy used in this package, including the environmental mind, helped teenagers understand how their characteristics are shaped by others' perspectives and recognize the extent of their involvement in false walls. Additionally, concepts such as the rich mind empowered them to solve problems by adopting a top-down perspective. They also learned how to forgive others and develop their character through stages of wisdom and education. Concepts like self-love helped them realize the damage they inflicted on themselves through certain behaviors, allowing them to avoid the mental and physical harms they caused. Overall, the concepts in this educational package played a significant and influential role in supporting the teenagers.

This systematic review contributes to the evidence on the effectiveness of interventions targeting individuals with type 1 diabetes in social environments. The study's findings demonstrate that motivational interviewing (MI) is effective in promoting adherence to treatment regimens and reducing A1C levels in patients with type 1 diabetes. Moreover, MI can facilitate changes in self-care and self-management behaviors among adolescents with

type 1 diabetes.

This evidence highlights the positive effects of psychosocial interventions such as MI. However, it is important to note that the reviewed studies did not account for factors such as patients' mood, mental status, treatment regimens, support systems, and stress levels, all of which could confound the effects on A1C. Therefore, further studies are needed to assess the net effects of MI on treatment adherence and A1C. A meta-analysis of individual patient data may help address other questions that were not covered in this review. It is recommended that the motivational psychotherapy training package be implemented in educational counseling centers through group training programs, workshops, and individual consultations.

**Authors' Contribution:** It was not declared by the authors.

**Conflict of Interests:** It was not declared by the authors.

**Data Reproducibility:** It was not declared by the authors.

**Funding/Support:** It was not declared by the authors.

**Informed Consent:** Written informed consent was obtained from all participants.

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