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Original Article

The Comparison of Effectiveness of Emotion-Focused Therapy with and without Health-Promoting Behaviors Training on High-Risk Behaviors and Healthy Lifestyles in Secondary School Students

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Abstract

Background and Aim: The conducting studies to achieve gold standards in intervention for high-risk behaviors and improving a healthy lifestyle is important. The aim of the research was to compare the effectiveness of emotion-focused therapy with and without teaching health-promoting behaviors on high-risk behaviors and healthy lifestyles in secondary school students.

Materials and Methods: The research design employed a semi-experimental approach with a pretest-posttest design and a control group. From three high school girls in the fifth region of Tehran, 45 participants were selected through cluster random sampling and then randomly assigned to two treatment groups and one control group. Data collection utilized the Risky Behaviors Scale (RBS) and the lifestyle questionnaire (LSQ), and analysis was performed using covariance analysis and Duncan's Multiple Range test (DMRT) with SPSS-26.
The first treatment group underwent emotion regulation intervention over eight sessions lasting 90 minutes each. The second treatment group received emotion regulation intervention combined with health promotion behavior training across seven sessions of 90 minutes each. The control group did not receive any intervention.

Results: The emotion-focused therapy with and without health-promoting behavior training is effective in reducing risky behaviors (F=23.266, P=0.001) and promotion of healthy lifestyle F=54.084, P=0.001) and comparing these two interventions indicate the greater effectiveness of the integrated emotion-focused therapywith health-promoting behavior training.

Conclusion: It is recommended to use emotion-focused therapy in combination with the training of health-promoting behaviors for intervention in risky behaviors and unhealthy lifestyles in adolescence .Also, these results require further investigation in future studies.

Keywords: Health promotion,life style, Emotion-focused therapy, Health risk behaviors, Adolescent

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Introduction

Adolescence is a transitional and risky period and one of the most sensitive stages of life for health problems (1). Developments and challenges of adolescence and psychiatric comorbidities are associated with the tendency of adolescents to risky behaviors and unhealthy lifestyles (2). Dominant high-risk behaviors during the adolescence period that are associated with later health problems are alcohol consumption, smoking, unsafe sex, risky driving, and violence (3). In addition, a healthy lifestyle plays an important role in successful transition from adolescence and achieving a later quality of life (4). Lifestyle is an infrastructure for health-related behaviors and includes issues such as daily work and leisure time, activities, attitudes, interests, thoughts, and values (5). Most adolescents do not have a healthy lifestyle, which highlights the need for interventions to reduce risky behaviors, increase awareness of the potential risks of unhealthy behaviors for health status, and promote healthy lifestyles (6).

Therapeutic interventions to reduce high-risk behaviors and improve healthy lifestyles in adolescence have brought favorable results, but intervention in this field is still increasing and evolving to achieve the gold standard of treatment. Emotion-oriented therapeutic approaches and health-promoting behaviors trainings are effective interventions in reducing high-risk behaviors of adolescents and improving a healthy lifestyle (7, 8). Emotion-focused therapy focuses on underlying emotional schemas and interpersonal determinants of behaviors and tries to improve emotional processing as a fundamental goal in changing behavior (9). Emotion-focused therapy leads to the reduction of high-risk behaviors by improving the use of positive cognitive emotion regulation strategies (10). Besides, one of the important determinants of a healthy lifestyle is health-promoting behaviors, and disease prevention and health promotion are related to it (11). Health-Promoting Behaviors Training by increasing awareness, improving attitudes, and improving behavioral sets play an important role in reducing risky behaviors and promoting a healthy lifestyle in adolescence (8, 12).

Also, in terms of theoretical perspectives and previous findings, emotional regulation problems and unhealthy lifestyles play a role in adopting risky behaviors and reducing healthy behaviors in teenagers (13, 14). In fact, providing intervention programs centered on emotional regulation and health-promoting behaviors helps to empower teenagers in facing various life events and strengthens healthy lifestyle and health indicators (6, 15). Berking et al. (16) showed that emotion regulation training is effective in reducing negative behaviors related to health and improving healthy lifestyle indicators. Kris-Etherton et al. (17) showed that promoting a healthy lifestyle reduces risky behaviors and improved health-related lifestyle. Saber Shahraki, Rahimian Boogar and Najafi (18) also showed that health promotion interventions can reduce health-risk behaviors and increase healthy behaviors. In general, emotion-based interventions and training of health-promoting behaviors contain positive achievements in reducing risky behaviors and promoting a healthy lifestyle in adolescents (19-20).

Reducing high-risk behaviors and improving healthy lifestyles among students is one of the Headstart programs for reducing psychosocial pathology, and the comparison of gold standard interventions is important in formulating optimal and effective interventions in this field. Although there is empirical evidence on the effect of emotion-focused therapy and health-promoting behavior training on reducing high-risk behaviors and healthy lifestyles, research comparing these intervention approaches independently or in combination is limited. Given the rise in risk-taking behaviors among adolescents, including alcohol and drug consumption, risky driving, high-risk sexual behaviors, impulsivity, and the associated consequences of violence, these factors pose significant threats to adolescent health. It is crucial to address and prevent high-risk behaviors while promoting a healthy lifestyle. Focusing on more effective interventions becomes imperative in order to curb these risks and enhance the well-being of adolescents. Although the

effect of emotion-focused therapy and training of health-promoting behaviors on reducing emotional regulation problems and adopting a healthy lifestyle in adults has been well established, the combination of these interventions seems to be more effective compared to providing emotion-oriented therapy alone for adolescents. The paucity of previous research in the field of interventions with and without the training of health-promoting behaviors on reducing high-risk behaviors and increasing behaviors detrimental to a healthy life and the need to develop cost-effective and effective interventions are important reasons for conducting research in this field. Therefore, To empower middle school students, this research investigates whether there exists a difference in the impact of emotion-focused therapy with and without the incorporation of health-promoting behavior teachings on high-risk behaviors and healthy lifestyles among second high school students.

Methods

The research design was semi-experimental and pretest-posttest with a control group. The statistical population included all female students of the second year of high school in Tehran in the academic year 1400-1401. The statistical sample consisted of 45 female students of the second year of high school in Tehran.Among the educational districts of Tehran, from 3 high schools (Afaq Badieh, Aindeh Bertar and Allameh Tabatabai) in fifth region, with the coordination of education and breeding 45 participants including 15 students from each school were selected by cluster random sampling and randomly assigned in three groups (two treatmentgroups and one control group).Inclusion criteria included female gender (girls), studying in the second period of high school, and non- use of psychiatric drugs. The exclusion criteria include failure to complete the questionnaires, the presence of chronic medical diseases or severe psychiatric disorders (according to medical history, clinical interview and self-report), receiving other psychological interventions at the time of conducting the research, lack of motivation to continue the treatment sessions, misconduct during education, and the absence of more than two sessions in the intervention sessions.The data were collected using the Risky Behaviors Scale (RBS) and the lifestyle questionnaire (LSQ).

Materials

Risky Behaviors Scale (RBS)

The Risky Behaviors Scale (RBS) was designed and validated by Mohammadkhani (21) by adapting the CDC's Youth Risk Behavior Surveillance System (YRBSS) (22) to measure high-risk behaviors. This instrument includes seven groups of high-risk behaviors, including: 1. cigarette and tobacco smoking, 2. alcohol consumption, 3. psychoactive drug use, 4. aggressive behaviors, 5. suicidal thoughts and attempts, 6. running away from home and school, and 7. relationship with the opposite sex, and the tendency to use drugs in the future (21). This questionnaire is a self-assessment and each part of it includes questions about the first risky behavior, the amount of risky behavior during the lifetime, the last 12 months and the last month, as well as the desire to perform risky behavior in the future (23). The scoring method of this questionnaire is easy and it is possible to score the Risky Behaviors Scale (RBS) according to the situation and purpose of the research (for example, epidemiology or determining the effectiveness of the intervention). Mohammadkhani (21) confirmed the construct validity of this questionnaire and its internal consistency coefficient was 0.87 based on Cronbach's alpha (24). In Maktabi et al.'s research (25), the reliability of the risky behaviors scale was obtained using the Cronbach's alpha coefficient equal to 0.64. In order to consider the validity of the risky behaviors scale, the structural correlation method was used in such a way that the correlation of each question with the total score of the questionnaire was calculated, and the results indicated that all items have a significant relationship with the total score of the questionnaire. In addition, the correlation coefficients vary between 0.26 and 0.47 (25).

Lifestyle Questionnaire (LSQ)

The lifestyle questionnaire (LSQ) was compiled and designed by Lali, Abedi, and Kajbaf (26) and it has 10 factors and 70 questions, and its purpose is to evaluate different dimensions of lifestyle. The ten factors of this multidimensional questionnaire are: 1. physical health,

2. exercise and fitness, 3. weight control and nutrition, 4. illness prevention, 5. psychological health, 6. spiritual health, 7. social health, 8. drug and alcohol avoidance, 9. accident prevention, and 10. environmental health. The scoring range of this instrument is of the Likert type and "never" gets a score of 0 and "always" gets the score of 3. The minimum possible score is 0 and the maximum is 210. Lali et al. (26) confirmed the construct validity of the lifestyle questionnaire as a multidimensional instrument for evaluating and measuring lifestyle using factor analysis. Cronbach's alpha coefficients were in the range between 0.76 and 0.89, which indicates the good internal consistency of this questionnaire, and the reliability coefficients by the retest method were also in the range of 0.84 to 0.94. (26).

This research is taken from the doctoral thesis of the first author from Islamic Azad University, Semnan Branch, which was reviewed and approved by the ethics review board at the Research Ethics Committees of Islamic Azad University-Shahrood Branch on 2021-09-05 (The number code: IR.IAU.SHAHROOD.REC.1400.042).

Intervention

At first, following the entrance and existance criteria and ethical considerations, the pre-test was conducted based on two questionnaires. After the pre-test, the first treatment group was subjected to emotion regulation intervention during eight sessions of 90 minutes once a week according to the intervention protocol adapted from Gross (27). The second treatment group was subjected to emotion regulation intervention according to intervention protocol adapted from Gross (27) along with the training of health promotion behaviors according to the intervention protocol adapted from Ahmadi et al. (28) during seven 90-minute sessions. During the implementation of the interventions, the control group did not receive any intervention. Both interventions were implemented by a trained researcher and the interventions were tailored to the conditions of the participants. In each meeting, while determining the topic and goals of the meetings and familiarizing the participants with the goals and expressing the importance of recording and noting everyday emotions, the participants were asked to record and rate their experiences and behaviors as a task and give their opinions or feedback on the content presented in each session, especially in acquiring the necessary skills. The content of the interventions is presented in Table 1 and Table 2.

After completing the questionnaires again in the post-test stage, the data were analyzed using descriptive statistics (mean and standard deviation), multivariate analysis of covariance (MANCOVA) and Duncan's Multiple Range test (DMRT)using SPSS-26 software.Besides, Researchperformed by observing ethical considerations, including ensuring the confidentiality of individualcharacteristics in research; protection of the participants' rights, obtaining written informed consent to participate in the research and the possibility of withdrawing from the continuation of the study at each stage were done according to the wishes of the participants. Also, this study has been reviewed and approved by the Ethics Review Board (ERB) in the Islamic Azad University-Shahrood Branch on 2021-09-05 (The Code number: IR.IAU.SHAHROOD.REC.1400.042).

Results

According to the demographic information, 73.3% of the participants were housewives, 15.6% were working mothers, and 11.1% were retired mothers. Also, 55.6% of the participants had working fathers, 31.1% had retired fathers, and 13.3% had unemployed fathers. Forty percent of the participants had mothers with a diploma and an associate degree, 35.6% had mothers with less than a diploma, 13.3% had mothers with bachelor's education and 11.1% had mothers with master's education. Also, 31.1% of the participants had fathers with a diploma and an associate degree, 26.7% had fathers with a lower education than a diploma, 22.2% had fathers with a bachelor's degree and 20% had fathers with a master's degree. The descriptive characteristics (mean and standard deviation) of the variables investigated in the research are presented in Table 3.

Table 1: The content of emotion regulation training protocol (27).

The emotion regulation training protocol	
Sessions	**Content**
1	Familiarizing the group members with each other, explaining the logic and stages of the intervention and the framework and rules of participation in the educational group
2	Recognizing emotions and activating situations through teaching the difference between the performance of different types of emotions and the short-term and long-term effects of emotions
3	Selecting a situation to assess the level of vulnerability and emotional skills of people in high-risk situations
4	Creating a change in the emotion-provoking situation and training interpersonal skills (conversation skills, self-expression and conflict resolution)
5	Shifting attention, distraction and stopping rumination and worry related to high-risk situations
6	Changing and modifying cognitive apprasials and teaching reapprasial strategies for situations
7	Changing and modifying the behavioral and physiological consequences of emotions in facing high-risk situations
8	Description of social support and training techniques for maintaining and expanding the social support and social network. Overview of the program and creation of a personal stress management program, Program Wrap-Up, Additional monitoring worksheets Post-test implementation. Re-apprasial of events and life experiences in high-risk situations, teaching relapse prevention skills and removing obstacles to the application of learned techniques.

Table 2: The training protocol of health promotion behaviors (28).

The training protocol of health promotion behaviors	
Sessions	**Content**
1	Presenting the logic of the intervention and familiarizing the participants with the purpose and content of the intervention, and training about the in-session and out-of-session assignments.
2	providing nutritional recommendations and strategies to increase adherence with them, including eating breakfast regularly; weight control and maintenance; use of fruits and vegetables in the diet
3	Providing education on eliminating sedentary lifestyles, behavioral management of boredom, and behavioral activation to enhance physical mobility. Providing training on regular and appropriate exercise such as flexibility and daily mobility according to physical conditions; Light walking in the open air twice in the morning and in the evening for 18 to 15 minutes each time and increasing its duration gradually up to a maximum of one hour a day and more (hierarchically and continuously)
4	Strengthening interpersonal skills and community-based strategies for managing high-risk behaviors, increasing functional social support and participation in healthy peer groups. Teaching interpersonal communication skills and ways to live happily during adolescence, such as communicating with family, friends and acquaintances and avoiding loneliness. Reinforce regular friendly interactions at home or outside the home such as the park
5	Teaching environmental, social and contextual stress management strategies and how to practice and strengthen them in the face of high-risk situations. Teaching cognitive, behavioral and emotional stress management strategies and their application in high risk situations
6	Training interventions based on spiritual health and risk management strategies based on mental, religious and spiritual concepts. Mental and spiritual growth interventions such as participating in religious ceremonies such as prayer; Quran reading; Visiting the blessed graves; Attention to mental and spiritual growth and development
7	Training and strengthening health responsibility, valuing individual health and strategies to strengthen individual health. Interventions to increase health responsibility, such as the harms of smoking and tobacco use, regular visits to the doctor for the prevention and early detection of diseases. Summarizing educational materials and answering questions

According to Table 3, in the control group, the mean scores of high-risk behaviors and healthy lifestyle in pre-test and post-test are almost the same and no significant difference is seen. However, in the two treatment groups, the scores of high-risk behaviors and healthy lifestyle in the posttest are significantly different from the pre-test.

Table 3: Mean and standard deviation of high-risk behaviors and healthy lifestyles in the groups.

Variables	Assessment Phase	Mean ± SD		
		Emotion-Focused Therapy	Emotion-Focused Therapy With Health-Promoting Behaviors Training	Control
High-risk behaviors	Pre-test	69.00±8.46	70.93±5.57	65.80±9.86
	Post-test	45.13±4.45	53.20±9.39	68.40±7.95
Healthy lifestyles	Pre-test	170.20±20.99	158.13±21.38	173.47±16.93
	Post-test	263.67±20.78	240.07±20.32	169.87±17.59

To check the type of data distribution and the normality, Skewness and Kurtosis were used. The skewness of risky behaviors was -0.189 and the skewness of healthy lifestyle was 0.600, as well as the Kurtosis of risky behaviors was -0.918 and the Kurtosis of healthy lifestyle was -0.378. Since the skewness and kurtosis of all variables have been obtained in the interval (+2 and -2), the data distribution of all variables is normal. Then multivariate analysis of covariance and Duncan's Multiple Range test (DMRT)were used to test the hypotheses. The Levene's Test of Equality of Variances on high-risk behaviors also showed that the homogeneity of variance of the statistical groups was confirmed and maintained with a statistical value of 1.673 and a significant level of 0.150. The homogeneity of variance for the healthy lifestyle variable was also confirmed with a statistical value of 0.360 and a significance level of 0.875.The results of Multivariate analysis of covariance (MANCOVA) on dependent variables are presented in Table 4.

The results (Table 4) show that emotion-focused therapy and emotion-focused therapy with health-promoting behaviors training reduce risky behaviors and improves healthy life in secondary school students. In Duncan's test, the mean scores of the emotion-focused therapy alone (07.62), the emotion-focused therapy with health-promoting behaviors training (07.57) and the control group (10.57) were obtained. Based on these findings, the experimental and control groups are significantly different from each other. Therefore, the effectiveness of two emotion-focused therapy with and without training of health-promoting behaviors on high-risk behaviors have a significant difference and the combined intervention is more effective than the emotion-focused therapy without health-promoting behaviors training on high-risk behaviors.Also, based on the results of the comparison of the effectiveness of two emotion-focused therapy with and without training in health-promoting behaviors on a healthy lifestyle and Duncan's follow-up test, the mean scores in the intervention group of emotion-focused therapy without training in health-promoting behaviors is equal to 199.10, in the intervention group of emotion-focused therapy with the training of health promotion behaviors was equal to 171.67, and in the control group it was equal to 216.93.

Table 4: The results of multivariate analysis of covariance on dependent variables in the groups.

Dependent variable	Source	Sum of squares	df	Mean Square	F	p-value	Eta^2	Statistical Power
High-risk behaviors	Pretest	3802.500	1	3802.500	61.460	0.001	0.423	1.00
	Group	1510.022	2	755.011	12.203	0.001	0.225	0.995
	Pretest×group interaction	2876.867	2	1439.433	23.266	0.001	0.356	1.00
Healthy lifestyles	Pretest	73788.100	1	73788.100	189.236	0.001	0.693	1.00
	Group	31196.867	2	15598.433	40.003	0.001	0.488	1.00
	Pretest×group interaction	42177.267	2	21088.633	54.084	0.001	0.563	1.00

Based on these findings, the mean scores of the experimental groups were significantly different from each other and from the control group (P>005). Therefore, the combined intervention was more effective than the emotion-focused therapy without health-promoting behaviors training on the adoption of a healthy lifestyle by students.

Discussion

The results of the first hypothesis in this research indicate a significant difference between emotion-focused therapy with the training of health-promotion behaviors and the control group regarding high-risk behaviors in second high school students. Furthermore, emotion-focused therapy with the training of health promotion behaviors, when compared to emotion-focused therapy without such training, proves to be more effective in reducing high-risk behaviors among students.This finding is consistent with the research results of Sharma et al. (29), Mohammadkhani et al. (30), Houck et al (7),and Havighurst et al (31) and inconsistent with the research findings of Anselma et al. (32). In explaining these findings, it can be concluded that emotion management strategies and health-promoting behaviors help to reduce high-risk behaviors in students by strengthening protective factors. In addition, Hosseinian and Nooripour (33) believe that emotion-based interventions lead to the reduction of risky behaviors in adolescents by reducing emotion regulation problems. Farias et al. (34) also explain that teaching health-promoting behaviors by strengthening healthy behaviors and promoting behavioural health plays a major role in reducing the incidence of high-risk behaviors in adolescents. To explain this finding, it can be stated that the emotion-oriented approach leads to the reduction of high-risk behaviors through teaching strategies to adapt to stressful events. Based on the opinion of Gross (27), in the emotion-oriented method, topics such as expressing emotion, regulating emotion and re-evaluating it are considered, which provide the context for producing flexible responses to intense emotional experiences and cause people to focus on promoting healthy behaviors by managing emotional symptoms and reducing and postponing their behavioral and emotional problems. In fact, emotion-focused therapy by teaching skills that focus on understanding, correcting and accepting negative emotions, increases self-control and therefore reduces the tendency to risky behaviors. Also, Sharma et al. (29) have considered behavioral health to be important in reducing risky behaviors based on the contagion theory. Providing education related to healthy behaviors by creating preparation, attitude and skills in students plays an important role in reducing risky behaviors and adopting healthy behaviors. Therefore, emotion-focused therapy with the training of health promotion by creating awareness and improving attitudes is able to provide the right context to avoid risky behaviors. Besides, in explaining the discrepant results, Anselma et al. (32) believe that different conceptualizations and measurement tools in measuring emotion regulation as well as different research samples can lead to differences in research findings.

According to the second hypothesis, there was a significant difference between the emotion-focused therapy with and without the training of health promotion behaviors compared to the control group in the healthy lifestyle of high school students, Also, the emotion-focused therapy with the training of health promotion behaviors was more effective than the emotion-focused therapy without the training of health promotion behaviors.This findings is consistent with the results of the researches of Kris-Etherton et al. (17), Soltanian et al. (35), Lee et al. (20) and López-Gil et al. (36). Soltanian et al. (35) argue that health promotion intervention through increasing awareness in the field of health behaviors helps people to adopt a healthy lifestyle. Also, Kris-Etherton et al. (17) explain these findings in such a way that teaching health-promoting behaviors by increasing healthy behavioral treasury and positive emotional states is involved in creating a healthy lifestyle. Heidari et al. (37) believe that emotion-based interventions and training healthy behaviors by strengthening social skills and improving behavioral functions will strengthen healthy lifestyles in late-school adolescents. Also, in another explanation, Ho and Lee (38) believe that emotion-based interventions and healthy behavior training are the type of interventions that are often based on the needs of teenagers and adjusted according to their emotions and emotions, and they can better cultivate a healthy

lifestyle for teenagers. As Rahimian Boogar et al. (39) and Zsakai et al. (40) argued, it can be said that emotion-based intervention along with health behavior training helps to promote a healthy lifestyle by reducing risky behaviors and improving health-related quality of life indicators. Houck et al. (7) argue that emotion regulation interventions by reducing psychopathological symptoms and improving mental health indicators lead to strengthening health-related behaviors and reducing risky behaviors. In fact, it can be concluded that improving emotional management and training healthy behaviors by helping people in stress management, health responsibility, interpersonal relationships, spiritual growth, healthy nutrition and increasing physical activity facilitates the process of creating and sustaining a healthy lifestyle. In sum, the combination of emotion-focused therapy with the training of health-promoting behaviors is more effective by focusing on the emotional dimensions and behavioral sets of students simultaneously in taking action on health-related behaviors and reducing high-risk behaviors, and this result is promising for the formulation of multifaceted interventions in these fields.

Conclusion

In general, the results showed that emotion-based intervention along with teaching healthy behaviors plays an important role in reducing high-risk behaviors and improving the healthy lifestyle in adolescents. Given the increased efficacy of the emotion-oriented approach in conjunction with health-promoting behavior training for mitigating risky behaviors and fostering a healthy lifestyle, coupled with the susceptibility of the adolescent period to engaging in such behaviors, offering personalized interventions that focus on emotion regulation and incorporate healthy behavior training appears to be beneficial in preventing and reducing the occurrence of high-risk behaviors among students, promoting the adoption of a healthy lifestyle.This finding, in addition to implications, in order to achieve the golden standards of intervention in these fields, requires more investigations in more studies in the future. This research, along with its promising results, has been accompanied by some limitations. Considering the special cultural conditions of secondary schools in Tehran, the research was conducted only on girls, and the generalization of its results to male students and other communities should be done with caution. Therefore, it is recommended to carry out more research in the future, taking into account the cultural differences in different regions of the country and other secondary high schools for boys and girls. Another limitation is the impossibility of implementing the follow-up period due to the lack of continuous access to the participants in the treatment groups. In this regard, it is recommended to carry out follow-up studies in the future in order to determine the continuity of the effect of emotion-oriented interventions along with the training of healthy behaviors.

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Conflict of Interest

The authors declare that they have no conflict of interest.

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