ORIGINAL ARTICLE

The Effect of Cognitive-behavioral Therapy on Communication Skills and Eating Disorders among Adolescents with Eating Disorders

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Abstract

Background: One of the main indications for cognitive behavioral treatment is eating disorders (CBT). This study examine the effectiveness of cognitive-behavioral therapy on communication skills and eating disorders among high school adolescents.

Methods: The present study employed a quasi-experimental design composed of a pre-test and post-test design in experimental and control groups. A total of 40 students were selected and randomly assigned to experimental (n=20) and control (n=20) groups through a multistage cluster sampling method. Cognitive-behavioral therapy was performed in nine 60-minute sessions for the experimental group, while the control group did not receive any intervention. Queendom's Communication Skills Test-Revised Inventory (2004) and Garner's Eating Disorders Questionnaire (Garner, 1979) were used to collect data. All statistical analyses were performed using the SPSS 24.0 software for Windows (SPSS Inc.), and $P<0.05$ was considered to be statistically significant.

Results: The Mean±SD of communication skills in the Case group in pre-test and post-test were as follows:75.15±6.67, 81.75±6.04. The Mean±SD of Eating Disorders in the Case group in pre-test and post-test were as follows:36.5±1.71, 36.95±3.44 The results obtained from the analysis of covariance showed that cognitive-behavioral therapy had a significant effect on communication skills and eating disorders (P=0.01).

Conclusion: According to the findings of this study, it can be concluded that cognitive-behavioral therapy can be adopted as a suitable method of improving communication skills and the treatment of eating disorders in adolescent students.

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Introduction

Early adolescence is when a series of physical, interpersonal, and intrapersonal changes begin. The start of an active search for a distinctive character is one of the changes occurring. According to Erickson's theory of the psychosocial evolution stages, the evolution of identity has been considered a fundamental psychosocial task in adolescence.[1] In addition to the emergence of positive developmental processes as a cohesive identity during adolescence, this particular time of age usually abounds with problematic behaviors. Accordingly, adolescents' health and well-being have been of particular importance, and providing the grounds for their mental health helps them be mentally and physically healthy and better play their social roles.[2] Studies have indicated that, given the formation of attitudes toward their bodies and the sense of competition with their peers in sports activities,

adolescents run a considerably higher risk of eating disorders than other age groups.[3]

Likewise, studies conducted worldwide assert that a relatively large proportion of adolescents, especially 90% of girls, experience eating problems.[4] Eating disorders are considered psychosomatic disorders. They can also bring about many physical health and mental functioning problems, disrupting the affected persons' quality of life and even causing death. Since adolescent girls often pay special attention to their weight and body shape and frequently adopt incorrect attitudes toward eating to cope with the pressures caused by critical and challenging pubertal changes, this kind of confrontation gives rise to behavioral problems.[5] In a study on Adolescents Aged13 to 18 Years Old in Gonabad, researchers found a significant difference between girls and boys in terms of eating disorders.

Moreover, the prevalence of this disorder was significantly associated with age and educational level. The researchers also concluded that the frequency of bulimia nervosa was higher among girls.[6] Additionally, eating disorders can cause nutrition-related disorders and threaten a person's health by altering their dietary patterns, resulting in poor nutrient intake.[7]

Communication skills are skills through which individuals can engage in interpersonal interactions and the communication process. Moreover, they are the channel through which individuals share their information, thoughts, and feelings via the exchange of verbal and nonverbal messages.[8] This skill is of such a degree of significance that it improves the teenagers' mood and conveys the experience of being good and helpful to all with whom they are in touch since this skill is the primary means for achieving positive results, satisfying needs, and realizing dreams.[9] According to an enormous number of studies, cognitive-behavioral training programs establish and enhance competencies such as decision-making, motivation-generating, accountability, establishing positive communication with others, self-esteem, problem-solving, self-regulation, self-sufficiency, and mental health.[8] Cognitive-behavioral therapy is an active, structured, and time-sensitive psychological intervention that helps patients, through behavioral activation, increase their ability to perform activities wherein they experience success and pleasure.[10] A study on Japanese women with an average age of 19-37 years with eating disorders found that the experimental group, after ten sessions of cognitive-behavioral therapy, showed a decrease in eating and depression scores, whereas self-esteem scores increased. After a 10-year follow-up of this group, those who continued treatment showed a better prognosis than those who left treatment. After 10 years of follow-up among this group, people who continued treatment showed a better prognosis than those who left treatment.[11] The study results showed that there is evidence to support CBT-E as an efficacious and effective treatment for adults and older adolescents with a range of eating disorder diagnoses.[12]

Methods

Study Design

This quasi-experimental study was performed using pre-and post-test designs with equal control and experimental groups.

Selection and Description of Participants

The statistical population for this study included all the first-grade female high school students in Selseleh County in 2017-2018. Selseleh County is a county in Lorestan Province in Iran. First, out of 4 city districts, 2 districts were selected by simple random sampling; a list of high schools in the selected areas was prepared;3 high schools were selected by simple random sampling, and finally, two classrooms were selected in each chosen high school. One hundred ninety students were randomly selected based on the alphabetical list. From all education districts in Selseleh, some girls' schools were randomly selected. Then, some girls' high schools were randomly selected in each district. Next, experts interviewed all the students in the selected high schools. All students were assessed via the Communication Skills Inventory and the Eating disorders symptoms Test, leading to the selection of 120 female students who obtained scores lower than the average as the research sample. Inclusion criteria consisted of students in the age range of 13-15 years, eating disorders based on the score of the eating disorder questionnaire, not taking psychiatric drugs such as antidepressants and anti-anxiety drugs, the absence of stressful events such as divorce, and the death of loved ones in the past three months. Exclusion criteria also included dissatisfaction with participation in the research and completing the questionnaire incompletely. Forty females were randomly assigned to two experimental (n=20) and control groups (n=20) as sample size using similar studies[13, 14] and taking into account the 95% confidence level, 80% test power, and the sample volume formula. Afterward, the cognitive-behavioral therapy package was administered to the experimental group in nine 60-minute sessions twice a week. It is noteworthy that the control group did not receive any intervention. The subjects were fully assured that their information would not be disclosed at any stages of the study. They were assured that they can contribute to this study with full discretion and satisfaction and they are free to terminate their cooperation at any stage.

The following instruments were employed to collect data:

Technical Information

1) Queendom's (2004) Communication Skills

Test-Revised

This questionnaire was devised by Queendom in 2004 to evaluate communication skills in adults and comprised of 34 items. The questionnaire measures communication skills on a 5-point Likert scale from one (never) to five (always), and each person's scores rang from 34 to 170. A low score indicates low communication skills, and a high score represents high communication skills.[15] Hossein Chari and Fedakar (2005) assessed the reliability of the communication skills test. The total reliability of the test was calculated using Cronbach's alpha method. It was equal to 0.69 and indicated the acceptable internal consistency of this test. This value was 0.71 for student subjects and 0.66 for high school students. Also, the total reliability coefficient of the test using the halving method was equal to 0.71. In the present study, the reliability of the questionnaire was 0.87.[16] In this study, the Content Validity Ratio (CVR) and the Content Validity Index (CVI) for the items were >0.8 and from 0.9-1, respectively. To determine the face validity of the research instrument, the researchers mainly focused on the target group. The face validity of the research instrument was assessed by two methods of quantitative (item impact index score) and qualitative.

Eating Disorder Inventory (Garner other colleagues, EAT 26

The eating feedback test is usually used as a self-assessment screening tool to identify patients' attitudes and behaviors. It also distinguishes healthy individuals from those with anorexia, bulimia nervosa, and obesity. This inventory is available in two 40- and 26-item forms. In this research, the 26-item form was used.[17] Garner's other colleagues. In 1979 and 1982 demonstrated the high reliability of this questionnaire. According to Cronbach's alpha, the reliability of the eating attitude test for non-clinical and clinical groups was 94%.[17] In a study done by Ahmadi and other colleagues, These factors demonstrated satisfactory concurrent validity, acceptable to high internal consistency(0.76–0.92), and low test-retest reliability (0.26–0.64).[18] In this study, the Content Validity Ratio (CVR) and the Content Validity Index (CVI) for the items were >0.78. To determine the face validity of the research instrument, the researchers mainly focused on the target group. The face validity of the research instrument was assessed by two methods of quantitative (item impact index score) and qualitative.

How was the Study Implemented?

The authors explained the purpose of the study to the participants and obtained their written informed consent forms prior to their enrolment. After obtaining the necessary permits, the researchers administered Garner's (1979) Eating Disorders Inventory and Queendom's Communication Skills Questionnaire (2004) to students. Then, the students who received a lower score in Queendom's Communication Skills Questionnaire (2004) and a score of 20 or higher in the Eating Disorders Inventory were selected. Of all the randomly chosen participants, 40 people were selected. Afterward, both control and experimental groups filled in both questionnaires as their pre-test.

The experimental group attended nine 60-minute cognitive-behavioral therapy sessions twice a week on a specific day and time. The treatment protocol used in this study was extracted from the practical book of cognitive-behavioral therapy. The content of these sessions included: familiarizing participants with the concept of cognitive-behavioral therapy, communication skills, eating disorders, self-compassion, empowering members in the field of self-awareness and recognizing your own characteristics, needs, wants, goals, values and self-identity, familiarity of members with the relationship between thought, feeling and behavior, familiarity with spontaneous thoughts and cognitive distortions, challenging cognitive distortions, familiarity with the concept of documents and examining the causes of misunderstandings and teaching how to change documents, teaching problem-solving skills such as defining the problem, providing alternative solutions, evaluating the solutions, selecting and implementing the selected solution, evaluating the implemented solution, defining the relationship and its elements, familiarizing members with practical communication skills and its characteristics, teaching negotiation and dispute resolution methods, familiarizing clients with daring behavior and performing practical activities, playing a role in order to teach this skill, examining the constructive changes that have taken place during the sessions, highlighting the successes of the clients, and discussing how to consolidate the created changes. The problem-solving skill also includes the discussion of the therapist's strengths and weaknesses and of the research plan, receiving feedback from clients, and conducting a post-test.

The Ethics Review Board of Boroujerd Azad University approved the present study with the following number: 230166.

The continuous variables were reported as mean±standard deviation (M±SD), while the categorical ones were presented as a percentage. Shapiro-Wilk test was used to test the normality assumption. The homogeneity of research variables' variancwas analyzed using the Levin test. In addition, Multivariate analysis of covariance compares the mean post-test of variables with pre-test control. All statistical analyses were performed using the SPSS 24.0 software for Windows (SPSS Inc.), and $P<0.05$ was considered to be statistically significant.

Results

The Mean±SD age of the students was 16±2.2. 68% of

students were in the second year of high school. The father job of most students (70%) was self-employed, and The mother job of most students (75%) was housewife. The results of this study support hypothesis, stating that Cognitive-behavioral therapy affects students' communication skills. The indicators related to descriptive statistics, including mean and standard deviation for the variables studied in this study, are all depicted in Table 1.

The Shapiro-Wilk test was utilized to check the normality of the score distribution (Table 2).

As Table 2 shows, considering the level of significance in this test, which is more than 0.05, there is no significant difference between the distribution of scores, and the normal distribution does not exist in both tests (pre-test and post-test). Table 3 shows the Levin test results (homogeneity of variance of research variables).

The Levin test results shown in Table 3 indicate no significant difference regarding the dependent variables of the research in the post-test stage (P=0.1). Table 4 shows the multivariate analysis of covariance to compare the mean post-test of variables with pre-test control.

Table 4 shows the results of the multivariate analysis of covariance to compare the mean values for the post-test scores of the variables and those of the pre-test control.

Discussion

This study was conducted to evaluate the effectiveness of cognitive-behavioral therapy on communication skills and Eating disorders symptoms among adolescents. The present study results showed that cognitive-behavioral therapy is effective in improving communication skills and decreasing Eating disorders symptoms in adolescents.

Findings of the present study coincide with those of Salamat & et al.,[19] Shahri & et al.,[20] Sasaki & et al.,[21] Felder & et al.,[22] Peterson & et al.,[23] Manasse & et al.[24]

When explaining these findings, we should pay attention to the hypotheses of cognitive therapy, which is based on changing cognition, emotion, and behavior.[25] It means that the cognitive-behavioral therapy intervention performed in the present study promotes the communication skills of the experimental group, thus accounting for the effectiveness of cognitive-behavioral therapy on communication skills.[26] In cognitive-behavioral therapy, individuals improve their communication skills and minimize their stress and emotional pressures by recognizing

Table 1: Descriptive statistics for the variables studied

	Group	Pre-test		Post-test		N
		Mean	SD	Mean	SD	
Communication skills	Case	75.15	67.6	81.57	6.04	20
	Control	69.90	5.44	72.20	5.15	20
Eating Disorders	Case	40.55	4.24	35.40	3.88	20
	Control	36.5	1.7	36.95	3.44	20

Table 2: Shapiro-Wilk test for normal data distribution

		Group	F	sig.
Pre-test	Communication skills	Control	0.92	0.11
		Case	0.95	0.36
	Eating Disorders	Control	0.94	0.34
		Case	0.96	0.57
Post-test	Communication skills	Control	0.92	0.11
		Case	0.94	0.25
	Eating Disorders	Control	0.95	0.44
		Case	0.96	0.60

Table 3: Levin test results (homogeneity of variance of research variables)

	Study time	F	P value
Communication skills	Pre-test	6.11	0.10
Eating Disorders	Post-test	0.10	0.98

Table 4: Multivariate analysis of covariance to compare the mean post-test of variables with pre-test control

		Sum of squares	Mean square	F	P value	Effect size
Communication skills	Control	194.05	194.05	130.23	0.01	0.77
	Case	55.12	1.49			
Eating Disorders	Control	171.53	171.53	10.04	0.01	0.21
	Case	632.44	17.09			

defective and inconsistent cognitions and correcting them with therapeutic texts such as Socratic dialogue.[27] Cognitive-behavioral therapy has also reduced Eating disorders symptoms in the experimental group, which can explain the efficiency of cognitive-behavioral therapy on Eating disorders symptoms.[22] This treatment helps the person to detect their distorted thinking patterns. Cognitive-behavioral therapy has numerous benefits, including mastering behavioral signs, contemplating the causes of events that occur, combating negative thoughts, identifying negative self-talk, changing and correcting misconceptions, getting prepared to complete training, and replacing negative thoughts with positive ones. When compared to other published studies, the current research includes the frequency of data obtained, and the fact that no other medication was offered to the patients during the active intervention.[23] In addition, the results of therapy, as performed in a replicable context (i.e., with non-specialist physicians in a group ambulatory setting) with relatively few exclusion parameters, are likely to be generalizable.[24] This study focused on the students compared to other studies. Eating disorder is one of the most common disorders among students that significantly impacts their physical and psychological health. in addition, this study focused on cognitive-behavioral therapy and their influence on communication skills in patients with eating disorders. In contrast, Rajabi and his colleagues reported that behavioral methodology had no effect on improving the visual imagery of children with cancer.[28] The reason for the discrepancy between the results of Rajabi's research and the present study is that their research was conducted on children with cancer and the present study was performed on adolescents with eating disorders. Children with cancer have more and more negative physical self-description than adolescents with eating disorders; therefore, education has no significant effect on their improvement. Also, the family and social conditions of children with cancer and adolescents with eating disorders are different.

Conclusion

Some subjects' reduced motivation levels due to the long treatment protocol and the time-consuming homework in this treatment method are considered other limitations of the present study. Given the few studies conducted in this field inside and outside the country, there is an urgent need for further research in this field of study. To increase the validity and generalizability of the research findings, it is suggested that the current design be implemented with a larger sample size in other regions and cultures to make the results more generalizable.

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