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Original Article

Comparison of the Effectiveness of Acceptance and Commitment Therapy and Reality Therapy in Suicidal Ideation, Self-Harming Behaviors, and Aggression in Adolescents

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Abstract

Background and Objective: Adolescence is one of the most critical and sensitive stages of human development associated with the confusion of needs. Suicidal tendencies are directly related to unmet needs, feelings of despair and helplessness, conflicts in life, and unbearable stress. The present study aimed to compare the effectiveness of acceptance and commitment therapy and reality therapy in suicidal ideation, self-harm, and aggression in adolescents.

Materials and Methods: This quasi-experimental study was conducted based on a pretest-posttest multi-group design with a follow-up period. The statistical population of this study included 12th-grade female students in Sari in the academic year of 2019-2020. Out of this population, 60 subjects were selected via the purposive sampling method and assigned to three groups (n=20 in each group): acceptance and commitment, reality, and control groups. The research tool included the Bass and Perry Aggression Questionnaire (1992), Suicide Thought Questionnaire by Mohammadifar, Habibi and Besharat (2005), and Self-Harm Inventory (Sansone, Wiederman, and Sansone,1998). Data were analyzed using multivariate and univariate covariance in SPSS software (version 18).

Results: The results pointed out that acceptance and commitment therapy and reality therapy affected suicidal ideation, self-harm, and aggression in adolescents. Moreover, it was detected that acceptance and commitment therapy had a more significant effect on suicidal tendencies, self-harm, and aggression in adolescents than in reality therapy (P<0.001).

Conclusions: As evidenced by the results of this study, acceptance and commitment therapy and reality therapy can be used to reduce suicidal ideation, self-harming behaviors, and aggression in adolescents.

Keywords: Acceptance and commitment, Adolescents, Aggression, Reality therapy, Self-harming behaviors, Suicidal ideation

Background

Adolescence is a challenging life period that can cause physical and mood changes, putting adolescents' mental health at risk if they do not fully adapt to their role, often leading to confusion and anxiety [1]. At this stage, they face problems and changes in many aspects, some of which are the issues related to identification, independence, choosing a field of study, rapid physical changes, as well as extensive cognitive and emotional changes [2]. Suicidal tendencies are among the serious problems that threaten current societies in the field of mental health [3]. Suicidal tendencies in recent years are significantly increasing among adolescents, and its prevalence in high school students is rising, reaching 3.5%-11% [4].

Suicidal tendencies are directly related to unmet needs, feelings of despair and helplessness, double conflicts in life, and unbearable stress [5]. In fact, suicidal ideation is an individual act that a person may commit, and social factors also play a significant role in its occurrence [6]. Moreover, as the most catastrophic consequence of depression, with its increasing trend in many countries, it is always one of the major problems in mental health [5]. Another problem for adolescents is self-harm, which results from stress, according to the Diagnostic Statistical Manual of Mental Disorders Version 5 [7]. People who are socially anxious, frustrated, depressed, and lack self-confidence are more likely to engage in risky behaviors.

In their studies, O'Connor, Rasmussen, &

Houghton [8], Kinks et al. [9], and Kyung Li [10] indicated that high levels of stress, depression, and poor parent-peer relationships were significantly correlated with self-harm that leads to aggression. Aggression is defined as behavior when feelings of hatred are expressed. This definition includes physical aggression and verbal aggression [11]. Aggression can be direct or indirect. Direct aggression is behavior that has an immediate negative effect, physically or verbally, on the victim's well-being. Nonetheless, indirect aggression is a behavior that indirectly (such as gossiping) causes damage to social relationships [12]. Aggression is a behavior that occurs differently in children and adolescents as a growing problem in adolescents. Aggression is any form of behavior that can harm others [11].

One of the therapeutic approaches that work on suicidal tendencies, self-harm, and aggression is reality therapy. It has evolved to satisfy inner drives (survival, sense of belonging, power, freedom, and entertainment) and is based on choice theory which considers the human brain a system that seeks to influence the outside world [13]. Reality therapy is a method that clients learn to perform with the help of a counselor or therapist in the position of a kind friend, an empathetic teacher, and a questioner [14, 15].

Another new approach, such as reality therapy, which has a cognitive and primarily behavioral context and emphasizes practice, is acceptance and commitment therapy. This approach, which specializes in aggression, suicidal tendencies, and self-harm, stems from therapeutic behavior developed in the late 1980s by Steven Hayes, Kelly Wilson, and Kirk Stroeshall, with a particular emphasis on a component called attention awareness [16]. Acceptance and commitment therapy is a model of the third wave of behavioral therapy. The primary purpose of this model is to perform an effective action, an action that is conscious attention with the entire presence of mind and value-orientation [17].

Acceptance and commitment therapy aims to increase clients' psychological resilience. That is to say, the ability to go back to the present, be aware and observe one's thoughts and emotions, distance oneself a little from rigid beliefs, and perform what is essential despite unpleasant events. The main goal in acceptance and commitment therapy is to live a rich and valuable life, which is in the hexagon of psychological flexibility, with six processes: 1) contact with the present, 2) acceptance, 3) fault, 4) communication with the viewer, 5) specification of values, and 6) committed action [18].

Doosti, Gholami, and Torabian [19] in a study entitled "Effectiveness of acceptance and commitment therapy in the reduction of aggression in students addicted to the Internet." Statistical analysis demonstrated that acceptance and commitment therapy reduced physical aggression, verbal aggression, anger, and hostility in the experimental group compared to the control group.

Objectives

The present study aimed to compare the effectiveness of acceptance and commitment therapy and reality therapy in suicidal ideation, self-harming behaviors, and aggression in adolescents.

Materials and Methods

This quasi-experimental study was conducted based on a pretest-posttest multi-group design with a follow-up period. The statistical population of this study included the 12th-grade female adolescents in Sari in the academic year of 2019-2020. Out of this population, 60 subjects were selected via the purposive sampling method and assigned to three groups (n=20 in each group): acceptance and commitment, reality, and control groups. The treatment of the experimental groups was held for 60 min (8 sessions of reality therapy and eight sessions of acceptance and commitment therapy) on a weekly basis for students. During this period, the participants in the control group did not receive any training and were only on the waiting list, and all three groups responded to the research tools in three stages.

The inclusion criteria were as follows: the age range of 15-17 years, no severe mental disorder, and no chronic physical illness, such as multiple sclerosis, diabetes, and cancer). On the other hand, the exclusion criteria entailed having other mental or physical problems, drug abuse, serious risk of suicide that makes it impossible to receive or maintain medication, and absence from more than two sessions of treatment.

Research tools

1. Bass and Perry Aggression Questionnaire: This questionnaire was developed by Bass and Perry [20]. The main sample of this questionnaire contains 52 items, and some of them were omitted due to weakness and inadequacy in factor analysis. Finally, this scale was transformed into a 29-item questionnaire. The items were rated on a 7-point Likert scale, ranging from 1-7. This questionnaire measures the physical dimensions of physical aggression, verbal aggression, anger, and hostility. Cronbach's alpha coefficients calculated by Bass and Perry for these four dimensions are: 0.72, 0.83, 0.72, 0.85, and Cronbach's alpha coefficient for the

whole scale is 0.89 [20]. Cronbach's alpha coefficient for the whole scale of this questionnaire in Iran was reported as 0.91 by Alizadeh [21].In the present study, Cronbach's alpha coefficient was 0.78.

2. Suicide Thought Scale: This scale has been developed and standardized by Mohammadifar, Habibi, and Besharat. It consists of 38 items that are always scored on a 4-point Likert scale ranging from 0-3. This scale measures five feelings of guilt and self-destruction, frustration and feelings of inferiority, isolationism, and lack of connection, stagnation and stagnation, and depression. Cronbach's alpha coefficients for these five dimensions are: 0.80, 0.84, 0.83, 0.72, and 0.73. Cronbach's alpha coefficient for the whole scale was reported to be 0.93 [22]. In this study, Cronbach's alpha coefficient was 0.83.

3. Self-Harm Inventory (SHI-22; Sansone, Wiederman, & Sansone, 1998): It is a 22-item self-report questionnaire (with yes/no answers) that examines the history of self-harm in respondents. The self-harm questionnaire, unlike other questionnaires in this area, is the only scale that can be used to diagnose borderline personality disorder. Study of the validity of this questionnaire with a cut-off point of ≥5 accurately classified 84% of the respondents who were considered to have this disorder based on the borderline disorder diagnosis interview [23]. Cronbach's alpha coefficient for the whole scale was 0.94, as calculated by Sanson, Wiedermann, and Sanson [23]. Cronbach's alpha coefficient of this questionnaire in Iran was obtained at 0.74 by Mohammadi [24] for the whole scale, and in this study, Cronbach's alpha coefficient was 0.81.

4. Treatment Theory Selection Theory: Choice theory training in this study was designed using the principles of selection theory, with an emphasis on the mitigation of aggression, self-harm, and suicide. The table below displays the educational content in eight sessions.

Table 1. Treatment Theory of Selection Theory

Meeting	Content
First	Familiarity of group members with each other, stating the purpose and rules of the group, as well as explaining the 10 principles of selection theory
Second	Assessing homework, why and how to engage in a specific behavior, introducing and explaining five basic needs with examples and group discussion, and homework
Third	Examining homework, group discussion, answering questions, linking the level of satisfaction of needs and unmet needs with self-injurious behaviors, aggression, and suicide, talking about their experiences and feelings about self-injurious thoughts, normalizing emotions, examining effective and ineffective homework choices
Fourth	Examining homework, explaining about the perceptual system, the perceptual world, and the desirable world with the help of charts and examples, linking aspirations and goals to the topic of the perceptual world and the desirable world, discussion about the perceptual balance
Fifth	Examining homework, examining aspirations and goals and determining the realism, responsibility and morality of each of them, building a realistic picture of goals, familiarity with the topic of self-control and control over others through destructive behaviors that are signs of external control
Sixth	Homework review, discussion of notes and machine behavior review and an emphasis on changing the direction of thought, discussion of values using value cards and its implementation in the meeting and allegory of lighthouse and compass, allegory of ship and monsters and bus passengers
Seventh	Homework review, group discussion on fault and mindfulness notes and exercises, general behavior machine review, and an emphasis on reversing the action wheel with intelligent planning (Specific, Measurable, Assignable, Realistic, Time-related)

5. Acceptance and commitment to treatment protocol

The treatment protocol is based on the acceptance and commitment to aggression, self-harm, and suicidal tendencies.

Data analysis was performed in two sections: descriptive and inferential statistics. The descriptive statistics section discussed demographic information and statistics of the central index (mean, frequency, percentage of skew, and elongation) and dispersion indices (standard deviation, variance). In the inferential statistics section, after analyzing the assumptions of parametric tests, a multivariate covariance analysis with a significance level of 0.005 was used using SPSS software (version 28).

Table 2. Acceptance and commitment to treatment protocol

Meeting	Content
First	Communicating well with participants, Expressing instructions and familiarity with feelings of anger and aggression, as well as beliefs about anger, compassion, and awareness
Second	Accepting and paying attention, reviewing the previous session and evaluating the costs of anger, creative frustration, controlling a part of the problem, and reporting angry behavior
Third	Examining past sessions of consciousness, mindfulness and how to create anger, breaking values and commitment
Fourth	Contact the present moment, accept and see yourself as an observer
Fifth	Itself as a context/observer and awareness of awareness, values, and committed action
Sixth	Failure and attention of consciousness, compassion
Seventh	Failure and awareness attention, committed action, and awareness attention
Eighth	Acceptance and attention awareness, barriers to committed action, and awareness

Results

This section provides a descriptive mean and standard deviation of pre-test and post-test scores ofadolescents' self-harm, suicidal tendencies, and aggression in adolescents by two experimental groups (acceptance-commitment therapy and reality therapy) and control. The participants of this study were 60 12th-grade female students in Sari who were assigned to three groups of 20. The mean age scores of participants in the three groups of acceptance and commitment therapy, reality therapy, and control were 16±6.25,16±6.41, and 16±7.31, respectively.

The mean scores of self-harm, aggression, and suicidal tendencies in adolescents in the experimental and control groups were almost equal. Nonetheless, in the post-test of self-harm and adolescent aggression, the mean scores of experimental groups (acceptance, commitment, and reality therapy) were much higher than those in the control group. To perform a multivariate analysis of covariance (MANCOVA), firstly, assumptions need to be made.

As illustrated in Table 3, the results of MANCOVA on the scores of suicide variables show self-harming behaviors and aggression. As displayed, all MANCOVA tests are significant at the level (P<0.001); therefore, it can be stated that there is a significant difference in at least one of the variables of suicidal ideation, self-harming behaviors, and aggression.

Table 3. Results of multivariate analysis of covariance (MANCOVA)

title of exam	the amount of	F	df hypothesis	df error	sig
Plastic effect	0.690	28.249	3	57	0.000
Lambs's Wilkes	0.452	28.003	3	57	0.000
Hoteling effect	1.358	28.003	3	57	0.000
The biggest root of the error	1.358	28.003	3	57	0.000

The results of Table 4 point to a significant difference between the two experimental groups in terms of suicidal ideation, self-harming behaviors, and aggression. Moreover, the acceptance and commitment therapy group differs significantly from the control group in the mentioned variables.

As presented in Table 5, both methods ("acceptance and commitment therapy" and "reality therapy") are significantly superior to the control group. The effect size of reality therapy treatment was slightly less than that of acceptance and commitment therapy, compared to the control group (Eta2=0.976), compared to the control group (Eta2=0.991). According to Cohen, since Eta Squared $\eta 2$= 0.01 indicates a small effect; $\eta 2$= 0.06 indicates a medium effect; $\eta 2$=0.14 indicates a large effect, both methods of treatment are based on acceptance and commitment. Reality therapy has been effective in suicidal ideation scores; nonetheless, the impact of acceptance and commitment therapy is greater than that of reality therapy on suicidal ideation scores.

Table 4. Results of multivariate analysis of covariance

Source of dispersion	Variables	average of squares	df	sum of squares	f	sig	Effect size
Group	Suicidal tendencies	224.245	1	224.245	28.055	0.000	0.987
	Self-harming behaviors	162.863	1	162.863	19.713	0.000	0.942
	violence	489.287	1	489.287	34.058	0.000	0.992

Table 5. Summary of results of intergroup analysis of covariance

Comparison	Sources Change	Total squares	df	Average of squares	f	sig	Effect size
Reality therapy - control	group	296.346	2	148.173	110.116	0.000	0.976
	Error	85.854	58	1.480			
Reality therapy - control	group	389.125	2	194.562	152.478	0.000	0.991
	Error	76.582	60	1.276			

Discussion

As evidenced by the study results, the acceptance and commitment therapy and reality therapy were significantly different in their effects on suicidal ideation, self-harming behaviors, and aggression in adolescents. These findings are consistent with those reported by Agah, Sahebi, and Ebrahimi [25], Izkian, Mirzaeian and Hosseini [26], Forkman et al. [27], and Walker et al. [28].

Suicidal tendencies, self-harming behaviors, and aggression in adolescents are associated with many negative emotions and feelings, such as pain, suffering, and fear of death. The ultimate goal of acceptance and commitment therapy and reality therapy is to change these painful thoughts and feelings and abnormal traumatic symptoms into a

natural human experience that is part of a meaningful life [13]. Cognitive and existential therapists believe that suicidal ideation, self-harming behaviors, and aggression lead to clinical disorders.

On the other hand, acceptance and commitment therapy had a more significant effect on suicidal tendencies, self-harming behaviors, and aggression than reality therapy, putting the cognitive and emotional mind in a mental, emotional, and emotional state [29, 30]. On the other hand, according to the realistic view in reality therapy, life is full of pain; no matter how good our life is, it will be accompanied by a lot of pain anyway, and we humans all experience a lot of painful feelings since we are human beings [31].

In reality therapy, the patients' problems arise from their inability to understand and apply their daily life's moral principles and values. Patients are confronted with their behaviors and reminded that they are responsible for their behavior and there will be no change until they take responsibility for changing them. This can focus on the person instead of controlling the environment and expressing dissatisfaction with the reactions focused on accepting and doing something that the person takes responsibility for, instead of blaming him/herself and doing something to get rid of it [32].

Among the notable limitations of the present study, we can refer to the confinement of participants to high school students in Sari and the impossibility of receiving follow-up due to the COVID-19 pandemic. According to the studies conducted on other variables, such as the socioeconomic levels, which affect people's behaviors. Future researchers are recommended to include them in their studies. Based on this research, it is suggested that similar studies be carried out on people in other regions and age groups with different educational levels. Moreover, similar studies should be conducted on other influential variables related to the subject. The evaluation of human behavior is a complex and lengthy process. Therefore, to achieve more reliable results, it is recommended that longitudinal studies be performed on the formation of problems with follow-up steps. Finally, it is suggested to use multiple assessment methods, such as observation, interview, and questionnaire.

Conclusions

As evidenced by the results of this study, acceptance and commitment therapy and reality therapy can be used to reduce suicidal ideation, self-harming behaviors, and aggression in adolescents.

Compliance with ethical guidelines

All ethical principles were considered in this research. This research has a code of ethics in research IR.IAU.SARI.REC. 1399.163.

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Authors' contributions

Conceptualization [Fataneh Espahbodi]; Methodology [Bahram Mirzaian]; Investigation [Ghodratollah Abbasi].

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Conflicts of Interest

The authors declare that they have no conflict of interest.

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