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Original Article

Comparing the Effectiveness of Acceptance and Commitment-based Therapy and Reality Therapy in Aggression, Psychological Flexibility, and Career Decision-Making Self Efficacy among Adolescents

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Abstract

Background and Objective: Adolescence is a critical period in a person's life since all the main characteristics of personality, career interests and desires, work values, and choosing a career path are formed in this period. Therefore, the present study aimed to compare the effectiveness of acceptance and commitment-based therapy (ACT) and reality therapy in aggression, psychological flexibility, and self-efficacy in career path decision-making in secondary school girls in Yazd, Iran.

Materials and Methods: In this study, we adopted a quasi-experimental pretest-posttest control group design. The research population included all second-grade high school female students in two districts of Yazd in the 2022-2023 academic year. Out of this population, three groups of 15 cases were selected by cluster sampling method and randomly assigned to two experimental groups (Therapy based on acceptance and commitment and reality therapy) and a control group. The data collection tools were Buss-Perry Aggression Questionnaire, the Hayes Psychological Flexibility Questionnaire [2000], and The Career Decision Self-Efficacy Scale (CDSES, Taylor & Betz, 1983), which were answered in two stages, pre-test and post-test. The subjects in the experimental group received acceptance and commitment-based therapy and reality therapy in a group [in the form of training and skills] for two months(one 60-minute session per week). Nonetheless, no training was provided to the control group during this period. The data were statistically analyzed in SPSS software (version 23) using multivariate and univariate analysis of covariance at a significance level of $P<0.05$.

Results: Paying attention to the significance level of less than 0.05 for aggression and job self-efficacy variables and high observed power and eta squared contribution greater than 0.14 for these two variables was the significant effect of our intervention on aggression and job self-efficacy variables. The Bonferroni test was used to compare the two groups and the effectiveness of these three treatments. According to the significance level of 0.013 for the acceptance and commitment treatment method and 0.003 for the reality therapy treatment method, we found a significant effect of these two treatment methods compared to the control group in the aggression variable. In the variable of psychological flexibility, there was no significant difference between the mean of the control group and the two treatment approaches in this variable. Therefore, the treatment intervention's effect was insignificant, and the only significant difference between the reality therapy approach and the control group was in occupational self-efficacy, with a significance level of 0.01 ($P<0.05$). This significant mean difference of 5.990 is in favor of the reality therapy approach compared to the control group.

Conclusions: As evidenced by the obtained results, the treatment based on acceptance and commitment and reality therapy was effective in aggression and self-efficacy in career path decision-making, with a significance level of less than 1%. Nonetheless, it has been effective compared to the control group. Furthermore, it was revealed that ACT and reality therapy approaches were not significantly effective in psychological flexibility.

Keywords: Aggression, Psychological flexibility, Reality therapy, Self-efficacy

Background

Adolescence is a very important period in a person's life since all the main characteristics of personality, career interests and desires, work values, and choosing a career path are formed in this period [1]. Career path [2] and low self-efficacy [3] are encountered. Numerous issues and challenges in this period prevent a person from using all his/her potential and abilities. Therefore, identifying these

issues and problems and taking effective measures in this period has a major role in preventing problems in the next periods of life, the health of the country, and the substructures of society [4]. One of the relatively common behaviors in teenagers is aggression. There is no person on the planet who has not experienced emotional pain and anger in their life. Sometimes, a lack of familiarity with the correct skills for facing and managing anger leads to aggressive behaviors that bring people severe consequences [5]. Among the components that make it easier to go through these changes and developments and overcome dysfunctional emotions is psychological flexibility, which signifies a set of behaviors that a person performs in the direction of his/her values [6].

Psychological flexibility encompasses six components: acceptance, failure, self as context, connection with the present, values, and committed action, all of which cause psychological flexibility [7]. By gaining psychological flexibility, people become more efficient in making important decisions in their lives, such as marriage and choosing a field of study and career. Self-efficacy in career decision-making is used as a general term to explain and describe a person's beliefs about the ability to perform various career-related tasks and behaviors related to career decision-making [8].

The results of the study by Hayes [9] demonstrated that many external motivations put pressure on people and prevent them from making a conscious and value-oriented choices. Psychological flexibility helps people endure the anxiety of performance, fear of failure of success, the pain of disappointment, and shame caused by inevitable failures, not avoid it and move towards self-efficacy [10]. Today, there are various strategies to increase psychological flexibility and self-efficacy in career path decision-making, as well as treatment of aggression, such as acceptance and commitment therapy (ACT) and reality therapy [11].

The ACT refers to accepting thoughts, emotions, and other experiences in the present moment without any judgment [12]. It is designed to improve a wide range of psychological problems. Based on this therapeutic approach, people learn that thoughts and feelings are fleeting experiences that do not necessarily reflect reality. Based on this, they are able to choose useful options that are not clearly affected by thoughts or feelings and options that are influenced by outcomes. Through this therapeutic approach, pain and distress are considered optional options, and this is if these variables were avoided in the past. These choices make people do things that are aimed at their value despite pain and distress [13-16]. Not denying the reality, taking responsibility and planning to achieve goals are among the most important needs of human beings in life, which is why a therapeutic treatment has been given to it. [17] In this view, it is believed that those who suffer from feelings of loneliness and worthlessness deny reality and experience unhappiness, depression, anxiety, and lack of responsibility [18]. Therefore, adolescence is a critical period in human life since all the main characteristics of personality and interests, career tendencies, work values, and choosing a career path are formed in this period. In light of the aforementioned issues, the present study aimed to compare the effectiveness of ACT and reality therapy in aggression, psychological flexibility, and self-efficacy in career path decision-making in secondary school girls in Yazd.

Objectives

This research aimed to compare the effectiveness of ACT and reality therapy in aggression, psychological flexibility, and self-efficacy in career decision-making in second-year high school girls in Yazd.

Materials and Methods

In this study, we adopted a quasi-experimental pretest-posttest control group design. The research population included all second-grade high school female students in two districts of Yazd in the 2022-2023 academic year. Out of this population, three groups of 15 cases were selected by cluster sampling method and randomly assigned to two experimental groups (Therapy based on acceptance and commitment and reality therapy) and a control group. The data collection tools were the Buss-Perry Aggression Questionnaire, Hayes Psychological Flexibility Questionnaire [2000], and The Career Decision Self-Efficacy Scale (CDSES, Taylor & Betz, 1983), which were answered in two stages, pre-test and post-test. The subjects in the experimental group received acceptance and commitment-based therapy and reality therapy in a group [in the form of training and skills] for two months (one 60-minute session per week). Nonetheless, no training was provided to the control group during this period. The data were statistically analyzed in SPSS software (version 23) using multivariate and univariate analysis of covariance at a significance level of $P<0.05$. The inclusion criteria entailed: 1. Second-year high school students, 2. Female students, and 3. Students of Yazd. On the other hand, the exclusion criterion was absence from more than two PDP sessions and three irregular sessions.

Research instruments

Bass and Perry Aggression Questionnaire

The new version of the aggression questionnaire, whose previous version was called the hostility questionnaire, was revised by Bass and Perry in 1992 and includes 29 statements and four subscales of physical aggression, verbal aggression, and anger. Bass and Perry have reported the internal consistency coefficient of this questionnaire as 0.89 and its reliability as 0.80 using the test-retest method [19]. Cronbach's alpha coefficient for this questionnaire was reported as 0.78 by Samani [20]. Hossein Khanzadeh et al. [21] used Cronbach's alpha method to determine the reliability of this questionnaire, and the obtained coefficients for the whole questionnaire were 0.89 and 0.90, respectively, indicating a good reliability coefficient.

Acceptance and Action Questionnaire by Bund and colleagues

This 7-item questionnaire was designed by Bond et al. in 2011 for the experimental measurement/ psychological inflexibility [22]. The items in this questionnaire measure the unwillingness to experience unwanted thoughts and feelings (I am afraid of my feelings) and the inability to be in the present and move towards inner values (painful memories deprive me of a satisfying life). The items are rated based on a 7-point Likert scale (never 1 to always 7). Higher scores on this scale indicate lower psychological flexibility and higher experiential avoidance. The test-retest reliability of this questionnaire was obtained by Bund et al. Its internal consistency was calculated at 0.84 [22]. Cronbach's alpha coefficient for this questionnaire was reported as 0.59 by Safarzai et al. [23].

Self-Efficacy Questionnaire for Career Path Decision Making

This scale was compiled by Taylor and Betz in 1983. This 25-time questionnaire evaluates five competencies in the field of career choice based on the Crites [1961] model. Therefore, the items of this questionnaire are in these areas: 1] proper self-evaluation, 2] gathering job information, 3] choosing a goal, 4] planning for the future, and 5] solving the problem. The questionnaire is on a four-point scale from no self-confidence to complete self-confidence. In 1983, Taylor and Betz calculated a reliability of 0.97 for this scale using Cronbach's alpha [24]. Cronbach's alpha coefficient for this questionnaire was reported as 0.78 [25].

Treatment protocol based on acceptance and commitment

This protocol was developed in 1986 during eight sessions by Hayes [11], and it is a mixture of four attention approaches: awareness, acceptance, commitment, and behavior change and the overall goal is to achieve flexibility finally. It is psychological in such a way that there is no need to remove or destroy the bad feeling; nonetheless, despite the existence of this feeling, the person moves towards the behavior based on the thought value [11]. The first experimental group was subjected to treatment based on acceptance and commitment. The content of these sessions is presented in Table 1.

[5] Reality therapy protocol: This protocol, compiled by William Glaser in 1960, consists of realism, responsibility, and separation of right and wrong. The school of reality therapy states that the person does not suffer from a mental or physical illness but from human, social, and global conditions. With this description, a person's failure to meet his basic needs causes his/her behavior to deviate from the defined norms. Since the essential needs are considered a part of the person's present life, reality therapy does not involve itself in the client's past issues. Moreover, the principles of this method of treatment do not involve themselves in issues related to the unconscious. Reality therapy relies on counseling and problem-solving, focusing on the client's present and dealing with payment and education to choose a better future for clients. In this treatment method, in order to achieve these goals in the current situation, clients are guided to understand what they really want and how they can

Table 1. Summary of content of therapy sessions based on acceptance and commitment

Session	Content
Briefing	Implementation of pre-test, evaluation of research participants, diagnostic interview and regulation of derma.
First session	Getting to know the therapeutic concepts of acceptance and commitment, creating insight in participants towards the problem, and challenging control
Second session	Teaching creative despair and getting to know the list of discomforts and problems that the client has tried to get rid of
Third session	Creating acceptance and mindfulness by letting go of trying to control and creating a cognitive fault and reviewing the previous session and assignments
Fourth session	Teaching value-oriented life and selecting and reviewing previous meetings and assignments
Fifth session	Evaluation of goals and actions, specification of values, goals, and actions, and their obstacles
Sixth session	Re-examining values, goals, and actions and familiarity and engagement with passion and commitment
Seventh session	Identifying and removing obstacles to committed action, summarizing and implementing post-examination
Eighth session	Evaluation of research participants, diagnostic interview, regulation of treatment, and implementation of pre-test

Table 2. Summary of reality therapy session content

Session	Content
Briefing	Explaining the rules of the group, establishing proper communication with the group members, conducting the pre-test, presenting the schedule of the meetings and their timing, sharing the goals of the training sessions with all the members of the group
First session	Familiarization of group members with each other, statement of the group's purpose, introduction about the history of selection theory
Second session	Why and how to issue behavior from the person, introduction of five basic needs.
Third session	Introducing external and internal control, teaching the ten principles of choice theory, and replacing constructive behaviors
Fourth session	Real-world and desired world, four components of general behavior: thought, action, feeling and physiology, introduction of behavior machine
Fifth session	Creating a realistic picture of the goals, introducing the characteristics of the goals
Sixth session	Planning and planning to achieve the goal, goal-setting methods
Seventh session	Practical steps towards goals, ability cards. Practical steps towards goals
Eighth session	Responsibility and responsible life, summary

behave correctly [26]. The second experimental group took part in reality therapy sessions based on Glasser's model (Table 2).

Results

The present study aimed to compare the effectiveness of ACT and reality therapy in aggression, psychological flexibility, and career path self-efficacy in female high school students in Yazd (Table 3).

According to the values of the significance level and the eta square of the contribution in Table 4, it is possible to interpret therapeutic approaches as a significant influencing factor in dependent variables. Eta squared values are proof of a share of the variance that is related to the factor variable. The general rule is that if this value is greater than 0.14 or 14%, it indicates that the effect size is large.

You can see the results related to the significance test of the factor or agent in Table 5. According to the significance level of less than 0.05 for aggression and job self-efficacy, as well as the high observed power and eta squared contribution greater than 0.14 for these two variables, our intervention has a significant effect on aggression and job self-efficacy. Now, in order to compare groups two by two and the effectiveness of these three treatments, the Bonferroni test is used, as illustrated in Table 6.

From the results of Table 6 in the control row, the comparison of the treatment methods with the control group, which did not use any treatment method, and its significant difference according to the significance level of 0.013 for the treatment method of ACT and 0.003 0.0 for reality therapy, it was found that these two treatment methods have a significant effect on aggression. Nevertheless, according to the difference in means and significance level, no significant difference was observed between the two treatment approaches in this variable.

Table 3. Descriptive statistics of dependent variables

	group	M	SD	number
aggression	ACT	91.33	13.526	15
	Reality therapy	78.60	16.604	15
	Control	72.25	19.413	16
Psychological flexibility	ACT	78.73	14.978	15
	Reality therapy	76.27	8.705	15
	Control	74.88	11.002	16
career path self-efficacy	ACT	67.00	12.610	15
	Reality therapy	77.60	5.779	15
	Control	72.25	12.223	16

Table 4. Multivariate test

Effect	amount	F	significance level	The square of the parabola	observed power
Pillai effect	0.423	3.485	0.004	0.211	0.931
Landay Wilkes	0.593	3.779	0.002	0.230	0.950
by Hotlings	0.659	4.062	0.001	0.248	0.964
The largest zinc root	0.615	7.992	0.000	0.381	0.984

Table 5. Covariance analysis of variables

Source	The dependent variable	df	average of squares	f	sig	The square of	the parabola observed power
group	aggression	2	426.607	6.879	0.003	0.256	0.902
	Psychological flexibility	2	16.454	0.243	0.785	0.012	0.086
	Job self-efficacy	2	110.695	5.115	0.011	0.204	0.793
error	aggression	40	76.016				
	Psychological flexibility	40	67.661				
	Job self-efficacy	40	21.640				

Table 6. Comparison of means for post-test aggression variable

dependent variable A	Group[I]	Group[J]	Average difference I-J	standard error	sig	confidence interval for the 0.95 difference in means	
						lower limit	upper limit
aggression	ACT	Reality therapy	-0.070	3.171	1.000	-7.995	7.855
		Control	-11.524	3.796	0.013	-21.011	-2.037
	Reality therapy	ACT	0.070	3.171	1.000	-7.855	7.995
		Control	-11.454	3.243	0.003	-19.557	-3.351
	Control	ACT	11.524	3.796	0.013	2.037	21.011
		Reality therapy	11.454	3.243	0.003	3.351	19.557

As displayed in Table 7, there is no significant difference between the mean of the control group and the two treatment approaches in psychological flexibility. Therefore, the effect of treatment intervention was not significant.

Based on Table 8, the only significant difference between the reality therapy approach and the control group was in the occupational self-efficacy variable at a significance level of 0.01 (<0.05). This significant mean difference of 5.990 is in favor of the reality therapy approach compared to the control group.

Table 7. Comparison of means for psychological flexibility variable

dependent variable b	Group[I]	Group[J]	Average difference I-J	standard error	sig	confidence interval for the 0.95 difference in means	
						lower limit	upper limit
Psychological flexibility	ACT	Reality therapy	-1.004	3.313	1.000	-9.282	7.274
		Control	1.333	3.965	1.000	8.576	11.242
	Reality therapy	ACT	1.004	3.313	1.000	-7.274	9.282
		Control	2.37	3.387	1.000	-6.127	10.801
	Control	ACT	-1.333	3.965	1.000	-11.242	8.576
		Reality therapy	-2.337	3.387	1.000	-10.801	6.127

Table 8. Comparison of averages for the job self-efficacy variable

dependent variable c	Group[I]	Group[J]	Average difference I-J	standard error	sig	confidence interval for the 0.95 difference in means	
						lower limit	upper limit
Psychological flexibility	ACT	Reality therapy	-2.957	1.873	0.367	-7.639	1.724
		Control	3.033	2.243	0.552	-2.571	8.637
	Reality therapy	ACT	2.957	1.873	0.367	-1.724	7.639
		Control	5.990	1.916	0.010	1.203	10.777
	Control	ACT	-3.033	2.243	0.552	-8.637	2.571
		Reality therapy	-5.990	1.916	0.010	-10.777	-1.203

Discussion

As evidenced by the results of this study, ACT and reality therapy are effective in aggression and self-efficacy in career decision-making, with a significance level of less than 1%. Nonetheless, ACT and reality therapy did not significantly affect psychological flexibility compared to the control group**.** In fact, both methods of ACT and reality therapy were effective in aggression in second-year high school students. These findings are in line with the results of the studies by Robert, Ogundabe, Ajokpaniyo, and Fajonyomi [27], Mohadi Rad, Ebrahimi, Sahibi [4], Chegani, Ebrahimi, Sahibi [5] and Hossein Mardi and Khaltabari [28]. Moreover, there was no significant difference between the effectiveness of these two treatments. These findings are consistent with the research results reported by Abbaszadeh, Ghazanfari, Cherami, and Ahmadi [29].

In explaining this result, it can be stated that reality therapy and ACT both had an effect on the reduction of aggression among second-year high school students because the components of both protocols in the scheduled sessions had the structures and concepts of mental health. It can increase well-being and even have continuity over time [11]. In both treatments, secondary school students learned that despite environmental, family, academic, and social problems and issues, they still have a significant level of choice and free will. In both cases, they learned to stop trying to control things that are not in their control and focus on actions and choices that are in their control. Finally, there has been a process of smart plan or intelligent planning to change conditions in both approaches.

In other words, in both approaches, we emphasize the discussion of values and the meaning of life. In the present research, students in the choice theory and reality therapy group became familiar with the concept of the ideal world. By examining and memorizing people, beliefs, relationships, and other meaningful and valuable issues, they learned the

necessity of anger management to prevent harmful behaviors for these elements of the desirable world. In the ACT group, they were also one of the six sides of the hexagon of psychological flexibility of the values section.

In explaining the effectiveness of group therapy based on ACT and reality therapy in psychological flexibility, it can be stated that psychological flexibility is a deep, complex, and multi-dimensional concept that requires an acceptable period of time and specific environmental conditions for its formation or increase. This intervention was carried out for two months and was implemented in a situation where high school students were preparing for the end-of-the-year exams and did not have the necessary concentration for sufficient practice and reviewing the material. It seems that in the three-month follow-up that will be performed in the coming months after the exams, we can expect changes in each of the two experimental groups.

In fact, according to neuroscience research, changing the prefrontal parts of the brain, which are responsible for mindfulness, reasoning, and attention to spiritual matters, is similar to physical therapy for an injured body part, requiring sufficient time. Therefore, for the effectiveness of these approaches, including the change of self-evaluation in reality therapy with the WDEP process, as well as the process of anchoring and paying attention to values and performing effective actions in the approach of acceptance and commitment, people may experience failure many times before achieving success.

Furthermore, both reality therapy and ACT had an effect on the self-efficacy of career path decision-making among second-year high school students. This effect was different, and reality therapy was more effective in career path self-efficacy. So far, there has been no research on the effectiveness of ACT and reality therapy in career decision-making self-efficacy; nonetheless, this research is in line with the study by Hashemi et al. In explaining this result, it can be argued that the effectiveness of both reality therapy and ACT on career decision-making self-efficacy can be attributed to an increase in the sense of self-efficacy and self-esteem that people observe in themselves by learning positive approaches. In fact, in both of these approaches, people learn that they can set a vision and goals based on that vision and move in line with those visions and goals with intelligent planning.

Nevertheless, the possible reason for the superiority of reality therapy is that effective communication skills are learned in this approach, and students are able to establish better communication with their parents, teachers, and counselors by applying these teachings and getting their guidance and support. They have received better advice for choosing their career path and are more confident in their career path**.** The sample group in this research were not adults of legal age who can easily form new relationships with work and family groups, but teenagers who, whether you like it or not, the important people in their lives are their parents, and they are in charge of their school. Therefore, by learning the theory of choice and implementing reality therapy, their relationships with these people improved, and they were able to achieve a higher level of mental health and peace, and ultimately self-efficacy and higher levels of career path self-efficacy.

This research, like other studies, has some limitations, among which we can refer to the age limit and restriction to Yazd. In addition, due to the chemical attacks on girls' schools during the interventions, the researcher was had to hold two meetings online. Moreover, the possibility of receiving a follow-up of this event may be the result of effective interventions. Therefore, it is suggested that this research be conducted on boys in a national sample in the future.

Conclusion

As evidenced by the obtained results, the treatment based on acceptance and commitment and reality therapy was effective in aggression and self-efficacy in career path decision-making with a significance level of less than 1%. Nonetheless, it has been effective compared to the control group. Furthermore, it was revealed that ACT and reality therapy approaches were not significantly effective in psychological flexibility.

Compliance with ethical guidelines

This article was extracted from a thesis. The ethical considerations in this research included obtaining ethical permits and a code of ethics IR.IAU.YAZD.REC.1402.006, obtaining informed consent from all participants in the study, explaining the implementation method and purpose of the research, and answering the participants' questions.

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Authors' contributions

First author: idea development, manuscript writing and revision, and data collection. Second author: Project support, responsible for data analysis, and reviewed the revisions of the article. All authors participated in the initial writing of the article and its revision and accepted the responsibility for its correctness.

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Conflicts of Interest

The authors reported no conflict of interest.

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