

The Efficacy of Acceptance and Commitment Therapy on Psychological Capital and Emotion Regulation of Students with Suicidal Ideation

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Submitted: 23 April 2022

Accepted: 1 June 2022

Int J Behav Sci. 2022; 16(2): 96-102

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Abstract

Introduction: Suicidal ideation, like self-reported suicidal ideation, ranges from a vague, influential desire to die to complete suicidal ideation. For this purpose, the present study was conducted to investigate the effectiveness of acceptance and commitment therapy on psychological capital and emotion regulation of students with suicidal ideation.

Method: The present study was quasi-experimental with a pretest-posttest design and a control group. The statistical population of the study included students of Guilan University in 2021. Among them, 30 students were selected by the available sampling method and were then randomly assigned to experimental and control groups. Suicide Thought (Beck et al., 1988), Psychological Capital (Luthans et al., 2007), and Emotion Regulation (Gross and John, 2003) questionnaires were used to collect information. Acceptance and commitment group therapy was performed on experimental groups during eight sessions of two hours per week. Finally, the obtained data were analyzed using a multivariate analysis of covariance.

Results: According to findings, acceptance and commitment therapy significantly increases self-esteem, optimism, resilience, self-efficacy, cognitive reappraisal and expressive suppression in students with suicidal ideation ($P < 0/005$).

Conclusion: According to the results of the present study, acceptance and commitment therapy can increase psychological health by improving psychological capital and emotion regulation in people with suicidal ideation. Therefore, this type of intervention is recommended to reduce suicidal thoughts.

Keywords: Acceptance and Commitment Therapy, Psychological Capital, Emotion Regulation, Suicidal Ideation

Introduction

Suicide is an important public health challenge and the third leading cause of death for adolescents and adults in the world [1]. According to the World Health Organization, 2% of the population seriously decides to commit suicide during their lifetime, 5% eventually commit suicide, and about one million people in the world die every year due to suicide [2]. Numerous biological, social, and psychological factors are associated with suicide, some of the most important of which include depression, drug abuse, adverse life events, family history of suicide, interpersonal relationship problems, and sexual identity problems [3]. The suicide process involves thinking, planning, taking action, and finally completing suicide. Suicidal ideation is an important precursor to suicide, and in 60% of cases, the transition

from suicidal ideation to suicide occurs within a year [4]. Students are one of the groups at risk of depression, frustration and suicidal ideation. According to studies, the prevalence of suicidal ideation, planning and suicide in students has been reported as 22.3%, 6.1% and 3.2%, respectively [5]. Studies conducted in Iran indicate a prevalence of 1.8 to 42% of suicidal thoughts and behaviors in students [6].

Given that most cases of suicide lead to death are observed in people who have committed suicide for the first time, early detection of suicidal ideation is very important, so it is necessary to study the status and factors associated with suicidal ideation in every society [1]. One of the factors influencing the decrease of thoughts and suicide attempts is the psychological capital of individuals [7]. Psychological capital is a positive psychological state of life that includes four dimensions of resilience, hope, optimism, and self-efficacy [8]. Resilience is defined as the ability of an individual to successfully adapt to difficulties and to create co-impotence in dealing with the problems of life [9]. Optimistic optimism comes as a single attribute on the dipole continuum that lies at one end of optimism and at the other end of pessimism [10]. Optimistic people exhibit more effective exposure behaviors, better social and better social and physical wellbeing, more physical and physical wellbeing than pessimists [11]. Hope is a positive motivational mode considering the clear objectives for life. In the hope of a desire to desire or will to move toward goals and on the other hand, it lies in the appropriate ways to achieve goals [12]. Self - efficacy is an important personal and key source of transformation, compatibility and personal change and means one's judgment about its competence to manage different situations of life [13]. In this regard, Gao et al. [14] in a study examined the role of psychological capital in predicting suicidal ideation. Studies have shown a 14% prevalence of suicidal ideation. People with high psychological capital had lower suicidal ideation. In a review study, Preston et al. [15] examined the role of psychological capital in the mental health of young people. Findings indicated the role of psychological capital in reducing depression, anxiety and suicidal ideation.

Emotional regulation is another variable that can be considered effective in suicidal ideation [16]. The ability to regulate emotion includes modulating and regulating emotional experiences to achieve desirable emotional states and adaptive outcomes [17]. Different theoretical models show the role of emotional response and emotional regulation in the onset and maintenance of many psychological symptoms [18]. Emotional regulation is a broad structure that refers to individuals' strategies for controlling and regulating their emotions [19], which the problem is associated with many psychological disorders [20]. Given the existence of defects and problems in the identical structure as well as interpersonal communication skills in people with suicidal ideation, the ability to regulate emotions can be considered effective in attempting suicide [21]. In a similar study, Quintana-Orts et al. [22] examined the relationship between suicidal ideation and emotion regulation. The studies showed a negative and significant relationship between emotion regulation and suicidal

ideation. Young people with higher emotion regulation were better able to control situations in sensitive situations and experience fewer suicidal thoughts. In another study, Baer et al. [23] examined the relationship between emotion regulation strategies and suicidal ideation in 362 young people. The results showed that the use of positive emotion regulation strategies was associated with a reduction in suicidal ideation-related thoughts and behaviors in young people.

One of the approaches that have considered the dimensions of the definition of health and has been considered by psychologists in recent years to prevent suicide is the treatment of acceptance and commitment [24]. This treatment, as the third wave of cognitive-behavioral therapies, tries to increase the cognitive connection of the person with his thoughts and feelings instead of cognition [25]. In acceptance and commitment therapy, it is assumed that human beings find many of their inner feelings, emotions or thoughts annoying and are constantly trying to change or get rid of these inner experiences. These attempts at control are ineffective and paradoxically exacerbate the feelings, emotions, and thoughts that the individual initially tried to avoid [26]. Ducasse et al. [27] examined the effectiveness of acceptance and commitment-based therapy on managing suicidal ideation. The results showed that after receiving treatment for depression, anxiety, frustration and emotional problems were significantly reduced.

As adolescence and student life are very sensitive and having suicidal thoughts can have dire psychological and physical consequences for oneself and those around one, having positive thoughts and using emotion regulation strategies play an important role in increasing people's mental health. According to studies, treatment based on acceptance and commitment abroad in Iran was able to reduce suicidal ideation. Due to the fact that few studies have been conducted in Iran, first of all, in addition to the variables of psychological capital and emotion regulation, it is necessary to study the effectiveness of treatment based on acceptance and commitment to reduce suicidal ideation in students.

For this purpose, the present study was conducted to answer the following hypotheses:

Acceptance and commitment therapy will increase the psychological capital of students with suicidal ideation.
Acceptance and commitment-based therapy will increase emotion regulation in students with suicidal ideation.

Method

The design of the present study was quasi-experimental with a pre-test-post-test design and a control group. The statistical population of the study included students of Guilan University in 2021, from which 30 students were selected by convenience sampling method. The sample size was considered for two groups using versions 3, 3, 9, 2 of G*Power software [28]. After sampling, research participants were randomly assigned to experimental (n=15) and control (n=15) groups. Inclusion criteria included belonging to the research community, age 20 to 40 years, obtaining an acceptable score for suicidal ideation, and not receiving very serious physical and

psychological therapies, personal desire and satisfaction. Also, cases such as absence from more than two sessions, creating problems in the program process, lack of proper interaction and cooperation, lack of following the program and tasks, lack of desire and personal satisfaction were considered as criteria for leaving the research. It is important to note that in the present study, all ethical considerations such as personal satisfaction, protection of personal information, and informed participation were taken into account in accordance with Helsinki's ethical principles [29].

The used tools in this study were as follows:

Beck Suicide Thought Questionnaire (BSTQ): This questionnaire is a 19-item based self-assessment tool designed to assess, think, and plan for suicide by Beck et al. in 1988 [30]. Participants answer yes and no to questions that range from 0 to 38. In this questionnaire, the first five questions are designed for screening so that if students give zero to the first five questions, they have no suicidal thoughts. Scores between 1 and 5 indicate suicidal ideation, scores between 6 and 19 indicate readiness for suicide, and scores between 20 and 38 indicate suicidal ideation [30]. In Iran, the simultaneous validity of this scale with general health questionnaire was 0.76 and its validity was obtained using Cronbach's alpha method which was equal to 0.95 [31]. In the present study, Cronbach's alpha coefficient of this questionnaire was reported to be 0.87.

Psychological Capital Questionnaire (PCQ): This tool was designed by Luthans et al. in 2007 and consists of four subscales of hope, optimism, resilience and self-efficacy. This questionnaire consists of 24 questions, each subscale containing six items [32]. To obtain the psychological capital score, first each subscale is obtained separately and then their sum is considered as the total psychological capital score. The range of scores for each subscale is between 6 and 30. The higher the score in this questionnaire, the higher the psychological capital. By using factor analysis and structural equations, Luthans et al. [32] reported the chi-square ratio of this test as 22.6 and CFI and RMSEA statistics of this model as 0.97 and 0.80, which confirmed the factor validity of the test. In Iran, studies reported the reliability of this questionnaire as 0.85 [33]. In this study, Cronbach's alpha coefficient of total score and subscale of hope, optimism, resilience and self-efficacy were 0.88, 0.82, 0.79, 0.86 and 0.80, respectively.

Emotion Regulation Questionnaire (ERQ): This questionnaire was developed by Gross and John in 2003 to measure emotion regulation strategies. It includes two subscales of cognitive reappraisal (6 items) and expressive suppression (4 items). Participants answer on a 7-point Likert scale from 1 to 7. In Gross and John's study, the internal correlation was 0.79 for the cognitive reappraisal subscale and 0.73 for the expressive suppression subscale. Also, the total internal validity of this scale was 0.73 and its retest reliability was 0.69, which indicates the acceptable reliability of this scale [34]. In Iran, the addition of this scale using Cronbach's alpha was reported to be 0.79. The correlation coefficients of the score of each item with the total score of the scale were between 0.51 to 0.68 [35]. In the present study, Cronbach's alpha coefficient for the

subscale of cognitive reappraisal and expressive suppression was reported to be 0.88 and 0.82.

Due to the COVID-19 pandemic, research questionnaires were provided to students virtually. After completing the questionnaires, students who scored between 6 and 19 on the Suicide Thought Scale were placed in two experimental and control groups. In order to comply with the health protocols, group therapy sessions based on acceptance and commitment were held in the form of eight two-hour weekly group sessions for the experimental group in the open air, while the control group did not receive any intervention. Acceptance and commitment group therapy was designed based on the acceptance and commitment programs proposed by Hayes et al. [36], taking into account the key characteristics in the design of acceptance and commitment programs (Table 1).

Results

The mean and standard deviation of pre-test-post-test scores of psychological capital and emotion regulation of students with suicidal ideation in the experimental and control groups are presented in Table 2. Also in this table, the results of the Shapiro-Wilk test (S-W) are reported to check the normality of the distribution of variables in the two groups. According to this table, Shapiro-Wilk statistics is not significant for all variables. Therefore, it can be concluded that the distribution of variables is normal (Table 2).

Multivariate analysis of covariance was used to evaluate the effectiveness of treatment based on acceptance and commitment on psychological capital and emotion regulation of students with suicidal ideation. The results of Levin test to examine the homogeneity of variance of dependent variables in groups showed that the variance of hope ($F=0.03$, $P=0.845$), optimism ($F=0.34$, $P=0.560$), resilience ($F=1.11$, $P=0.301$), self-efficacy ($F=1.80$, $P=0.191$), cognitive reappraisal ($F=4.03$, $P=0.054$) and expressive suppression ($F=2.04$, $P=0.164$) were equal in the groups. The results of the box test to evaluate the equality of the covariance matrix of dependent variables between the experimental and control groups also showed that the covariance matrix of the dependent variables is equal (Box $M=28.58$, $F=1.04$, $P=0.407$). The significance of the box test is greater than 0.05, so this assumption is valid. Also, the results of the Bartlett test to examine the sphericity or significance of the relationship between psychological capital and emotion regulation showed that the relationship between them is significant ($\chi^2=72.01$, $df=20$, $P<0.05$). Another important assumption of multivariate analysis of covariance is the homogeneity of regression coefficients. It should be noted that the homogeneity test of regression coefficients was examined through the interaction of dependent variables and independent variables (intervention method) in the pre-test and post-test. The interaction of these pre-tests and post-tests with the independent variable was not significant and indicated the homogeneity of regression slope. Therefore, this assumption also holds. Due to the establishment of multivariate analysis of covariance, the use of this test will be allowed. Then, to find out the differences between the groups, a multivariate analysis of covariance was performed.

Table 1. Summary of Sessions Based on Acceptance and Commitment Treatment [36]

Session	Target	Topic	Change expected behavior
1	Familiarity with group rules and generalities of acceptance and commitment	Familiarity of members with each other and the therapist, group rules, goals and group structure, therapeutic commitments, introductory talks about acceptance and commitment	Learning about acceptance and commitment
2	Familiarity with some of the therapeutic concepts of acceptance and commitment including the experience of avoidance, fusion and psychological acceptance	Assessing clients' problems from the perspective of acceptance and commitment therapy, extracting experience, avoidance, mixing and values of the individual, making a list of advantages, disadvantages and practices problem control	Not trying to avoid negative emotions
3	Implement acceptance and commitment therapy techniques such as separation cognitive, psychological awareness, self-embodiment	Specify inefficiency, control negative events using metaphors, cognitive separation training, psychological awareness and self-visualization	Accepting negative behaviors and emotions
4	Teaching therapy techniques, emotional awareness, awareness wisely (metaphor of your victim)	Separating evaluations from personal experiences and taking a position of observing thoughts without judgment so as to lead to mental flexibility and positive emotions	Paying attention to current experiences moment by moment
5	Teach your healing techniques as a background and practice mindfulness techniques and distress tolerance training	Connect with the present and consider yourself as a field and teach the techniques of the mind awareness and tolerance of anxiety in order to accept negative emotions	Accepting negative emotions and thoughts without prejudice and judgment
6	Teaching therapeutic techniques of personal and clear values - creating values and teaching emotion regulation (metaphor bad cup)	Identifying the life values of clients and measuring values based on their importance, preparing a list of obstacles in the realization of values and creating positive emotions	Striving for psychological flexibility
7	Teaching techniques of personal values and practicing commitment and increasing interpersonal efficiency (metaphor chess board)	Provide practical solutions to overcome obstacles while using metaphors and planning for a commitment to pursue values and create a sense of meaning in life	Gaining psychological flexibility
8	Review and practice therapeutic techniques taught with emphasis on regulating emotions and a sense of meaning in real life	A report on the steps of pursuing values, asking clients to explain the results of the sessions and applying the techniques taught in the real world of life in order to create a sense of meaning and create positive emotions	Getting rid of emotions and negative thoughts and gaining psychological flexibility

Table 2. Descriptive Indices of Study's Variables in Control and Experimental Groups

Variables	Groups	Mean	SD	S-W	P	
Hope	Pretest	Experimental	21.13	3.22	0.14	0.063
		Control	21.53	47.4	0.12	0.057
	Posttest	Experimental	25.13	2.41	0.14	0.088
		Control	21.86	4.01	0.11	0.107
Optimism	Pretest	Experimental	19.73	2.18	0.14	0.109
		Control	19.46	2.94	0.17	0.063
	Posttest	Experimental	23.60	1.68	0.10	0.074
		Control	19.86	2.61	0.11	0.107
Resilience	Pretest	Experimental	18.20	1.52	0.17	0.052
		Control	18.53	1.76	0.10	0.074
	Posttest	Experimental	22.86	1.80	0.15	0.108
		Control	18.93	1.62	0.10	0.068
Efficacy	Pretest	Experimental	21.14	2.99	0.18	0.083
		Control	21.53	4.45	0.09	0.107
	Posttest	Experimental	24.40	2.47	0.16	0.083
		Control	21.06	4.51	0.07	0.163
Cognitive reappraisal	Pretest	Experimental	28.80	3.01	0.09	0.058
		Control	28.33	3.14	0.16	0.106
	Posttest	Experimental	32.46	2.85	0.07	0.174
		Control	28/60	2.38	0.10	0.120
Expressive suppression	Pretest	Experimental	16/67	1.95	0.16	0.065
		Control	16.73	3.01	0.06	0.052
	Posttest	Experimental	19.86	2.35	0.07	0.163
		Control	16.20	2.36	0.10	0.087

The results of multivariate analysis of covariance on mean post-test showed the effect of the independent variable on the dependent variables. In other words, experimental and control groups have a significant difference in at least one of the variables of psychological capital and emotion regulation, which according to the calculated effect size, 95% of the total variance of experimental and control groups is due to the effect of the independent variable. Also, the statistical power of the test is equal to 1, which indicates the adequacy of the sample size. However, to determine in which areas the difference is significant, a univariate analysis of covariance test was used in MANCOVA test, the results of which are reported in Table 3.

According to the contents of Table 3, F-statistic is significant for hope (137.39), optimism (61.60), resilience (47.09), self-efficacy (55.38), cognitive reappraisal (31.28) and expressive suppression (117.33) at the level of 0.001. These findings indicate that there is a significant difference between the groups in these variables. Also, according to the calculated effect size, 86% of hope, 73% of optimism, 68% of resilience, 71% of self-efficacy, 58% of cognitive reappraisal and 84% of expressive suppression were independent of the effect of the variable. As a result, it can be stated that acceptance and commitment therapy significantly increases hope, optimism, resilience, self-efficacy, cognitive reappraisal and expressive suppression in students with suicidal ideation.

Table 3. Results of Univariate Analysis of Covariance on the Mean of Post-Test Scores of Dependent Variables in Two Experimental and Control Groups

Variables	SS	SS Error	DF	MS	MS Error	F	P	Effect Value
Hope	86.70	13.88	1	86.70	0.63	137.39	0.001	0.86
Optimism	81.49	29.09	1	81.49	1.32	61.60	0.001	0.73
Resilience	112.05	52.34	1	112.05	2.37	47.09	0.001	0.68
Efficacy	91.29	36.26	1	91.29	1.64	55.38	0.001	0.71
Cognitive reappraisal	75.28	52.93	1	75.28	2.40	31.28	0.001	0.58
Expressive suppression	97.08	18.20	1	97.08	0.82	117.33	0.001	0.84

Discussion

The aim of this study was to evaluate the effectiveness of acceptance and commitment therapy on psychological capital and emotion regulation of students with suicidal ideation. The results of the present study showed that after receiving the treatment of acceptance and commitment, the experimental group had higher resilience, optimism, hope and self-efficacy, which reduced suicidal ideation in students. These results are consistent with previous studies [7, 14, 15, 37, 38, 39].

Psychological capital is one of the psychological indicators of positivism, which is characterized by the belief in one's ability to achieve success, perseverance in pursuing goals, creating positive self-image and enduring problems [14]. People with higher psychological capital are better able to cope with life's problems. Having psychological capital enables people to be less stressed in addition to better coping with stressful situations, to have high power in the face of problems, to have a clear view of themselves and to be less affected by everyday events. People have higher mental health and cope better with life problems [10]. Some studies have shown that psychological capital in people with suicidal thoughts and behaviors is low [8]. In this way, Feng et al. [37] in a study examined the role of stress, self-efficacy and optimism in predicting suicidal ideation. The results showed that stress was directly related to increased suicidal ideation. In contrast, self-efficacy and optimism were able to reduce stress and suicidal ideation. In another study, Clement et al. [38] examined the association of grit, hope, and optimism with suicidal ideation. Based on the results, it was found that people who had high grit, hope and optimism were less likely to think about suicide and had good mental health.

Acceptance and commitment therapy by using cognitive failure exercises, increasing mindfulness and acceptance causes the person to be separated from the content of dysfunctional thoughts related to inefficiency and improving self-efficacy causes the person to be more flexible with the disease and also increases self-care behaviors [15]. Some young people lose their life expectancy and optimism due to the problems created. In the treatment of acceptance and commitment, a sense of judgment and balance of consciousness was taught, which helps to clearly see and accept emotions and physical phenomena as they occur [9]. Hope can also play an important role in adaptation as a dynamic and powerful factor. Applying acceptance and commitment therapy seems to make people accept their thoughts and feelings and be committed to the changes that have taken place. People were trained to focus on increasing their psychological awareness, re-measuring their strengths, and trying to make good judgments about their problems [12]. The acceptance and commitment approach, instead of focusing on eliminating harmful worlds, helps clients accept their controlled emotions and cognitions and allows them to let go of conflict with them [13]. On the other hand, in treating acceptance and commitment by teaching emotional control strategies, performing behavioral commitment exercises, clarifying values, techniques for identifying value-based behaviors with metaphorical expression, failure and acceptance have all been effective in increasing resilience [39].

On the other hand, the findings showed that acceptance and commitment therapy significantly increased emotion regulation (cognitive reappraisal and expressive suppression) in students with suicidal ideation. These results are in line with previous research [19, 20, 22, 23].

Emotion regulation represents the range of processes through which individuals can change the nature, fluctuation, and duration of emotions that are appropriate for understanding emotional disorders [18]. People with these disorders tend to experience their negative emotions uncontrollably and often lack the skills to manage and regulate these intense emotional experiences, which increases physiological arousal and decreases self-control [21]. When a person feels that she or he has no control over life events, he or she becomes depressed, and this shows that using the acceptance strategy cannot always lead to positive consequences. However, it must be said that a certain type of acceptance that is not accompanied by cognition leads to emotional disorders and as a result, ideation becomes suicidal [20]. People with high levels of emotion regulation can control their anger, have good resilience, and make less emotional decisions [23]. According to studies, depression and anxiety significantly increase suicidal thoughts and behaviors in people [7].

In this regard, Brausch et al. [19] in a study examined the regulation of emotions and self-harming behaviors in young people. Studies have shown the important role of emotion regulation in aggression, self-harming behaviors and suicidal ideation among young people. People with good emotion regulation skills showed more adaptive behaviors in the long run. In another study, Colmenero-Navarrete et al. [20] examined the relationship between emotion regulation and suicidal ideation. The findings showed a significant and negative correlation between emotion regulation and suicidal ideation in adolescents and adults.

The present study has several limitations. Due to time constraints, pre-test and post-test evaluation and measurement in the present study is short and had no follow-up stage. Therefore, it is suggested that future studies be performed at longer intervals and at the follow-up stage. The effect of individual differences, people's motivation, expectation and hope on treatment were effective in the research results. It is also worth considering the mere use of self-report tools to measure research variables. Therefore, it is suggested that experimental methods be used in future studies. Since suicide is an issue that is rarely mentioned by individuals, it can be used as a hidden problem to cause irreparable damage to the individual, family and society. Given that having the right level of psychological capital and emotion regulation can get people out of the state of autism and depression, it is necessary to take measures to study the brain structures of depressed patients with suicidal ideation to be able to more accurately investigate these people.

Conclusion

The findings showed the effect of acceptance and commitment therapy on the psychological capital and emotion regulation of students with suicidal ideation. People who have high hopes, optimism, resilience, self-efficacy, reassessment, and emotion suppression are better able to cope with a variety of situations, have high

cognitive flexibility, and maintain high mental health. Instead of changing one's cognitions, acceptance and commitment therapy tries to increase one's psychological connection with one's thoughts and emotions. This makes people less frustrated, depressed, and anxious, resulting in fewer suicidal thoughts and behaviors.

Conflict of Interest

The authors of this study state that they have no conflicts of interest.

Ethical Approval

The ethical principles in writing the article have been observed according to the instructions of the National Ethics Committee and the COPE regulations.

Acknowledgment

The authors consider it necessary to thank all the students and individuals who participated in this research.

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