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The Effectiveness of Psychological Well-being Training on Negative Automatic Thoughts and Resilience of Female Adolescents with Rumination in Tehran

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Abstract

Background: While there is a strong link between rumination and internalizing psychopathology over the lifespan, the development of rumination is not well understood. This study aimed at investigating the effectiveness of psychological well-being training on negative automatic thoughts and resilience of female adolescents with rumination in Tehran.

Methods: The present study followed a quasi-experimental pretest-posttest design with a control group. The study population was all female adolescents with rumination in District 6, Tehran, Iran in 2018-2019. Sample of the study included 30 adolescent girls with rumination, referred to counseling centers and psychological services in Tehran. They were selected through convenience sampling and randomly assigned to experimental (n = 15) and control (n = 15) groups. The experimental group received psychological well-being interventions (10 one-hour training sessions, one session per week). Then, female adolescents with rumination in both groups underwent a posttest. The instruments used included the Negative Automatic Thoughts Questionnaire (ATQ-N, Ingram et al. 1995), and the Resilience Questionnaire (Connor and Davidson, 2003). The data were analyzed by SPSS software version 23.

Results: The results showed that 6.6% in the experimental group and 11.11% in the control group were 14 years old. Moreover, psychological well-being training was significantly effective in negative automatic thoughts (F= 50.89, P=0.001), and resilience (F= 1.24, P=0.001) of adolescents with rumination (p>0.05).

Conclusion: The 10-session Psychological well-being training was effective on negative automatic thoughts and resilience of adolescents with rumination in Tehran.

Key Words: Negative automatic thoughts, Psychological well-being, Resilience, Rumination.

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1- INTRODUCTION

Adolescence is a time of accelerated physical and mental growth and a period of transformation from infancy to adulthood. As a result, most psychologists regard it as a turbulent and chaotic time, as well as a time of exceptional physical, mental, and emotional capacity (1, 2). Erickson splits the stages of human development into eight stages in another description, the fifth of which includes puberty. Physical growth and mental and psychological maturity are more critical during puberty, and if the teenager will get through this period with the aid of his parents, he can avoid certain unfortunate accidents such as chronic ailments, a proclivity for anomalies, and styles. Avoid emotional, mood, social, and other conditions that endanger adolescents' welfare (3). All "psychologists" believe that adolescence is the most sensitive, critical, and important period of human development. In this period, the person tries to discover his identity, seeks independence and separation from childhood attachments; for this reason, in this period, adolescents do not have a stable mental state and usually the most behavioral problems occur for adolescents (4). Rumination is a significant susceptibility factor that causes depression and influences its length, according to the Response Styles Theory (5). Meditation has been linked to both depressive episodes and the persistence and aggravation of depressive symptoms in a significant number of empirical trials. Intrusive rumination focuses on the unfavorable consequences of the activities and affections associated with Post-traumatic stress disorder (PTSD) PTSD (6). According to some research, more emphasis on the negative side of life can lead to intrusive rumination; and there is a connection between intrusive rumination and automatic suicidal thinking (7).

People who ruminate on various cognitive and metacognitive elements, such as pessimistic random emotions, and psychological components, such as resilience, are in a different position from the normal community (8). They believe that when confronted by negative scenarios and emotions, they should employ mind management mechanisms (such as thought suppression) to regain complete control over their information processing systems (9). As a result, people who ruminate have a lot of pessimistic feelings. Negative random feelings in suicidal patients are brief, succinct evaluations of fractures (10). Those who are vulnerable to rumination have a mind that is continually disrupted by negative thoughts, which lead to more sadness and depression (11). In particular, it is hypothesized that relapse and recurrence of depression are caused by repetitive connections between depressive mood and pessimistic self-deprecating and futile thoughts, which lead to cognitive and neural adjustments (12). The endurance of individuals who suffer from rumination is another sensitive trait. The willingness to deal with challenges is referred to as resilience. Resilience is not an exit from problems; rather, it enables us to overcome obstacles, appreciate life, and deal better with pressures and stresses (13). Resilience is described as the desire to step on in the face of adversity, i.e., the ability to continue working and performing professional, social, competitive, and environmental responsibilities despite problems, tension, and anxiety (14). It also helps people protect themselves against psychological problems such as depression, anxiety, and anger (9).

Various methods have been used for rumination and cognitive and psychological components of these people. One of these types of methods is psychological well-being training. Ryff and Singer (2008) define that proper well-being includes positive emotions, mature

personality traits such as self-leadership, participation, self-fulfillment, life satisfaction, and personality traits such as hope, compassion, and courage. Self-awareness has also been cited as the key to proper well-being, based on the fact that the characteristics of well-being are diminished if they are not internalized, not experienced spontaneously, and people are not aware of themselves and their actions (15). In this regard, group pieces of training based on psychological well-being help people to have more meaningful psychological functions and to establish more intimate relationships with themselves, family, and society. It also causes trained people to experience higher levels of spontaneity, personal growth, and positive relationships with others (16).

The study of behavioral disorders in adolescence and related interventions is very important in this regard that these disorders significantly impair the daily functioning of adolescents. In addition, ignoring these problems may lead to more severe psychological disorders in adulthood (17). On the other hand, considering the large number of adolescents in the world who are considered as the driving force and dynamism of societies, it is worth attempting to recognize their attitudes, problems, and desires. Therefore, paying attention to their problems is like paying attention to the main national capital, and by describing the current situation, a bright and promising future can be drawn for them (18). In addition, it should be noted that in previous studies, the effectiveness of psychological well-being training on psychological traits of different people has been investigated and confirmed, but no research has been conducted on its effects on negative spontaneous thoughts and resilience of female adolescents with rumination. Therefore, the main purpose of this study was to determine the effectiveness of psychological well-being training on negative automatic thoughts and resilience of female adolescents with rumination in Tehran, Iran.

2- Materials and METHODS

2-1. Study design and population

This research is a quasi-experimental pretest-posttest study with a control group. Its statistical population comprises all female adolescents with rumination disorder who received counseling from treatment centers and psychiatric facilities in district 6, Tehran, Iran, in 2018-2019. The study sample included 30 adolescent girls with rumination disorder who were selected through convenience sampling, and were randomly assigned into the experimental and control groups; 15 participants in the control group and 15 in the psychological well-being training experiment. The standard for selecting 15 subjects in each group is based on current scientific literature, indicating the sufficiency of 15 individuals per group for the experimental research (19).

2-2. Inclusion and exclusion criteria

Inclusion criteria include having a minimum score for having a rumination based on their profile in the counseling center, declaration of satisfaction and readiness to participate in research, having no acute physical illness (according to their health record), having not received any psychological treatment in the past for emotional and academic problems, and no other acute or chronic mental illness (according to their counseling record). Criteria for leaving the research were having lost more than two sessions or not cooperating and not doing the assignments specified in the class.

2-3. Procedure

In order to conduct the research, first, adolescent girls who referred to counseling centers and psychological services (Rasash, Nahal, and first health) in District 6 of Tehran, for whom rumination disorder

was registered and met the necessary criteria to participate in the study, were selected. In the next step, negative automatic thoughts and the resilience questionnaires were administered to the subjects of both groups and the obtained scores were considered as pretest scores. Then, the experimental group underwent psychological well-being training intervention in 10 one-hour sessions of treatment, one session per week; however, the control group did not receive any intervention. The psychological well-being training intervention was performed as a group based on a treatment protocol, which is a summary of psychological well-being training sessions. A summary of the 10 sessions of treatment is provided in **Table 1**. At the end of the intervention, the adolescent girls were reevaluated with the mentioned questionnaires. In this study, the referred adolescents to the counseling centers and psychological services in District 6 of Tehran along with their accompanying parents were allowed to participate in the intervention program and were informed of all stages of the intervention. The control group was also assured that they will receive these interventions in two sessions after the completion of the research process. Finally, the psychological well-being training program was implemented in the experimental group. Psychological well-being training sessions were conducted by the first author of this study and a specialist (**Table 1**).

Table-1: Summary of psychological Well-being Training sessions (16)

Sessions description	
Session1	The first teaching session includes an overview of psychological well-being. Inquiries into participant's perceptions of what induces pleasure and emotional well-being.
Session 2	Self-acceptance training (how to accept ourselves with our positive and negative characteristics and how we can accept what we are and come to terms with our past and our mistakes and love ourselves).
Session 3	The second part of the discussion of the previous session: self-knowledge training (how to know ourselves and find the right attitude towards ourselves and get acquainted with our personality traits).
Session 4	Teaching positive communication with others (introducing the concept of communication and its types, familiarity with communication skills, and effective communication methods). Homework for the next session
Session 5	The second part of the discussion of the previous session: teaching optimism and positive thinking; and explaining that optimism and positive thinking play a role in creating positive relationships with others. Homework for the next session.
Session 6	The third part is related to the discussion of the fourth session: Teaching what emotional intelligence is, and how to increase our emotional intelligence. Discussing the question of why people with high emotional intelligence are more successful at communicating with others. Homework for the next session.
Session 7	Educate and introduce the concept of personal growth and that new experiences enhance personal growth. Homework for the next session.
Session 8	Independence and autonomy training (training the skills of trusting one's own opinion and the training of courage, training the skill of saying no and strengthening these skills in the subjects). Homework for the next session.
Session 9	Training to master the environment (how to manage your life, the conditions, and environment; and explain the benefits of on time management; and how to plan properly). Homework for the next session.
Session 10	Purposeful education in life (ability to find meaning, purpose, and orientation in life, explaining the benefits of purposefulness and setting goals, and prioritizing them). Examining the achievement of therapeutic goals.

2-4. Measuring tools: validity and reliability

a) Negative Automatic Thoughts Questionnaire (ATQ-N):

This questionnaire, developed by Ingram et al., is a tool for evaluating the frequency of negative self-statements for cognitive evaluation of self-disclosure in depression and has 30 items (20) (**Table 2**). Its scoring is based on a five-point Likert scale, with options awarded in the order of 1 to 5, never, sometimes, usually often, and always. Each person's total score is between 30 and 150. A score of 30-70 indicates low self-esteem negative thoughts with moderate intensity 71-109 and 110-150 indicates severe negative self-thoughts. The alpha cronbach's coefficient of 0.97, reported in a previous study, indicates that this questionnaire is highly reliable (21). Ingram et al. (1995) reported Cronbach's alpha of this questionnaire as 0.89 (20). In the present study, the Cronbach's alpha reliability coefficients of the subscales were as follows: personal incompatibility and tendency to change, 0.81; the reliability of negative self-concept and negative expectations, 0.69; low self-confidence, 0.78; and helplessness, 0.74. The reliability of the whole questionnaire was also estimated as 0.82.

Table-2: ATQ-N items related to different subscales

Items	Subscales
7, 10, 14, 20, 26	personal incompatibility and tendency to change
2, 3, 9, 21, 23, 24, 28	negative self-concept and negative expectations
17 and 18	low self-esteem
29 and 30	helplessness

b) The Connor-Davidson resilience scale (CD-RISC):

This questionnaire was developed in 2003 by Connor and Davidson (22). This questionnaire is a 25-item tool that measures resilience constructs on a 5-point Likert scale from zero to four. The minimum resilience score is zero and the maximum score is 100. Internal consistency, retest reliability, and convergent and divergent validity have been all acceptable. The reliability of this scale based on Cronbach's alpha has been reported to be 0.86 (22). Its validity in Iran has been confirmed by Khoshouei (23).

In the present study, Cronbach's alpha reliability of the resilience questionnaire was calculated as 0.80.

2-5. Data Analyses

In this study, two levels of descriptive and inferential statistics were used to analyze the data. At the level of descriptive statistics, frequency, frequency percentage, mean and standard deviation, and at the level of inferential statistics, the Kolmogorov-Smirnov test to check the normality of the distribution of variables, and Leven test to check the equality of variances were performed. Finally, a covariance analysis test (due to control of pre-test scores) was used to evaluate the effectiveness of psychological well-being training on negative spontaneous thoughts and resilience of adolescents with rumination. The statistical results were analyzed using SPSS-23 statistical software ($p>0.05$).

3- RESULTS

As can be seen in **Table 3**, 8.88% in the experimental group of psychological well-being training were 12 years old and 13.33% were also in the ninth grade.

Table-3: Frequency and percentage of age and level of education among research groups

Variables	Groups	F	%
12 years	Experimental	4	8.88
	Control	3	6.66
13 years	Experimental	4	8.88
	Control	5	11.11
14 years	Experimental	3	6.66
	Control	5	11.11
15 years	Experimental	4	8.88
	Control	2	4.44
Seventh grade	Experimental	4	8.88
	Control	5	11.11
Eighth grade	Experimental	5	11.11
	Control	7	15.55
Ninth grade	Experimental	6	13.33
	Control	3	6.66

F: frequency

The results presented in **Table 4** indicate that psychological well-being training led to a change in the mean scores of negative spontaneous thoughts and resilience of the research sample in the posttest phase, but the significance of these changes should be examined by inferential tests.

Table-4: Mean and standard deviation of negative automatic thoughts and resilience in experimental and control groups in pretest and posttest stages

Variables	Groups	Pretest	Posttest
		Mean ± SD	Mean ± SD
Negative Automatic Thoughts	Experimental	45.13±5.34	33.23±3.87
	Control	47.27±6.39	46.60±5.50
Resilience	Experimental	48.53±4.46	62.60±4.63
	Control	48.13±3.31	47.93±4.12

The first premise required to use the method of analysis of covariance is the premise that the distribution of scores in the sample groups in the community is normal. To test this hypothesis, Shapiro and Kolmogorov-Smirnov tests were used, the results of which are presented in **Table 5**.

According to **Table 5**, the mean scores of negative spontaneous thoughts and resilience scores in the pretest and posttest stages in the experimental (psychological well-being training) and control groups were normally distributed.

Therefore, analysis of covariance is relatively robust against the violation of some assumptions and its results can be trusted.

As presented in **Table 6**, the value of F obtained for Levene's test is not significant in the variables of negative spontaneous thoughts and tolerance. This lack of significance means that the assumption of homogeneity of variance of scores is observed.

Table-5: Results of Kolmogorov Smirnov and Shapiro-Wilk tests on the default normality of score distribution

Group	Variables	Experimental		Control	
		Kolmogorov Smirnov	P	Shapiro-Wilk test	P
Pre-test	Negative Automatic Thoughts	0.21	0.08	0.90	0.13
	Resilience	0.16	0.21	0.93	0.29
Post-test	Negative Automatic Thoughts	0.15	0.21	0.96	0.65
	Resilience	0.13	0.21	0.89	0.08

Table-6: Levene's test results to investigate the homogeneity of variance error of the post-test groups

Variables	F	DF1	DF2	P
Negative Automatic Thoughts	2.68	1	28	0.16
Resilience	0.04	1	28	0.89

F: F is between-groups variance divided by within-groups variance; DF: degree of freedom; P: Significant level

As demonstrated in **Table 7**, after controlling the pretest scores, there is a significant difference between the posttest scores negative automatic thoughts between the two groups (F= 50.89, P=0.001), and the people in the psychological well-being training obtained higher scores in the posttest than those in the control group. According to **Table 3**, after controlling the pre-test scores, there is a significant difference between scores of resilience between the two groups (F= 1.24, P=0.001), and the people in the psychological well-being training group obtained higher scores than those in the control group.

Table-7: Analysis of covariance on the effect of group membership (psychological well-being training) on negative automatic and resilience in female adolescents with rumination

Variables		SS	DF	MS	F	P
Negative Automatic Thoughts	Pre-test	3369.92	1	3369.92	29.70	0.001
	group	584.33	1	584.33	50.89	0.001
	Error	340.09	27	11.09	-	-
Resilience	Pre-test	384.22	1	384.22	65.75	0.27
	group	11.45	1	11.45	1.24	0.001
	Error	255.3	27	9.44	-	-

SS: Sum of Squares; DF: degree of freedom; MS: Mean squares; F: F is between-groups variance divided by within-groups variance. P: Significant level.

4- DISCUSSION

The aim of this study was to determine the effectiveness of psychological well-being training on negative self-efficacy and resilience in adolescent girls with rumination. The results showed that psychological well-being training could lead to a significant difference in the mean scores of dependent variables (negative spontaneous thoughts

and resilience of adolescents with rumination) in the posttest stage. Therefore, it is concluded that by controlling the intervention variables, the mean scores of negative spontaneous thoughts and resilience in adolescent girls with rumination have been significantly improved after attending the psychological welfare training.

The results of the present study are in line with the research of Fallahian et al. (16); Sagoli and DiCaroli (17) on the relationship between psychological well-being and resilience in middle and late adolescence. These researchers have emphasized the prominent role of psychological well-being in increasing mental health and psychological components.

Explaining the above findings, it can be said that psychological well-being training, due to its characteristics, increases the psychological components of trained people, because psychological well-being is the same as mental health, a healthy person is able to cope with and regulate repeated pressures. Everyday life is acceptable in a way (26). On this basis, it can be said that psychological well-being training helps people to find a way to achieve mental health by reducing physical complaints, obsession, and compulsion, sensitivity, depression, anxiety, aggression, morbid fear, paranoid thoughts, psychosis, and overall symptom coefficient, which Provide discomfort and a combination of pathological symptoms (16).

Such an achievement for psychological well-being training is not unexpected, because its content is generally focused on mental health. To understand the mechanism of the effect of psychological well-being training on self-esteem, hardiness, and psychological well-being, a look at the training axes in this approach will be somewhat informative (15). The most important educational topics in the field of psychological well-being training in this study have focused on self-acceptance, positive relationships with others, emphasis on responsibility in personal growth, emphasis on purposefulness in life, environmental mastery, and independence. These axes are taken from authoritative texts in the field of psychological well-being, each of which has been shown in various studies to be an active element in shaping the feeling of psychological well-being in individuals. Therefore, the sum of these factors cause people who are trained in psychological well-being to show a significant improvement in their psychological components (26).

In another explanation, it can be argued that girls with rumination, experiencing adolescence as an important period of human development, experience many neurobiological, hormonal, physiological, and social changes that cause stress and sometimes depression (8-27). In this period of development, stress is considered as a relationship between the person and the environment, as a threat to the well-being and personal resources (28), which can have a negative and permanent effect on adolescent psychological components such as depression.

Accordingly, psychological well-being training can teach emotional and cognitive reactions to adolescents through which they can achieve a positive perception of the characteristics and ways in which they interact with the world around them. Gaggioli et al. (28); Perion et al. (29) states that psychological well-being training causes a person to take steps towards striving to realize their true potential. The feeling of well-being resulting from psychological well-being training has cognitive components that include life satisfaction. Life satisfaction also refers to a judgment-cognitive process in which individuals generally evaluate the quality of life based on a set of criteria.

Accordingly, when a person experiences higher psychological well-being, his life satisfaction and consequently his resilience also increases (28, 29).

Positive cognitions are among the components considered in wellbeing training. Positive cognition means having an understandable and controllable life, interest in work and activity, positive self-concept means the ability to prove oneself and make constructive interpersonal relationships. Therefore, when adolescent girls with rumination are trained in psychological well-being, they experience higher cognitive and metacognitive acceptance, acquiring the ability to accept the present situation with all its challenges; and despite the current problems, try to achieve their goals with hope for the future (15-16).

4-1. Study Limitations

The present study was conducted on adolescents with depressive disorder. Care should be taken in extending the results to other groups. The statistical population of this study included adolescent girls with rumination disorder in Tehran. Therefore, in generalizing the results of this research to other cities, it is necessary to examine the role of cultural differences. Another limitation is the use of self-report questionnaires, the responses to which can be affected by the person's mental and physical condition.The small number of subjects was another limitation in the present study. Failure to implement the follow-up phase was another limitation that was not implemented due to lack of time. The last but not the least, was the lack of control over variables affecting negative spontaneous thoughts and resilience of female adolescents with rumination disorder.

5- CONCLUSION

Negative random thinking and endurance of adolescents with rumination in Tehran were improved by a ten-session psychological well-being instruction (a one-hour training session per week).

6- ETHICAL CONSIDERATION

The condition of anonymity was met for each participant in order to avoid possible negative consequences for them. There was no obligation on the part of the researcher to participate. The results obtained were completely confidential and only used for research purposes. The discussions in the sessions were only in line with the content of the treatment. All participants were aware of the purpose of holding these sessions and answering the questions. The Ethics Review Board of Tehran University of Science and Research accepted the current study with the following code: IR.STRUT. REC. 018/98.

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