


The Impact of Stress Inoculation Management Training on Negative Automatic Thoughts, Psychological Distress, and Cognitive Fusion among Students Preparing for University Entrance Exam

Shirin. Khodamoradi¹, Saeedehsadat. Hosseini^{2*}, Hassan. Amiri²

¹ PhD Student, Department of General Psychology, Kermanshah Branch, Islamic Azad University, Kermanshah, Iran

² Assistant Professor, Department of Psychology, Kermanshah Branch, Islamic Azad University, Kermanshah, Iran

* Corresponding author email address: Saeedeh_hosseini@iauksh.ac.ir

Article Info

Article type:

Original Research

How to cite this article:

Khodamoradi, S., Hosseini, S., & Amiri, H. (2024). The Impact of Stress Inoculation Management Training on Negative Automatic Thoughts, Psychological Distress, and Cognitive Fusion among Students Preparing for University Entrance Exam. *Journal of Adolescent and Youth Psychological Studies*, 5(4), 11-19.

<http://dx.doi.org/10.61838/kman.jayps.5.4.2>



© 2024 the authors. Published by KMAN Publication Inc. (KMANPUB), Ontario, Canada. This is an open access article under the terms of the Creative Commons Attribution-NonCommercial 4.0 International (CC BY-NC 4.0) License.

ABSTRACT

Objective: One of the approaches that can lead to changes in reducing psychological distress, negative automatic thoughts, and cognitive fusion among students preparing for university entrance exam is stress inoculation management. Therefore, the purpose of this study is to investigate the effect of stress inoculation management training on negative automatic thoughts, psychological distress, and cognitive fusion among students preparing for university entrance exam.

Methods and Materials: This research is an applied study in nature and quasi-experimental in implementation, using a pre-test and post-test design with a control group. The population consisted of all female students preparing for university entrance exam in Kermanshah in the year 2023. From this population, 60 participants were selected using a convenience sampling method into two experimental groups and one control group. The research tools included the Kessler Psychological Distress Scale (Kessler et al., 2003), the Negative Automatic Thoughts Questionnaire (Kendall & Hollon, 1980), and the Cognitive Fusion Questionnaire (Rachman & Shafran, 1996). Data analysis was performed using multivariate covariance analysis.

Findings: The results indicated that the stress inoculation management intervention had a significant effect on the psychological distress of the students preparing for university entrance exam in the post-test phase ($p < 0.01$). The intervention also significantly impacted negative automatic thoughts ($p < 0.01$) and cognitive fusion ($p < 0.01$) in the post-test evaluations.

Conclusion: Stress inoculation management training is effective in impacting negative automatic thoughts, psychological distress, and cognitive fusion among students preparing for university entrance exam.

Keywords: Stress Inoculation Management Training, Negative Automatic Thoughts, Psychological Distress, Cognitive Fusion, Students Preparing for University Entrance Exam.

1. Introduction

Each year in the national university entrance exam, many students successfully achieve top ranks; thus, achieving these ranks is definitely not impossible for you either, and one can indeed obtain a good result and ranking in the national exam. However, achieving such a result requires significant motivation, perseverance, and effort (Teimourkhani et al., 2022). Today, due to various advancements in science and concurrent changes in educational goals, schools have increasingly focused on transmitting scientific information and facts; however, with the advent of the post-industrial and information age, due to characteristics such as knowledge explosion, rapid transformation and change in scientific findings, the presence of intelligent machines in education, and most importantly, the uncertainty of scientific knowledge, it is neither possible nor necessary to transmit all scientific findings. For this reason, educational experts and curriculum planners recommend fostering and strengthening scientific methods and attitudes instead of merely transferring scientific facts, and emphasize the process over the reproduction of scientific facts (Asadi et al., 2013).

When students with a positive automatic outlook adopt such beliefs and thoughts, they will experience logical and constructive outcomes and exhibit normative personality and behavior. Logical outcomes lead to appropriate adjustment among these students. However, when students harbor negative automatic thoughts and beliefs, they suffer from illogical and irrational outcomes. In this case, the individual experiences emotional and behavioral turmoil (Daly & Robinson, 2021). Nevertheless, the behaviors and emotions of the students are assumed to depend on their beliefs and attitudes, and behavioral or emotional consequences are largely independent of events and occurrences. This means that their emotional and behavioral reactions are not exactly aligned with the events that occur but are rather consistent with their perceptions and understanding of these events. It can be said that the belief system of the students is a very important part of their personality, which can influence various aspects of their personalities (Deyo, 2007).

One of the factors that can distress students preparing for university entrance exam is psychological distress. This condition is one of the types of mental disorders in which the patient's activities are significantly reduced, and in fact, they lack the motivation to perform many tasks (James et al., 2015). The disturbed individual experiences a reduction in

energy and life skills, and their concentration significantly decreases. Sometimes they are aggressive and at other times hopeless. The sense of guilt in these individuals is very strong. In addition to the fact that the patient falls short of their life goals, causing a reduction in social and productive activities, this also inflicts a significant blow to the economy of society (Muris et al., 2005). In fact, this disorder manifests in a set of symptoms (syndrome) that based on the quantity, quality, and duration of these symptoms, it is possible to diagnose that the individual has developed a form of distress. However, it should be noted that this disorder manifests as a syndrome, and it is not possible to recognize the distress with just one symptom (KhojastehMehr et al., 2013; Morgan et al., 1995).

Thus, cognitive preoccupation with negative moods and other depressive symptoms are thoughts and beliefs that repeatedly draw an individual's attention to negative feelings, the nature, and the outcomes of these feelings (Wilkinson & Goodyer, 2008). Patients involved in cognitive preoccupation think about the causes and consequences of depressive symptoms without taking any action to solve their problems and do not perform any effective work to escape from these symptoms. Based on this, some believe that cognitive preoccupation is a useful strategy for gaining insight, identifying causes, and triggers of depression and provides a suitable basis for problem-solving, as well as preventing future errors and helping individuals prioritize their affairs (Asadi et al., 2013; Muris et al., 2005).

Usually, when individuals feel they can do something about a problem, they use problem-focused coping, and if they perceive the situation as beyond their capabilities, they resort to emotion-focused coping. However, they often use a combination of both methods, which results in a more certain outcome. For example, when about to meet an important person, maintaining composure (emotion-focused) and using effective communication skills (problem-focused) are employed to deal with the problem (KhojastehMehr et al., 2013; Vaziri & LotfKashani, 2015). Similarly, preparing for an exam session requires both control of emotions and fear, as well as studying, practicing, and repeating the exam topic, and possibly using various specific coping strategies to achieve the goal. In this regard, recognizing efficient and inefficient coping strategies and their specific places greatly helps us when needed to make the best use of the related techniques (Mansouri et al., 2012). The coping process is primarily the cognitive and behavioral activities and actions of an individual to manage stress. Stone et al. (1999) define

coping as the conscious effort to deal with stress-inducing demands. In this coping, learned behavioral responses reduce stress by limiting the significance of a threatening or unpleasant situation (demands causing stress). On the other hand, Compas (2001) believes that coping is merely a strategy and not necessarily equivalent to success in reducing stress and helplessness. According to Compas, coping refers to adjusted and unadjusted actions in dealing with stressors (Besharat et al., 2021).

One of the ways that can lead to change in reducing psychological distress, negative automatic thoughts, and cognitive fusion among students preparing for university entrance exam is stress inoculation management training (Khosravi et al., 1387). Our view of life is a combination of feelings, thoughts, beliefs, and attitudes we hold. If we wish to change our negative outlook to a positive one, the first essential step on this path is to identify and distinguish between our feelings, thoughts, and beliefs. We should refrain from thinking about negative outcomes because whatever we allow into our minds will grow there. Therefore, the main issue in this research is the effectiveness of stress inoculation management training on negative automatic thoughts, psychological distress, and cognitive fusion among students preparing for university entrance exam. In fact, the main research question is whether stress inoculation management training is effective in influencing negative automatic thoughts, psychological distress, and cognitive fusion among students preparing for university entrance exam?

2. Methods and Materials

2.1. Study Design and Participants

This research is an applied, quasi-experimental study employing a pre-test and post-test design with a control group. Experimental and control groups will be selected via convenience sampling. A pre-test will be conducted on both groups before the experimental interventions, followed by a post-test at the end of the intervention. The statistical significance of the differences between the pre-test and post-test results of each group will be examined. Thus, stress inoculation management training is implemented as the independent variable to determine its impact on negative automatic thoughts, psychological distress, and cognitive fusion among the students, which are the dependent variables.

The sample in this study consists of all female students preparing for university entrance exam in Kermanshah in

2023. From this population, 40 individuals will be selected using convenience sampling into two experimental groups and one control group. The sample size is chosen based on the following criteria: (1) considering statistical power, an alpha level of 0.05, and an effect size of 0.8 and (2) the number of group members in group intervention programs with standard treatments and various therapeutic approaches is 15, planning for a potential dropout rate, 20 individuals per group were selected.

Data collection was carried out after coordinating with the administrators of secondary girls' schools in District 4 of Qom. Among the female students in the eleventh and twelfth grades, after explaining the purpose of the research, how to complete the questionnaires, and assuring the confidentiality of their information and obtaining informed consent for participation in the research, 60 girls were selected and divided into three groups of 20. Subsequent sessions were held where therapeutic programs were presented to the two experimental groups, but no intervention was applied to the control group.

2.2. Measures

2.2.1. Psychological Distress

This questionnaire, developed by Kessler et al. (2003) with 10 items, is used in various studies to identify mood and anxiety disorders. It is more effective with a 10-item format. Each item is scored on a 5-point scale (0=never to 4=always), with the highest possible score being 50. Vaziri and Lotfi Kashani (2019) found a Cronbach's alpha reliability of 0.83 for the Kessler questionnaire in a research study (Vaziri & LotfiKashani, 2015).

2.2.2. Cognitive Fusion

This scale was created by Rachman and Shafran in 1996. It consists of 19 questions on a 5-point scale (completely agree to completely disagree), with scores from 1 to 4 and zero respectively. It includes three subscales for potential thought-action fusion for oneself (3 items), others (4 items), and moral (12 items). In the revised Thought-Action Fusion Scale, eight subscales have been added to the original TAF scale, with two entirely new subscales and six that are revised versions of the original scales. The new subscales measure beliefs that positive events for others can be increased by one's thoughts (4 items) and that harm can be prevented by thoughts (3 items). The other six subscales measure the value and responsibility one feels regarding

each type of negative, positive, and harm-avoidant thoughts. In fact, in this TAF scale, probability for others is divided into three types of thinking—negative, positive, and harm-avoidant—then the probability, value, and responsibility that the individual attributes to each category of thoughts are assessed separately in 9 subscales. These 9 subscales together with the moral and probable TAF subscales for oneself make up a total of 11 TAF-R subscales. The total number of items in this new scale is 27, but from item 16 to 27, each item is divided into two parts, and each part is scored separately. The psychometric properties of this scale in Iran were evaluated by Pourfarokh and Mohammadi (2020), and the exploratory factor analysis using Varimax rotation indicated the presence of 8 factors that explained 80% of the total variance of the scale. The factors include moral TAF, responsibility for positive thoughts, likelihood of negative events, likelihood of positive events, responsibility for negative thoughts, responsibility for thoughts preventing danger, likelihood of preventing danger with thought, and likelihood of thoughts about oneself. Reliability of the scale was assessed using internal consistency methods, retest over a 4-week period on a sample of 35 individuals, and split-half methods. Reliability coefficients for the entire scale were 0.81, 0.61, and 0.82 respectively (Pourfarokh et al., 2020).

2.2.3. Negative Automatic Thoughts

This questionnaire, developed by Kendall and Hollon (1980), consists of 30 questions on a 5-point scale ranging from strongly disagree to strongly agree. Each option scores from 1 to 5. After responding to all questions, the scores are summed. Nikkiah and colleagues assessed the validity and reliability of this questionnaire, calculating the reliability coefficient for the entire questionnaire through correlation coefficient and then determined the internal consistency of the questionnaire items. Emphasis on general analysis methods also led to the acceptance of all ten factors of the questionnaire in a confirmative factor analysis (Farhadi Navarudi et al., 2020).

2.3. Intervention

2.3.1. Stress Inoculation Management

The training sessions for the experimental group were scheduled for 2 days a week for 5 weeks, each session lasting 2 hours. The content of the stress inoculation management intervention sessions is as follows (Hasanzadeh et al., 2013):

Session 1: Introduction and Orientation

The first session serves as an introduction and orientation for the participants. The session begins with an introduction of all members to foster a sense of community and mutual support. The goals of the stress inoculation training and the rules of group interaction are clearly outlined to establish expectations. The concept of stress is defined, and its symptoms and consequences are discussed to build a common understanding among the participants. This foundational knowledge sets the stage for the more specific techniques that will be covered in subsequent sessions.

Session 2: Relaxation and Tension Release Training

In the second session, participants learn about body relaxation and tension release techniques. The focus is on practical exercises such as deep breathing, progressive muscle relaxation, and guided imagery that participants can use to manage physical symptoms of stress. The aim is to equip the students with tools to reduce their physiological stress response, enhancing their ability to remain calm under pressure.

Session 3: Introduction to Cognitive Concepts

The third session delves into cognitive concepts, particularly the role of thoughts in generating stress. Participants explore the relationship between thoughts, feelings, and behaviors to understand how negative thinking patterns can influence their emotional state and actions. The session introduces the characteristics of negative automatic thoughts and common cognitive distortions, laying the groundwork for cognitive restructuring techniques that will be taught in later sessions.

Session 4: Coping with Negative Thoughts

This session teaches participants strategies to counter negative thoughts. Techniques such as cognitive restructuring are introduced, where participants learn to identify and challenge irrational or harmful thoughts and replace them with more constructive and realistic ones. This session is crucial for empowering the students to manage their internal dialogues, which can significantly impact their stress levels.

Session 5: Guided Self-Talk Training

The fifth session focuses on guided self-talk and its role in stress generation. Participants learn about the impact of negative self-statements and how to alter these narratives through positive self-talk techniques. The session emphasizes the importance of self-compassion and maintaining a supportive internal voice to enhance emotional resilience.

Session 6: Focus and Attention Redirection Techniques

In the sixth session, participants are taught how to maintain focus and use attention redirection techniques to manage distractions and reduce stress. Skills such as mindfulness and concentrating on the present moment are practiced to help students avoid rumination on past events or anxiety about future outcomes, which are common triggers of stress.

Session 7: Problem-Solving Training

The seventh session covers problem-solving skills. Participants learn a systematic approach to identifying, analyzing, and solving problems, which helps reduce stress by providing a clear framework for dealing with challenges. Emphasis is placed on developing practical solutions and considering multiple perspectives to foster a proactive rather than reactive approach to stressors.

Session 8: Anger Management Skills

In this session, participants receive training in anger management. They explore the sources of anger, its effects on stress levels, and techniques for expressing anger in healthy and constructive ways. The training includes communication skills, such as assertiveness and conflict resolution, to help participants deal with interpersonal stressors effectively.

Session 9: Practice of Learned Skills

The ninth session is dedicated to practicing the skills learned in previous sessions. This consolidation phase allows participants to refine their techniques under the guidance of the facilitator, ensuring they understand how to

apply these skills in various scenarios. Role-playing and simulation exercises are used to reinforce learning and boost confidence.

Session 10: Application and Closure

The final session focuses on applying all the learned skills in stress-inducing situations. Participants review the key concepts and techniques from the entire program and discuss how to integrate these into their daily lives. The session ends with a summary of the course content and a formal closure, celebrating the participants' progress and discussing strategies for maintaining stress management practices independently.

2.4. Data analysis

For statistical data analysis, descriptive statistics including frequency, percentage, mean, standard deviation, and inferential statistics including multivariate and univariate analysis of variance at a 0.05 level were employed using SPSS software version 23.

3. Findings and Results

In the current study, 40 participants were involved, with the experimental group having an average age of 17.87 (SD = 4.68) and the control group an average age of 17.92 (SD = 4.76). All participants were on the verge of taking the university entrance examination.

Table 1
Means and Standard Deviations for Research Variables

| Variable | Group | Number | Pre-test Mean | Pre-test SD | Post-test Mean | Post-test SD |
|-----------------------------|-----------------------------|--------|---------------|-------------|----------------|--------------|
| Psychological Distress | Stress Inoculation Training | 20 | 33.87 | 0.34 | 23.05 | 0.69 |
| | Control | 20 | 32.67 | 1.11 | 32.19 | 0.76 |
| Negative Automatic Thoughts | Stress Inoculation Training | 20 | 105.23 | 2.86 | 88.57 | 1.19 |
| | Control | 20 | 104.12 | 2.25 | 104.76 | 2.17 |
| Cognitive Fusion | Stress Inoculation Training | 20 | 58.11 | 3.34 | 44.65 | 1.72 |
| | Control | 20 | 58.00 | 3.64 | 57.13 | 2.77 |

According to [Table 1](#), the mean scores (and standard deviations) for psychological distress in the stress inoculation management group were 33.87 (SD = 0.34) in the pre-test and 23.05 (SD = 0.69) in the post-test. The mean scores (and standard deviations) for negative automatic thoughts in the stress inoculation management group were 105.23 (SD = 2.86) in the pre-test and 88.57 (SD = 1.19) in the post-test. The mean scores (and standard deviations) for cognitive fusion in the stress inoculation management group were 58.11 (SD = 3.34) in the pre-test and 44.65 (SD = 1.72)

in the post-test. These results indicate significant changes from pre-test to post-test in the experimental group, while the control group showed no significant changes.

This study utilized the Kolmogorov-Smirnov test before conducting the analysis of variance to examine the assumption of normal distribution of scores in the population, which confirmed that the distribution of scores was normal as p-values were greater than 0.05 ($P > 0.05$), allowing the use of analysis of variance. The Box's M test was also used to check the assumption of homogeneity of

variance-covariance matrices, and since the significance level obtained was greater than 0.05, the data did not violate this assumption, indicating that the use of covariance analysis in this study was appropriate. Levene's test

confirmed homogeneity of variances across all dependent variables due to random assignment of the two groups and an adequate sample size, enabling the use of analysis of variance for hypothesis testing.

Table 2

Repeated Measures ANOVA Results for Psychological Distress Across Three Measurements

| Research Variables | Source of Variation | F-Statistic | Significance | Effect Size | Power |
|------------------------|---------------------|-------------|--------------|-------------|-------|
| Psychological Distress | Group | 24.720 | 0.001 | 0.371 | 0.999 |
| | Time | 5.611 | 0.007 | 0.211 | 0.833 |
| | Interaction | 6.380 | 0.001 | 0.371 | 0.908 |

The results in Table 2 indicate that the stress inoculation management intervention significantly changed the scores of psychological distress between the two groups across three

measurements ($F = 24.720$; $P = 0.001$), meaning the intervention had a significant effect on improving psychological distress.

Table 3

Repeated Measures ANOVA Results for Cognitive Fusion Across Three Measurements

| Research Variables | Source of Variation | F-Statistic | Significance | Effect Size | Power |
|--------------------|---------------------|-------------|--------------|-------------|-------|
| Cognitive Fusion | Group | 40.844 | 0.001 | 0.660 | 0.865 |
| | Time | 175.594 | 0.001 | 0.807 | 0.880 |
| | Interaction | 53.995 | 0.001 | 0.720 | 0.865 |

The results in Table 3 indicate that the stress inoculation management intervention significantly changed the scores of cognitive fusion between the two groups across three

measurements ($F = 40.844$; $P = 0.001$), meaning the intervention had a significant effect on improving aspects of cognitive fusion.

Table 4

Repeated Measures ANOVA Results for Negative Automatic Thoughts Across Three Measurements

| Research Variables | Source of Variation | F-Statistic | Significance | Effect Size | Power |
|-----------------------------|---------------------|-------------|--------------|-------------|-------|
| Negative Automatic Thoughts | Group | 4.989 | 0.001 | 0.478 | 0.999 |
| | Time | 35.017 | 0.012 | 0.193 | 0.786 |
| | Interaction | 17.645 | 0.005 | 0.457 | 0.996 |

The results in Table 4 show that the stress inoculation management intervention significantly changed the scores of negative automatic thoughts between the two groups across three measurements ($F = 4.989$; $P = 0.001$), indicating a significant improvement in negative self-future thoughts due to the intervention.

management training effectively impacted the negative automatic thoughts of these students. The primary finding of this study demonstrated that the post-test phase of the implemented intervention, namely stress inoculation management, was effective in reducing negative automatic thoughts and improving them. Furthermore, the results showed that there was a statistically significant difference in the effectiveness of two protocols in improving negative automatic thoughts, meaning that the stress inoculation management method had a greater impact on reducing negative automatic thoughts compared to the control. Thus, the first hypothesis of the current study is confirmed.

4. Discussion and Conclusion

The aim of this research was to determine the impact of stress inoculation management training on negative automatic thoughts, psychological distress, and cognitive fusion among students preparing for university entrance exam. The results indicated that stress inoculation

Ahmadzadeh et al. (2019) corroborate the current findings by showing that stress inoculation management

therapy was effective in reducing negative automatic thoughts among students. The explicit goal in stress inoculation management is to reduce the effort for internal control, experience avoidance, enhance behavioral control, and foster a willingness to experience a wide range of emotions (Ahmadzadeh et al., 2019). Research findings indicated that increasing behavioral control and willingness to experience a broad range of emotions led to a reduction in negative automatic thoughts in students. Stress inoculation management encourages students to face failure and stress in life and, through the process of acceptance, helps them to adopt an accepting stance towards themselves and life challenges, moving away from negativity. Since the aim of stress inoculation management is not to change fundamental beliefs, thoughts, or emotions but rather to help students manage life stresses and pressures despite disruptions, it has reduced negative automatic thoughts by changing how the sample individuals respond to problems and confront issues, which can consequently affect their psychological well-being. Employing a stress inoculation management approach leads to enhanced positive traits and psychological well-being and results in students experiencing less social anxiety. On the other hand, stress inoculation management teaches individuals that pain and conflict exist in life, and while students accept and experience failure and become familiar with the true nature of thoughts and mental stories with strategies of detachment and acceptance of thoughts and unpleasant feelings, they come to understand life values.

The other finding of the present study showed that the post-test phase of the implemented intervention, namely stress inoculation management, was effective in reducing psychological distress and improving it, and there was a statistically significant difference in the effectiveness of two methods in improving psychological distress, meaning that the stress inoculation management method had a greater impact on psychological distress. Therefore, the second hypothesis of this study is confirmed. This current finding regarding the positive effect of stress inoculation management aligns with the results of some previous studies (Gharagozloo et al., 2018; Shahbazfar et al., 2021). In working with students in the stress inoculation management approach, change occurs through work on issues such as experience avoidance, cognitive fusion, domination of the future or past, lack of explicit values. Importantly, in this approach, acceptance does not mean accepting painful conditions imposed by the external environment; rather, the emphasis on the concept of acceptance in this approach is the individual's willingness to accept painful internal

experiences and, instead of avoiding these experiences, necessarily face them. Although facing these painful experiences is painful, accepting the experiences and confronting the phenomenon helps the individual to face life's challenges in a more constructive manner. Acceptance can be created through contact with the present. Generally, all functional processes of the stress inoculation management approach are based on the present and focus on the current state. Stress inoculation management, by working on factors that create psychological distress such as mental barriers, expectations, vague values, disconnection from the present, and efforts to avoid and antidote them, can lead to a reduction in psychological distress. Stress inoculation management through self-metaphors helps students achieve detachment and not get involved in their mental productions. The use of cognitive detachment techniques can be useful for creating distance between thoughts arising from maladaptive patterns, as these thoughts lead students toward familiar avoidance behaviors and compel them to engage in activities that result from confusion, conflict, alienation from each other, and uncontrolled growth of relationships (Hasanzadeh et al., 2013). Cognitive detachment helps students separate from thoughts arising from old maladaptive patterns, ensuring that these thoughts do not hinder joint activities and value-driven interactions among students. Stress inoculation management increases students' awareness against stressful experiences, so the higher the students' ability for full awareness, openness to their experiences, and action based on their values, the higher their quality of life will be, and also, by fully engaging with life and allowing their values to guide them, they can experience a more purposeful life and lower psychological distress (Farhadi Navarudi et al., 2020).

An explanation that can be offered regarding the effectiveness of the stress inoculation management approach on the psychological distress of the sample individuals in the present research is that the concepts and interventions of this approach can be applied both individually and in groups, and in the environments of counseling and psychotherapy centers. Generally, this finding from the present research aligns with the results of some previous studies (Hasanzadeh et al., 2013). Also, in explaining the effectiveness of stress inoculation management on psychological distress, it can be said that psychological distress in students leads to the loss of problem-solving thinking, their problems become deeper and more complex day by day. However, in stress inoculation management interventions, the formation and increase of interpersonal processing occur, individuals gain

a metacognitive perspective both from their way of speaking and the experiences they gain from each other. To the extent that most scientific reports have shown that this awareness leads to fundamental changes in communication methods, problem-solving, which reduces their psychological distresses.

The effectiveness of stress inoculation management training on the cognitive fusion of students preparing for university entrance exam is also confirmed by the final finding of this study, which showed that the post-test phase of the implemented intervention, namely stress inoculation management, was effective in reducing cognitive fusion and improving it, and there was a statistically significant difference in the effectiveness of two methods in improving cognitive fusion, meaning that the stress inoculation management method had a greater impact on cognitive fusion. Therefore, the third hypothesis of this study is confirmed. KhojastehMehr et al. (2013) also demonstrated in line with the current study that stress inoculation management was effective in reducing symptoms of depression and cognitive fusion among disturbed students. In fact, the way cognitive fusion of students in the etiology of distress and individual pathology, in the continuity of distress and disorder, recurrence or maintaining therapeutic advancements, and prognosis of treatment is effective. On the other hand, it should be said that cognitive fusion plays an important role in self-disclosure, empathetic responses, and compassionate behaviors (KhojastehMehr et al., 2013). Another potential explanation that can be offered is that this approach teaches students to adopt methods to come closer to each other despite individual differences. From this perspective, considering individual needs and differences in this area has been taken into account in the new formulations of the stress inoculation management approach, and strategies are taught to adapt to these conditions and increase the tolerance of students. It can be said that individuals' awareness of these differences increases their understanding of each other and causes individuals to examine their emotional and behavioral reactions to these differences and, while validating these differences, have more emotional control.

5. Limitations & Suggestions

The limitations mentioned in the current study include: in this research, self-report tools (questionnaire) were used, and this may have caused fatigue in the subjects and reduced their accuracy and somewhat distorted their responses. Also,

because this study was conducted among a population of students, caution should be exercised in generalizing the findings to other married women with marital problems and issues and also to young men. The lack of a follow-up phase was another limitation of this research. Therefore, it is recommended that a follow-up phase be conducted in future research. It is suggested that the effectiveness of the stress inoculation management method on other psychological constructs such as academic burnout and academic self-regulation and compared with the results of other psychotherapies especially reality therapy by Glasser and emotion-focused approaches. It is also suggested that in future research, in addition to self-report tools, interviews be used for data collection.

Acknowledgments

We would like to express our appreciation and gratitude to all those who cooperated in carrying out this study.

Declaration of Interest

The authors of this article declared no conflict of interest.

Ethics Considerations

The study protocol adhered to the principles outlined in the Helsinki Declaration, which provides guidelines for ethical research involving human participants.

Transparency of Data

In accordance with the principles of transparency and open research, we declare that all data and materials used in this study are available upon request.

Funding

This research was carried out independently with personal funding and without the financial support of any governmental or private institution or organization.

Authors' Contributions

All authors contributed equally.

References

- Ahmadzadeh, L., Vaezi, M., Sodagar, S., Bahrami Hidaji, M., & Golmohammad Nazhad, G. R. (2019). The Effect of Acceptance and Commitment Therapy Adopted for Couples Compared with Integrative Couple Therapy on Marital Conflicts of Couples with Breast Cancer. *Iranian Journal of*

- Breast Diseases*, 12(3), 47-59.
<https://www.magiran.com/paper/2046149>
- Asadi, S. M., A., Abedini, M., Poursharifi, H., & Nikokar, M. (2013). The Relationship between Intolerance of Uncertainty and Rumination with Worry on Student Population. *Journal of Clinical Psychology*, 4(4), 83.
<https://www.magiran.com/paper/1109602>
- Besharat, M. A., Jafari, F., & Gholam Ali Lavasani, M. (2021). Predicting symptoms of anxiety and depression based on satisfying basic psychological needs. *Rooyesh-e-Ravanshenasi*, 10(1), 25-34.
<https://www.magiran.com/paper/2261400>
- Daly, M., & Robinson, E. (2021). Psychological distress and adaptation to the COVID-19 crisis in the United States. *Journal of psychiatric research*, 136, 603-609.
<https://doi.org/10.1016/j.jpsychires.2020.10.035>
- Deyo, M. (2007). *Mindfulness and rumination: Does mindfulness training lead to reductions in the ruminative thinking associated with depression?* Pacific Graduate School of Psychology.
<https://search.proquest.com/openview/54e960a7e5dff95fb4a9b5eeb5fd13c/1?pq-origsite=gscholar&cbl=18750>
- Farhadi Navarudi, S., Tahmorsi, N., & Sedaghat, M. (2020). The effectiveness of mindfulness-based therapy (MBCT) on negative spontaneous thoughts and coping strategies to avoid and perceived stress of entrance exam candidates with physical symptoms. *Journal of Adolescent and Youth Psychological Studies*, 1(1), 177-189.
<https://www.magiran.com/paper/2538475>
- Gharagozloo, N., Moradhaseli, M., & Atadokht, A. (2018). Comparing the effectiveness of face to face and virtual Cognitive-behavioral Couples Therapy on the Post-traumatic stress disorder in Extra-Marital Relations. *Counseling Research & Developments*, 17(65), 187-210.
<https://www.magiran.com/paper/1848532>
- Hasanzadeh, L. M., Tarkhan, M., & Taghizadeh, M. (2013). Effectiveness of stress inoculation training on perceived stress in pregnant women with infertility. *Journal of Holistic Nursing And Midwifery*, 23(2), 27-34.
<https://www.magiran.com/paper/1184201>
- James, K., Verplanken, B., & Rimes, K. A. (2015). Self-criticism as a mediator in the relationship between unhealthy perfectionism and distress. *Personality and individual differences*, 79, 123-128.
<https://doi.org/10.1016/j.paid.2015.01.030>
- KhojastehMeh, R., Shiralinia, K., Rajabi, G., & Beshlideh, K. (2013). The Effects of Emotion-Focused Couple Therapy on Depression Symptoms Reduction and Enhancing Emotional Regulation in Distressed Couples. *Journal of Applied Counseling*, 3(1), 1-18.
<https://www.magiran.com/paper/1538389>
- Khosravi, M., Mehrabi, H. A., & Azizimoghadam, M. (1387). A comparative study of obsessive- rumination component on obsessive-compulsive and depressive patients [Research]. *Koomesh journal*, 10(1), 65-72.
<http://koomeshjournal.semums.ac.ir/article-1-421-en.html>
- Mansouri, A., BakhshipourRoodsari, A., Mahmood Alilou, M., Farnam, A., & Fakhari, A. (2012). The comparison of worry, obsession and rumination in individual with Generalized Anxiety Disorder, Obsessive-Compulsive Disorder, Major Depression Disorder and normal individual. *Quarterly Journal of Psychological Studies*, 7(4), 55.
<https://www.magiran.com/paper/987013>
- Morgan, I. A., Matthews, G., & Winton, M. (1995). Coping and personality as predictors of post-traumatic intrusions, numbing, avoidance and general distress: A study of victims of the Perth flood. *Behavioural and Cognitive Psychotherapy*, 23(3), 251-264.
<https://www.cambridge.org/core/journals/behavioural-and-cognitive-psychotherapy/article/coping-and-personality-as-predictors-of-posttraumatic-intrusions-numbing-avoidance-and-general-distress-a-study-of-victims-of-the-perth-flood/57CAE2CC65E575162202599FAFD006D7>
- Muris, P., Roelofs, J., Rassin, E., Franken, I., & Mayer, B. (2005). Mediating effects of rumination and worry on the links between neuroticism, anxiety and depression. *Personality and individual differences*, 39(6), 1105-1111.
<https://doi.org/10.1016/j.paid.2005.04.005>
- Pourfarrokhi, P., Kkermani, M., & Jamali, J. (2020). Assessment of the level of Perception stress of students of Mashhad University of Medical Sciences about COVID19 in 2020. *Horizon of Medical Education Development*, 11(2), 66-76.
<https://www.magiran.com/paper/2230243>
- Shahbazfar, R., Zarei, E., Hajjalizade, K., & Dortaj, F. (2021). Comparing the Effectiveness of Cognitive-Behavioral Couple Therapy and Couple Therapy Based on Acceptance and Commitment Therapy in Improving Marital Quality of Non-clinical Couples. *Psychological Models and Methods*, 12(43), 100-113. <https://doi.org/10.30495/jpmm.2021.4726>
- Teimourkhani, H., Ghamari, M., AmiriMajd, M., & Jafari, A. (2022). Comparison of the effectiveness of Adlerian group counseling and dialectical behavior therapy on the academic buoyancy of unsuccessful male students in Universities Entrance Exam. *Journal of Adolescent and Youth Psychological Studies*, 3(3), 160-169.
<https://www.magiran.com/paper/2570599>
- Vaziri, S., & LotfiKashani, F. (2015). The four factor approach in psychotherapy: Foundations and Achievements. *Thought and Behavior in Clinical Psychology*, 9(35), 77-87.
<https://www.magiran.com/paper/1432028>
- Wilkinson, P. O., & Goodyer, I. M. (2008). The effects of cognitive-behavioural therapy on mood-related ruminative response style in depressed adolescents. *Child Adolesc Psychiatry Ment Health*, 2(1), 3.
<https://doi.org/10.1186/1753-2000-2-3>