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One of the elements of modern time is reliance on scientific thinking. With respect to thought provoking philosophical nature of the present time, Modern psychology has proposed theories in the field of psychological processes based on empirical studies. Hence Journal of Modern Psychology has been launched to provide a space for scholars to publish thoughts and scientific studies in personality, abnormal and social psychology.



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Volume 3, Issue 2, Spring 2023

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Contents

The Association between Physical Activity with Mental and Social Wellbeing among Employees of Police Guard

Pages 1-13

Mir Hamid Salehian; Zahra Ezzati Arbat

The Effectiveness of Yoga on Reducing Women's Anxiety

Pages 14-21

Horrieh Abbasmofrad

A Causal Model of the Relationship between Cognitive Emotion Regulation and the Quality of Couples' Committed Relationships Mediated by Mindfulness

Pages 22-32

Kobra Abbaspour; Masoume Maleki Pirbazari; Fatemeh Ashournejad

Netflix is the new Scheherazade! Exploring the relationships between online binge-watching, self-control, and bedtime procrastination among college students in Iran

Pages 33-40

Farshid Delaei Milan

Superstition and Its Association with Depression and Anxiety among University Students

Pages 41-48

Ghazal Sadat Pournesaei

Effectiveness of Acceptance and Commitment Therapy on Suicidal Ideation, Emotional Self-regulation and Psychological Flexibility of Adolescents with Suicidal Ideation Referring to Social Emergency

Pages 49-62

Fatemeh Haghbin; Fatemeh Pooragha



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Journal of Modern Psychology

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Research Paper: The Association between Physical Activity with Mental and Social Wellbeing among Employees of Police Guard



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Abstract

The purpose of the current research was to determine the level of physical activity of the male employees of the police guard and also to investigate the relationships between physical activity and mental and social wellbeing in the male employees of the police guard. The current research was descriptive-correlation research. The statistical population of this research included all the male employees of police guard of Tehran in 2021. The statistical sample of the current research included 146 men who were selected through convenience sampling. Physical activity was measured using the international physical activity questionnaire (IPAQ), mental health was measured using depression anxiety and stress scale 21 (DASS-21), and social health was measured using the Keyes's social well-being questionnaire (KSWBQ). Pearson's correlation test and structural equations were used for data analysis. Results showed that the research subjects had a body mass index with an average of 24.40 which is at an average level, but close to overweight. Also, a total of 52% of the subjects had moderate-to-vigorous physical activity. In addition, the mental and social health scores were in the average range. Moreover, physical activity had significant relationships with mental health and social health. The results of the model fit showed that the research model had a good fit. Our findings indicated the positive effects of physical activity on psycho-social health components in the male employees of police guard. These findings show that the use of strategies and interventions to improve the physical activity status of the staff of police guard is of special importance.

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1. Introduction

Physical activity is defined as any body movement produced by skeletal muscles that results in energy expenditure. Physical activity can be done as part of sports activities, work activities, active transportation, household activities, and recreational activities (Banasadi et al., 2022c; Chaharbaghi et al., 2022a, Chaharbaghi et al., 2022b; Malm et al., 2019; Seyed Asl et al., 2016; Taghva et al. 2020). Research has shown that physical activity leads to better cardio-respiratory and muscular fitness, stronger bones, better memory function and cognitive control, as well as reduced symptoms of depression and obesity (Saeedpour-Parizi et al. 2020, 2021; Lahart et al., 2019; Schwartz et al., 2019). Also, some researches have pointed out the benefits of participating in physical activity and sports on people's mental, mental, and social health (Khosravi et al. 2023; Lahart et al., 2019; Schwartz et al., 2019). Due to the many benefits of physical activity, the World Health Organization (WHO, 2020) recommends that all people, from children to the elderly, should do a certain amount of moderate to vigorous physical activity every day. For example, for adults, WHO guidelines recommend that adults should get at least 60 minutes of moderate-to-vigorous physical activity per day during the week (Mohammadi et al., 2022; Hazrati et al. 2022; Hashemi Motlagh et al. 2022; WHO, 2020). In addition, they should limit the duration of inactivity, especially the use of smart communication devices (such as mobile phones or tablets) and computers. However, many studies that have examined the

participation of adults in physical and sports activities have shown that adults around the world do not follow WHO's (2020) guidelines for daily participation in moderate-to-vigorous physical activity (Banasadi et al., 2022c; Chaharbaghi et al., 2022a; Chaharbaghi et al., 2022b; Ekblom-Bak et al., 2022; Husu et al., 2016; Banasadi et al., 2022c; Hukkanen et al., 2018; Du et al., 2019; Hamer et al., 2011; Seyed Asl et al., 2021). This lack of participation in regular physical activity can have many negative consequences for current and future health. They include obesity, which is one of the most effective factors in the occurrence of many diseases. Due to the very low participation of adults in daily physical activity, WHO (2020) has planned a plan according to which the participation of adults in physical activity will grow by 15% by 2030. Therefore, according to these facts, adult physical activity has become a key topic in sports and health research during the last decade, and examining the level of moderate-to-vigorous physical activity in adults has been a constant concern of researchers to determine the amount of physical activity of adults over the years.

One of the groups in the age group of adults who must participate in regular physical activity due to the nature of their job and maintaining their physical and mental health, are the police force employees (Banasadi et al., 2022a; Chaharbaghi et al., 2022a; Farhangnia et al. 2020; Abdi et al., 2020; Ghorbani et al., 2020; Sheikh et al., 2021, 2022). The nature of the work of police guard makes this job very dangerous and exhausting. Therefore, one of the effective

components of the efficiency and performance of police guard is increasing their physical strength, which can be achieved by increasing their physical activity level. Therefore, it can be said that the issue of physical activity and its consequences should be seriously addressed in the employees of the police guard. Therefore, the purpose of the present research was to investigate the level of physical activity of the employees of the police guard in Tehran. Also, their psycho-social health status and the relationship between physical activity and the psycho-social health of the employees of police guard in Tehran were investigated.

2. Method

According to the objectives of the research, the method of conducting the present research is descriptive-correlation based on the structural equation method. The statistical population of this research included all the male employees of police guard of Tehran in 2021. The statistical sample of the current research included 146 men who were selected through convenience sampling.

2.1. Instruments

International Physical Activity Questionnaire (IPAQ): This questionnaire was designed by [Baniasadi et al. \(2022a\)](#) and has 7 questions. By using this questionnaire, it is possible to obtain information about people's physical activity during the last seven days. According to the instructions of this questionnaire, the total intensity of the physical activities performed by a person, according to the energy consumed in the last seven days, is placed in one of the three groups of light, moderate, and intense

physical activity. Activities whose duration is less than 11 minutes are not considered in the calculation ([Committee, 2015](#)). In this questionnaire, walking as 3.3, moderate physical activity as 4, and vigorous physical activity as 8 are considered as metabolic equivalent of work (MET). A MET represents the amount of energy consumed per minute for a person while performing work ([Committee, 2015](#)). To calculate the total amount of physical activity per week, the amount of walking (metabolic equivalent \times minutes \times days) with the amount of moderate physical activity (metabolic equivalent \times minutes \times days) and the amount of intense physical activity of the person (metabolic equivalent \times minutes \times days) in the last week ([Committee, 2015](#)). This questionnaire is suitable for determining the physical activity of adults aged 18-65 and has been used in many studies so far, and its validity and reliability have been reported very well ([Jafarpour et al., 2016](#)).

Depression, Anxiety, Stress Scale-21 (DASS-21): This scale was designed by Lovibond and [Lovibond \(1995\)](#) and in this study was used to measure the mental health status of the subjects. The DASS-21 is a self-report scale designed to assess negative affective states including depression, anxiety, and stress. This 21-item scale consists of three subscales (depression, anxiety, stress), each of which contains seven items. Respondents used a 4-point Likert scale (from 0 for "never" to 3 for "most of the time") to rate how often they applied each item in the past week. Higher scores indicate higher levels of symptoms.

Keyes's social well-being questionnaire (KSWBQ): This questionnaire was developed by Keyes (1998) and is a valid survey to assess the social health of adults. This questionnaire has 20 questions that are evaluated using a five-point Likert scale from completely agree (5) to completely disagree (1). In this study, Cronbach's alpha of this questionnaire was equal to 0.89.

In this research, descriptive statistics including mean and standard deviation were used to describe the research variables. The Kolmogorov-Smirnov test was used to check the normality of the research data. In addition, Pearson's correlation test and

structural equations were used for inferential analysis of relationships between research variables. The significance level was considered at 0.05.

3. Results

Table 1 shows the individual characteristics of the research subjects, including age, activity history, height, weight, and body mass index. As it is known, the average age of the subjects is 35.28 years and they have an average of 15.61 years of experience in the police guard. Also, the research subjects have a body mass index with an average of 24.40 at an average level, but close to overweight.

Table 1

Demographic data of the subjects

Variable	Age (year)	Experience (year)	Height (cm)	Weight (kg)	BMI
Mean \pm SD	35.28 \pm 8.19	15.61 \pm 8.36	176.12 \pm 7.92	75.61 \pm 8.94	24.40 \pm 2.86

Also, the mean and standard deviation of the subjects' scores in all research variables, as well as the results of the Kolmogorov-Smirnov test to determine the normal distribution of the data, are given in **Table 2**. Regarding the physical activity status of the employees of police guard Headquarters, it can be stated that the research subjects had a level of physical activity lower than the value recommended by WHO. Regarding the physical activity pattern of the subjects, the

results showed that a total of 52% of the subjects had moderate-to-vigorous physical activity; which indicates that about half of the employees of police guard do not have proper physical activity for physical and mental health. Also, mental health scores were in the average range. Finally, the subjects' social health scores were also average. The results of the Kolmogorov-Smirnov test also showed that all research variables have a normal distribution ($P > 0.05$).

Table 2

Description of research variables along with normal distribution results

Variable	physical activity (day of the week)	physical activity (minutes per week)	physical activity (intensity)			Mental wellbeing			
			light (people/percent)	moderate (people/percent)	vigorous (people/percent)	Depression	Anxiety	Stress	Social wellbeing
Mean \pm SD	3.21 \pm 2.25	157.55 \pm 48.82	67(48%)	52(37%)	27(15%)	9.54 \pm 5.21	8.09 \pm 3.92	10.54 \pm 6.92	62.52 \pm 17.82
K-S	P=0.95	P=0.20	P=0.32	P=0.10	P=0.11	P=0.08	P=0.20	P=0.30	P=0.30

Table 3 shows the results of the Pearson correlation test. The research results showed that 1) there was an indirect and significant relationship between physical activity (days per week) and depression ($r=0.528$, $p<0.001$), 2) between physical activity (minutes per week) and depression. There was an indirect and significant relationship ($r=0.764$, $p<0.001$), 3) There was an indirect and significant relationship between the intensity of physical activity and depression ($r=0.424$, $p<0.001$), 4) There was an indirect and significant relationship between physical activity (days per week) and anxiety ($r=0.692$, $p<0.001$), 5) There was an indirect and significant relationship between physical activity (minutes per week) and anxiety. ($r=-0.394$, $p<0.001$), 6) there was an indirect and significant relationship between physical activity intensity and anxiety ($r=0.416$, $p<0.001$), 7) between There was an indirect and significant relationship between physical activity (days per week) and stress ($r=0.552$, $p<0.001$), 8) There was an indirect and

significant relationship between physical activity (minutes per week) and stress (439 9) There was an indirect and significant relationship between the intensity of physical activity and stress ($r=-0.325$, $p>0.001$), 10) between physical activity (days per week) and social health, there was a direct and significant relationship ($r=0.284$, $p<0.001$), 11) there was a direct and significant relationship between physical activity (minutes per week) and social health (0.641) $r = 0.001$, $p < 0.001$), 12) there was a direct and significant relationship between the intensity of physical activity and social health ($r = 0.432$, $p < 0.001$), 13) there was an indirect and significant relationship between depression and social health There was a relationship ($r=0.458$, $p<0.001$), 14) there was an indirect and significant relationship between anxiety and social health ($r=0.531$, $p<0.001$), and 15) There was an indirect and significant relationship between stress and social health ($r=0.397$, $p<0.001$).

Table 3

The results of the relationship between physical activity and mental and social wellbeing

Variable	Depression	Anxiety	Stress	Social wellbeing
physical activity (day of the week)	$r=-0.528$ $p<0.001$	$r=-0.692$ $p<0.001$	$r=-0.552$ $p<0.001$	$r=0.284$ $p<0.001$
physical activity (minutes per week)	$r=-0.764$ $p<0.001$	$r=-0.394$ $p<0.001$	$r=-0.439$ $p<0.001$	$r=0.641$ $p<0.001$
physical activity (intensity)	$r=-0.424$ $p<0.001$	$r=-0.416$ $p<0.001$	$r=-0.325$ $p<0.001$	$r=0.432$ $p<0.001$

The results of structural equation modeling are given in Table 4 and Figure 1. The results showed that: 1) physical activity (days per week) significantly reduced

depression, 2) physical activity (minutes per week) significantly reduced depression, 3) the intensity of physical activity significantly reduced depression, 4) physical activity (days

per week) significantly reduced anxiety, 5) physical activity (minutes per week) significantly reduced anxiety, 6) physical activity intensity significantly reduced anxiety, 7) physical activity (days per week) significantly reduced stress, 8) physical activity (minutes per week) significantly reduced stress, 9) the intensity of physical activity significantly reduced stress, 10) physical activity (days per week) significantly increased social health, 11) Physical activity (minutes per week)

significantly increased social health, 12) Physical activity intensity significantly increased social health, 13) depression significantly decreased social health, 14) anxiety significantly decreased social health, and 15) stress It significantly decreased social health.

The results of fitting the research model showed that the current research model has a good fit (RMSEA = 0.06).

Table 4
Structural equation modeling results

Path	β	T-value	Result
physical activity (day of the week) => depression	0.537	- 7.574	confirm
physical activity (minutes per week) => depression	0.724	- 10.827	confirm
physical activity (intensity) => depression	0.410	- 4.658	confirm
physical activity (day of the week) => anxiety	0.701	- 9.208	confirm
physical activity (minutes per week) => anxiety	0.367	- 3.021	confirm
physical activity (intensity) => anxiety	0.420	- 6.221	confirm
physical activity (day of the week) => stress	0.550	- 7.793	confirm
physical activity (minutes per week) => stress	0.428	- 6.297	confirm
physical activity (intensity) => stress	0.369	- 3.121	confirm
physical activity (day of the week) => social wellbeing	0.280	2.036	confirm
physical activity (minutes per week) => social wellbeing	0.693	9.057	confirm
physical activity (intensity) => social wellbeing	0.450	6.968	confirm
depression => social wellbeing	0.483	- 6.529	confirm
anxiety => social wellbeing	0.553	- 7.864	confirm
stress => social wellbeing	0.395	- 3.854	confirm

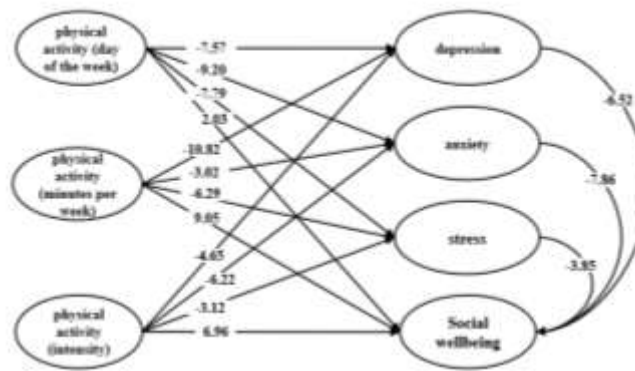


Figure 1. The results of the structural relationships of the research model in the form of T data

4. Discussion

Previous studies have shown relatively low levels of adult participation in physical activity. Also, people who regularly participated in physical activity had a higher level of psychosocial health (Granero-Jimenez et al., 2022; Fouladi et al., 2020; Peluso et al., 2005; Hamer et al., 2012; Hallam et al., 2022). Nevertheless, the level of physical activity and its relationship with psycho-social health in the employees of the police guard has not been investigated. Therefore, the purpose of the current research was to investigate the level of physical activity in the employees of the police guard and also to investigate the relationship between the level of participation in physical activity and the psycho-social health of the employees of the police guard.

In relation to the level of physical activity of the employees of police guard, the results of this research showed that on average, the subjects of this research had a level of physical activity lower than the value recommended by WHO (2020). The results showed that the pattern of physical activity of

the employees of the police guard is such that a total of 52% of the subjects had moderate-to-vigorous physical activity; Which indicates that about half of the employees of police guard did not have the level of physical activity recommended WHO (2020). These results are consistent with the findings of previous research (Baniasadi et al., 2022a) and indicate a relatively low level of physical activity among the employees of the police guard. Considering the many benefits of regular participation in physical activity, it seems necessary to investigate ways to increase the participation of employees of the police guard in physical activity and sports and to adopt appropriate intervention strategies for this. In the meantime, strategies for creating and increasing motivation among the employees of the police guard for regular participation in physical activity can be of particular importance.

In terms of mental health, the results of the research showed that the employees of the police guard had moderate levels of depression, high levels of anxiety, and moderate levels of stress. These results show

that these people have moderate to low mental health. The present findings are in accordance with previous studies (Granero-Jimenez et al., 2022; Fouladi et al., 2020; Peluso et al., 2005; Hammer et al., 2012; Hallam et al., 2022) which show the levels Average mental health in people in military organizations. The average to low level of mental health in the employees of the police guard is probably related to the difficulty of their jobs or financial components. Hard working conditions and high job stress related to the security of the country's borders, as well as possible economic problems caused by high living costs and not very suitable income conditions, can be among the factors that make military personnel suffer from depression and anxiety. and faces stress. Therefore, it is necessary to adopt appropriate strategies to improve the level of mental health in the employees of the police guard. The results of two-way communication as well as structural equation modeling showed that more participation in physical activity improved mental health (decreasing depression, anxiety, and stress) in the employees of police guard. These findings are in accordance with the results of previous studies that show the positive effects of physical activity on the mental health of people in different age groups, including adults (Granero-Jimenez et al., 2022; Fouladi et al., 2020; Peluso et al., 2005; Hammer et al., 2012; Hallam et al., 2022). Research has shown that regular participation in physical and sports activities causes a variety of changes in the brain, including neural growth, reduction of inflammation, and new activity patterns that promote a sense of relaxation

and well-being in a person. Also, regular participation in physical and sports activities releases powerful chemicals in the brain, i.e., endorphins, which boost morale and make a person feel good. Also, regular participation in physical and sports activities can act as a distracting factor and allows a person to be quiet and calm and can get rid of the cycle of negative thoughts that cause depression, anxiety or become stressed (Peluso et al., 2005; Hammer et al., 2012). Therefore, it can be said that regular participation in physical and sports activities improves the mental health of people, including the staff of the police guard.

Regarding social health, the results of this research showed that the employees of police guard have moderate to high social health. The present findings are consistent with the findings of previous researches (Keyes & Shapiro, 2004), which indicate moderate to high levels of social health among military personnel. Despite the very difficult job nature of the military class as well as several factors that make life difficult for this class, the results of this research show that these people are capable of appropriate social interactions at the community level and have good social behaviors and good social vitality. Also, the results of the present research showed that there is a direct and meaningful relationship between physical activity and social health, so that with the increase in the amount of physical activity in people, the amount of social health also increases. One of the existing models in this field is Sunström's psychological model. According to this model, regular participation in physical and sports activities positively

affects a person's self-confidence and ultimately increases a person's self-esteem. It is obvious that the increase in self-esteem brings about positive changes in interpersonal relationships and the social network of a person and improves the social health of people. On the other hand, not participating in physical and sports activities prevents a person from being absorbed in social frameworks, and the person feels that there is no common ground between his personal and social values, and becomes indifferent and distrustful of social values and norms. It leads to a decrease in his social cohesion. Therefore, a person feels that the fate of the society is related to external forces or structures, not to the constituent parts of the society, and does not consider the society to have a potential power in its evolutionary path, and this causes a decrease in social prosperity in him (Baniasadi et al., 2022a). Therefore, it is necessary to adopt appropriate strategies to improve the level of physical activity and subsequently social health among the employees of the police guard.

5. Conclusion

In short, the current research is one of the first researches that investigated the impact of physical activity on mental and social health in the staff of police guard. First of all, it should be stated that the physical activity of the police guard staff who participated in this research was less than the WHO's (2020) recommended amount of 60 minutes of moderate-to-vigorous physical activity per day, which indicates that it is of particular importance to use solutions and interventions to improve the physical activity status of the

employees of the police guard. Also, physical activity had a positive effect on improving the level of mental and social health in the employees of the police guard, which highlights the role of regular participation in physical activity in improving the mental and social health of the employees of the police guard. These findings can also be practical, so that the officials and decision-makers of the police force organization can expect that their health level increases and possibly their work quality will improve by emphasizing the implementation of regular physical activity and sports programs in the employees of the police guard.

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Conflict of interest

The Authors declare that there is no conflict of interest with any organization. Also, this research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

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Research Paper: The Effectiveness of Yoga in Reducing Women's Anxiety



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Abstract

The study purpose to investigate the effect of yoga on women's anxiety. The research method was quasi-experimental. The statistical population of the research included women who visited yoga clubs in Rasht City in 2022. For this purpose, 30 women who had a high score according to the Beck Anxiety Inventory (BAI) were selected by purposive sampling method and were divided into two experimental (15 individuals) and control (15 individuals) groups. Then, yoga exercises were performed for 8 ninety-minute sessions for the participants of the experimental group, and the control group did not receive any exercises during this period. And then the said questionnaire was again implemented in both groups. The data were analyzed using covariance analysis and SPSS 27 software. The findings indicated that yoga exercise was effective in reducing women's anxiety ($p < 0.05$). Therefore, it can be concluded that counselors, psychologists, and psychiatrists can use yoga exercises to reduce women's anxiety.

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1. Introduction

Anxiety is a warning that alerts the individual that a threat is coming and helps them take action to deal with the threat (Sadoks & Sadoks, 2016). Anxiety is a normal, emotional, rational response to potential hazards, however, it can be problematic if anxiety symptoms are prolonged, irrational, severe, or occur in the absence of stressful or arousing events (Woldegerima et al., 2018). About 30 to 40 percent of people in Western societies suffer from disorders related to anxiety at some stage of their lives, and in America and Europe, anxiety disorders are considered one of the most expensive types of mental disorders (Ganji & Ganji, 2016).

Studies indicate that 20 to 65 percent of women suffer from anxiety and depression. In general, it can be said that all these tensions are programmed in the woman's body, but their psychological dimension depends on the history of her personal, family, and social life (Rahmani et al., 2009). In other words, a woman's body's biological structure is built in such a way that she is more prone to anxiety and stress than men (such as hormone fluctuations and childbirth), but the severity and manner of it are related to psychological issues such as upbringing and family environment. Achieving health development in the world is not possible without paying attention to the importance of women's health and considering gender differences in various aspects of health and development policies and programs, as well as implementing women's empowerment and development

programs. Women's health is the surest way to achieve live a quality life for everyone, and capacity building and empowering them to participate are the main prerequisites for improving health and also achieving community health goals (Etemadi et al., 2014). Studies have indicated that psychological and physical interventions help improve psychological problems (Brenes et al., 2018; Kuvacic et al., 2018).

In addition to psychological treatments, physical activity and exercise are among the methods used to prevent or treat psychological problems, including anxiety (Marques et al., 2017; Evazei et al., 2019). Yoga is one of the common physical activities whose psychological effects have been confirmed in various research (Patel et al., 2012; Pascoe et al., 2017). Yoga is a Sanskrit word, that means the unity of mind and body, in which emphasis is placed on promoting peace and consciousness (Yurtkuran et al., 2007). Yoga is a set of physical exercises of posture selection (Asana), controlled breathing (Pranayama), and release and relaxation (Shavasana)¹ (Villien et al., 2005). A key pose in yoga is the relaxation pose at the end of the session. In this posture, the individual completes the movements s/he has done before by lying down for 5 to 10 minutes and progressive relaxation (Yurtkuran et al., 2007).

In recent decades, in most countries of the world, yoga has been mentioned as the key to achieving physical health and mental peace. Studies have indicated that yoga has positive effects on cognitive and emotional function,

¹“Savasana” is commonly known as the corpse pose

and also that the implementation of yoga breathing techniques reduces the process of thoughts and emotions such as fear, anxiety, and worry (Aghili & Afzali, 2017). In this regard, Yoshihara et al. (2014) indicated in their research that yoga is effective in reducing women's depression. In a systematic review, the benefits of yoga were also indicated to be greater than conventional exercise interventions for health status, aerobic fitness, and strength training (Patel et al., 2012). In Iran, studies have confirmed the effectiveness of yoga in various areas such as psychological well-being and women's happiness (Babaei Bonab, 2020) and reducing anxiety and depression of people with psoriasis (Jalilvand et al., 2021). Considering that for the growth and development of sports psychology in the field of rehabilitation sciences, for people in need of psychological treatments, scholars have suggested conducting research on the effectiveness of yoga as a complementary medicine to improve people's mental health (Piri & Ghasemi, 2017). This study aimed to investigate the effect of yoga exercises on women's anxiety in Rasht city.

2. Method

This research method was quasi-experimental and its design was pretest-posttest with a control group. The statistical population of the study was women referring to yoga clubs in Rasht city in 2022. Before conducting the research, five clubs were randomly selected from five districts of Rasht city (north, south, east, west, and center of

Rasht city), and then by referring to the clubs, the Beck Anxiety Inventory was administered to individuals and 47 of them had a high level of anxiety (cut-off point 15). Considering that the minimum sample size in quasi-experimental research was suggested to be fifteen individuals (Wilson et al, 2007), 30 of them who were ready to participate in the research were selected by purposive sampling method, and a Hatayoga course was performed on these women.

Hatayoga consists of exercises for different parts of the body, which are done in the form of gentle stretching, stopping, and returning from movement along with deep breathing, control and relaxation, and thought concentration. Hatayoga exercises were performed for 8 weeks with 3 sessions per week each session lasting 90 minutes in a sports health center under the supervision of trained specialists who have a certificate from the Iran Sport for All Federation and a bachelor's degree in physical education. After the completion of eight sessions, the Beck anxiety inventory was again performed on both groups and the data were analyzed using SPSS version 27 software and the covariance analysis test. The inclusion criteria included the following: not having a history of acute mental illness, not taking neuropsychiatric drugs, and being willing to cooperate. The exclusion criteria were having a history of acute mental illness and pharmacotherapy². Also, the participants were asked to sign the consent form after fully reading the details of the research and it was decided that all their information would remain confidential.

AKA: pharmacological therapy or drug therapy ^{*}

Beck Anxiety Inventory (BAI): This inventory contains 21 items that were compiled in 1990 by Beck and Steer, and includes common symptoms of anxiety. The participants responded to the amount of their resentment in the last week by putting crosses in the column before. Methods of scoring answers are none [0], mild [1], moderate [2] and severe [3]. Thus the range of an individual's score can fluctuate from 0 to 63. The cut-off points for mild, moderate, and severe levels are 8, 11, and 15, respectively (Beck & Steer, 1990). The reliability and validity of the test were obtained by Beck

(1990) above 0.9 with Cronbach's alpha and split-half methods, respectively. The reliability of the Iranian version was 0.83 using Cronbach's alpha method and the validity was 0.92 using the correlation method (Kaviani & Mousavi, 2008).

3. Results

The studied sample was 30 women with anxiety in Rasht City with an average age of 24.7 and a standard deviation of 3.9. The mean and standard deviation of the research variables are reported in Table 1.

Table 1

Mean and standard deviation of the experimental group's anxiety scores

test	Experimental		Control	
	Mean	Std. deviation	Mean	Std. deviation
Pre-test	15.27	3.06	15.2	3.11
Post-test	7.72	2.08	15.9	3.21

According to the results of Table 1, the average anxiety in the control group in the pre-test and post-test was 15.2 and 15.9, respectively, and the average anxiety in the experimental group in the pre-test and post-test was 15.27 and 7.72, respectively. As can be seen, the changes in the anxiety variable of the control group's pre-test and post-test stages were non significant, but the changes in the anxiety variable of the experimental group's pre-test and post-test stages were significant.

Also, to perform the covariance analysis test, the p-value of the Kolmogorov-

Smirnov's test was scrutinized in all variables, which was greater than 0.05 (pre-test of the experimental group, $p < 0.05$, $z = 0.441$, and post-test of the experimental group, $p < 0.05$, $z = 0.152$, pre-test of the control group, $p < 0.05$, $z = 0.421$, and post-test of the control group, $p < 0.05$, $z = 0.189$) and therefore the normality of the variables was confirmed. Levene's test ($p < 0.05$, $F = 0.239$) was also not significant, which indicated that the assumption of equality of anxiety variance was the same in both experimental and control groups.

Table 2

Summary of the results of covariance analysis of the effect of yoga on anxiety

	Sum of squares	Df	Mean squares	F	Significance level	Effect size
Post-test	127.7	1	127.7	11.32	0.001	0.72

As can be seen in Table 2, the obtained results indicated that the F value equal to 11.32 was significant at the error level of less than 0.01. Therefore, yoga exercises were effective in reducing the anxiety symptoms of affected women. The effect size value indicated that 72% of the variance of anxiety can be explained through group differences.

4. Discussion

The findings of the research indicated that there is a significant relationship between performing yoga and reducing the level of anxiety in women. This research is in line with the research of Babaei Bonab (2019), Jalilvand et al. (2021), Aghili and Afzali (2017), Piri and Ghasemi (2017), Woldegerima et al. (2018), Pascoe et al. (2017), Yoshihara et al. (2014), Patel et al. (2012).

In explaining the obtained results, it can be said that on the one hand, the release of several hormones from different body glands as a result of yoga exercises and its effect on the nervous system and excess oxygen consumption causes relaxation and relieves anxiety and increases the level of psychological well-being (Mehrabizade et al., 2013). On the other hand, the difference in anxiety between the two experimental and control groups can be seen as a result of doing exercises that increase positive aspects and provide situations to divert people's attention

from threats and emergencies (Kamarzarrin et al., 2012). By performing yoga exercises, sets of physiological changes occur in the body, which is the opposite of psychological tension (Pascoe et al., 2017). The positive role of yoga in managing anxiety can also be elucidated in the framework of the attention diversion technique. In addition, the research indicates the effect of yoga on reducing cortisol hormone levels and reducing perceived stress in people (Zallipour & Momeni, 2013). The Yoga method, by emphasizing muscle relaxation, can cause attention bias to pleasant inner feelings, and as a result, a person focuses less on stressful situations and stimuli (Memarian et al., 2017). Moreover, in elucidating the effects of yoga in reducing anxiety and depression, it can be said that yoga classes have a strong focus on breathing and start with more active postures and gradually end in slower and meditative postures. Emphasis on breathing, meditation, and gradual relaxation of posture slows down the physiological stress response and thoughts, and this physiological and psychological relaxation is incompatible with anxiety. Meditation and mindfulness components of yoga intervention increase the state of relaxation as the main feature of the intervention. Also, yoga is attractive to patients and since the participants receive yoga intervention in yoga gyms, they do not have a therapeutic view of yoga and do not consider participating in the yoga program as

a shame for receiving psychological counseling, and therefore yoga does not create resistance to the treatment of anxiety symptoms in these patients. On the other hand, yoga is offered by sports trainers and this issue decreases the effect of mistrust of mental health counselors. Yoga has the potential to reduce some of the barriers associated with mental health treatment (Brenes et al., 2018).

One of the limitations of the current study is the non-random selection of the sample, which may not be considered representative of the entire population. Furthermore, the study was conducted only on women, it is better to conduct a similar study on men and in larger groups to generalize the results better. Another limitation of this study is the lack of a follow-up phase. Yoga exercises are an enlivening, safe, and effective exercise method for reducing anxiety, which can be easily implemented at any age and in any person with minimum facilities. Therefore, yoga exercises are recommended for people who experience a high level of anxiety, and considering the mentioned benefits, this method is recommended to treatment seekers in medical centers by mental health specialists and also by other health care providers along with other treatment methods. It is suggested to carry out this investigation over a longer period and to carry out a long-term follow-up to check the durability of the effects of yoga exercises on reducing anxiety.

5. Conclusion

Based on the results of this research, it is concluded that yoga exercises can effectively reduce the anxiety of affected women compared to before the start of the project and also compared to the control group. According to these results, participation in yoga classes is suggested to women suffering from anxiety to benefit from the physical and mental benefits of yoga exercises.

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Conflict of interest

The author declares that there is no conflict of interest.

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Research Paper: Causal Model of the Relationship between Cognitive Emotion Regulation and the Quality of Couples' Committed Relationships Mediated by Mindfulness


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Abstract

The present study was conducted with the aim of investigating the causal model of the relationship between cognitive regulation of emotion and the quality of couples' committed relationships with the mediation of mindfulness. The methodological design of the present research was descriptive and correlational. The statistical population of the study included married women in Bandar Ganaveh in 2022, of which 263 were selected by convenience sampling method. The data collection tools included Cognitive Emotional Regulation Questionnaire (CERQ), Dimensions of Commitment Inventory (DCI) and Freiburg Mindfulness Inventory-Short Form (FMI) which were completed online. Structural equation modeling method was used to test the hypotheses using SPSS-22 and SmartPLS-3 software. The obtained findings indicated that the research data has a goodness of fit with the proposed model. The results of data analysis showed that the cognitive emotion regulation has a positive and direct effect on the quality of committed relationships of couples ($p < 0.05$). Also, there is a positive and direct effect mindfulness on the quality of couples' committed relationships ($p < 0.05$). There is an indirect and positive effect the cognitive emotion regulation through mindfulness on the quality of couples' committed relationships ($p < 0.05$). We conclude from this research that strengthening the cognitive regulation skills of emotion and mindfulness is related to more committed relationships in married women, and counselors of counseling centers can benefit from the results of this research.

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1. Introduction

In order to continue their lives, humans need their fellow humans from the moment they are born, and they spend their first life experience in the family, and therefore, the foundation of the family is the first committed social bond that it is formed in the form of marriage, and has become the basis of the mental health of human society (Mohammadi & Musavi Moqaddam, 2021). Therefore, the central core of the family system is the marital relationship (Ghezelsefloo et al., 2016), which is based on the commitment of the couple to each other, and without the commitment of the couple, the relationship will be very superficial. What makes a marriage last is the committed relationship of the couple. Commitment is a type of cognitive assessment that reflects psychological dependence that requires couples to maintain their relationship (Leonhardt et al., 2022). The quality of couples' committed relationships is one of the most important factors in the peace of the family and society. According to Ho et al. (2019), the existence of commitment in the couple's relationship has a very high relationship with life satisfaction. Therefore, with the reduction of commitment in marital relations, the probability of divorce increases and divorce leaves negative effects on the overall quality of life and mental well-being of people (Shafiee & Mohammadi, 2018). Therefore, one of the things that a healthy family does is to feel commitment towards other family members (Shahsiah et al., 2009).

In marital relationships, if attention is paid to the way of managing and recognizing emotions, it can play its role well in the committed relationship of couples. Therefore, the correct regulation of emotions such as anger and fear is another effective factor in the relationship of couples (Bloch et al., 2014). The cognitive emotion regulation as a personality trait in the emotional range is a

very important issue that has obvious effects and undeniable results on interpersonal relationships and it can fully clarify some of the issues related to family relationships, which exist in the form of emotional relationships between men and women (Vafaei & Ghasemi Motlagh, 2020). Emotional regulation processes are generally reactions that are necessary to adapt to various environmental demands and needs (Kohn et al., 2014) and help people to manage their emotions and feelings and not be defeated by them (Hasani, 2010). Improper regulation of emotions is related to mood and anxiety disorders (Picó-Pérez et al., 2017), low mental health of a person (Hu & Bentler, 1999) and decreased well-being of people (Kraiss et al., 2020). Since positive and negative emotions can have a high value in adjusting the physical and mental health consequences of people and acting according to their moods, in this case, cognitive emotion regulation is one of the most important tasks for physical and psychological health, especially in couples' relationships (Zare & Rezaei, 2016). Any defects in the regulation of emotions can make a person vulnerable to emotional problems such as depression, anxiety, mental pressure and physical problems (Vafaei & Ghasemi Motlagh, 2020; Tahamtan et al., 2021). The research of Najafloo and Sayyar (2021) showed that the ability to regulate emotions in life can have an effective role on the quality of committed relationships of couples.

Also, based on the research conducted for the continuation of committed relationships of couples, mindfulness is also another important factor. Mindfulness allows a person to observe his cognitions and emotions from the perspective of an external observer, separate from the outside world and himself. Also, to have a closer sensory contact with the moment-to-moment experiences of his life and by making his mental smoothness more

flexible, he can improve his mental health directly and faster and show less reaction to threatening emotional stimuli. Increasing awareness and being present in the present moment, accepting experiences and refraining from avoidance, creates a greater ability to deal with stressful situations for a person. Mindfulness leads to an increase in the quality of a couple's conscientious relationship. Mindfulness leads to the reduction of negative thoughts, tensions, frustrations and marital conflicts and emotional control, increasing the high level of self-control, adaptability, positive view of one's spouse and communication with people, thereby increasing satisfaction and peace in life (Mahmoudpour et al., 2020). The research of SedaghatKhah and BehzadiPoor (2017) showed that mindfulness leads to non-judgmental observation of thoughts and feelings and is a barrier against negative thoughts in the rumination pattern and plays a role in predicting the quality of couples' relationships. Also, the results of the Barnes et al (2007) research showed that mindfulness is related to couples' satisfaction. Lucas-Thompson et al (2020) showed that mindfulness leads to the reduction of marital conflicts and destructive emotions by creating mechanisms such as regulating attention, strengthening self-compassion, non-judgment and strengthening the relationship. In the same context, Laurent et al (2016) showed that mindfulness reduces the effect of spouses' negative beliefs through the correct regulation of emotions in couples' conflicts.

The conducted research also shows the relationship between cognitive emotion regulation and mindfulness. For example, in the research of Ebrahimi et al (2018), the component of suppression (conscious repression of emotions) as one of the components of emotional dysregulation had a negative correlation with mindfulness, but there was a positive correlation between the positive strategies of cognitive emotion

regulation (such as reappraisal) and mindfulness (Babaei Nadinluye et al., 2017).

According to what was said, the general purpose of this research is to determine the causal model of the relationship between cognitive regulation of emotion and the quality of committed relationships of couples with the mediation of mindfulness.

2. Method

The current research is a descriptive and correlational research using the structural equation modeling method. The statistical population of the current study includes all married women in Bandar Ganaveh city in 2022, based on which, 263 people were selected from the population using convenience sampling method.

2.1. Instruments

Cognitive Emotional Regulation Questionnaire (CERQ): The cognitive emotion regulation questionnaire was compiled by Garnefski et al (2001), which has several dimensions and 36 items. This questionnaire has two forms for adults and children, and the form for adults is used in this research. Cognitive emotion regulation scale evaluates 9 strategies including self-blaming, others-blaming, acceptance, rumination, positive refocusing, refocusing on planning, positive re-evaluation, and catastrophizing. The scoring of the questionnaire is based on the Likert scale (never = 1, rarely = 2, sometimes = 3, often = 4, always = 5). This questionnaire has been used in Iranian researches. Garnefski et al (2002) have also expressed a favorable validity and reliability for this scale. The alpha coefficient for the subscales of this questionnaire has been reported by Garnefski et al. (2002), in the range of 0.71 to 0.81, Cronbach's alpha of the questionnaire in the present study was 0.837.

Dimensions of Commitment Inventory

(DCI): This inventory was compiled by Adams and Jones (1997) and has 36 items that are set on a Likert scale (I completely disagree to completely agree) with a score of 1 to 5, and it measures the level of commitment and loyalty of people to their spouse and marriage and its dimensions. The dimensions of this inventory are: personal commitment, moral commitment and structural commitment. Adams and Jones (1997) in six different studies to obtain the reliability and validity of this inventory, they implemented it on 417 married people, 347 single people and 46 divorced people, in their study the reliability of the whole inventory was reported as 0.89. Adams and Jones (1997) reported the reliability of the scale of personal commitment 0.91%, moral commitment 89.0%, and structural commitment 0.86%. Also, the validity and reliability of the inventory was examined in the study of Abbasi Molid et al (2013) on Iranian couples. In this regard, the Kappa index of 0.90 (measurement of the agreement coefficient between experts) was obtained. The construct validity of the test, which is calculated by the correlation coefficient between the subscales and the total score of the test, varied between 0.66 and 0.81 percent, and all the coefficients were significant at the 0.001 level. Cronbach's alpha of the inventory in the present study was 0.854.

Freiburg Mindfulness Inventory-Short Form (FMI):

This inventory was developed by Walach et al (2006) which have 14 items and in its long form it has 30 items. The items of this inventory are graded on a five-point Likert scale; each of these options has 1 to 5 points. If a person gets a high score, i.e. close to 56, then he has high mindfulness, and if he gets a low score, close to 14. It will have low mindfulness. There is evidence that this inventory was two-factor in some researches, but it was single-factor in the Iranian norm. Walach et al (2006) reported its alpha coefficient as 0.86. Also, Ghasemi Jobaneh et al (2015) investigated the psychometric properties of this inventory in Iran and estimated the Cronbach's alpha of this inventory to be around 0.92. The Cronbach coefficient of the inventory in this research was 0.753.

3. Results

Based on the results, it was determined that most of the studied subjects were adult women between the ages of 41 and 50 years old, most of them had a bachelor's degree. Also, most of the studied women were housewives and unemployed. Descriptive indices of the investigated variables are presented in Table 1.

Table 1.
Descriptive indices of the investigated variables

Variable	Mean	Standard deviation	Variance	Skewness	Kurtosis
Quality of couples' committed relationships	135.26	14.69	215.87	0.02	0.26
Cognitive emotion regulation	11.57	14.58	212.56	-0.04	0.45
Mindfulness	38.48	6.94	48.15	-0.31	0.27

Path coefficients and Student's t-test results are presented in Figures 1 and 2, respectively.

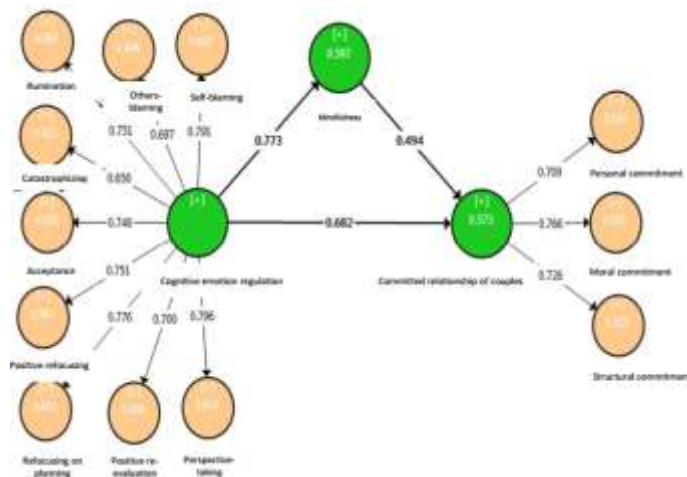


Figure 1. Standard path coefficients of the research conceptual model

The significance test of the path coefficients was calculated using the bootstrap method of Student's t-test values.

If the values of the Student's t-test are greater than 1.96, the path coefficient is significant at the 0.05 level.

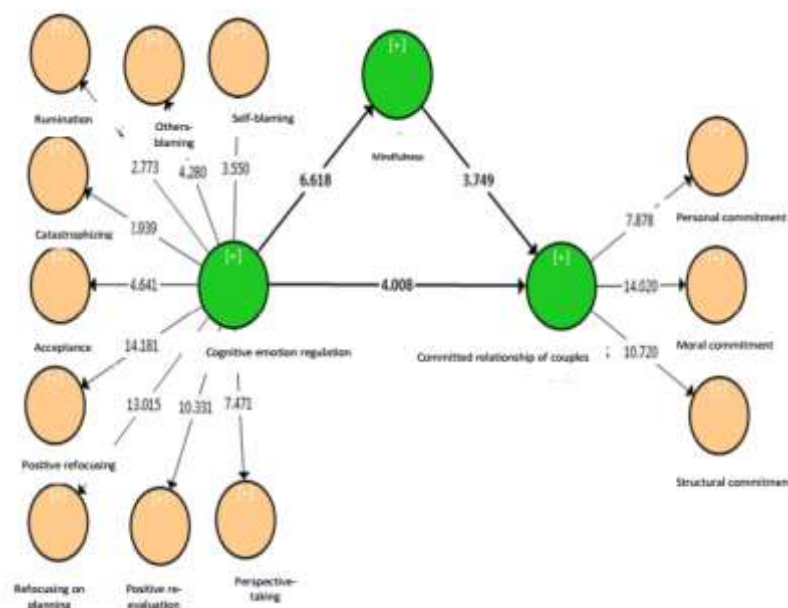


Figure 2. Student's t-test results to check the significance of path coefficients

Path coefficients and their significance results are presented in [Table 2](#).

Table 2

The results of structural model evaluation

Path	Path coefficient (β)	T-value	Test result
Cognitive emotion regulation \rightarrow couples' committed relationships	0.68	4	confirm
Cognitive emotion regulation \rightarrow mindfulness	0.49	3.74	confirm

The result of the test is confirmed due to the fact that the statistical significance between the variable of cognitive emotion regulation and the quality of couples' committed relationships, as well as mindfulness and the quality of couples' committed relationships is equal to the value of 4 and 3.74, respectively, and greater than the value of 96. Also the path coefficient between the mentioned variables is equal to 0.68 and 0.49, respectively, which means that the cognitive emotion regulation with a value of 0.62 and mindfulness with a value of 0.49 affect the quality of couples' committed relationships.

Also, to check the goodness of fit of the research model, the R^2 , Q^2 , GOF and SRMR criteria were used, all of which were acceptable compared to the criterion value; Based on this, the value obtained from the

criterion in the variables of mindfulness and the quality of couples' committed relationships is 0.59 and 0.57, respectively, and is acceptable compared to the criterion values; And in the measure of mindfulness and the quality of couples' committed relationships, it is 0.23 and 0.25, respectively, and it is acceptable compared to the criterion values; And in the GOF criterion equal to 0.44, which is greater than the criterion value of 0.3, and the SRMR index, which is equal to the value of 0.05 and lower than the criterion value of 0.08. In this way, was confirmed the goodness of the fit of the structural model.

In the following, the bootstrap method was used to investigate the indirect effect of cognitive motion regulation through mindfulness on the quality of couples' committed relationships, the result of which is presented in Table 3.

Table 3

The results of the bootstrap method to check the significance of the indirect effect

Path			Indirect effect	Bootstrap value		T-value	Estimation error	P
Independent variable	Mediating variable	Dependent variable		Upper limit	Lower limit			
Cognitive emotion regulation	Mindfulness	Quality of couples' committed relationships	0.38	0.45	0.30	7.15	0.05	0.00

According to Table 3, the significance level is equal to 0.00 and smaller than 0.05 and the confidence interval does not include zero. Therefore, the cognitive emotion regulation through mindfulness has an indirect effect on the quality of couples' committed relationships.

4. Discussion

The purpose of this research is to determine the causal model of the relationship between cognitive cognitive emotion

regulation and the quality of couples' committed relationships with the mediation of mindfulness in married women of Bandar Ganaveh in 2022. In this way, one of the obtained results indicated that the cognitive emotion regulation has a positive and direct effect on the quality of couples' committed relationships. The obtained result is consistent with the research findings of Kelein et al (2016). They concluded that hostile criticism is greater when couples have more difficulty

regulating their emotions. In the explanation of the obtained result, it is stated that one of the important structures of psychological sciences is regulating the expression of feelings and emotions in the situation. Therefore, the cognitive emotion regulation is based on self-blaming, others-blaming, rumination, catastrophic perception, acceptance, positive refocusing, refocusing on planning and positive evaluation refers to the perceptive ability of a person to express his emotions and how to express his emotions. In married life, there are many ups and downs to which each couple reacts or express their emotions and feelings, however, if the expression of emotions is calculated and expressed from awareness and knowledge, the commitment between the couple will be established and its quality level will also increase. If the expression of the couple's emotions towards each other in different situations of life is without recognition and awareness, the commitment between the couple weakens, and as a result, its quality level also decreases. Because according to [Mahmoudpour et al \(2020\)](#), commitment is associated with better interaction, happier and more constructive behavior in the path of problems. Based on this, the studied women showed in their answers that the cognitive emotion regulation can affect the quality of committed relationships of couples, so that the more the emotional regulation is cognitive and based on the understanding of the affairs and awareness of the existing conditions, the couples will have stronger and more committed relationships.

Among other findings, there was a positive and direct effect of mindfulness on the quality of couples' committed relationships. The result obtained is consistent with the research findings of [Barnes et al \(2007\)](#), they found that

mindfulness is related to the satisfaction of couples' relationship. Also, mindfulness predicts less emotional stress reactions and positive change in the relationship. In this regard, [Atkinson \(2013\)](#) concluded that mindfulness can automatically improve the processing and organization of cognition and behavior related to couples' relationships, and [Pepping & Halford \(2016\)](#) found that mindfulness can be useful for couples' romantic relationships and it can facilitate healthy marital relationships, including increasing emotion regulation. In the explanation of the obtained result, it is stated that mindfulness is one of the cognitive qualities and alertness of people towards current affairs and conditions, which causes a person to act consciously and prudently. [Kabat-Zinn \(2003\)](#) has stated in this context that mindfulness is a type of consciousness or a quality of consciousness that arises as a result of paying attention to the goal in the present moment and without moment-to-moment evaluation. In mindfulness, a person is well aware of the existing situation and always tries to show a behavior that ends in a positive and pleasant result. This is important not only to manage existing problems (in the present time), but also to reduce stress and tension. This is very important in married life. A series of important obligations and responsibilities have been established between couples, however, in case of any possible issues and problems during the married life, if the couple has mindfulness, they can resolve the current issues in a committed manner without harming their married life. Because one of the factors that threaten the strength of the committed interaction of couples is harmful and irrational beliefs. Based on this, the studied women showed in their answers that mindfulness, due to focusing the mind on the issues of the present and not on the issues of the past, and reducing stress

and calming the mind to solve the problems, it can positively and directly affect the quality of committed relationships of couples. On the other hand, the reduction of mindfulness in couples causes the couple's relationship to be damaged and its quality to be lost.

The indirect effect of cognitive emotion regulation through mindfulness on the quality of couples' committed relationships was one of the other findings obtained in this research. The obtained result is consistent with the research findings of [Rimsky \(2020\)](#). He came to the conclusion that people with higher mindfulness experience less rejection and depression in couples' relationships. In addition, mindfulness had a significant effect on marital satisfaction among 64 couples. In the explanation of the obtained result, it is stated that the couples' committed relationships is one of the strong bases in maintaining the life of married life. Relationships with love, passion and dedication of couples show that they have high quality relationships. Therefore, paying attention to the quality of couples' committed relationships in married life - which is based on personal, moral and structural commitment-, is very important. Therefore, when couples face difficult events and situations in their lives and try to adjust their emotions and feelings according to the conditions and issues that arise - that is, when and where and how to express their feelings - and also regardless of the issues that happened in the past, they deal with the issues of the present with full knowledge and awareness, the expectation is created that their committed relationships are of quality and not only they can well overcome existing problems, but also increase the durability and survival of their married life. In this way, the women in the present study showed in their answers that their committed relationships with their

husbands can be improved due to the reduction of tensions and stresses, lack of attention to past events, reduction of anger and greater mindfulness. That is, the stronger the cognitive emotion regulation along with mindfulness is in the couples, their committed relationships will be of higher quality.

Considering that the conduct of this research was not excluded from the limitations, therefore, the most important limitations of the present research are the gender limitation of the study subjects, the cross-sectional nature of the research and the impossibility of examining the relationships of the variables over time, the selection of the sample in a convenience manner and the lack of interaction between the researcher and the participants during the implementation of the questionnaire was due to the online implementation in the conditions of the Covid-19 pandemic.

5. Conclusion

According to the obtained results, it is suggested to strengthening women's logical and critical thinking following the events in their married life, helping to control behaviors such as self-blaming, others-blaming, rumination, etc. and strengthening acceptance, positive refocus, refocus on planning and a broader view of issues through training sessions for couples, providing training workshops and pre-marriage counseling for people on the verge of marriage in order to teach mindfulness skills and include programs based on focus on mindfulness and emotion regulation to increase all types of commitment (personal, moral, structural) in relevant educational programs.

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Conflict of interest

The Authors declare that there is no conflict of interest with any organization. Also, this research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

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Research Paper: Netflix is the new Scheherazade!

Exploring the relationships between online binge-watching, self-control, and bedtime procrastination among college students in Iran.



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Abstract

Online binge-watching is a common practice nowadays. It is defined as watching multiple episodes in one sitting. It may seem a new phenomenon, but the same mechanism happened to the Persian King and kept him listening to Scheherazade's stories for 1001 nights, which made him forgot about killing young virgin girls and also delayed his bedtime. This study aims to investigate the relationships between these variables in Iranian college students in Ghazvin with a sample of 133 people between the ages of 19 and 25 using brief self-control scale (BSCS), bedtime procrastination scale (BPS), and binge-watching addiction questionnaire (BWAQ). The research indicates that there is a notable negative correlation between online binge-watching and self-control ($r = -.443$, $p < .001$). Also, a negative relationship between self-control and bedtime procrastination was found ($r = -.360$, $p < .001$). Further, a positive correlation between online binge-watching and bedtime procrastination was detected ($r = .307$, $p < .001$). The problematic binge-watching can be identified by the motives and cognitive processes underlying this phenomenon, such as narrative transportation. Ways to prevent mental illness caused by them and future research paths are discussed.

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1. Introduction

Streaming services have surely changed the media consumption game forever. When Netflix first released the whole season of “The House of Cards” back in 2013, a lot of people binge-watched the entire season, even Barack Obama, former president of the US, tweeted “Tomorrow: @HouseofCards. No spoilers, please.” It seemed that a lot of people would binge-watch the whole season of the show. The distribution of TV shows has changed from one episode per week to 13 episodes in one day. This made it easy for viewers to binge-watch. Binge-watching is defined as watching three episodes or more consecutively in one sitting and it was chosen as the word of the year by Collins dictionary in 2015. At the core of this phenomenon lies a cognitive process called “Narrative Transportation”, but it is not a new concept.

In the late “One Thousand and One Nights” book, which is set in the Middle Ages and tells the story of Shahryar, the Persian king who got betrayed by his wife and was devastated and angry by this event, decides to kill his wife and every virgin girl in town after sleeping with them every night, for they are all unfaithful. After a while, the vizier runs out of girls to bring to the king, and he has two of his own daughters. His older daughter, Scheherazade, offers herself to the king to put an end to all this madness. After they slept together, Scheherazade asked the king if he would allow her to tell a story to her little sister before she went to sleep, so she began a story and ended it with a cliff-hanger. The king was so eager to know the end of the story that he decided to spare her life until the next day, but she did it again and ended the second night’s story the same way. This went on for 1001 nights, hence the name.

Narrative transportation refers to immersing oneself in a story in such a way that viewers have imaginatively left their

immediate surroundings behind and entered the narrative world (Green, 2021). Importantly, being transported into a story has strong cognitive and emotional consequences and leaves a viewer susceptible to attitude change from the theme of the story they are experiencing. Levels of transportation into a given story are affected by variables within the story itself, the situation, and the audience. I intend to focus on the individual aspects of this phenomenon, such as self-control and its consequences like bedtime procrastination (Ahmad & Khurshid, 2022).

Bedtime procrastination was first described in 2014 by Dutch social and behavioral scientist Kroese and her team (Kroese et al., 2014). They defined it as “going to bed later than intended while no external circumstances are accountable for doing so” (Kroese et al., 2014). In a meta-analysis (Hill et al., 2022) found that bedtime procrastination had a negative association with sleep quality and sleep duration and also a positive association with daytime fatigue.

(Lades et al., 2022) found that regression analysis shows that participants with higher trait self-control report lower levels of tiredness, boredom, guilt, and sadness when binge-watching compared to less self-controlled participants. These associations are partly explained by binge-watching interfering less with higher-order goals for highly self-controlled participants. Lower levels of trait self-control are also associated with a stronger increase in happiness on initiating binge-watching and increased feelings of guilt after binge-watching.

In 2013 Oxford Advanced learner’s dictionaries defined binge-watching as “to watch several episodes (=separate parts) of a television series or program, one after another”(Panda & Pandey, 2017). Binge-watching is a popular practice among teens whose impact on consumers has been

shown to be, at times, both positive and negative.

In a study with 251 participants (Richard & Plante, 2023) assessed the potential impact of binge-watching while taking into account both the viewers' motivational antecedents (i.e., coping, escapism, emotional enhancement) and individual differences (i.e., transportability, self-control, sensation seeking). Results showed that binge-watching's relationship with viewer well-being is contingent upon a complex array of associations between individual and motivational differences and the nature of one's engagement in the activity.

In a study by my fellow Iranian scientists (Alimoradi et al., 2022), their aim was to investigate the associations between binge-watching and five mental health concerns, including depression, loneliness, sleep problems, and anxiety and stress. Results showed that binge-watching was significantly associated with the five types of mental health concerns, with the most robust correlations found with stress (0.32) and anxiety (0.25).

When COVID-19 hit and people were advised to stay at home in ads like "Our grandparents were called to war and we're being called to sit on the couch, we can do this", people turned to binge-watching to pass the time.

(Sigre-Leirós et al., 2023) conducted a longitudinal study to assess changes in TV series viewing patterns during the first COVID-19 lockdown. Results from the longitudinal analysis principally showed that male gender and social motives for TV series watching predicted a decrease in negative affect levels. A problematic binge-watching pattern characterized by loss of control was the single predictor of an increase in negative affect over time. These findings suggest that TV series watching patterns effectively increased during the first COVID-19 lockdown. Watching TV

series for social motives emerged as a protective factor, whereas problematic binge-watching seemed to act as a maladaptive emotion regulation strategy throughout these unprecedented circumstances.

Bedtime procrastination (BP) is defined as the behavior of going to bed later than intended, without having external reasons for doing so (Kroese 2014).

According to (Zhang et al., 2023), who conducted a study with 718 participants, trait anxiety independently predicted bedtime procrastination while controlling for demographic characteristics. Correlation analysis showed that BP was positively correlated with trait anxiety, but negatively related to self-control. A mediating role of self-control in the relationship between trait anxiety and bedtime procrastination was also revealed in this study.

A study was conducted during the COVID-19 outbreak with 881 participants by (Huang et al., 2023) for the purpose of investigating the associations between mobile phone dependency, bedtime procrastination, FOMO (fear of missing out), and sleep quality among college students. The correlation analysis indicated that mobile phone dependency was positively associated with fear of missing out, bedtime procrastination, and poor sleep quality among college students. The structural equation modeling analysis revealed that mobile phone dependency had significant indirect effects on sleep quality through bedtime procrastination and fear of missing out.

We ordinarily use the term "self-control" to describe decisions between alternatives arriving at different times. Psychologists studying self-control have long noticed that self-control is a "now" versus "later" issue. Their subjects show self-control when they prefer large rewards in the future to smaller rewards in the

present or, symmetrically, avoid greater pain in the future in return for lesser pain (Rachlin, 1974). Self-control is a central function of the self and an important key to success in life (Baumeister et al., 2007). Research has found that individuals who are lower in self-control strength because of previous self-control exertions perform more poorly on subsequent tests of self-control (Muraven & Slessareva, 2003).

The study by (Cobb-Clark et al., 2022) investigated the predictive power of self-control for individuals and their children using population representative data. They used the well-established BSCS (Brief Self-Control Scale) to demonstrate that people's trait self-control is highly predictive of their life outcomes. Higher self-control is associated with better health, education, and employment outcomes as well as greater financial and overall well-being. The self-control of children is correlated with that of their parents while higher parental self-control is also linked to fewer behavioral problems among children.

(Cao & Li, 2022) designed an experiment to understand the relation between self-control and COVID-19 vaccine acceptance. They found that students scoring high on trait self-control expressed less vaccine hesitancy than students scoring low on self-control and also, that non-student adults with higher self-control strength levels were more likely to accept vaccine appointment opportunities than those with lower self-control strength levels.

From ancient tales to contemporary TV series, entertainment and education often rely on the art of storytelling. The most effective stories are those that fully engage the audience, allowing them to escape from reality and enter the realm crafted by the creators. When people are transported into these narrative worlds and become absorbed, they can experience intense emotions and vivid mental imagery. They may not notice their immediate

surroundings or the passage of time. This feeling of being "lost in a story" is the core of narrative transportation theory. Narrative transportation has been defined as a combination of attention, imagery, and feeling in which an individual becomes immersed in a narrative world (Green, 2021).

(Isakoglou et al., 2021) started an investigation to examine the relationship between genre and narrative transportation, while measuring baseline trait empathy and assessing the mediating role of affective on the relationship between genre and narrative transportation. Empathy was positively correlated with narrative transportation ($r=0.39$, $p<0.001$). Narrative transportation was higher for participants who read challenging fiction and non-fiction than for participants who read easy fiction. Positive affect, but not negative affect, mediated the effect of challenging versus easy text conditions on narrative transportation. These findings suggest that narrative transportation may not be dependent on story genre, but rather on a given text's difficulty level and the positive emotions experienced while reading.

In this study we'll be discovering relationships between online binge-watching and bedtime procrastination, self-control and online binge-watching, and self-control and bedtime procrastination. Thus the purpose of this research is to investigate the relationship between binge-watching, self-control, and bedtime procrastination among college students in Iran. My aim is to shed light on the potential correlations between these variables in the context of this specific population.

2. Method

The survey was conducted using the "Porsline" platform (an online questionnaire distributor) among undergraduates in Ghazvin. Participants were provided with study instructions and were thanked for their involvement in the

research. Standardized scales were used for conducting the assessments.

2.1 Instruments

Brief Self-Control Scale (BSCS): The scale developed by (Tangney et al., 2004) consists of 13 items and each statement has a rating from 1 (not like me) to 5 (very much like me). Content validity was used for this questionnaire and Cronbach's alpha method for reliability (0.818).

Bedtime Procrastination Scale (BPS): The scale developed by (Kroese et al., 2014) consists of 9 items and each question is rated from 1 (almost never) to 5 (almost always). The total BPS score is computed by averaging responses to all individual items. The total score reflects the extent to which people unnecessarily delay going to bed, with higher scores indicating more bedtime procrastination. To ensure the accuracy and relevance of the questions in this questionnaire, content validity was utilized. Cronbach's alpha was also employed as a method to measure reliability (0.875).

Binge-Watching Addiction Questionnaire (BWAQ): Developed by (Forte et al., 2021), consists of 20 items, each question rated on a five-point Likert scale from “never” to “always”. The overall score for the BWAQ is obtained by calculating the average of all individual responses. A higher total score indicates that a person tends to watch more episodes of a show in one sitting, as this scale measures the degree to which individuals engage in binge-watching behavior. To guarantee the precision and significance of the questions in this questionnaire, content validity was implemented. Additionally, Cronbach's alpha was utilized as a means to assess reliability (0.891).

In this study data were analyzed using descriptive statistics (Mean and Standard Deviation), and the collected information was analyzed by descriptive and inferential statistics (Spearman Correlation). R programming and IBM SPSS 27 were used for data analysis.

3. Results

Table 1 illustrates the number of participants, mean and standard deviation

Table 1:

	N	Mean	S.D
Online Binge-Watching	133	50.89	13.41
Self-Control	133	37.99	4.74
Bedtime Procrastination	133	27.14	3.54

Table 2 shows Correlations between online binge-watching, self-control, and bedtime procrastination

Table 2:

	Online Binge-Watching	Self-Control	Bedtime Procrastination
Online Binge-Watching	1		
Self-Control	-.44	1	
Bedtime Procrastination	.30	-.36	1

Note: $p < .001$

As can be seen in Table 2, there is a negative relationship between online binge watching and self-control, and there is a positive relationship between online binge watching and bedtime Procrastination ($p < .001$). Also, there is a negative relationship between bedtime Procrastination and self-control ($p < .001$).

4. Discussion

The study confirmed that online binge-watching and bedtime procrastination are strongly and positively related and it was consistent with the findings of (Srinivasan, Edward, & Eashwar, 2021) that subjective sleep quality, sleep latency, habitual sleep efficiency and daytime dysfunction had statistical significance association with binge-watching. The results also found that online binge-watching and self-control have a negative and strong relationship and there was consistency with the findings of (Lades et al., 2022) that shows binge-watching is the result of a self-control failure where the person acknowledges that the short-term desire to binge-watch interferes with other important long-term goals. High levels of trait self-control are considered key to resolving such vice-virtue conflicts in favor of the virtuous activity. Similarly, it is revealed that self-control and bedtime procrastination have a moderate negative correlation between them, as (Ahmad & Khurshid, 2022) suggested that when self-control is high, sleep quality is better with lower Bedtime Procrastination and when Bedtime Procrastination is high, sleep quality is lower, and self-control is worse. According to (Ling et al., 2023), a study was conducted on 763 Chinese college students with self-reported questionnaires and using standardized scales. The results indicated that both self-control and bedtime procrastination mediated the relationship between mindfulness and sleep quality, hence the effectiveness of mindfulness to provide a set

of useful recommendations for strategies and interventions that could help students improve their sleep quality.

5. Conclusion

This research explores the relationship between online binge-watching, self-control, and bedtime procrastination in Iranian college students. As mentioned earlier, there is a significant positive correlation between online binge-watching and bedtime procrastination. A negative correlation occurred between self-control and online binge-watching. The same negative correlation was seen between self-control and bedtime procrastination. Research shows that motives are important for distinguishing the problematic side of this behavior from the enjoyment-seeking side. Through empirical research conducted around the world, we can get to know this behavior better and prevent mental health issues caused by it. The practice of mindfulness, building a routine bedtime, and practicing self-control can contribute to this matter a lot.

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Conflict of interests

The Author declare that there is no conflict of interest with any organization. Also, this research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

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Research Paper: Superstition and Its Association with Depression and Anxiety among University Students



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Abstract

Superstitious beliefs and practices have a determining role in culture and society in traditional communities and influence their worldview and value system. The aim of the present study was to investigate the relationship between superstition tendency and depression and anxiety among college students. The present study was descriptive-correlational. The research population consisted of all students who were studying at the Islamic Azad University of Bandar-e Anzali in the academic year 2021-2022. From this population, 335 people were selected as the sample using the convenience sampling method. Beck Depression Inventory (BDI), Beck Anxiety Inventory (BAI), and Superstition Tendency questionnaires were administered to them and the questionnaires were analyzed using correlation and regression statistical methods after collection. The Results showed that there was a significant relationship between superstition tendency and depression and anxiety ($P < 0.001$). As a result, it can be said that superstition tendency can predict depression and anxiety in university students.

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1.Introduction

Depression is one of the most common psychological disorders and is characterized by symptoms such as low mood, hopelessness, fatigue, feeling worthless, suicidal thoughts, and sleep and eating disorders (Spriggs et al., 2021). The World Health Organization (WHO, 2023) has declared depression the main cause of disease and disability in the world. Depression is accompanied by symptoms such as severe sadness, avoidance of others, feeling useless and worthless (Anand, 2019).

Depressive disorders are relatively common, regardless of their diversity; this means that about 17% of people experience at least one episode of severe depression in their lifetime (Shim et al, 2020). It is agreed that depression is one of the most disabling diseases that affects a large number of people in the world today and impairs their ability to function, think and feel. On the other hand, the prevalence of depression is such that it is considered the most common disorder and the common cold of mental illnesses (Colomer et al, 2021). Diagnostically, depression is also one of the most common diagnoses in mental disorders that encompasses a large number of people with different backgrounds in the world (Shim et al, 2020).

Another factor that affects mental health is anxiety. Anxiety is a warning that alerts the person, tells them that there is a threat ahead, and helps them to take actions to cope with the threat (Sadoks & Sadoks, 2016). Anxiety is a normal, emotional, logical response to potential danger. However, if the symptoms of anxiety are long, irrational, severe, or

occur in the absence of stressful or stimulating events, it will be problematic (Woldegerima et al., 2018). About 30 to 40 percent of people in Western societies suffer from disorders related to anxiety at some stage of their lives (Ganji, 2017). Anxiety disorders are one of the most common mental health problems. The prevalence of this disorder has been estimated at 28.8% (Osmanagaoglu et al., 2018). The serious and distressing symptoms of anxiety are the most common mental problem in the world, affecting about 5 percent of all adults with disability in the developed world (Mkrtchian et al., 2018).

Since the beginning of existence, humans have used various methods to explain any phenomenon. When their scientific knowledge was limited and flawed about the world's affairs, they attributed every phenomenon to gods, spirits, demons and supernatural things, and in times of fear and insecurity, they relied on various rituals, magic, witchcraft, prayer writing and generally superstitions. Superstitions are an inseparable part of the intangible culture of any society that has survived in different forms and ways throughout history. Just as many beliefs depend on specific time and space conditions, superstitious beliefs are also influenced by time and place; however, it is not incorrect to say that in every class and group, there is a strand of superstitious beliefs with different levels. Today, as technology, media and internet use have increased, superstitions have also spread in these media and social-internet networks (in the form of fortune-telling, prediction) online

and have attracted many people (Dehghani & Ebrahimi, 2019).

Catania and Reynolds (1968) identifies and differentiates three types of superstitions based on their nature: the first type is simple superstitions, which are behaviors that result from a positive outcome or event. This type of superstition can be observed in Skinner's experiment, where pigeons quickly bobbed and rotated their heads, believing that this would make food appear and be accessible. The second type, called concurrent superstitions, are strengthened when a behavior, response or reward happens at the same time, even though the reward has no causal connection to the behavior. The third type is sensory superstitions, which are defined as giving importance to some things and aspects of the individual's environment, such as a hat or lucky socks (Rabiei, 2015). Research confirms the effect of superstitions on mental health. Naghash et al (2020) demonstrated in their research that there is a direct and significant correlation between superstitious beliefs and all dimensions of pathological symptoms, and depressive symptoms have a positive and significant role in explaining superstitious beliefs. Dehghani & Ebrahimi (2019) claimed in their research that there is a negative relationship between the inclination to superstitions and psychological security, and the higher the inclination to superstitions, the lower the psychological security. Hartmann et al (2006) also thinks that there are exaggerated beliefs and perceptions that have influenced ordinary and public human interactions; these beliefs extend to strong beliefs and convictions and affect health behaviors.

According to the points mentioned, the values that each person believes in affect the beliefs related to human needs, health and illness, and directly influence the person's reaction to diseases, treatment choice, and Quality of Life (Lange et al, 2001). The aim of this study was to explore how superstition tendency relates to depression and anxiety among students. This is an important issue because superstition affects the beliefs, attitudes and mental health of people in society (Dehghani & Ebrahimi, 2019) and there is no consistent research on its impact on anxiety and depression.

2. Method

The present study had an applied purpose and a descriptive-correlational method. The research population included all students who were studying at the Islamic Azad University of Bandar-e Anzali in the academic year 1401-1402, totaling 2500 people. Based on the table of Krejcie & Morgan (1970), 335 people were selected as the sample using the available sampling method. All participants received oral information about the research and participated if they wished; they were assured that all their information would remain confidential and their personal information was not recorded for privacy reasons. Finally, the researcher administered the Beck Depression Inventory, Beck Anxiety Inventory and Superstition Tendency Questionnaires to them and analyzed the questionnaires using SPSS24 and correlation and regression statistical methods after collection.

2.1. Instruments

Beck Anxiety Inventory (BAI): This Inventory was developed by Beck and Steer (1990) and consists of 21 items that cover common symptoms of anxiety. The subjects, in order to answer, mark their distress level in the past week in the column opposite it. The scoring method of the answers is as follows: none (0), mild (1), moderate (2) and severe (3). In this way, the individual's score range can vary from zero to 63. The reliability and validity of the test were obtained by Beck above 0.9 respectively by Cronbach's alpha and split-half methods (Beck, 1990). The reliability of the Iranian version by Cronbach's alpha method was 0.83 and the validity by correlation method was 0.92 (Kaviani & Mousavi, 2008).

Beck Depression Inventory (BDI): Beck (1961) developed this Inventory, which has 21 items. It includes cognitive, physical and emotional subscales. The questions of this scale have 4 options from zero to 3 points. The total depression scores can range from 0 to 63. Beck et al (1988)' research obtained the reliability coefficient of the questionnaire

by the retest method 0.86. The questionnaire's validity in Rajabi's (2005) research was 0.80 and the reliability by Cronbach's alpha method was 0.89.

Superstition Tendency Questionnaire: Afshani and Sheikhalishahi (2022) designed this questionnaire, which has 10 items with 5 options from completely agree (4 points) to completely disagree (0 points). Therefore, the highest score is 40 and the lowest score is 0. The more the score obtained, the more the person's superstition tendency. Afshani and Sheikhalishahi's (2021) research obtained the reliability of this questionnaire by the retest method 0.80 and the reliability by Cronbach's alpha method was 0.86.

3. Results

This study involved 335 students of Islamic Azad University of Bandar-e Anzali. Of these, 232 (68.3 percent) were female and 123 (31.7 percent) were male. Table 1 shows the mean and standard deviation of the scores on the superstition tendency, depression and anxiety questionnaires.

Table 1

Mean and standard deviation of superstition, depression and anxiety

Factors	Mean	Standard deviation
Superstition tendency	5.83	2.11
Depression	3.55	2.4
Anxiety	5.51	4.4

Table 2

Correlation between tendency to superstitions scales with depression and anxiety

	Depression	Anxiety
Superstition tendency	0.52*	0.38*

*P<0.01

**P<0.05

Table 2 shows the correlation between tendency to superstitions with depression and anxiety. The data showed that there was a significant relationship between tendency to superstitions with depression ($r=0.52$,

$P<0.01$) and anxiety ($r=0.38$, $P<0.01$), and this meant that with increasing tendency to superstitions, depression and anxiety also increased.

Table 3

The degree of explanation of the superstition tendency variable by the variables of anxiety and depression

Predictor variables	B	Standard error	β	T	R2	Significance level
Depression	0.239	0.155	0.421	2.28	0.028	>0.000
Anxiety	0.253	0.176	0.488	2.99	0.033	<0.000

Since the significance level of the test is less than the standard level of 0.01, the test results are significant. This means that there is a significant relationship between superstition tendency and depression and anxiety. If superstition tendency increases, depression ($B=0.239$, >0.000) and anxiety ($B=0.253$, <0.000) also increase.

4. Discussion

The aim of this research was to investigate the relationship between tendency to superstitions and anxiety and depression in university students. The findings showed that there was a significant positive correlation between tendency to superstitions and depression and anxiety. That is, as tendency to superstitions increased, depression and anxiety also increased. The findings were consistent with the results of Naghash et al. (2020), Dehghani and Ebrahimi (2019), Rabiei (2015) and Hartmann et al. (2006).

To explain these results, the findings of Inglehart (2016) were referred to, who stated that the lack of mental health increases the

amount of traditional values and actions of individuals and under psychological pressures and sense of danger, these values and actions have more manifestations. In addition, according to Maslow, if human needs, such as physical, security, love, self-esteem and self-actualization, are met, their impact on beliefs, thoughts, actions and behaviors will be seen. Accordingly, tendency to superstitions, which is one of the values, traditional and irrational actions of any society, is influenced by psychological pressures and as a result, lack of social security, which increases the beliefs and behaviors of individuals with unfulfilled needs. In fact, tendency to superstitions is a mechanism for soothing and calming people who do not have the necessary confidence in their lives (Zare-Shahabadi & Torkan, 2015).

Tendency to superstitions is shaped by sources such as ambiguity of position, including personal and social situations. High levels of stress, pressure, anxiety, depression and social distrust lead to doubt and helplessness among people. Women are more

exposed to these ambiguous situations and tend to use superstition as a coping strategy. This, in turn, results in more mental and emotional problems among women, who then engage in more superstition and superstitious behaviors to alleviate these problems (Dehqani & Ebrahimi, 2019).

There were some limitations in conducting the above research, including that this research was conducted on college students of Islamic Azad University, Bandar-e Anzali Branch and in generalizing the results to other groups and other cities and cultures, caution should be exercised. Another limitation of the present research was the lack of control of acute mental problems. Therefore, participants entered the research with any mental and behavioral problems. It is suggested that in the future and when conducting similar research, using purposive sampling, people who have acute mental problems should be identified and excluded from the research.

5. Conclusion

This research's results suggest that superstition tendency is a significant predictor of depression and anxiety among university students.

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Conflict of interest

The Author declares that there is no conflict of interest with any organization. Also, this research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

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Research Paper: Effectiveness of Acceptance and Commitment Therapy on Suicidal Ideation, Emotional Self-regulation and Psychological Flexibility of Adolescents with Suicidal Ideation Referring to Social Emergency



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Abstract

This study aimed to examine the effectiveness of acceptance and commitment therapy (ACT) on suicidal ideation, emotional self-regulation, and psychological flexibility in adolescents with suicidal ideation who were referred to a social emergency center. The research method was a quasi-experimental pretest-posttest design with a control group. The population of the study included all adolescents with suicidal ideation who visited the counseling center of the social emergency in Astaneh-ye Ashrafiyeh city in 2021. Thirty participants (15 in the control group and 15 in the experimental group) were selected from this population by purposive sampling and randomly assigned to two groups. The experimental group received eight 90-minute sessions of group ACT, while the control group was put on a waiting list. Data were collected using the Acceptance and Action Questionnaire (AAQ-2), the Cognitive Emotion Regulation Questionnaire (CERQ), and the Beck Scale for Suicide Ideation (BSSI). Data were analyzed using the analysis of covariance (ANCOVA) test. The results showed that there was a significant difference between the experimental and control groups in the posttest mean scores of the reappraisal component of emotion regulation and suicidal ideation. However, there was no significant difference in the flexibility and suppression components of emotion regulation. Based on the results of this study, it is recommended that psychologists and psychotherapists working in social emergency centers or with adolescents use the results of this study to improve emotion regulation and reduce suicidal ideation in their adolescent clients.

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1. Introduction

Every society develops and implements programs to meet the needs of its people and address or alleviate their problems. Our country follows the same principle. One such program is the social emergency program, which is the outcome of the Welfare Organization's several years of activity in the country. It has been operating since 1999 to intervene in personal, family, and social crises. The crisis intervention section of the social emergency provides services to people who experience various types of harm, such as sexual identity disorder, suicidal ideation and behavior, sexual deviance, social harm to women and girls, elder abuse, child abuse, spouse abuse, disability abuse, and running away from home. The aim of these services is to empower people who are at risk or socially harmed and help them return to a healthy life (Mousavi Chalak, 2021).

Adolescents are an important and vulnerable social group that often have suicidal thoughts. These people are more likely to attempt suicide because they do not know how to cope with their problems (Russell et al., 2019). One of the most urgent issues that adolescents face is suicidal thoughts and actions. Research has shown that about 23 percent of high school students experience suicidal ideation (Orri et al., 2020). Suicidal thoughts and ideas are the strongest predictors of self-harm behaviors (Mars et al., 2019). They are not limited to a specific stage of life, but they seem to affect people more when they encounter personal difficulties and feel hopeless (Pan et al., 2017). Suicidal thoughts are a type of mental involvement with death that has not yet

become a reality (Andriessen et al., 2019). They also include a spectrum of vague thoughts about the possibility of ending one's life to complete suicide (Nam et al., 2018). Their tendency increases during puberty. Contrary to what most adults believe, most suicide attempts by adolescents are planned in advance, not impulsive responses to failures (Lian et al., 2017).

Excitement regulation is an important factor for health and successful performance, as shown by a review of texts and psychological studies. Emotion regulation is a process that involves both external and internal factors, and it is responsible for reviewing, evaluating, and adjusting emotional reactions, especially their intensity and duration, to achieve a goal (Drach et al., 2021). However, the ability to regulate emotion declines in individuals during adolescence (Ersan, 2020). Many researchers believe that an ineffective style of emotion regulation leads to negative mood states, which cause turmoil in the individual (Pico-Perez et al., 2017). Research also shows that people who have a history of suicidal thoughts and actions display more negative emotions in response to life issues. These findings suggest that problems in cognitive evaluation, especially in moderating and regulating negative emotions, are more related to suicide risk (Pico-Perez et al., 2017; Kudinova et al., 2015).

Psychological flexibility is another factor that can affect adolescents' risk of suicidal thoughts or actions. Flexibility is associated with psychological well-being, according to some studies (Denckla et al., 2018). It is a process or an outcome of adapting well to

challenging situations, allowing people to cope with their negative and unpleasant experiences and keep their equilibrium (Gonzalez et al., 2017). Flexibility involves a range of behaviors that a person engages in according to their values, and it also fosters commitment to action (Hayes, 2016).

Various intervention methods and treatment modalities have been applied to assist adolescents who have suicidal thoughts and are referred to social emergency centers. Acceptance and commitment therapy (ACT) is one of the psychological interventions that has gained much popularity in recent years. It is a third wave behavioral therapy that helps people pursue a rich and meaningful life instead of struggling with unpleasant internal experiences. It uses six fundamental components and its theoretical foundation, Rational Frame Theory (RFT), to achieve this goal (Hayes, 2019). This approach fosters flexibility in clients by employing six main components: acceptance, defusion, observing self, contact with the present moment, values, and committed action (Allmann, 2020). The main premise of ACT is that any attempt to control mental experiences is futile and counterproductive (Kiuru et al., 2021). In acceptance and commitment therapy, people learn to experience their problematic thoughts and emotions in a different way rather than trying to alter their outlook on life (Wynne et al., 2019).

Research suggests that acceptance and commitment therapy (ACT) improves not only physical performance but also various mental health problems (Spidel et al., 2018). Lewin et al. (2021), Kim and Lee (2019), Wersebe et al. (2018), Deval et al. (2017),

Rezai Sharif et al. (2021), and Khorani et al. (2019) found that ACT improved psychological flexibility by reducing experiential avoidance and increasing acceptance ability, connection with the present, and non-coherence in their studies. Esmail zadeh et al. (2021) supported this therapeutic approach and showed that ACT significantly improved emotional regulation problems in adolescents. Halliburton and Cooper (2015) also explored how ACT could be applied and adapted to adolescents and discovered that ACT could help adolescents with chronic pain, anorexia, depression, obsession, stress, behavioral disorders, learning disorders, and autism spectrum disorders and reduce their psychological problems. However, they also noted that adolescents used ACT less than other groups and most studies in this field had small samples and short interventions. Tighe et al. (2018), Walser et al. (2015), and Jamali et al. (2021) concluded that ACT could be an effective intervention to reduce suicidal thoughts and self-harm behaviors in their studies.

Adolescent psychological issues require special attention, and suicide has been increasing among young and adolescent people in recent years. Therefore, it is necessary to address the issue of suicidal thoughts in adolescents, as this issue can affect their life and future in various ways. Moreover, the absence of psychological flexibility and emotional self-regulation can cause problems for individuals at the educational, family, and social levels. Hence, more information is needed on this problem and its treatment methods in the adolescent

group. The aim of the present study was to examine the effectiveness of acceptance and commitment therapy on suicidal thoughts, psychological flexibility, and emotional self-regulation in adolescents with suicidal thoughts.

2. Method

Method This research used a quasi-experimental method with a pre-test-post-test and a control group. The research population included all adolescents who had suicidal thoughts or actions and were referred to the social emergency center of Astaneh Ashrafieh city in 1400. According to the statistics obtained from the social emergency center, there were 94 of them. We used the following sampling method: we selected purposefully 30 adolescents who met the entry criteria out of this number and randomly divided them into two groups (15 people each) of experimental and control. The entry criteria were: having suicidal thoughts, not having severe mental disorders (as diagnosed by the research psychologist), and giving informed consent to participate in the research. The exit criteria were: missing more than two sessions and showing no interest in continuing the treatment. The participants gave their informed consent to take part in the research.

2.1. Instruments

Beak Scale for Suicidal Ideation (BSSI): This is a scale that Beck developed in 1961 to measure the intensity of attitudes and planning for suicide. It contains 19 items that use a three-point Likert scale from 0 to 2. Five items are for screening and the person must answer the remaining 14 items if he/she answers item 5 positively; otherwise, there is no need to continue. The person's score can range from zero to thirty-eight. [Beck and Steer \(1990\)](#) reported the reliability coefficient and inter-rater reliability of the scale as 0.89 and 0.83, respectively. [Anis et al. \(2005\)](#) studied the validity and reliability of the Beck Suicide Ideation Scale with 100 subjects aged 19 to 28. They estimated the validity of the scale to be 0.95 using the Cronbach's alpha method and 0.75 using the two-half method.

Emotional Self-Regulation Questionnaire (CERQ): Gross and John developed this questionnaire in 2003 to measure emotion regulation strategies. The scale has 10 items with two subscales: cognitive reappraisal (6 items) and suppression (4 items). Responses are on a Likert scale (seven-point), ranging from strongly disagree (1) to strongly agree (7). The Cronbach's alpha coefficient for cognitive reappraisal was 0.79 and for suppression was 0.73. The test-retest reliability after three months for the whole scale was 0.69. The correlation coefficients of cognitive reappraisal with positive affect and negative affect were 0.24 and -0.14, respectively. The correlation coefficients of suppression with positive affect and negative affect were -0.15 and 0.04, respectively ([Balzarotti & John, 2010](#)). The validity of this

questionnaire in the Iranian population was based on the internal consistency method (with Cronbach's alpha range of 0.86 to 0.81) and validity through principal component analysis using varimax rotation. The correlation of the two subscales was -0.13. The validity was desirable (Kayani, 2013).

Acceptance and Action Questionnaire-II (AAQ2-): This questionnaire, developed by Bond and colleagues (2011), is a 10-item version of the original questionnaire that measures experiential avoidance and psychological inflexibility. The questions are on a Likert scale from one (never) to seven (always) and include both positive and negative questions. Questions one, six and ten are reverse scored (Bond et al., 2011). The scores range from 10 to 70 and lower scores indicate higher levels of psychological flexibility (Hayes et al., 2012). Bond et al. (2011) reported a Cronbach's alpha of 0.84 and a test-retest reliability of 0.81 and 0.79 after 3 and 12 months, respectively, for this

questionnaire. They also reported evidence of concurrent, longitudinal and incremental validity for this instrument by reporting the correlation between the scores from this questionnaire and multiple indicators of mental health and indicators such as absenteeism rate in the work environment at present and in the future.

2.2. Procedure

The study used a convenience sampling method to select 30 participants based on the research criteria. They were randomly divided into two groups: experimental and control. Both groups took a pre-test before the intervention. The experimental group received eight sessions of acceptance and commitment therapy (90 minutes per session, twice a week) following the protocol of Zettle et al. (1980). After the intervention, both groups took a post-test. The data were analyzed using SPSS software and the statistical method of covariance analysis.

Table 1

Summary of acceptance and commitment therapy sessions

Objective	Content	Expected behavior change	Homework
Introduction, Treatment explanation, Treatment agreement, Case conceptualization	Completing questionnaires, introduction	Getting familiar with the treatment	Recording problematic behaviors
Creating creative hopelessness, ineffectiveness of previous solutions	Talking about the painful experiences of the clients, using the metaphor of the person fallen in the well and the tug of war Using the jelly doughnut metaphor to explain that controlling oneself causes the problem	Replacing appropriate solutions instead of previous solutions	Writing down thoughts and feelings and reporting weekly events
Labeling control as the problem		Making the clients aware of the futility of controlling	Expressing behaviors that are considered as control. Not avoiding negative thoughts.
Introducing defusion, distancing from thoughts and watching them	Bus passengers metaphor, walking with mind exercise	Familiarity with defusion	Defusion practice throughout the day
Introducing oneself as the context	Observing oneself	Observing thoughts and paying attention to one's experiences Practicing being in the present moment and accepting one's thoughts and emotions	Practicing being an observer
Introducing mindfulness	Focusing on bodily sensations		Doing meditation at home
Clarifying values	Identifying, assessing and prioritizing values in life	Understanding values and striving to live a valuable life	Drawing a table of ranking values
Committed action	Making a commitment to do the exercises, summarizing the sessions and doing the post-test	Committing to act according to the life values, accepting the disturbing thoughts and reducing experiential avoidance	Doing and reviewing the exercises during the therapy sessions

3. Results

The descriptive indices of the research variables are presented in Table 2. Before conducting the covariance analysis test, the

assumptions of the parametric tests were checked. The Kolmogorov-Smirnov normality test for the variables of psychological flexibility, emotion regulation

and its dimensions, and suicidal thoughts indicated that the distribution was normal ($P > 0.05$). The Levene test for assessing the homogeneity of variance of the groups in the components of the dependent variables of the research showed that the significance level

was higher than 0.05. Therefore, the experimental and control groups were roughly equivalent in terms of the variability of scores of these variables and their components in the pre-test phase.

Table 2

Descriptive indices (mean and standard deviation) and normality of research variables in two pre-test and post-test phases

Variable	Group	Pre-test		Post-test		Kolmogorov Smirnov	p	Levene	P
		M	SD	M	SD				
Flexibility	Experiment	44.53	11.40	34.46	6.84	0.116	0.200	1.422	0.243
	control	29.33	8.94	27.73	9.16				
Reappraisal	Experiment	21.26	9.25	26.26	6.60	0.102	0.150	1.983	0.050
	control	23.93	9.36	23.33	9.68				
Suppression	Experiment	13.93	5.78	15.06	4.31	0.109	0.200	0.166	0.687
	control	13.13	4.08	13.20	4.22				
Total score of emotion regulation	Experiment	35.20	12.64	41.33	8.14	0.096	0.200	3.505	0.072
	control	37.06	11.54	36.53	13.2				
Suicidal thoughts	Experiment	23.26	10.08	8.26	5.93	0.150	0.083	1.053	0.314
	control	17.33	10.09	16.53	9.89				

The univariate covariance analysis results in Table 3 showed that, after controlling for the pre-test effect, the experimental and control groups had significantly different mean scores on the post-test for the total score of emotion regulation ($2 \eta^2 = 0.268$ and $P > 0.05$, $F = 9.901$) and suicidal thoughts ($2 \eta^2 = 0.489$ and $P > 0.05$, $F = 25.855$). However, there was no significant difference between the groups for cognitive flexibility ($2 \eta^2 = 0.101$ and $P > 0.05$, $F = 3.042$).

Table 3

Univariate covariance analysis results of the difference between the experimental and control groups in the total scores of cognitive flexibility, emotion regulation and suicidal thoughts

Source	Sum of Squares	DF	Mean Square	F	P	Eta ²
Flexibility						
Corrected model	1665.75	2	832.87	44.53	0.001	0.767
Intercept	79.92	1	79.92	4.27	0.048	0.137
Pre-test	1325.72	1	1325.72	70.88	0.001	0.724
Group	56.88	1	56.88	3.04	0.093	0.101
Error	504.94	27	18.70			
Total	31187.00	30				
Corrected total	2170.70	29				
Emotion regulation						
Corrected model	2754.33	2	1377.168	46.39	0.001	0.775
Intercept	300.77	1	300.77	10.13	0.004	0.273
Pre-test	2581.53	1	2581.53	86.96	0.001	0.763
Group	293.93	1	293.93	9.90	0.004	0.268
Error	801.53	27	29.68			
Total	49030.00	30				
Corrected total	3555.86	29				
Suicidal thoughts						
Corrected model	1410.99	2	705.49	19.756	0.001	0.594
Intercept	4.65	1	5.65	0.158	0.694	0.006
Pre-test	898.46	1	898.46	25.159	0.001	0.482
Group	923.30	1	923.30	25.855	0.001	0.489
Error	964.20	27	35.71			
Total	6988.00	30				
Corrected total	2375.20	29				

Table 4 shows the results of the test that measured how the intervention affected the participants' emotion regulation skills (appraisal and suppression).

Table 4

Multivariate analysis of covariance for examining the effect of group on emotion regulation components

	Value	F	Df1	Df2	P	Effect size
Pillai's trace	0.375	7.515	2	25	0.003	0.375
Wilk's lambda	0.625	7.515	2	25	0.003	0.375
Hotelling's trace	0.601	7.515	2	25	0.003	0.375
Largest root	0.601	7.515	2	25	0.003	0.375

Table 5 presents the results of the multivariate analysis of covariance test for

the emotion evaluation and suppression regulation components.

Table 5

Results of covariance analysis of difference between experimental and control groups in emotion regulation components

Variable	Sum of squares	DF	Mean square	F	Significance level	Eta ²	Statistical power
pre-test							
Evaluation	194.50	1	194.50	15.48	0.001	0.373	0.966
Repression	21.15	1	21.15	2.408	0.133	0.085	0.321

The results show that the mean scores of the emotion evaluation component in the post-test were significantly different after controlling for the pre-test effect ($P < 0.01$). However, there was no significant difference between the pre-test and post-test scores of the emotion suppression component ($P > 0.01$).

4. Discussion

The aim of this study was to examine the effectiveness of acceptance and commitment therapy (ACT) on suicidal thoughts, psychological flexibility and emotional self-regulation in adolescents with suicidal thoughts. The results of this study indicated that ACT reduced suicidal thoughts in the experimental group. This finding was consistent with the studies of Tighe et al. (2018), Walser et al. (2015), and Jamali et al.

(2021). A possible explanation for this finding is that ACT involves acceptance. Acceptance is a client's intentional and brave state. It allows him or her to fully and non-judgmentally experience his or her psychological aspects (the good, the bad and the ugly). He or she can also express them in society without labeling them as good or bad. Acceptance means experiencing feelings, emotions and thoughts, without any attempt to change them. Acceptance is especially necessary when the experience is not and should not be changeable. This paradoxical state allows the client to be who he or she is and to be where he or she is present, and to reduce his or her desire to change his or her thoughts and feelings (Hayes et al., 2012). ACT helps people to become aware of their emotions and cognition and to abandon their maladaptive strategies, in order to achieve

better and more compatible goals. Therefore, the person is released from the grip of his or her destructive conflicts that he or she is trapped in and that may lead him or her to harm himself or herself and others, to move towards emotional solutions such as risky behaviors, and to achieve psychological compatibility in the person (Hayes, 2016). In addition, the use of the creative hopelessness technique helped adolescents to expand their behaviors in the direction of personal values, instead of cognitively aligning with negative thoughts and trying to change those (Hayes et al., 2012).

In this study, there was also a significant difference in the mean scores of the post-test of the experimental and control groups in the reappraisal component of the emotion regulation dimensions. However, there was no difference in the suppression dimension. This result was consistent with previous studies such as Hubert et al. (2015), Esmail Zadeh et al. (2022). This result could be explained as follows: ACT is one of the solutions to increase emotion regulation. It has mechanisms such as acceptance, increased awareness, and presence in the present moment, non-judgmental observation and committed action based on personal values. These mechanisms help people to align with beliefs and values that give them more control over their emotions. This is especially helpful when they face unpleasant and threatening emotions (Wetherell et al., 2011).

Studies by Kim and Lee (2019), Wersebe et al. (2018), Lutfiazimi (2022), Rezai Sharif et al. (2021), based on the effectiveness of ACT on improving psychological flexibility,

all stated that this approach, which is a behavioral therapy, uses skills such as acceptance, cognitive defusion and mindfulness to increase psychological flexibility (Hayes, 2016).

5. Conclusion

The result of this study contradicted the previous findings and showed that acceptance and commitment therapy (ACT) did not have a significant effect on the flexibility of the target group adolescents. A possible reason for this finding is that the study group, due to having severe suicidal thoughts in the pre-test stage and being in the sensitive period of adolescence, was more resistant to change. Psychological flexibility aims to help the person cope with and evaluate his or her situation (Bond et al., 2006). Adolescents with a history of suicidal thoughts show more fragility in response to life issues and are not able to accept the difficult conditions of life. Therefore, considering the consequences of problems related to suicidal thoughts, they did not show the necessary impact in response to the related questionnaire.

This study provided a suitable framework for treating adolescents with suicidal thoughts through ACT. Therefore, this method is recommended for use in educational centers and schools for the variables of this study and other variables in the adolescent age group who are in the sensitive stage of growth and identity formation. On the other hand, considering the non-significance of the flexibility variable and the suppression dimension of the

emotion regulation dimensions, psychologists and psychotherapists of social emergency centers should pay more attention to the results of this study to improve emotion regulation and flexibility of their adolescent clients. Among the limitations of the present study is the allocation of samples to Astaneh-ye Ashrafiyeh city, which limits the generalization of the result to other cities. On the other hand, the sample under study was only female adolescents, which limits the generalization of the results to male adolescents. It is also advised that more assessments be done during the intervention phase to avoid biasing the mean scores by the treatment period and that a follow-up phase be performed to calculate the effect of the treatment with more certainty. Considering the high percentage of suicidal thoughts in adolescents and their referral to treatment centers, conducting psychological studies related to this harm will significantly help to treat the problems of this group of people.

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Conflict of Interest

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