

The Effect of Selected Leisure Sports Games on Mindfulness Skills, Anxiety, and Depression of Chronic Mental Patients*

Shabnam ASAN¹, Mahdi ESFAHANI¹, Amin AZİMKHANI^{1†}

¹Imam Reza International University, Department of Sports Sciences, Mashhad, Iran

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Abstract

This study aimed to investigate the effect of selected sports games in leisure time on mindfulness skills, anxiety and depression of chronic mental patients. This is a quasi-experimental study and its participants consisted of women with chronic mental illness aged 20-30 years hospitalized in Atef Rehabilitation Centre of Mashhad in 2022. The statistical sample was selected as a total of 46 people, i.e., the entire statistical population. The samples were randomly divided into control and experimental groups. Data collection tools included the Kentucky Mindfulness Skills Questionnaire (2004), the Beck Depression Inventory (1961), and the Zung Anxiety Inventory (1971). In the pre-test, both groups filled out the questionnaires. The subjects of the experimental group played selected sports games for eight weeks, three days a week and every day for 60 minutes, and the control group continued their daily activities. Then, the two experimental and control groups participated in the post-test and filled out the questionnaires again. SPSS software version 24 was used for data analysis. Findings indicate that the mean of depression and anxiety decreased after the post-test, but the mean increased for mindfulness. Although there was a significant difference between the control and experimental groups in the variables of mindfulness, depression, and anxiety after selected sports games, the components of describing mindfulness and physical symptoms of anxiety were not significant. The results showed that considering that playing sports games in the leisure time of chronic mentally ill people improves their level of mental health, it is recommended that selected sports games be included in the leisure program of these patients; Therefore, spending sports leisure time while creating positive effects on the physical and mental dimensions of patients can be a good alternative to the same and inflexible daily programs of this group of society.

Keywords: Anxiety, Chronic mental illness, Depression, Leisure time, Mindfulness skills, Sports games.

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† **Corresponding Author:** Amin AZİMKHANI, **E-mail:** amin.azimkhani@imamreza.ac.ir

INTRODUCTION

Leisure time can be considered the most important opportunity in human life as for the believers, the moments of worship with the deity, for the scholars and thinkers, the moments of contemplation, for the artists the time of making and inventing, and for some, if they do not have a specific plan to use it, will be the most boring moments. These times establish the closest connection with the spiritual and cultural life of individuals, times that are spent willingly in the way of learning, creation, research, training, voluntary social participation, etc. (Sanaei, 2013). Since a person can do what he/she likes in his free time, he/she finds his/her main character and expresses it, therefore, his/her abilities are often manifested in the areas of leisure (Mozafari et al., 2010). Activities at such times are so important that they are referred to as a mirror of culture (National Youth Organization, 2003). Of course, there is a relationship between leisure and game, as in many aspects of leisure, the game plays an important role. Game is one of the most important aspects of life, so the Dutch sociologist Honizinga, one of the first game theorists, considers it as one of the foundations of culture and the development of civilization (National Youth Organization, 2005).

A game is a type of leisure activity that has three characteristics: intrinsic, individual, and self-motivated motivations; It is also associated with cheerful and witty behaviors and has a tendency to avoid reality and non-serious goals (Sanaei, 2013). Although the term leisure is commonly used for adults, the game is actually an important part of everyone's leisure time. According to new psychological research, the game plays a very effective role in personality development and mental health of young and old (National Youth Organization, 2003). The game covers a wide range of aspects. Hence, there are several definitions of the game. Game is a natural, enjoyable, amazing, and mysterious activity. Game is a means of expressing emotions, establishing relationships, describing experiences, revealing desires, and self-fulfillment. Game is an innate activity and is often done for its own sake, rather than as a means to an end; that is, voluntarily and spontaneously; and it has a pleasant state (Mohammadesmaeil, 2004).

Also, most games are considered a form of physical activity, especially at younger ages. Health and physical fitness resulting from physical activity is a desirable biological state that contributes to the normal functioning of the human body. Research has shown that this factor can probably increase a person's life expectancy and make a person's physical appearance more desirable (Ramezani Nejad, 2007). According to Mobaraki et al., (2022), increasing adherence to physical activity can lead to improving the life expectancy, ultimately providing a good quality of life for the people. Physical fitness is related to the nature and biological existence of a person, and from this point of view, no other serious competitor can be imagined for it. Without health, all hopes, plans, satisfaction and meaningful experiences will be lost, and the story of life will end very soon (Ramezani Nejad, 2007). Numerous research has proved the effect of physical activity not only on physical health but also on mental and social health of people in the society (Karimian &

Shekarchizadeh, 2007, Mobaraki et al., 2022). But does physical activity also affect the mental health of certain people in the community?

Today, we face a large number of chronic mental patients in the community, whose financial costs and the devastating psychological effects of their illness on the family and society are very heavy. Over the past three decades, the care of chronic mentally patients have received increasing attention in the mental health system. High admission of patients in hospitals, recurrent disease, high cost of treatment, community-based care, severe pressure on the family of mentally ill patients and patients' dissatisfaction with the quality of available services, show the need for more attention to the situation of chronic mental patients (Noury Ghasemabady & Bayanzadeh, 1996). In this regard, addressing the issue of preventing the incapacity of these people is very vital (Malekshahi et al., 2009). Mentally ill people not only have difficulty controlling their emotions, thoughts, and behaviors, but also have difficulty performing daily and relaxing activities. Mental disorder is a medically diagnosed disease that results in defects in cognitive, emotional, and affective abilities. Mental disorder occurs when for any reason a person loses the ability to maintain a balance with the environment and therefore is unable to accept the performance of daily activities (Asliazad et al., 2012).

When it comes to mental health, a lack of attention to mindfulness skills, depression, feelings of worry and anxiety is usually the starting point of mental distress, as its persistence leads to disorders in mental, social and physical functioning. Therefore, in examining mental health, examining these three factors can be helpful. Mindfulness means paying special attention, purposeful in the present time and free from prejudice and judgment. In mindfulness, the person becomes aware of the mental method at every moment and learns the skills to identify more useful methods (Aminpour & Zare, 2019). Mindfulness is a skill that allows us to receive events in the present less than they are distressing. When we are aware of the present, our attention is no longer focused on the past or the future, while most psychological problems are caused by focusing on the past (Aminpour & Zare, 2019). When people have an unconscious mind, the least effort is made to process information. In this case, information is processed in a predetermined and inflexible way and the person has the least amount of awareness, which is a clear example of such inflexibility of information processing in anxiety and depression, in which the processing system in a relatively stereotypical way, it gives priority to some processes and prevents some other processes (Pour Mohammadi & Bagheri, 2015). Also, it has been shown that the use of mindfulness programs can improve the level of motor and psychological indicators affecting the performance of people, it is recommended to use mindfulness methods, considering the characteristics of exercise (Sadeghi et al., 2022).

In this regard, depression is one of the most important causes of disability in all countries and is in fact a widespread and harmful disease that affects every man and woman (Patel et al., 2001). This disease is one of the most common mental disorders and manifests as a global health problem in all cultures. Depression does not belong to a specific group, but some people in society are more

vulnerable to this disorder due to their particular situation (Amani et al., 2004). It is believed that 10-20% of the general population experience mild to severe depression, and this disorder is a common illness that 15% of people experience at least once in their lifetime. The number of depressed people is also increasing due to the pressures of social and environmental changes and the rise of some physical ailments, and depression has been recognized as a psychological problem in adult life for centuries. The increasing number of patients with this disorder at different ages to medical centers is a sign of the high prevalence of depression (Amani et al., 2004). Depression is currently considered the most serious disease of the century and according to Harvard University, by 2020, it will be ranked first or second among common diseases (Aramun et al., 2013).

Also, the characteristic that describes anxiety disorders is the chronic and severe experience of feeling anxious, the fear of what might happen to you in the future. The anxiety that people with anxiety disorders experience causes them to have a lot of difficulties functioning in daily life. People with anxiety disorders also experience fear, which is an emotional response to a real or imminent threat. With proper empathy, support, treatment, and conscious rehabilitation, a chronic mental patient can be brought back into the community. There are some preliminary reasons that cause abnormal behaviors in patients in the environment, so improving the environment is effective in reducing pathological behaviors. The mentally ill must realize that even though they have a mental disorder, they are still a human being in the eyes of others, a human being who needs help. Therefore, involving a person in even the smallest matters and asking for his opinion can motivate him to do the work (Malekshahi et al., 2009).

Given the importance of spending the leisure time of chronically mentally patients and considering that there are no suitable opportunities for their play and physical activity, the development of an active leisure program for these people is an issue. Finally, considering the importance of mindfulness, depression, and anxiety as psychological concepts on the one hand and the positive effect of exercise and play on various diseases on the other, in this study, the effect of leisure sports games on mindfulness, depression, and anxiety of chronic mental patients are examined.

MATERIAL and METHODS

Research Model and Research Groups

This is a quasi-experimental study and its participants consisted of women with chronic mental illness aged 20-30 years hospitalized in Atef Rehabilitation Centre of Mashhad in 2022. The statistical sample was selected as a total of 46 people, i.e. the entire statistical population. The samples were randomly divided into control and experimental groups.

Data Collection Tools

In order to collect information, three questionnaires were used. The first one was *Kentucky Mindfulness Skills Questionnaire (KIMS)*: The Kentucky Mindfulness Skills Test was developed by Baer et al., (2004). This questionnaire has 39 questions and is designed to measure 4 components of mindfulness, namely observe, describe, act with awareness, and accept without judgment. The Kentucky Mindfulness Questionnaire is 5 values. In questions 1, 2, 5, 6, 7, 9, 10, 12, 13, 15, 19, 21, 25, 26, 29, 30, 31, 33, 34, 37, 38 and 39, never=1, rarely=2, sometimes=3, often= 4 and always=5 points are given. In questions 3, 4, 8, 11, 14, 16, 17, 18, 20, 22, 23, 24, 27, 28, 32, 35 and 36, never=5, rarely=4, sometimes=3, often=2 and always=1 points are given. A higher score on this test indicates more mindfulness skills. The reliability of the test was 0.83 by Cronbach's alpha method.

The second one was *Beck Depression Inventory (BDI)*: Developed by Beck et al., in 1961 and revised in 1987. The three sides of Beck Depression's triangle include 1- Negative evaluation of self, 2- Negative evaluation of the future, and 3- Pessimistic evaluation of the environment and those around. Beck et al., (1961) were concerned with the effect of cognition on depression, and this test addresses the following symptoms: 1- Mood depression, 2- Cognitive depression, 3- Behavioural and 4- Physical. This questionnaire has 21 items, each of which has four sentences, each of which has been compiled due to the severity of depression. Of these 21 items: 11 items measure cognitive signs and symptoms, 5 items measure the physical symptoms of depression, 2 items measure the symptoms of depression, one of which is irritability, 2 items measure the obvious signs of depression, and 1 item measures interpersonal symptoms. The reliability of the test was 0.86 by Cronbach's alpha method.

The third one was *Zung Anxiety Inventory*. This scale was first developed by Zung in 1971. It is one of the most common clinical questionnaires for measuring the severity of anxiety and consists of 20 items that measure the signs and symptoms of anxiety. The first 5 items are related to the emotional symptoms of anxiety, including anxiety and nervousness, mental breakdown and worry, panic, fear, and the next 15 items measure the physical symptoms of anxiety, which are: Tremor, body aches, fatigue, weakness, restlessness, irregular heartbeat, recurrent urination, sweating, flushed face, insomnia, and nightmares. The Zung Anxiety Inventory is 4-valued, and the scoring method is such that each of the options has a score between 1-4 points. The value of the options in some questions is 1 to 4, respectively, and in some questions in reverse, i.e., from 4 to 1. In questions (5, 9, 13, 17, 19) the options are reversed. Therefore, scale scores can be between 20 and 80. The reliability of the test was 0.84 by Cronbach's alpha method.

Description of Selected Games

According to the purpose of the research, purposeful and selected games to fill the leisure time of chronic mental patients were selected and included in the plan. These games were selected for a period of 8 weeks according to the study of the characteristics of these people and reviewing and interviewing them and determining their interest in the type of activities and games. These games

were played every week for three weeks from 5 to 6 pm for eight weeks. At first, 15 minutes of warm-up with aerobics with music, 35 minutes of sports games, and finally 10 minutes of stretching and cooling down exercises were performed. These games include:

1. Rolling the colour ball to the main goal,
2. Practice rackets with ping pong balls,
3. Dart,
4. Badminton,
5. Bowling,
6. Play the jungle,
7. Step in the air (everyone I named has to catch the ball),
8. Passing in a circle,
9. Throw the ring to the main target,
10. Seven stones,
11. Cannonball,
12. Sit upside down,
13. Dodge ball,
14. Walking with books,
15. Crossing the swamp,
16. Again in the middle of the circle,
17. Rope competition,
18. Drop the cups with the help of a balloon wind,
19. High-speed colour tablet separation contest,
20. Blowing ping pong balls from inside the tray,
21. Match the ping pong ball into the cup by hitting them on the table,
22. The race to pick up soda bottles and let the ball blow from the bottles and fall into the glass,
23. Targeting soda bottles with the band,
24. Paper drawing contest between glasses,
25. Putting glasses on top of each other,
26. Target match to catch ping pong balls inside the circle,
27. Contest of throwing bulletproof paper with cardboard into a container,
28. Tea bag hanging from a hat, and
29. Competition to throw the balls out of the cartons tied to the waist.

The mentioned games were extracted from the book of Sports games and its role in the physical and mental development of children written by Ghasemnejad (2014), the book of play therapy from childhood to old age written by Abbasgholipour et al., (2015) and the book of familiarity with different types of local sports games written by Safikhani & Hosseini (2014) and also, the games studied and approved by the supervisors.

Analysis of Data

SPSS (Chicago, IL, USA) 24.0 program was used in order to analyse the data. Descriptive statistics were given as number, percentage, mean and standard deviation. Data were analysed whether they were normally distributed. In order to identify correlations between factors in the scales Pearson Correlation Coefficient Test was implemented. In order to explain the dependent variable by the independent variable, Regression Test was used. Significance level was accepted as $p < 0.05$. Kolmogorov-Smirnov test was used to check the normality of the data. Then, using the independent t-test, it was concluded that the separation of the control and experimental groups in the pre-test stage did not make a significant difference in the response to the variables. In inferential statistics, due to the normality of the data, independent-samples T test and paired-samples T test were used.

FINDINGS

Of the individuals enrolled in the study most people (82.5%) have an undergraduate degree and only (17.5%) have a diploma or higher. The longest hospitalized time is related to 2 to 3 years (40%) and the lowest is related to more than 10 years (7.5%).

Subsequently, the results show that the mean of depression and anxiety decreased after the post-test. In the case of mindfulness, the mean is higher (Table1).

Table 1. Mindfulness, anxiety and depression scores

Variable	Stage	N	Mean	Std. Deviation
Mindfulness	Pre-test	46	2.61	0.31
	Post-test		2.79	0.33
Anxiety	Pre-test	46	2.52	0.39
	Post-test		2.31	0.42
Depression	Pre-test	46	2.36	0.39
	Post-test		2.13	0.42

Then, independent samples t-test was used to determine the homogeneity between the groups (Table 2).

Table 2. Independent samples t-test (homogeneity between groups)

Variable	Group	T	df	p-value
Mindfulness	Experimental	-0.435	44	0.66
	Control			
Depression	Experimental	0.226	44	0.82
	Control			
Anxiety	Experimental	0.110	44	0.91
	Control			

According to the p-value, which is greater than 0.05, no significant difference was observed between the mean of mindfulness, depression and anxiety between the control and experimental groups, and they are homogeneous.

Table (3) presents the mean of mindfulness and its components in chronic mental patients before and after the game.

Table 3. Mean of mindfulness and its components in chronic mental patients before and after the game

Variable	Stage	Mean	T	df	p-value
Mindfulness	Pre-test	2.61	6.68	22	0.001
	Post-test	2.79			
Observe	Pre-test	2.76	5.87	22	0.001
	Post-test	3.09			
Describe	Pre-test	2.34	2.25	22	0.03
	Post-test	2.42			
Act with awareness	Pre-test	2.52	6.52	22	0.001
	Post-test	2.74			
Accept without judgment	Pre-test	2.81	2.12	22	0.04
	Post-test	2.89			

According to Table 3, the mean score of mindfulness skills and its components has increased after the game. Also, the results of paired-samples T test show that there is a significant difference before and after the game in the mindfulness and its components.

Table (4) presents the mean of anxiety and its components in chronic mental patients before and after the game.

Table 4. Mean of anxiety and its components in chronic mental patients before and after the game

Variable	Stage	Mean	T	df	p-value
Anxiety	Pre-test	2.54	6.55	22	0.001
	Post-test	2.20			
Emotional symptoms	Pre-test	2.89	6.27	22	0.001
	Post-test	2.46			
Physical symptoms	Pre-test	2.19	3.59	22	0.002
	Post-test	1.94			

According to Table 4, the mean score of anxiety and its components decreased after the game. Also, the results of paired-samples T test show that there is a significant difference before and after the game in the anxiety and its components.

Table (5) presents the mean of depression and its components in chronic mental patients before and after the game.

Table 5. Mean of depression and its components in chronic mental patients before and after the game

Variable	Stage	Mean	T	df	p-value
Depression	Pre-test	2.37	12.28	22	0.001
	Post-test	1.91			
Cognitive-emotional	Pre-test	2.40	9.52	22	0.001
	Post-test	1.90			
Negative attitude	Pre-test	2.34	7.43	22	0.001
	Post-test	1.92			

According to Table 5, the mean score of depression and its components decreased after the game. The results of paired-samples T test show that there is a significant difference before and after the game in the depression and its components.

DISCUSSION AND CONCLUSION

Considering that the higher the mean of mindfulness, the higher the skills of mindfulness, and the lower the mean, the lower the skill of the individual in this field; the results showed that the mean of mindfulness and its components increased after the game, which was a significant difference according to the results of paired-samples T test. Therefore, sports games have been able to have significant effects on the mindfulness skills of chronically mentally ill people, and increasing this skill helps mentally ill people to receive less of the events that are distressing and when be aware of the present and no longer focus on the past or the future, because most psychological problems are caused by focusing on the past.

The results of this study are in line with the research of Ghamarikivi et al., (2015), Jahangirpour et al., (2013) and Kiani et al., (2013) so that in this research they studied the effectiveness of

mindfulness on mental health. Ghamarikiivi et al., (2015) by examining the "effectiveness of cognitive-behavioural therapy and mindfulness on mental health of crack users", concluded that mindfulness reduces depression and anxiety of crack users in experimental groups compared to the control group. Also, Jahangirpour et al., (2013) and Kiani et al., (2013) in their research concluded that mindfulness training has a significant effect on reducing depression and anxiety. Therefore, it can be said that in the present study, selected sports games have been able to increase the mindfulness of chronic mental patients due to pre-test and post-test and given that other research has different methods to increase mindfulness has been reported in various research populations, so it is likely that selected sports games could be used as an alternative to teaching mindfulness skills to these patients. Due to the fact that performing selected sports and games has different effects on the physical and mental dimensions of individuals, including the emotional effects and energy depletion in the psychological dimension, as well as sweating, correction of erectile structure, and providing motor feedback, hence, paying attention to this type of activity can lead people to more mobility. As a result, it can be said that the role of these games, while considering the mutual interactions of the games, is a good alternative to one-dimensional training for people.

Considering that the higher the mean of anxiety, the higher the severity of anxiety and the lower the mean of anxiety, the less anxiety, the results showed that the mean of anxiety and its components decreased after the game, which was a significant difference according to the results of paired-samples T test, therefore, sports games have been able to reduce the anxiety of chronic mental patients.

The results of this research are consistent with the research of Jalali & Molavi (2010), Ebrahimi Moghadam et al., (2015) and Amini & Sokooti Joybari (2016). Amini & Sokooti Joybari (2016) in their research concluded that exercise and physical activity, if done regularly and continuously, has beneficial effects on the individual. Also, during exercise, due to the interactions that take place in the body, diseases such as depression, anxiety, stress, and Alzheimer's that come to a person throughout life are gradually eliminated. Therefore, it can be concluded that not only exercise and physical activity (mentioned in previous research) but also the selected sports games that was performed in the leisure time of these patients could have a positive and significant effect on reducing their anxiety.

Given that the higher the mean of depression, the worse it is, and the lower the mean, the lower the depression, the results showed that the mean of depression and its components decreased after the game. According to the results of paired-samples T test, this difference was significant in depression and its components. Therefore, sports games have been able to reduce depression in the chronic mentally patients.

The results of this study are consistent with the research of Harvey et al., (2010), Azad (2014) and Ebrahimi Moghadam et al., (2015). Ebrahimi Moghadam et al., (2015) in their research concluded that game therapy program is significantly effective in reducing anxiety and depression. In general,

the study noted that the use of games as a therapeutic tool has a long history, but in recent decades, special attention has been paid to this issue. The compelling reason for the usefulness of game therapy techniques is their non-verbal and indirect nature, which allows a person to vent their emotions in a safe environment. Therefore, according to the findings of the present study, it can be concluded that playing selected sports games in leisure time can also have a positive and significant effect on reducing depression in chronic mental patients.

Today, due to the increase in mental illness and its impact on the patient, family and society, the prevention, reduction and control of these diseases is very important. Many studies have examined the effect of exercise and play on people with different diseases. The present study conducted on chronic mental patients and the results showed that sports games have a positive effect on chronic mental patients. After analyzing the data, it was concluded that sports games are significantly effective in increasing the mindfulness skills of chronic mentally patients and also significantly reduce depression and anxiety in these people in the present study, chronic mental patients had low mindfulness skills that were significantly increased by playing sports. As mentioned, mindfulness is a skill that allows us to receive events in the present less than they are distressing. When we are aware of the present, our attention is no longer focused on the past or the future, while most psychological problems are caused by focusing on the past (Aminpour & Zare, 2019). Therefore, the results of the present study indicate that selected sports games have been able to draw the attention of chronic mental patients to the present and prevent them from thinking in the past or the future, and therefore can affect their consciousness and promote it.

Also, these patients had high levels of depression and anxiety, which showed that after a period of eight weeks of selected sports games, their depression and anxiety decreased significantly. In general, the results showed that depression and anxiety of chronic mental patients under the influence of leisure time with selected sports can be significantly reduced. Perhaps because this period of games has been able to have a good effect on the mindfulness of chronically ill patients. Therefore, as mentioned in previous research, with the increase of mindfulness, people's mental health has improved and consequently depression and anxiety have decreased. Therefore, the way of spending leisure time and playing sports games can have a great impact on chronic mental patients, so that playing sports games in the leisure time of chronic mental patients promotes mindfulness and, consequently, mental health, and as a result reduce depression and anxiety in these patients.

Chronic mental patients are more vulnerable than other people because of their special mental conditions and because of being out of society. Therefore, how they spend their leisure time is very important. Having a regular schedule of sports games in leisure time allows them to interact with other people, focus their thoughts on the present in the game and do not pay attention to the past and future, freely choose the game, enjoy and be satisfied with the leisure time they are playing and show their abilities. These can possibly have a significant effect on increasing mindfulness and reducing depression and anxiety.

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