Effect of a Period of Selective Aerobic Exercises on Self-Efficacy, Happiness and Mindfulness in Addicts

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Abstract

Objective: The aim of this study was to investigate the possible effects of selective exercises on self-efficacy, happiness, and mindfulness. Method: The current research method was quasi-experimental along with pretest/posttest and control group. From all the addicts in Yazd city, 50 addicts were randomly selected and divided into two 25-person groups (control group and experimental group). Self-Efficacy Questionnaire, Oxford Happiness Inventory, and Mindfulness Questionnaire were used for data collection. The experimental group received selective exercises for 6 weeks and the control group did not receive any training or intervention. Analysis of covariance test (ANCOVA) was used to examine the influence of the exercise. Results: The results showed that the above-mentioned selective exercises had a significant effect on the promotion of self-efficacy, happiness, and mindfulness in the experimental group ($P<0.05$). Conclusion: It can be concluded that aerobic exercises lead to the improvement of psychological functions in addicts. Hence the relevant institutions are recommended to include these exercises in their programs in order to improve mental functions in addicts.

Keywords: self-efficacy, happiness, mindfulness, addicts

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Introduction

Drug addiction is one of the most important problems of the present age, which has become globally widespread. The disaster that destroys millions of lives and dedicates national macro capital for fighting or compensating for the relevant damage. Every day, the number of victims of drug use increases and its complications include physical, psychological, familial, cultural, economic and social disorders that threaten human health (Dehghani Firoozabadi, Ghasemi, Safari, Ebrahimi, and Etemadi , 2013). So far, several therapies and interventions have been presented with physical, psychological and spiritual approaches to addiction, the benefits of some of them have been supported by empirical evidence. However, since the nature of this disease is biological-psychological and social, none of these therapies alone can lead to total health of the individual and the interactive and multidimensional approach to addiction treatment has received much attention by researchers in this field. Several cognitive factors in drug addicts have been investigated by researchers and in recent researches, except the addict sample, there has been a tendency towards mindfulness and self-efficacy

Mindfulness is non-judgment, non-descriptive consciousness based on the present time, of the experience of one person at a particular moment in the range of the individual's attention. Mindfulness is derived from cognitive-behavioral therapies and is one of the important components of the third wave of psychological therapies (McCarney, Schulz & Grey, 2012). Mindfulness has also been used about addiction and has positive therapeutic effects. Combining prevention method training with mindfullness can produce relatively successful effects on addicts' judgment (Treloar, Laybutt & Carruthers, 2010).

Self-efficacy is a key concept derived from Bandura's SOCIAL COGNITIVE THERAPY (1997), which means one’s perception of the ability to perform an activity, to create an outcome, and to control a situation. Many studies have shown that self-efficacy has a role in preventing, treating and preventing drug use relapse. Marlatt (1996) mentions the low self-efficacy and coping skills defect in evaluation of etiology of substance abuse and return of compulsive behaviors. Also, El & Bashir (2004) concluded in their research that self-efficacy is an important factor in the drug use relapse.

Considering addicts happiness has long been considered as an effective variable of therapists. Happiness has different definitions among psychologists, and some believe that happiness is a mental state or an internal state (Seligman, 2002). However, others believe that happiness is genetically determined or influenced by environmental factors (Argyle, 2001). Diener (2002) regards happiness as an evaluation that a person has of him/herself and his/her life and includes life satisfaction, positive emotion and mood and the lack of depression and anxiety, and various aspects of it are in the form of cognition and emotions. Happiness is volatile in addicts due to impairment in the dopaminergic system

and serotonin levels and has interaction with cognitive variables (Bequet, Gomez-Merino, Berthelot & Guezennec, 2001).

Optimism and problem-solving style are the best predictors of happiness in addicts that can be considered in relation to self-efficacy and mindfulness (Babamiri et al., 2013). Therefore, studying the effect of treatment on cognitive factors of self-efficacy, happiness and mindfulness can probably predict the rate of addiction relapse and therapeutic success because self-efficacy shows the level of coping skills in addicts and evaluates happiness and emotion. Ultimately, mindfulness makes addicts aware of the current situation and subsequently promotes acceptance and commitment to change. Among the various methods of treatment for drug addicts, treatment through exercise and physical activity is less considered than other drug treatments and interventions; while exercise has different and Optimum functions in terms of social and economic aspects (Mattick et al., 2003, quoted from Vafamand, 2012). Newman & Whitehill (1997) investigated 100 individuals receiving sport intervention technique in Hong Kong and concluded that 56% of them continued sport treatment after three-year of follow up, but in the control group only 2 Percentage continued treatment, and in comparison they used heroin 4 times more than those undergoing sport treatment. One of the non-drug methods for addiction treatment is exercise and group therapy based on cognitive-behavioral protocols that engage mindfulness. According to the Information Society of Iran's Anonymous Addicts in 2007, the rate of withdrawal of participants in the anonymous addicts groups was 60% less than one year, 28% between 1 to 3 years, 11.1% between 3 and 5 years, and 9% more than 5 years. According to the study, about 60% of the members of the anonymous addicts had less than a year of not using of drugs and this value fell about 9% for those who had been clean more than 5 years. This reduction does not necessarily reflect the ineffectiveness of the treatment of anonymous addicts. The relatively short history of the presence of anonymous addicts in Iran and the gradual increase in familiarity with this method can be the probable reason of justifying this difference (Kiani, Ghasemi and Pourabbas, 2012). On the other hand, studies have shown that the effectiveness of drug maintenance therapies wouldn't be efficient without psychosocial interventions, due to low drug compliance and a high rate of exclusion (Diener, 2002).

Now, the American Psychiatric Association considers psychosocial treatments as essential components of any type of substance abuse treatment program. In an etiological study of substance abuse and relapse of compulsory behaviors, different researchers and theorists have stated emotion regulation defect, low tolerance of discomfort, emotional avoidance, behavior without thinking and habit, bias towards drugs signs, low self-efficacy, defective coping skills and spiritual problems (Bandura, 1997). Therefore, anonymous addicts, in addition to group therapy in self-assistance and drug therapy groups, require exercise interventions to promote certain cognitive factors for emotion

regulation, mood regulation and self-efficacy; the studies in this field are very limited and need more investigation

Mogharnesee et al. (2011) showed that sport exercises have a significant effect on reducing symptoms of physical illness, anxiety, social dysfunction and depression in drug addicts. In a study, Beckit et al. (2001) showed that the synthesis and metabolism of noradrenaline, serotonin and dopamine increase during exercise, which is an important factor in the treatment of diseases being associated with the absence of dopamine. Fontes et al. (2011) pointed out in their research that regular exercise overlaps with drug abuse, due to the effect of exercise on the dopaminergic system and increased dopamine levels. Vafamand et al. (2012) investigated the 8 -week effect of aerobic training on serotonin and dopamine levels in addicted women in Isfahan Central Prison. Results showed that aerobic training has a significant effect on these variables. Also the comparison of the two methods of rehabilitation with exercise and without exercise on quality of life and self-esteem among addicted people investigated by Shirsavar et al (2013) showed that beside medical treatment, regular exercise have positive effects on quality of life and self-efficacy of addicts. Bock and et al (2010) also compared the effects of yoga practice and cognitive-behavioral therapy and the results showed that combined yoga exercises have well effect on reducing anxiety and stress, as well as increasing self-efficacy and general well-being in smoke-quitting. Eventually, Khanna & Greeson

(2013) considered yoga exercises and mindfulness protocols as effective complementary factors to break the stress cycle, negative emotions and addictive behavior through the creation of a sense of self-awareness, self-control, and self-knowledge. According to the mentioned researches, the efficacy of addiction withdrawal treatment therapies is contradictory and requires the provision of interventional programs along with drug treatments. As mentioned, physical activity is an appropriate approach for the treatment of addicts because of its cost-effectiveness and social function. Physical activity can be considered as one of these treatments as in addition to physical factors, enhances cognitive function. Therefore, in this study, the effect of a selected exercise period on self-efficacy, happiness and mindfulness in addicts was investigated

Method

Population, sample and sampling method

The current research method was quasi-experimental along with pretest/posttest and control group. The statistical population included all opium-dependent men presenting to addiction treatment centers in Yazd, who voluntarily participated in the research project .The sampling method is purposive and 25 people were selected in the experiment group and another 25 were selected in the control group. Inclusion criteria were: informed consent for participation in the study, no addiction to Shisheh and other amphetamines, no history of physical illness including cardiovascular disease, and inability to exercise regularly in the

activity history. Also, the exclusion criteria were: lack of regular activity in the exercise program and drug use relapse.

Instrument

1- Oxford Happiness Inventory: This questionnaire was developed by Argyle (1989). As Beck Depression Test is one of the most successful scales of depression. After discussing with Beck, Argyle reversed his depression scales. Thus, 21 items were added to which 11 other items were added to include other aspects of happiness. The questionnaire has 29 four-choice items being scored ranging from zero to three, and the sum of the 29 scores is the total scale score, with the lowest score of the test is zero and the highest score is 87. Therefore, the higher the individual's score than the average total score (44), the higher the happiness and if it is lower, it shows the lack of happiness of an individual. Items 1, 2, 3, 5, 6, 8, 13, 14, 24, and 26 are related to the subscale of life satisfaction, items 4, 10, 11, 15, 20, 21, and 23 are related to self-esteem, items 12, 16, 18, 19, and 29 refer to the subscale of the subjective well-being, items 7, 9, 17, 23, and 25 refer to the subscale of satisfaction and items 22, 27 and 28 refer to the positive mood subscale. Argyle et al., reported alpha coefficient of 0.90 with 347 subjects and Farnham (1990) reported alpha of 0.87. Valiant (1993) reported the test re-test reliability of 0.83 after three weeks (Argyle, 2001). This questionnaire was translated into Persian by Alipoor and Nourbala (1999) and the Cronbach Alpha was 0.93. The Spearman Brown by split-half method, the coefficient was reported 0.92 and 0.91 by Gutman method. In this study, Cronbach's alpha coefficient was 0.81.

2- The Freiberg Mindfulness Scale: This scale was developed by Walach et al. (2006), which consists of 14 items, and is scored on a four-point Likert scale (1 = rarely, 2 = sometimes, 3 = approximately, 4 = always), the scoring of score 13 is inverse. Higher score on this scale means high mindfulness. Walch et al. (2006) investigated the reliability and validity of this questionnaire on healthy individuals and patients with clinical problems. The Cronbach's alpha coefficient 0.86 indicates the suitable reliability.The results of exploratory factor analysis by principal component method represent the one-factor structure. Golparvar and Mohammad Amini (2012) reported the Cronbach's alpha coefficient in a group of high school students of 0.73. In the present study, Cronbach's alpha coefficient was 0.78.

3-Sherer Self-efficacy Questionnaire: This questionnaire was developed by Sherer et al. (1982) and has 17 items and each item has five choices of totally disagree, disagree, no Idea, agree and totally agree. . Thus, items 1, 3, 8, 9, 13, 15, which are based on the Likert scale, have scores of 5 to 1, respectively, and the rest of the items 2, 4, 5, 6, 7 , 10, 11, 12, 14, 16, 17 take scores from 1 to 5. So the highest self-efficacy score on this scale is 85 and the lowest score is 17. Higher scores indicate stronger self-efficacy and lower scores indicate weak self-efficacy. Sherer (1982) states the calculated reliability through Cronbach's alpha for genera self-efficacy is 0.76. The validity of this scale is obtained through

construct validity. In a research to assess the validity and reliability of this scale, the scale was performed on 100 high school students. The correlation of 0.61 was obtained from two self-esteem scales and self-assessment with self-efficacy scale to support the construct validity of this scale. In the research of Jahani (2009), Cronbach's alpha was 0.74. In this study, Cronbach's alpha coefficient was 0.73

Procedure

The questionnaires were distributed with the coordination of the relevant addiction treatment centers and giving the necessary explanations. The research samples were divided into two groups. The exercise protocol was performed in one of the groups randomly and the other group did not receive any intervention. The exercise program and proposed protocol are described by the researcher for all individuals. After 6 weeks of training in accordance with the proposed protocol, post-test was performed on all subjects in two groups. In this study, the standard protocol was not used for physical exercise. After reviewing several protocols, finally, with the special condition of individuals, a researcher-made protocol was used in accordance with the help of trainers and was used and planned based on the experience protocol (Table 1). The exercise protocol was as at the beginning of each session, stretching tensile and warm up exercises was performed. Warm-up increases the heat of the muscles and enhances metabolism, also helps minimize the damage. The activities in the warm-up section were divided into two parts: aerobic activity: these activities should be of little tension, activities should only increase body temperature to the point where the person feels the heat. The warm-up activities included simple walking, side walking, walking back and running slowly. Light warm up: These activities should be performed slowly and accurately. The selected exercises should move all big muscles and muscle groups of body around their movement range. Also, fast and sharp movements should be avoided. The activities in this section include bending the neck to the right, left, front and back, turning the arms around the arm joint forward and backward, movements of the spine motion, bending and turning the body to the left and right. Each person exercised for 6 weeks, each week as three sessions based on the pre-determined schedule of the trainer. The choice of exercises and procedure were simple to difficult. The initial sessions of the exercise had less intensity, number and time and subsequent meetings were gradually increased and with respect to the ability of individuals and observing load excess principle. The exercise program was increased by increasing exercise time, intensity, and the repetitions of exercise. Exercise intensity was controlled continuously by measuring heart rate. The exercises started from 40 minutes in the first week and reached 60 minutes in the last session.

Table 1: Exercise protocol by sessions

Stage	*Activity intensity*	*Number of periods of each session*	*Number of repetitions in each period*	*Duration of each repeat*	*Rest between repetitions*	*Rest between periods*
First week	%50-55	2	4	3 min	1.5 min	3 min
Second week	%55-60	2	4	3.5 min	1.45 min	3.5 min
Third week	%60-65	2	4	4 min	2 min	4 min
Fourth week	%65-70	3	3-2-2	4.5 min	2.15 min	4.5 min
Fifth week	%70-75	3	3-2-2	5 min	2.30 min	5 min
Sixth week	%75-80	3	2-2-2	5.5 min	2.45 min	5.5 min

Findings

Descriptive statistics of demographic variables are presented in Table 2 in terms of groups.

Table 2: Descriptive Statistics of Demographic Variables by Groups

Education	*Age*			*Marital status*		*Education*		
Groups	*Range*	*Range*	*SD*	*Single*	*Married*	*Diploma*	*Associate*	*BA*
Control	22-59 years	22-59 years	8/49	8	17	13	7	5
Experiment	23-57 years	23-57 years	11/24	11	14	14	7	4

The descriptive statistics of the research variables by type of test and groups are presented in Table 3.

Table 3: Descriptive statistics of variables studied by type of test and groups

Groups		*Control (25)*		*Experiment (25)*	
Variables		*Mean*	*SD*	*Mean*	*SD*
Life satisfaction	Pre-test	12/64	12/64	13/4	8/9
	posttest	12/76	12/76	15/32	7/01
Self-esteem	Pre-test	8/4	8/4	8/48	5/57
	posttest	8/12	8/12	9/8	5/02
Subjective wellbeing	Pre-test	5	5	5/08	3/38
	posttest	5/6	5/6	6/8	3/49
Self-satisfaction	Pre-test	7/04	7/04	7/72	4/28
	posttest	6/84	6/84	9	3/27
Positive mood	Pre-test	3/88	3/88	4/6	2/87
	posttest	3/72	3/72	4/8	2/72
Happiness	Pre-test	35/44	35/44	37/76	21/97
	posttest	35/63	35/63	43/00	18/38
Self-efficacy	Pre-test	54/64	54/64	54/92	12/47
	posttest	53/88	53/88	59/08	11/64
Mindfulness	Pre-test	31/92	31/92	32/64	5/98
	posttest	31/00	31/00	36/32	5/65

A multivariate covariance analysis should be used to evaluate the effectiveness of intervention. One of the assumptions of this analysis is the

normal distribution of variables' distribution in groups. The results of the Shapiro Wilk's test are presented in Table 4.

Table 4: Shapiro Wilk's test results to check the normal distribution of variables

Variables	*Control*		*Experiment*		Variables	*Control*		*Experiment*	
	Significance statistics		*Significance statistics*	*Significance statistics*			*Significance statistics*		*Significance statistics*
Life satisfaction	0/920	0/057	0/932	0/097	**Self-esteem**	0/936	0/119	0/948	0/229
Subjective wellbeing	0/939	0/143	0/935	0/11	**Self-satisfaction**	0/950	0/245	0/944	0/183
Positive mood	0/937	0/145	0/928	0/077	**Happiness**	0/941	0/156	0/947	0/219
Self-efficacy	0/925	0/066	0/950	0/245	**mindfulness**	0/975	0/771	0/972	0/704

As shown in the table above, the variables are normal in two groups (P> 0.05). Another assumption is the multivariate covariance of equality of error variances. The results of the Leven's test showed that in life satisfaction variable (F = 0 215, P> 0.05), self-esteem (F = 1.515, P >0.05), subjective well-being (F=0.023, P> 0.05), Self-satisfaction (F = 0.874, P>0.05), positive mood (F=3.870, P>0.05), and happiness

F=0.325, P>0.05), this assumption is established. Another assumption is the equality of the covariance matrix. The results of the test showed that this assumption was established (F = 1. 147, P>0.05). Therefore, multivariate covariance analysis was performed and its results indicated a significant difference in linear composition of variables. (P<0.001, F=31.42, wilks Lambda =0.36) To study the patterns of difference, one-variable covariance analysis was used as shown in Table 5.

Table 5: Single-variable covariance analysis test results to examine the effect of exercise on happiness components

Variables	*Mean of squares*	*F statistics*	*Significance*	*Effect size*
Life satisfaction	392/58	40/91	0/001	0/488
Self-esteem	42/06	8/42	0/006	0/164
Subjective wellbeing	149/65	56/52	0/0005	0/568
Self-satisfaction	95/14	28/59	0/0005	0/399
Positive mood	103/96	52/85	0/0005	0/551
Happiness	6385/88	97/83	0/0005	0/685

As can be seen, the results indicate a significant effect of intervention on all components of happiness. That is, the exercise protocol can have a positive effect on happiness and increase happiness

Also, multivariate covariance analysis was used to investigate the effect of intervention on self-efficacy and mindfulness. Leven's test results in self-efficacy variable F = 0.001, P >0.05), and Mindfulness (F = 0.14, P > 0.05)

showed that the equality assumption of error variances is established. The results of the box test also show an equality assumption of error variances (F = 0.301, P > 0.05). To study the patterns of difference, one-dimensional covariance analysis was used as shown in Table 6.

Table 6: Univariate covariance analysis to examine the effect of intervention on self-efficacy and mindfulness

Variables	*Mean of squares*	*F statistics*	*Significance*	*Eta square*
Self-efficacy	2475/01	182/58	0/0005	0/802
Mindfulness	752/2	69/86	0/0005	0/608

As shown in Table 6, there is a significant difference in the effect of the intervention in both variables. In other words, the exercise protocol had a positive effect on self-efficacy and mindfulness.

Discussion and Conclusion

In studying the etiology of drug abuse and compulsive behaviors relapse, various researchers and theorists have stated emotion regulation defect, low tolerance of discomfort, emotional avoidance, behavior without thinking and habit, bias towards drugs signs, low self-efficacy, defective coping skills and spiritual problems (Dehghani et al., 2013). Therefore, in the treatment and prevention of drug use relapse, using the methods that can affect these problems is essential and can increase the effectiveness of treatment. Based on these findings and sport ability in emotion regulation and satisfaction of emotion-seeking sense, the present study is aimed to examine the effectiveness of physical intervention on mental constructs including self-efficacy, happiness and mindfulness. Accordingly, in this study, the effects of a course of exercises on self-efficacy, happiness and mindfulness of addicts were studied. In explaining this finding, it can be argued that individuals choose self-efficacious tasks that are more challenging and consider larger goals and show greater sustainability than those goals. Individuals with high self-efficacy beliefs believe in their abilities in every activity, and they are more likely to try their best to succeed and despite the obstacles and the negative consequences, they have much perseverance. They are able to cope with disappointments, and continue to do their best and consider defect not as the final result but also as temporary retreat (Sinha, & Jastreboff, 2013). People with low self-efficacy seem to be frustrated with problems, and this learnt frustration causes that he doesn't attempt for the next problems.

Now what factors in the exercise group increase self-efficacy of addicts? In unknown groups, unconditional acceptance is prevalent and al have similar conditions and don't avoid the situation, although they fear the negative evaluation and physiological symptoms. Addicted person speaks in the group, tells the circumstances and receives support from others. Also, we can refer to the impact of interpersonal relationships during exercise. Interpersonal relationships and social support that are injected to addicts during exercise are very high. Studies have shown that physical exercise has a positive effect on

behavior and creativity and reduces stress, tension and increases self-confidence of addicts (Mogharnasi et al., 2011). Also, physical activity can play a positive role in maintaining and providing mental health, and is effective in decreasing anxiety, depression, increasing mental health, improving quality of life, reducing fear of success and failure (Shirsawar et al., 2013). Studies have shown that exercise plays a significant role in reducing psychosis- physical symptoms, anxiety, social dysfunction and depression in drug addicts (Mogharnasi et al., 2011). Increasing self-esteem, mental health, general health and reducing depression and psychological -physical disorders all together lead to self-esteem and ultimately self-efficacy. In general, the findings indicate that those who participate in the exercise group, due to the availability of resources such as social support, unconditional admission, the expression of their own needs and how to cope with them and continuous encouragement by their fellows, had a higher self-efficacy than those who did not exercise.

The results also showed that there is a significant difference in happiness variable. In fact, the results show that the effect of exercise for the happiness variable is significant. Therefore, according to the mean, it is clear that there is no significant difference between the two groups in the pre-test and post-test, and the superiority of the happiness scores for the exercise group is determined. In explaining this finding, it should be noted that exercise is useful in the treatment of drug dependence. Although the effect of exercise therapy on dependence treatment has not been determined, emphasis has been placed on the theory of β-endorphin secretion, which is an opioid endogens (Williams & Strain, 2004). In addition, there is a great deal of evidence that deprivation of exercise causes mood disorder. Other studies have also shown that aerobic exercise stimulates the release of beta-endorphin and other intrinsic opioid peptides, and is believed to increase the rate of these substances, after increased activities (such as pain relieve) (Goldfarb, Hatfield, Sforzo & Flynn, 1987). Increasing the sense of pain can lead to higher happiness. In addition, there is evidence that all direct or indirect drugs affect the brain reward system by increasing dopamine levels. Dopamine is present in the areas of movement, sensation, cognition, motivation and pleasure. Drugs with an excessive stimulation of the system create a seductive and euphoria effect. Studies have also shown that the synthesis and metabolism of noradrenaline, serotonin and dopamine are increased during exercise, which is an important factor in treating diseases that are associated with the absence of dopamine (Beckit et al., 2001). Fontes et al. (2011) pointed out in their research that regular exercise overlaps with drug abuse, due to the effect of exercise on the dopaminergic system and increased dopamine (Fontes et al., 2011). Participating in sports exercises creates a sense of dependence and belonging in addicts. This feeling makes a person feel happy. It seems that other involved mechanisms affect the role of physical activity on the progression and improvement of the aerobic power of addicts. An

increase in the aerobic threshold that results in fatigue delay, an increase in cardiac

output that leads to an increase in blood flow to muscles and other tissues of the body, increase in the difference in blood oxygen and arterial oxygen in both the heart muscle and skeletal muscle, increased muscle capillary density and blood lactate reduction (Fontes et al., 2011) are among the mechanisms that bring happiness.

Finally, the results showed that there is a significant difference in the variable of mindfulness. In fact, the results show that the effect of exercise is significant in mindfulness variable. Therefore, with respect to the mean, it is clear that there is no significant difference between the two groups in the pre-test and in the post-test, the superiority of the scores for the exercise group is definite. Research has shown the effectiveness of mindfulness training on the symptoms of stress, anxiety and depression, quality of life, and prevention of relapse of addicts (Zare et al., 2013; Imani et al., 2013; Hamedi, Shahidi and Khademi, 2013). As a result, the results of this finding can be interpreted as enjoying mindfulness skill requires special training. In general, individuals having mindfulness features can have abilities such as preserving awareness voluntarily and depending on a particular subject, such as physical sentiment in the body (e.g., inhale and exhale) from one moment to another. Thus, the mind distorts to thoughts, emotions, voices or other bodily feelings; the content of consciousness is remembered, and then attention is slowly but seriously moving towards specific protected objectives. This process is repeated over and over again and is repeated again in the daily stages of prevalent consciousness exercise. Addicts of sport exercise group learn many skills to cope up with addiction including stress matching skills, friend seeking skills, social communication skills, critical thinking skills, decision-making skills, and anger control skills (Ulmer, Stetson & Salmon, 2010; Cana and Garrison, 2013). Studies have shown that individuals with regular physical activity have higher mindfulness than their inactive counterparts (Kangasniemi, Lappalainen, Kankaanpää & Tammelin, 2014; Bok et al., 2010). In fact, these results are obtained due to the effectiveness of active lifestyle on mental health. Researchers point out that mindfulness ability is achieved by active lifestyle and mental health. These results are very novel and require more extensive studies.

Generally, the results show that participation in sport activity improves addicts' cognitive factors. Therefore, the intervention or accompaniment of sports exercises can be a good way to stop addiction in terms of enhancing self-efficacy and mindfulness, as well as reducing stress and anxiety resulting from happiness. Future studies should determine the effect of interventions based on mindfulness, cognitive-behavioral and its interaction with exercise, with drug interventions and the coefficient of influence of each intervention, so that the relevant centers and organizations can select and implement the most appropriate intervention.

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