



## The Effect of Eight Weeks of Aerobic Exercises on Aggression in Addicted Women under Methadone Treatment in Kermanshah

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*(Received 07 February, 2015, Accepted 14 March, 2015)*

*(Published by Research Trend, Website: [www.researchtrend.net](http://www.researchtrend.net))*

**ABSTRACT:** Addicted women have further mental problems and issues as compared to other women which have been barely considered. The use of inexpensive and feasible preventive methods (like aerobic exercises) can help addicted women to promote their mental health and treatment. The present study examines the effect of 8-week aerobic exercises on changing the level of aggression in women under methadone treatment in Kermanshah. This quasi-experimental study was carried on addicted women under methadone treatment in Kermanshah in 2014. Among them, 40 were randomly divided into two control ( $n = 20$ ) and test ( $n = 20$ ) groups. Data was collected using Buss-Perry Aggression Questionnaire (AGQ). It was composed of 29 questions and subscales (verbal aggression, physical aggression, anger aggression and hostility aggression). Test group attended aerobic exercises for eight weeks (three times a week between 45min and 60min). To determine the effect of aerobic exercise on the level of aggression in women under methadone treatment, test and control groups filled out the questionnaire before and after eight weeks of aerobic exercises (intervention). Independent t-test was applied using SPSS. Results of the study showed that the eight weeks of aerobic exercises have a significant effect on physical aggression, anger, and hostility components as compared to their levels before the exercises. Yet, there is no significant difference regarding verbal aggression. Concerning the effect of exercises on changing the level of aggression in the addicted women under methadone treatment, it can be said that physical activity can be a part of addiction treatment plan. To prevent drug tendency and addiction relapse, sport can be used. Doing so, it will be possible to reduce the level of aggression, a mental index which can lead to addiction relapse.

**Keywords:** Addiction Relapse, Aerobic Exercises, Aggression

### INTRODUCTION

Drug abuse is one of the major problems of the present era. It has globally developed. It is a catastrophe ruining millions of lives and spending national macro capitals on fighting with or compensating for resulting damages. Its consequences include physical, mental, familial, cultural, economic, and social disorders. In Iran, humans have used opium for therapeutic purposes since hundreds of years ago. The history of addiction goes back to 400 years ago. It is critical to consider key physical and mental factors and also factors making family, school, living environment, and workplace susceptible to addiction, its durability and relapse as well as the fact that addiction can appear in all personal, ethnic, cultural, and social groups and classes [1]. Addiction is a social issue. Hence, women - as a half society population - are also involved either directly or

indirectly. Although addiction is still known as a male phenomenon in Iranian society, several reports show that women have increasingly tended to addiction. Based on the statistics of Iran's National Anti-Drug Staff, women's addiction growth was 14% in 2007 and %10 in 2011. It indicates that women's addiction is increasing. It brings about serious problems. There are receptors on cells in human's body known as opioid receptors. These receptors are in three types: " $\mu$ -opioid receptors", "k-opioid receptor", and " $\delta$ -opioid receptor". Biological differences have made women more susceptible to addiction as compared to men. " $\delta$ -opioid receptors" and "k-opioid receptor" are more in menopausal women as compared to men. As a result, both enjoying and hating drugs are due to the effect of " $\delta$ -opioid receptors" and the presence of more "k-opioid receptors" in women [2].

Above all, women are susceptible to further risk due to being further apt to anxiety, depression, and mental problems. During the recent years, glass addiction outbreak among women is resulted from women's further desire for fitness. They begin with smoking cigarette and taking so-called sliming pills. Finally, they tend to use glass or cocaine. Glass leads to more intensive changes in women's mood, anorexia, and dry mouth as well as undesirable physical and mental symptoms [3]. According to Wanding and Hans (2006), addiction is an acute reversible problem. The existence of social, mental, and physical problems leads to the relapse and leaving of treatment course. Addictive drugs and behaviors imply other deviations and misbehaviors, on one hand, and its sound bind to problems such as mental disorders, running away from home, aggression, aggression in social behaviors like rubbery, criminal behaviors, suicide, prostitution, etc, on the other [4].

Attending physical activities is a suitable method for physical, mental, and moral development and growth. Undertaking a responsibility in physical activities, an individual will have higher confidence. It will also be effective in reducing her anxiety and other mental disorders [5]. Regarding their special characteristics, aerobic exercises refer to performing sport exercises with rhythmic music is accompanied by special youthfulness and vitality. Hence, it is most likely to be useful for improving mental health. Aerobic exercises are a series of rhythmic and recurrent muscular movements raising heart rate and breathing for a certain time interval. They are performed in a certain frame in an aerobic system. Aerobic exercises are aimed to reach a physical balance and enhance the percentage of health with high spirit. However, they will affect in a permanent regular way (Bronk, Krous, and Rohak,

1995). Accordingly, the present study aimed to determine the effect of 8-week aerobic exercises on changing addicted women's aggression level.

## MATERIALS AND METHODS

The statistical population of the study consisted of addicted women under methadone treatment in Kermanshah. Among them, 40 (aged between 18 and 58) were divided into two control ( $n = 20$ ) and test ( $n = 20$ ) groups using convenience sampling. Both groups were examined in terms of pre-test-post-test based on Buss-Perry Aggression Questionnaire (including verbal aggression-physical aggression anger aggression and hostility aggression components).

Both groups were from partially the same class regarding social status and living condition. First, the groups answered the questions. Then, an eight-week aerobic exercise plan was administered. This plan included eight weeks (three 45-60-min sessions a week). Exercises comprised aerobic exercises suitable for participants' physical conditions. It consisted of a 7-10min warm-up and 30min main sport including stretching movements and rhythmic exercises for maintaining balance and coordination as well as Swedish exercises for enhancing muscular power. They ended with 10min cooling and relaxation. After these eight weeks, both groups again filled out Buss-Perry Aggression Questionnaire. Independent t-test was applied to measure changes in aggression level.

## RESULT

In this study, 40 women were divided into two groups of 20 including a control group (mean age = 36.75) and a test (intervention) group (mean age = 37.75). Table 1 indicates the natural distribution of data.

**Table 1: Mean and standard deviation of age in studied groups.**

Group	Mean	SD
Experimental group	37.75	11.21
Control group	36.75	8.75

Regarding the effect of aerobic exercises on changing the level of women's aggression in test versus control groups, level of significance is  $0.001 < 0.05$ . Hence, eight weeks of aerobic exercises have led to the reduction of aggression in addicted women under

methadone treatment. Results of t-test showed that there is a significant improvement in test group (as compared to control group) concerning aggression and physical, hostility, and anger components. Yet, no significant changes were observed in verbal aggression.

**Table 2: Mean and SD of aggression components in experimental and control groups.**

Component	Group	M ± SD	P value
Aggression	Experimental	74.15 ± 4.99	0.001
	Control	11.64 ± 1.12	
Physical	Experimental	32.11 ± 29	0.001
	Control	6.65 ± 7.56	
Verbal	Experimental	2.52 ± 14.8	0.001
	Control	4.86 ± 16.7	
Anger	Experimental	2.83 ± 22.8	0.001
	Control	2.48 ± 30.55	
hostility	Experimental	3.44 ± 24.9	0.001
	Control	3.7 ± 35.65	

## DISCUSSION AND CONCLUSION

Results of this study show that administering an eight-week aerobic routine has led to a significant improvement in the level of aggression as well as physical, hostility, and anger components. We can use sport for improving mental indices and physical (due to the secretion of hormones and enhancement of cardio-respiratory strength), and mental health of addicted women under methadone treatment. Results correlate with the results reported by another study, Effatsadat Vafamand *et al*, and Mahmoud Fazeli Bakhsheshi and Andros Stroll [6]. One of the therapeutic and hygienic methods is sport activity. It suits human's natural needs. Based on this approach, sport activities have positive and effective impacts on mental hygiene and mental health. Since long ago, sport exercises have been used for treating mental disorders [8].

Results reported by few studies show that regular physical exercises and motor activities have a positive effect on individuals' behavioral and psychological status [7, 8]. They are in the same line. Drug abuse especially, in women is related to psychological, social, and economic factors such as violence against them, poverty, and lack of rules concerning the main human's rights. Depression and deprivation of the above factors push women to tend to other tranquilizers and narcotics without thinking about their consequences. Women's dependence to drugs not only damages their health but also harms children and other young family members' health. Especially about pregnant women, drug abuse leads to mental and physical disorders in their fetuses.

Results reported by another study also showed a higher rate of addiction in adolescent boys and girls living in mean dirty neighborhoods [9].

With respect to the significance of woman's role in a family, further attention must be paid to this susceptible group. Suitable plans must be designed so as to effectively pave the way for promoting women and society's health by enhancing access to services, reducing damages, and offering treatment as well as preventing from this issue. Problems seen among addicted women include low confidence with acute depression and cluttered sick mind, aggression, self-injury, lack of adequate motivation for withdrawal, lack of proper knowledge of drugs. It is seen sometimes that women justify their addiction as they only use opium and/or they use glass only to lose weight. These characteristics will remain with them after withdrawal. This may result in their addiction relapse. However, all of the above problems originate from social factors like familial disorganizations and other environmental, mental, economic, etc factors.

Mental problems like anxiety and depression, aggression and the like can lead to addiction relapse. In this study, we made attempt to change aggression and its components using aerobic exercises. By the attendance of a psychologist, an obstetrician, and other employees of clinic in all exercise sessions and considering rewards for participants' regular attendance in all sessions, researcher encouraged them to regularly attend all exercise sessions.

Sport enhances confidence [10]. Natural narcotics from endorphins in brain and pituitary gland play a key role in creating a feeling of vitality and youthfulness during exercises. During physical exercises, the secretion of neuro-chemical mediators (like enkephalin and serotonin) increases in blood. As a result, they are able to create feelings of vitality and youthfulness in a person by their painkilling and life-giving effects. Regular and moderate sport routines like fast walking for 20min a day will stimulate endorphin secretion and promote feeling of vitality [10].

Sport leads to the peace of mind and reduces aggression through making physiological changes such as regulating blood flow and cardio-respiratory system function. Individuals in sport groups also acquire psycho-social, behavioral and communication skills necessary for attending the arena of individual and social relationships. These skills will in turn lead these individuals to appropriately respond other people's behavior and reduce aggression [11]. Increasing physical activities and using their physiological effects (including fitness, enhanced muscular power and strength, and improved cardio-respiratory readiness) together with improved mood, enhanced confidence, reduced anxiety and depression, and above all these people's social interaction with each other will lead them to survive in isolation, despair, and seclusion, and direct them to further sociability and positive social behaviors. These will be among critical and "protective" factors against drug abuse [12]. Hence, we conclude that sport can prevent from addiction relapse. It can be a part of the treatment plan. It will be possible to inhibit tendency to drugs (especially in youngsters) by placing physical activities in leisure and enhance physical and mental health.

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