



The Effectiveness of Physical Activity on Mental Health and Mindfulness in Veterans and Disabled

Sajad Parsaei^{a*}, Ali Asghar Arastoo^b, Shahla Zahednejad^c, Nasrin Teymoori^d, Mitra Derakhshesh^d

^a Department of Motor Behavior, Faculty of Physical Education, Shahid Chamran University of Ahvaz, Ahvaz, Iran.

^b Social Factors Affecting Health Research Center and Musculoskeletal Rehabilitation Research Center Health School, Ahvaz Jundishapur University of Medical Sciences, Ahvaz, Iran.

^c Musculoskeletal Rehabilitation Research Center, Physical Therapy Department, Rehabilitation School, Ahvaz Jundishapur University of Medical Sciences, Ahvaz, Iran.

^d Department of Physical Education, University of Farhangyan, Tehran, Iran.

Keywords

Disabled
Mental Health
Mindfulness
Physical Activity
Veteran

Sajad Parsaei,

Email: sajadparsaei93@gmail.com

Received: 2021/11/09

Accepted: 2021/01/24

Published: 2022/02/10

Abstract

Background: Physical Activity as a fundamental basis, generally for everyone in the community and particularly important for disabled people. The purpose of this study was to investigate the effect of Physical Activity on mental health and mindfulness in veterans and disabled people.

Methods: The method of this research is descriptive-correlational. 100 veteran and disabled athletes and 100 veterans and non-athlete disabled participated in this research among disability institutions and rehabilitation centers in Ahvaz. The instrument used in this study was an international physical activity, mental health and mindfulness questionnaire.

Results: The mean age was in the athlete group (29.87 ± 3.88) and in the non-athlete group (28.25 ± 3.55). The results of independent t-test showed that there is a significant difference between the two groups, which shows the positive effect of activity on mental health and mindfulness variables in veterans and disabled athletes compared to non-athletes. It was also found that physical activity variable predicts two variables of mental health and mindfulness in veterans and the disabled. Multiple correlation coefficient was equal to $MR = 0.879$ and determination coefficient was equal to $R^2 = 0.772$ which was significant at $P < 0.01$ level.

Conclusion: In a general conclusion, participation in active activities and having sufficient mobility in veterans and disabled people can improve mental variables such as mental health and also mind awareness.

Introduction

According to sociologists and researchers in the field of science and knowledge, physical disability means the inability to perform all or part of the daily activities of individual or social life. The cause of physical disability can be congenital or acquired and as a result of an accident (Atadokht et al 2014). The World Health Organization reports that about 10 percent of the world's population suffers from physical disabilities, of which about 80 percent live in developing countries (Afkar, et al,

2015). This can lead to lower self-esteem and self-esteem and cause them to experience more stress than normal people, which in turn can have a negative impact on their mental health (Moradi & Kalantari 2006).

Researchers and researchers in recent decades have found great interest in the topics of psychology and psychotherapy in different fields and in different people. The results of studies and researches of researchers in different parts of the world show that the number of mental disorders is

increasing day by day, so identifying the factors affecting mental health and effective factors in its prevention and improvement is very important (Sun, Norman & While, (2013). various factors directly and indirectly It affects the level of human health and mental health, which according to the slogan of the World Health Organization in 2002 is one of the most important of these cases of regular physical activity (Keyes, Shmotkin & Ryff, 2002).

Physical activity for people with physical disabilities as mobility, prevention of the disease caused by hospitalization, and helping people with physical disabilities to reconnect with the social environment and achieve physical and mental health. Has done (Vasudevan, Rimmer & Kviz, 2015).

Cohen, et al (2014) stated that physical activity has a continuous effect on people's health and mental health. According to the World Health Organization (2011), mental health is the end of physical, mental and social well-being and does not simply mean the absence of disease. Slaski & Cartwright, (2003) stated that mental health is a state of well-being in which a person realizes his / her abilities, can adapt to the stressful stimuli of his / her private, professional and social life. Work in a productive way and is able to help his community. Maculey (2005) stated that participating in physical activity in the shortest time can increase physical health, mental health and quality of life. The results of various researches show the positive effect of physical activity and exercise on the mental health of people in the community.

Biddle & Asare (2011) in a review study stated that exercise and physical activity play an important role in preventing mental illness and promoting mental health. Kennedy, Duff, Evans, & Beedie (2003) reported the positive effect of physical activity on reducing anxiety and depression in people with spinal cord injuries due to increased mental health. (Bakhshayesh, Bahmani, & Kamali (2013) in a study showed that athletes with physical disabilities had higher mental health than others and non-athletes with multiple disabilities had lower mental health than others.

Another important variable that has become very important among applied researchers today is the issue of mindfulness. Mindfulness is defined as the state of arousal and awareness of what is happening in the present moment (Walsh et al (2009). Mindfulness training places a lot of emphasis on learning through direct experience because it is nurtured in the body. In fact, mindfulness is one of the therapeutic methods in which intellectual awareness is emphasized (Parent,et al (2016.) Extensive research has examined the effectiveness of mindfulness-based studies on a variety of issues such as reducing depression, reducing negative spontaneous thoughts, improving quality of life, improving physical and mental symptoms of veterans and the disabled, increasing veterans' psychological capital, adjusting spouses and disabled spouses, and ability Cognitive studies have shown veterans and the disabled (Baer, 2019). On the other hand, (Nejati, et al 2011) in a study showed that mindfulness has a significant relationship with the

dimensions of vitality and mental health and has no significant relationship with the dimensions of physical activity, social activity and physical pain.

Given that mental health problems are one of the most common consequences of physical disability, the incidence of these problems among the physically disabled in developing countries is wider and is constantly increasing, and the importance of psychological issues in improving the quality of life of veterans and Physical Disabilities and Lack of Research on Two Important Variables of Mental Health and Mindfulness, Especially among Veterans and Physically Disabled, the purpose of this study was to evaluate the effectiveness of physical activity on mental health and mindfulness among veterans and the physically disabled.

Method

The method of this research is descriptive-correlation and is applied practical in terms of purpose.

Subjects

The statistical population of the study included all veterans and the physically disabled in Ahvaz. To select veterans and athletes with physical disabilities, among the veterans and physically disabled athletes of Ahvaz city, 100 people were selected using Morgan table by available sampling. Also, for the selection of non-athlete veterans and physically disabled, 100 people were selected from among the care institutions for the disabled and rehabilitation training centers in Ahvaz city as a sample to be homogenized with the athlete group.

Participants were divided into two groups of athletes (100 people and non-athletes (100 people) using the physical activity questionnaire and the mentioned criteria: the mean age in the athlete group (29.80 88 3.88) and in the non-athlete group (Of all the participants in the study, 11 were veterans (7 in the athlete group and 4 in the non-athlete group) and 63 women were among the total participants. (21 people in the athlete group and 42 people in the non-athlete group) and 137 people were men. Inclusion criteria for the athlete group include being an athlete (doing physical activity at least three days a week and regularly), not having psychological disorders, not having respiratory diseases (as an important variable in mindfulness) and not having a disease. He was heartbroken and nervous.

Apparatus and Task

International Physical Activity Questionnaire (IPAQ): This questionnaire includes questions that assess the status of physical activity and classifies physical activity into three categories: weak, moderate and severe. This questionnaire includes 5 scales which are: a) physical activity related to daily work b) physical activity for commuting c) activity related to homework, home repair and family care d) type of sport and physical activity in leisure time and) time spent sitting. This questionnaire measures physical activity in the last 7 days and according to the final score, the intensity of activities in the last 7 days is determined. Intense exercise is an activity that requires a lot of physical strength and makes you breathe much faster than normal. Moderate exercise is an activity that

requires moderate physical strength and makes you breathe a little faster than normal. To be in the active class, each person must do more than 5 days of moderate activity or more than 3 days of intense activity per week. In addition, any activity that lasts less than 10 minutes is eliminated (Vancampfort, et al, 2019).

Mental Health Questionnaire: This tool has 28 questions that was developed by Goldberg in 1979. The questions in this questionnaire examine a person's health status in the last month and examine signs such as thoughts, abnormal feelings, and aspects of observable behavior that emphasize current situations. This tool has 4 subscales: subscales of physical symptoms, anxiety and insomnia, social dysfunction and depression. A person's mental health score is obtained from a total of 4 subscales. Answering the questions of the questionnaire is in the form of Likert scale (1 to 4) for each question. The validity and reliability of this questionnaire has also been confirmed by (Nourbala, et al 2019).

Mindfulness Questionnaire: The short form of the Freiburg Mindfulness Questionnaire (FMI-SF) has been extensively studied and has been studied in many cultures in terms of psychometric properties. Subjects are asked to answer questions on a 4-point Likert scale (rarely to almost always). The minimum score in this questionnaire is 14 and the maximum is 56. A higher score indicates a higher consciousness. During an in-country study conducted by (GhasemiJobaneh, et al, 2015) the short form of the Freiburg Mindfulness Questionnaire was first translated into Persian and then its validity and reliability were examined.

Before completing the questionnaire, participants were given information about the research and questions related to the questionnaires. They then completed questionnaires on mindfulness, mental health, and physical activity in a relaxed manner. The questionnaire was completed individually and the questionnaires were collected by the researchers and in the leisure time of the participants.

It should be noted that all ethics were observed in the research and the participants were assured that their information will remain confidential and participation in this research was completely voluntary.

Data Analysis

Descriptive statistical indices of mean and standard deviation were used to describe the individual characteristics of the subjects and the research variables. Kolmogorov-Smirnov test was used to determine the normality of data distribution and Leven test was used to determine the equality of variance of data. T-test and regression model were also used to analyze the data.

Results

Table 1 provides information on the mean and standard deviation of scores of participants in the two groups of athletes and non-athletes, as well as independent t-test to compare the two groups.

The results of independent t-test showed that there is a significant difference between the two groups. Then, to investigate the relationship between research variables, regression analysis

method was used, the results of which are given in Table 2.

Table 1. Mean and standard deviation and independent t-test to compare mental health and mindfulness scores.

Variable	Group	Mean	SD	t	sig
Mental Health	Athlete	46.40	8.46	5.59	0.001
	Non-athlete	33.45	5.94		
Mindfulness	Athlete	40.95	6.25	11.34	0.001
	Non-athlete	55.21	4.40		

Table 2. Regression model predictors of mental health and mindfulness through physical activity.

Model	Correlation	The coefficient of determination	Adjusted coefficient of determination	Change the determination coefficient	Change F	sig
Mental Health	0.672	0.452	0.438	0.31	31.35	0.001
Mindfulness	0.879	0.772	0.766	0.40	28.62	0.001

According to Table 2, the physical activity variable is a predictor of two variables of mental health and mindfulness in veterans and the physically disabled. Multiple correlation

coefficient equal to $MR = 0.879$ and coefficient of determination equal to $R^2 = 0.772$ which is significant at the level of $P < 0.01$.

Table 3. Variable statistics included in the hierarchical model of mental health prediction and mindfulness.

The first model	Non-standard coefficients		Standardized coefficients	t	sig
	B	standard error	Beta		
Constant	3.02	0.155	-	19.54	0.001
mental health	-0.01	0.005	-0.230	-2.58	0.014
mindfulness	-0.034	0.004	-0.741	-8.24	0.001

As shown in Table 3, the standard beta coefficient is $\beta = 0.741$. This indicates the relative contribution of physical activity in predicting the two variables of mental health and mindfulness.

Discussion and Conclusion

The purpose of this study was to evaluate the effectiveness of physical activity on mental health and mindfulness among veterans and the physically disabled. The results showed that there is a

difference between the two groups of athletes and non-athletes in terms of mental health. Thus, veterans and athletes with physical disabilities have higher mental health than non-athletes. These results are consistent with the findings of Cohen et al., 2014, Maculey 2005, Biddle et al., 2011, and Ramazani et al., 2020.

In general, mental health consists of subscales of physical symptoms, anxiety and insomnia, social dysfunction, and depression. It can be said that

participating in regular and organized physical activity can lead to opportunities for social interaction by making new friends, reducing feelings of loneliness, isolation and social exclusion. Physical activity will be able to improve a person's mental health by increasing self-confidence and self-reliance, which are the basic criteria in mental health (Biddle, et al 2019).

Participating in physical and sports activities brings people together in terms of space and provides many opportunities for empowerment in the community. Encouraging physical activity frees one from being unplanned and aimless. It also strengthens the sense of cooperation in the individual and according to the discipline of sports, the individual learns that society, like sports fields, has certain rules, principles and values that violating them will cause many problems. This in turn can improve a person's functions and social interaction (Opstoel, et al, 2020).

Chu, et al, (2009) in a study that is in line with the present study stated that physical activity is inversely related to subgroups of mental health such as depression and anxiety. Thus, with increasing physical activity, the rate of depression, stress and anxiety in the person decreases.

The results of (Khajavi & Khanmohamadi (2016) regarding the improvement of sleep quality as a result of participating in physical activity are consistent with the results of the present study. Improving the quality of sleep as a result of exercise and physical activity can be justified by the theory of body restoration and energy conservation. These theories believe that sleep duration and the amount of slow sleep waves

increase with energy consumption. Therefore, exercise and activity and having sufficient mobility by easy depletion of energy reserves have an important effect on sleep quality (Rüger & Schmoelz, 2009).

da Silva, et al (2011) in a study examined the effectiveness of physical activity on the quality of life of amputated people. Forty amputated people in southern Brazil participated in the study. The results of their research showed that there is a significant relationship between the level of physical activity and quality of life components. It was also found that in active amputation patients, high levels of physical activity led to improved quality of life.

Other results showed that athletes have a higher level of mindfulness than non-athletes. Consistent with the results of the present study, Ghorbanzadeh & Lotfi (2018) in a study showed that participation in physical activity improves resilience. Van Der Zwan (2015) also showed in a study that physical activity can improve the components of mindfulness in adults aged 18 to 40 years.

The process of mindfulness is positively related to health conditions and enables a person to cope with stress, pain and other chronic conditions. According to the mindfulness and stress buffer hypothesis, people with higher mindfulness are able to reduce stress assessments and also reduce stress responses in stressful situations, which in turn leads to better performance. Becomes a person. These stress-reduction effects explain how mindfulness affects health outcomes (Creswell & Lindsay (2014).

In another study, Kangasniemi, et al (2014) found that active adults have higher mindfulness skills and mental flexibility than inactive individuals, and also have lower rates of depression. Is also consistent with the results of the present study.

In a general conclusion, it can be said that participating in physical activity and sports and also having adequate mobility in veterans and the physically disabled can improve mental variables such as mental health and mindfulness. Therefore, it is recommended to care institutions for the physically disabled and rehabilitation training centers and all organs that interact with veterans and the physically disabled to improve mental variables such as mental health and mindfulness of interventions to increase physical activity in Consider their plans.

Conflict of Interest

No conflict of interest has been expressed by the authors.

Acknowledgements

We would like to thank Ahvaz Jundishapur University of Medical Sciences, which sponsored this research, as well as all the participants in the present study.

References

1. Afkar, A., Nasiripour, A., Tabibi, J., Kamali, M., Farmanbar, R., & Kazem Nejad Leili, E. (2014). Comparison between Capabilities of the Disabled People before and after Implementation of Community Based on Rehabilitation (CBR) Program. *Journal of Holisti.*

2. Atadokht, A. (2014). Jokar Kamal Abadi N, Hoseini Kiasari T, Basharpour S. The role of perceived social support in predicting psychological disorders in people with physical disability and its comparison with normal subjects. *Archives of Rehabilitation*, 15.
3. Baer, R. (2019). Assessment of mindfulness by self-report. *Current opinion in psychology*, 28, 42-48.
4. Bakhshayesh, H., Bahmani, F., & Kamali, M. (2013). Comparative of mental health disabled people of athletic and non-athletic. *Iranian Journal of War and Public Health*, 5(1), 22-26.
5. Biddle, S. J., & Asare, M. (2011). Physical activity and mental health in children and adolescents: a review of reviews. *British journal of sports medicine*, 45(11), 886-895.
6. Biddle, S. J., Ciaccioni, S., Thomas, G., & Vergeer, I. (2019). Physical activity and mental health in children and adolescents: An updated review of reviews and an analysis of causality. *Psychology of Sport and Exercise*, 42, 146-155.
7. Chu, I. H., Buckworth, J., Kirby, T. E., & Emery, C. F. (2009). Effect of exercise intensity on depressive symptoms in women. *Mental Health and Physical Activity*, 2(1), 37-43.
8. Cohen, K. E., Morgan, P. J., Plotnikoff, R. C., Callister, R., & Lubans, D. R. (2014). Fundamental movement skills and physical activity among children living in low-income communities: a cross-sectional study. *International Journal of Behavioral Nutritio.*
9. Creswell, J. D., & Lindsay, E. K. (2014). How does mindfulness training affect health? A mindfulness stress buffering account. *Current directions in psychological science*, 23(6), 401-407.
10. da Silva, R., Rizzo, J. G., Gutierrez Filho, P. J. B., Ramos, V., & Deans, S. (2011). Physical activity and quality of life of amputees in southern Brazil. *Prosthetics and Orthotics International*, 35(4), 432-438.
11. GhasemiJobaneh, R., Arabzadeh, M., JaliliNikoo, S., MohammadAlipoor, Z., & Mohsenzadeh, F. (2015). Survey the validity and reliability of the persian version of short form of freiburg mindfulness inventory. *Journal of Rafsanjan University of Medical Scien.*
12. Ghorbanzadeh, B., & Lotfi, M. (2018). The effect of mindfulness and physical exercise on addicted women's behavioral characteristics and preventing them from further addiction. *Sport Psychology Studies (ie, mutaleat ravanshenasi varzeshi)*, 7(24), 1-17.
13. Kangasniemi, A., Lappalainen, R., Kankaanpää, A., & Tammelin, T. (2014). Mindfulness skills, psychological flexibility,

- and psychological symptoms among physically less active and active adults. *Mental Health and Physical Activity*, 7(3), 121-127.
14. Kennedy, P., Duff, J., Evans, M., & Beedie, A. (2003). Coping effectiveness training reduces depression and anxiety following traumatic spinal cord injuries. *British Journal of Clinical Psychology*, 42(1), 41-52.
 15. Keyes, C. L., Shmotkin, D., & Ryff, C. D. (2002). Optimizing well-being: the empirical encounter of two traditions. *Journal of personality and social psychology*, 82(6), 1007.
 16. Khajavi, D., Khanmohamadi, R. (2016). The Effect of Green Exercise on Improving the Sleep Quality of Female Elderly without Regular Physical Activity in Arak City. *Journal of Woman and Family Studies*, 3(2), 7-32.
 17. Maculey, E. (2005). Physical activity quality of life in older adults: efficacy–esteem and effective influences. *Journal of Psychological Science*, 10, 213-220.
 18. Moradi, A., & Kalantari, M. (2006). The impact of life skills training on psychological profile of women with physical-motor disabilities. *Journal of Exceptional Children*, 6(1), 559-576.
 19. Nejati, V. A. H. I. D., Amini, R. E. Z. A., ZabihZadeh, A. B. B. A. S., Masoumi, M. E. H. D. I., Maleki, G., & Shoaie, F. A. T. E. M. E. H. (2011). Mindfulness as effective factor in quality of life of blind veterans. *Iranian journal of war and public health*.
 20. Nourbala, A. A., Bagheri, Y. S., & Mohammad, K. (2009). The validation of general health questionnaire-28 as a psychiatric screening tool.
 21. Opstoel, K., Chapelle, L., Prins, F. J., De Meester, A., Haerens, L., van Tartwijk, J., & De Martelaer, K. (2020). Personal and social development in physical education and sports: A review study. *European Physical Education Review*, 26(4), 797-813.
 22. Parent, J., McKee, L. G., N Rough, J., & Forehand, R. (2016). The association of parent mindfulness with parenting and youth psychopathology across three developmental stages. *Journal of abnormal child psychology*, 44(1), 191-202.
 23. Ramazani, F., & Hejazi, M. (2020). The Comparison of Mental Health, Resilience and Hardiness in Athletes and Non-Athletes. *Clinical Psychology and Personality*, 15(1), 157-166.
 24. Rüger, M., & Schmoelz, W. (2009). Vertebroplasty with high-viscosity polymethylmethacrylate cement facilitates vertebral body restoration in vitro. *Spine*, 34(24), 2619-2625.
 25. Slaski, M., & Cartwright, S. (2003). Emotional intelligence training and its implications for stress, health and performance. *Stress and health*, 19(4), 233-239.
 26. Sun, F., Norman, I. J., & While, A. E. (2013). Physical activity in older people: a systematic review. *BMC public health*, 13(1), 1-17.
 27. Van Der Zwan, J. E., De Vente, W., Huizink, A. C., Bögels, S. M., & De Bruin, E. I. (2015). Physical activity, mindfulness meditation, or heart rate variability biofeedback for stress reduction: a randomized controlled trial. *Applied psychophysiology and .*
 28. Vancampfort, D., De Hert, M., Myin-Germeys, I., Rosenbaum, S., Stubbs, B., Van Damme, T., & Probst, M. (2019). Validity and correlates of the International Physical Activity Questionnaire in first-episode psychosis. *Early Intervention in Psychiatry*, 13(3).
 29. Vasudevan, V., Rimmer, J. H., & Kviz, F. (2015). Development of the barriers to physical activity questionnaire for people with mobility impairments. *Disability and health journal*, 8(4), 547-556.
 30. Walsh, J. J., Balint, M. G., SJ, D. R. S., Fredericksen, L. K., & Madsen, S. (2009). Predicting individual differences in mindfulness: The role of trait anxiety, attachment anxiety and attentional control. *Personality and Individual differences*, 46(2), 94.