


Exercise addiction and rehabilitation

Yong-Seok Jee*  <http://orcid.org/0000-0001-6797-0843>

Regular exercise has been shown to improve psychological and physical health (Malt, 2008; Peluso and Guerra de Andrade, 2005). On the contrary, indulging in excessive exercise may bring about adverse effects (Berczik et al., 2012). In other words, exercise does not always provide people with benefits such as physical development and alleviation of stress, depression, or apprehension, but could instead result in negative effects if engaged in indiscriminative or nonsystematic exercise programs. For instance, physical injuries resulting from overuse or overtraining can lead to chronic musculoskeletal deformation, pain, or a decrease in physical performance (Brenner, 2007). According to Shephard (2001), long durations of high intensity physical activity was concluded as a possible cause of injury that can exacerbate inflammatory responses or decrease immunity, which eventually affects the ability to recover from injuries. Gleeson (2007) also reported that the immunological responses which increase in accordance with long durations of high intensity exercises could be temporarily reduced upon the termination of such exercises and could thereby weaken the immune system. This phenomenon is referred to as 'exercise addiction'.

Exercise addiction was first reported by Baekeland (1970) while he was screening subjects for his study examining the influence of exercise deprivation on sleep. The subjects were compensated monetarily for their participation in that study, but revealed a strong desire to continue the exercise program, even without compensation. Finally, the response of the subjects defined the symptoms of exercise addiction. Since then, successive studies have tried to describe such behaviors. Will and Campbell (1995) employed the term 'commitment' which connoted the sense of attachment to something while Scanlan et al. (1993) defined such behavior as a psychological state by distinguishing the concept of indulgence in sports or leisure activities into three factors that influence the amount of desire to participate in such activities: hope,

belief, and confidence. The behaviors were characterized as a dependency on exercise, excessive exercise, compulsive exercise, negative exercise, or obligatory exercise (Basson, 2001). Consequently, the behaviors became referred to as exercise addiction to indicate the inability to suppress the psychological desire to exercise which resulted in excessive exercise. In 1981, Sachs defined exercise addiction as engaging in excessive exercise or yearning for additional exercise 24–36 hr after the termination of the last exercise. Carron et al. (2003) reported that approximately 9% of people who exercise regularly have exercise addiction. Approximately 40% of exercisers also reported that they had experienced symptoms similar to those of exercise addiction. Thus, approximately 50% of people who regularly exercised seemed to experience symptoms similar to those of exercise addiction or became addicted to exercise. In particular, the detection of exercise addiction requires careful observation because symptoms may not be noticed due to stress, nervousness, cramps, strains, anxiousness, sense of guilt, or slothful emotions (Sachs, 1981). Recently, Berczik et al. (2012) reported that excessive exercise has the potential to have adverse effects on physical and mental health.

Exercise addiction can be positive in that it can provide psychological or physical vitality. On the other hand, it can be negative in that it can adversely control the behavior of the addict. Debates on the effects of exercise addiction, such as whether they would be as negative as narcotism, are still ongoing. Some researchers argue that exercise addiction can be viewed as a positive addiction in that it could promote health or alleviate anxiousness. On the contrary, other researchers insist that exercise should be regarded as a negative addiction because it could induce injuries, as well as social problems (Sachs, 1981). Positive exercise addiction is important in that it can allow people to enjoy exercise and attain mental and physical energy to promote personal achievements. Contrary to positive exercise addiction, negative exercise addiction can

This is an Open Access article distributed under the terms of the Creative Commons Attribution Non-Commercial License (<http://creativecommons.org/licenses/by-nc/4.0/>) which permits unrestricted non-commercial use, distribution, and reproduction in any medium, provided the original work is properly cited.

cause psychological or physical instability and even social isolation. Negative exercise addiction was first introduced by Morgan (1979) in which he postulated two conditions: when exercise is felt to be a daily necessity; when withdrawal symptoms appear upon stopping exercise. In addition, the extent of personal relationships of exercise addicts was reported to be considerably limited. This was because of the limited number of relationships outside of exercise-related connections (Park, 2000). Problems with defecation, unstable heart rate, and depression due to extremely excited states were reported as withdrawal symptoms of exercise addiction (Glasser, 1976; Sachs and Pargman, 1984).

Exercise addiction is similar in concept to other addictions in that it shares a link with an underlying condition. Since regular exercise is a desired behavior of health promotion and maintenance, efforts should be redirected to maintaining an active lifestyle while rebalancing the role that exercise plays in one's life. Because exercise is often recommended as a desirable substitute for many compulsive acts, it can become compulsive for those inclined to addictive behavior. Therefore, treating the exercise addict necessitates a multipronged approach, and it is likely that professional approaches to its cure will be effective. Initially, an exercise specialist should determine the person's state of health, including physical and emotional well-being. Further analyses from nutritionists and psychologists should focus on the patient's dietary habits, motivation for recovery, redirection of exercise goals, and capacity for the implementation of coping strategies. Treatment therapies for exercise addicts should also include the development of healthy eating habits, strategies for improving and maintaining a healthy self-esteem and body image, gradual incorporation of healthy alternative recreational pursuits, and the monitoring of progress over time. It is likely that recovery from exercise addiction may take months or even years, so it must address any underlying issues or other conditions (Graham, 2015). Even as the research into treatment efficacy progresses, individual counseling and monitoring will remain critical to achieving recovery from exercise addiction.

CONFLICT OF INTEREST

No potential conflict of interest relevant to this article was reported.

REFERENCES

- Baekeland F. Exercise deprivation. Sleep and psychological reactions. *Arch Gen Psychiatry* 1970;22:365-369.
- Basson R. Human sex-response cycles. *J Sex Marital Ther* 2001;27:33-43.
- Berczik K, Szabó A, Griffiths MD, Kurimay T, Kun B, Urbán R, Demetrovics Z. Exercise addiction: symptoms, diagnosis, epidemiology, and etiology. *Subst Use Misuse* 2012;47:403-417.
- Brenner SE. Common sense for our genomes. *Nature* 2007;449:783-784.
- Carron AV, Hausenblas HA, Estabrooks PA. The psychology of physical activity. New York: McGraw-Hill; 2003.
- Glasser W. Positive addiction. New York: Harper & Row; 1976.
- Gleeson M. Immune function in sport and exercise. *J Appl Physiol* (1985) 2007;103:693-699.
- Graham HP. Exercise addiction. Ipswich (MA): Salem Press; 2015.
- Malt UF. Exercise in the treatment of major depressive disorder: still a long way to go. *Psychosom Med* 2008;70:263.
- Morgan WP. Negative addiction in runners. *Phys Sportsmed* 1979;7:57-70.
- Park SH. Propositions and research directions for developing and analyzing the risky sport framework. *J Leis Recreation Stud* 2000;19:105-118.
- Peluso MA, Guerra de Andrade LH. Physical activity and mental health: the association between exercise and mood. *Clinics (Sao Paulo)* 2005;60:61-70.
- Sachs ML. Running addiction. In: Sachs MH, Sachs ML, editors. *Psychology of running*. Champaign (IL): Human Kinetics; 1981. p.116-127.
- Sachs ML, Pargman D. Running addiction. In: Sachs ML, Buffone GW, editors. *Running as therapy: an integrated approach*. Lincoln: University of Nebraska Press; 1984. p. 231-253.
- Scanlan TK, Simons JP, Carpenter PJ, Schmidt GW, Keeler B. The sport commitment model: measurement development for the youth-sport domain. *J Sport Exerc Psychol* 1993;15:16-38.
- Shephard C. Pacing and exercise in chronic fatigue syndrome. *Physiotherapy* 2001;87:395-396.
- Will JD, Campbell LF. Exercise psychology. Champaign (IL): Human Kinetics Publisher; 1995.

Department of Physical Activity Design, Hanseo University, 46 Hanseo 1-ro
Haemi-myeon, Seosan 31962, Korea
Tel: +82-41-660-1028, Fax: +82-41-660-1088
E-mail: jeeys@hanseo.ac.kr