

The Effectiveness of Self-Regulation Training with Body Mass Index Interaction on Weight Control, Executive Functioning, and Emotion Regulation of Overweight and Obese Adolescent

Mohammad Vatankhah*
Seyed Musa Kafi**
Abbas Abolghasemi***
Iraj Shakerinia****

Introduction

Obesity refers to a complex medical condition characterized by severe and abnormal fat accumulation. Obesity in childhood and adolescence has always been a strong predictor of obesity in adulthood, with a 70% chance of obesity in adolescents (Abarca-Gómez et al., 2017). According to self-regulation theories, one of the causes of obesity in adolescence is a deficiency in the executive functions of the brain and thus a decrease in self-regulatory capacity. As a result, self-regulation training can be considered as an interventional approach to weight loss in children and adolescents. In this regard, Gorin et al. (2019), in their research, showed that behavior-based interventions can increase youth weight control without causing side effects such as depression and decrease in quality of life and decrease 5 to 10 kg of firm weight. Therefore, the purpose of this study is to determine whether self-regulation intervention can improve obesity and self-regulation related variables, executive functions and emotion regulation in obese and overweight adolescents.

* Ph.D. Graduated of General Psychology, Department of Psychology, University of Guilan, Guilan, Iran.

** Professor, Department of Psychology, Faculty of Psychology, University of Guilan, Guilan, Iran. *Corresponding Author*: mosakafie@yahoo.com

*** Professor, Department of Psychology, Faculty of Psychology, University of Guilan, Guilan, Iran

**** Associate Professor, Department of Psychology, Faculty of Psychology, University of Guilan, Guilan, Iran

Method

The research design is semi-experimental with control group and pre-test and post-test stages. The statistical population of the study consisted of obese and overweight adolescents in Isfahan who referred to health centers in Isfahan in 2019. Samples were selected by convenience sampling from those referring to health centers in Isfahan. They were assigned to two experimental and control groups. Research tools including Gratz and Romer (2004) emotion regulation difficulty questionnaire, Wisconsin and Stroop test were used to measure executive functions. Data were analyzed using multivariate analysis of covariance.

Results

The results of the analysis showed that self-regulation training was effective on participants' BMI, emotion regulation, and executive functions ($F=12.73$, $p<0.001$). However, BMI as the second independent variable was not effective in the results of the study ($F=0.536$, $p<0.775$).

Conclusion

According to the findings of the present study, Behavioral regulation training is effective on body mass index, emotion regulation, and executive functions regardless of participants' level of obesity and overweight. This finding is in line with research that has confirmed the effectiveness of behavioral therapies on obesity. These results may be due to the nature of the techniques used in the self-regulation package. It can also be caused by affecting the executive functions of the brain and subsequently affecting adolescent self-inhibition behaviors.

Keywords: Obese adolescents, Behavior regulation, Executive functions, Emotion regulation.

Author Contributions: Mohammad Vatankhah, general framework planning, content editing and analyzing and submission. Dr. Musa Kafi, collaboration in general framework planning, selection of approaches; and corresponding author. Dr. Abbas Abolghasemi, comparison of approaches, conclusions. Dr Iraj Shakerinia final review and correction. All authors discussed the results, reviewed and approved the final version of the manuscript.

Acknowledgments: The authors thank all dear colleagues and professors who have helped us in this research.

Conflicts of Interest: The authors declare there is no conflict of interest in this article. This article extracted from the PhD. thesis, with the guidance of Dr. Kafi and Dr. Abolghasemi and with the consultation of Dr. Shakerinia.

Funding: This article did not receive financial support.
