

Nutritional education as an effective intervention for body composition improvement in young swimmers with autism spectrum disorder

Abstract

Autism Spectrum Disorder, is a neurodevelopmental disorder which may affect individual's quality of life in several aspects including nutrition. Nutrition-related challenges may include food selectivity, poor dietary pattern and low variety of food consumption which may increase the risk of nutritional deficiencies. It can be suggested that the lack of nutritional knowledge can be considered as a leading cause for nutritional challenges in this area. The purpose of this study was to evaluate the effect of parental nutritional education on body composition of swimmers with Autism Spectrum Disorder.

Keywords: autism spectrum disorder, nutritional education, body composition, physical activity, swimming training

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Background

Autism Spectrum Disorder (ASD), is a neurodevelopmental disorder, diagnosed at the age of 3, which may affect individual's quality of life and health status in several aspects including physical activity, leisure, dietary pattern and nutritional status which may lead to chronic diseases incidence. Individual's with ASD, may experience several behavioral and health challenges during their life which can be related to each other and as a result, can affect health status.^{1,2} It has been suggested that nutrition related challenges has high prevalence among individuals with ASD.³⁻⁵ According to the centers of disease control (CDC), the prevalence of ASD has gained a growing trend within the past years and is estimated 1 in each 44 person may be autistic.⁶ Possible risk factor for ASD, can be included as both genetic and environment factors which can be stress, nutritional status, especially parental dietary pattern, nutritional deficiencies and nutritional status and even, parental occupation which can even affect inflammatory profile in individuals with ASD.⁷ Health related challenges in individuals with ASD may increase the requirement for medical and rehabilitation care, which lead to more required time for caregivers to spend at health care organizations which can affect their mental and physical health as well. While considering public health, it can be suggested that physical, behavioral and nutritional challenges which may be experienced by individuals with ASD, can bring a lot of cost for health care system, due the requirement of therapies, along with various barriers in health care system for ASD.^{8,9}

Nutritional challenges in ASD

Health challenges in ASD, include nutritional challenges as we; which can be considered as poor dietary pattern, restrictive diet, low variety of food consumption, food selectivity, food allergies, food intolerance, nutritional deficiencies which can be as a result of physical, social, behavioral and educational issues especially lack of knowledge. It has been indicated that increase in nutritional knowledge as a result of nutritional education, may improve dietary selection, dietary pattern, body composition and inflammatory profile along with metabolic status improvement.¹⁰⁻¹⁴

The purpose of this study, was to evaluate the effect of parental nutritional education on body composition of swimmers with ASD during summer 2022.

Material and methods

8 swimmers with ASD aged 9-11 years old were assessed for body composition indicators and growth status, according to CDC growth chart. Parental nutritional knowledge, was assessed using NKQ. The nutritional education program was recruited for 4 weeks, 2 sessions per week and 60 minutes for each session. The body composition indicators and parental nutritional knowledge were assessed after 4 weeks (Figure 1).

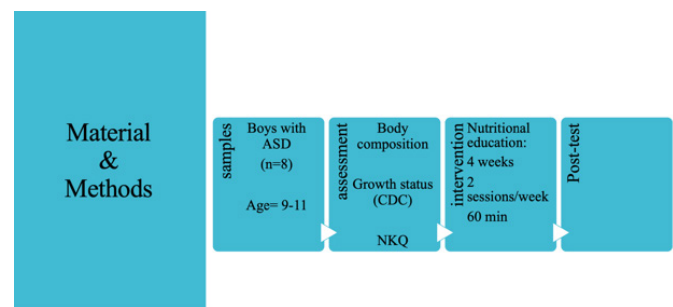


Figure 1 Study protocol.

Results and conclusion

The comparison of nutritional knowledge and the NKQ components have indicated a significant improvements especially in food choices ($p=0.001$). Moreover, the BMI percentile indicated improvement ($p=0.001$), along with stature for ages ($p=0.001$), despite the results from growth chart which may be due to short duration of assessment.

As nutritional challenges are considered as an important health related complications, planning, designing and recruiting effective interventions seems to be required. As some nutritional challenges may be due to lack of knowledge in caregivers, improving nutritional

knowledge seems to be an effective intervention which can be improve food choices and required modification. As a result, nutritional and individual's health status may improve which lead to better quality of life.

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Conflicts of interest

The author declares that there is no conflicts of interest.

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