



ORIGINAL ARTICLE

Interdisciplinary intervention in obese children and impact on health and quality of life[☆]

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KEYWORDS

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Recreação

Abstract

Objective: To verify the effects of an intervention program including physical exercise and recreational activities, as well as nutritional counseling, on the health-related quality of life of obese children.

Methods: This was a controlled clinical trial. The initial study population included children aged eight to 11 years with a body mass index (BMI) > 97th percentile for age and gender, according to the criteria of the World Health Organization, totaling 44 children matched by gender and age, as case (n = 22) and control groups (n = 22). BMI and self-reported health-related quality of life by Pediatric Quality of Life Inventory were measured before and after 12 weeks of intervention (three times weekly). The control group did not participate in the intervention.

Results: Thirty-two children completed the study (16 in each group). The case group showed significant reduction in BMI (p = 0.001) and improved quality of life in the physical (p = 0.001), emotional (p = 0.014), social (p = 0.004), and psychosocial (p = 0.002) domains, as well as in overall quality of life (p = 0.001), which was not observed in the control group.

Conclusion: The program was effective in improving the health and quality of life of obese children.

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Intervenção interdisciplinar em crianças obesas e o impacto na saúde e qualidade de vida

Resumo

Objetivo: Verificar os efeitos de um programa de intervenção com exercício físico, atividades recreativas e orientação nutricional na qualidade de vida relacionada à saúde de crianças obesas.

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Métodos: Trata-se de um ensaio clínico controlado. A população inicial do estudo envolveu crianças com idades entre oito e 11 anos e com índice de massa corporal acima de 97 percentil por idade e sexo, conforme os critérios da Organização Mundial de Saúde, totalizando 44 crianças pareadas em sexo e idade, sendo: grupo caso (n = 22) e grupo controle (n = 22). Determinou-se, antes e após 12 semanas de intervenção (três vezes semanais), o índice de massa corporal e a qualidade de vida relacionada à saúde autorrelatada pelo questionário PedsQL. O grupo controle não participou da intervenção.

Resultados: Completaram o estudo 32 crianças (16 em cada). O grupo caso apresentou redução significativa do índice de massa corporal ($p = 0,001$) e melhorou a qualidade de vida nos domínios físico ($p = 0,001$), emocional ($p = 0,014$), social ($p = 0,004$), psicossocial ($p = 0,002$) e qualidade de vida geral ($p = 0,001$), o que não foi observado no grupo controle.

Conclusão: O programa foi efetivo na melhora da saúde e da qualidade de vida de crianças obesas.

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Introduction

The increasing worldwide prevalence of obesity in children and adolescents is a matter of concern, considering its association with several comorbidities, among them cardiovascular disease.¹ In addition to its association with diabetes mellitus type 2, hypertension, dyslipidemia, acute myocardial infarction and stroke,¹ childhood obesity also appears to be involved in psychological and social consequences, as it may impair the self-esteem of young obese individuals and may result in psychological consequences in the long term.² Studies have shown an association between low quality of life and obesity in childhood and adolescence.³⁻⁶

Poor eating habits, sedentary lifestyle, and genetic predisposition are possible factors related to the development of obesity in young people. The practice of regular physical activities can prevent the onset of this condition. In addition to the benefits in the prevention and treatment of diabetes, obesity, metabolic syndrome,⁷ and improvement of the lipid profile,^{8,9} physical activities can also have an impact on the health-related quality of life of obese children and adolescents.¹⁰

The benefits of physical exercise and nutritional counseling on obesity are known in the young population.^{9,11} Other studies have shown positive effects of physical exercise with recreational activities and nutritional guidance on the components of metabolic syndrome¹² and body mass index (BMI) of obese children.¹³ The benefits of exercise on quality of life are also highlighted; however, none of these studies were conducted in Brazil,^{3,10,14,15} and one was performed with a similar methodology as used in the present study.¹⁰

Considering the gaps, this study assessed the effects of an intervention program with physical exercise and recreational activities combined with nutritional counseling on the health-related quality of life of obese children.

Methods

This was a controlled clinical trial. The initial population of the study involved children aged between 8 and 11 years

and with BMI above the 97th percentile for age and gender, according to the criteria of the World Health Organization (WHO), thus considered obese.¹⁶ The children were consecutively recruited from the Pediatric Cardiology Outpatient Clinic of the Hospital Infantil Joana de Gusmão (HIJG) of Florianópolis/SC, Brazil (a state referral center for this disease), in the period January-July 2009. The inclusion criteria were obese children between 8 and 11 years of age treated at HIJG and residents of Florianópolis/SC. The exclusion criteria were participation in any weight loss program, or physical or mental disability. All children that met the inclusion criteria and who sought treatment during this period were invited by the physicians of the institution to participate in the study. During the recruitment period, approximately 120 obese children aged 8 to 11 years were attended to at the outpatient clinic, and of these, approximately 90 met the inclusion criteria.

The head researcher was contacted by 77 parents of children who showed interest in participating in the program. Of these, 32 children studied in the morning and 45 in the afternoon. Due to logistical reasons, the program was held in the afternoon. Thus, children who studied in the morning were allocated to the case group (intervention participants) (n = 32), and those studying in afternoon were allocated to the control group, respecting the pairing for gender and age (n = 45). Losses that occurred between the initial contact and the beginning of the program totaled ten in the case group and 23 in the control group. Thus, each group initially consisted of 22 children, totaling 44 matched obese children. Children in the control group did not participate in the intervention; however, they maintained the conventional treatment (monitoring and traditional medical treatment). All children were instructed to maintain their usual activities during the study period and were advised by the hospital medical staff regarding the practice of physical activity and nutritional guidance during follow-up.

This study is part of a larger study,¹⁷ which used a clinically significant difference in systolic blood pressure of 15 mmHg and a standard deviation of 15 mmHg in the population of obese children to calculate the sample size, with type I error of 5% and type II error of 20% (pilot study), as

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