

Caring for Overweight Children and Adolescents at a Reference Clinic in Nutrology: Habits and Attendance

Atendimento de crianças e adolescentes com excesso de peso em um ambulatório de referência em nutrologia: Hábitos e assiduidade

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Abstract

Introduction The global obesity epidemic has mobilized health services to offer care at all levels, with reference outpatient clinics playing a prominent role in cases of greater complexity.

Objectives The present study aimed to identify soft drinks consumption and physical activity habits among children and adolescents diagnosed with overweight and obesity during the first visit at a secondary level nutrology outpatient clinic, and to verify attendance at follow-up visits in a 2-year period from the first visit.

Materials and Methods This is a retrospective, descriptive study based on data collection from medical records of overweighted or obese patients receiving first care at the Nutrology Clinic of the Municipal Health Secretariat from Ribeirão Preto, São Paulo, Brazil. The study population included children and adolescents aged between 2 and 18 years old cared for from January 2, 2013 to December 30, 2017. Age, weight, height, soft drinks consumption, physical activity, and attendance in scheduled follow-up visits during a 2-year period were analyzed.

Results During the study period, 316 patients were registered, including 302 (95.5%) diagnosed with obesity. Of these, 112 (35.4%) were children and 204 (64.6%) were adolescents. Only 2.0% of the children and adolescents did not consume soft drinks, while 23.5 and 26.2% of the children and adolescents, respectively, consumed them daily. Physical inactivity was reported by 31.8% of the children and by 35.8% of the adolescents. Among those who practiced some type of physical activity, 81.3% of the children and 78.2% of the adolescents did not meet the recommendation of moderate to vigorous activity for 60 minutes per day. Dropout rates within the 1st year were of 41.9% for children and of 34.3% for adolescents, increasing to 76.9% and 73.8%, respectively, within the 2nd year.

Keywords

- obesity
- feeding behavior
- health care
- food and nutritional education

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Conclusion There was a high consumption of soft drinks and low adherence to physical activity among patients who started outpatient follow-up. A small adherence to the follow-up program was also identified, with high dropout rates within the 2-year period following the first visit.

Resumo

Introdução A epidemia mundial de obesidade tem mobilizado os serviços de saúde para oferecer atendimento em todos os níveis, tendo os ambulatórios de referência um papel de destaque para os casos de maior complexidade.

Objetivos Identificar hábitos de consumo de refrigerante e prática de atividade física entre crianças e adolescentes com diagnóstico de sobrepeso e obesidade, na primeira consulta, atendidos em um ambulatório de nutrologia de nível secundário, e verificar a assiduidade às consultas de seguimento em um período de 2 anos posteriores à primeira consulta.

Materiais e Métodos Estudo retrospectivo e descritivo, realizado por meio de levantamento de dados de prontuários de pacientes com diagnóstico de sobrepeso ou obesidade que realizaram primeiro atendimento no Ambulatório de Nutrologia da Secretaria Municipal da Saúde do município de Ribeirão Preto, SP. A população do estudo incluiu crianças e adolescentes com idades entre 2 e 18 anos incompletos, no período de 02/01/2013 a 30/12/2017. As informações utilizadas foram idade, peso, estatura, consumo de refrigerante, prática de atividade física, número de atendimentos em retornos programados nos 12 meses sequenciais à primeira consulta e no 2º ano de seguimento.

Resultados No período de estudo, foram registrados 316 pacientes, sendo 302 (95,5%) com diagnóstico de obesidade. Destes, 112 (35,4%) eram crianças e 204 (64,6%) adolescentes. Apenas 2,0%, tanto das crianças quanto dos adolescentes, não consumiam refrigerante, enquanto 23,5 e 26,2% das crianças e dos adolescentes, respectivamente, os consumiam diariamente. Inatividade física foi observada em 31,8% das crianças e em 35,8% dos adolescentes. Entre os que praticavam algum tipo de atividade física, observou-se que 81,3% das crianças e 78,2% dos adolescentes não atendiam as recomendações de 60 minutos diários de atividade moderada a vigorosa. As taxas de abandono no primeiro ano foram de 41,9% para crianças e de 34,3% para os adolescentes. No segundo ano, as taxas de abandono foram de 76,9 e 73,8%, respectivamente.

Conclusão Observou-se elevado consumo de refrigerante e baixa adesão à prática de atividade física entre os pacientes que iniciaram o seguimento ambulatorial. Também foi identificada pequena adesão ao programa de seguimento, com elevadas taxas de abandono nos dois anos subsequentes ao primeiro atendimento.

Palavras-chave

- obesidade
- comportamento alimentar
- atenção à saúde
- educação alimentar e nutricional

Introduction

Obesity is a chronic disease characterized by excess body fat, and it poses serious health risks. Due to the sharp increase in its prevalence in all continents in recent decades, it is considered a worldwide epidemic. When affecting children and adolescents, obesity is one of the greatest public health challenges of the 21st century.^{1,2}

The World Health Organization (WHO) estimates that > 40 million children < 5 years old are overweight, worldwide.³ In recent years, the United States witnessed a significant increase in severe obesity among children aged between 2 and 5 years old and among female adolescents aged between 16 and

19 years old.⁴ In England, the proportion of overweight and obesity in 4- to 5-year-olds and in 10- to 11-year-olds reached 22.4 and 34.3%, respectively.⁵

In Latin America, it is estimated that overweight and obesity affect ~ 4 million children ≤ 5 years old. Mexico presents the highest overweight and obesity prevalence in children, at 33.5%.^{6,7} In Brazil, it is estimated that 7.3% of the children < 5 years old are overweight, mostly girls (7.7%).⁸ In addition, 30.3% of the children and adolescents aged between 5 and 19 years old are overweight.⁹

In view of this scenario, it is essential that primary health care units are prepared to identify abnormal weight gain

among children and adolescents early to institute preventive actions such as nutritional education, physical activity, and healthier lifestyle habits. In addition, more complex cases require specialized services, with multiprofessional teams, to offer the most appropriate treatment for each patient. The present study aimed a) to identify soft drinks consumption and physical activity habits among children and adolescents diagnosed with overweight and obesity at the first visit at a secondary level nutrology outpatient clinic, and b) to verify attendance at follow-up visits for a 2-year period after the first visit.

Material and Methods

This is a descriptive, retrospective study with a quantitative approach that was carried out through a survey of data from medical records of children and adolescents diagnosed with overweight or obesity who underwent first care at the Nutrology Clinic of the Municipal Health Secretariat of Ribeirão Preto (SMSRP, in the Portuguese acronym), state of São Paulo, Brazil. This outpatient clinic is a reference service for all basic health units from Ribeirão Preto, and it offers secondary and multidisciplinary care for children and adolescents, with a team consisting of physicians, nurses, a psychologist, and a physical educator.¹⁰

The study population was composed of children and adolescents aged between 2 and 18 years old diagnosed with overweight or obesity whose first visit occurred from January 2, 2013 to December 30, 2017. All information was collected from a specific new case form (visit date, age, weight, height, body mass index, soft drinks consumption, and physical activity habits) and the medical records of the patients (to assess program attendance at scheduled visits for 12 consecutive months after the first visit and during the 2nd year of follow-up). Overweight and obesity diagnoses were established according to the body mass index (BMI) curves for age groups and genders adopted by the WHO, and were defined as from the 85th to the 97th percentile and \geq the 97th percentile, respectively.^{11,12} The follow-up program at this clinic determines that an appointment is scheduled every 30 or 60 days.

The present study was authorized by the Municipal Health Secretariat of Ribeirão Preto (SMSRP-SP, in the Portuguese acronym) and by the Manager of the Outpatient Management Center-59, where it was carried out. In addition, the present study was submitted to the Research Ethics Committee of the Health Center from the Faculdade de Medicina de Ribeirão

Preto, Universidade de São Paulo, and was approved under the consubstantiated opinion number 3.132.649.

Results

From January 2013 to December 2017, 316 patients were registered at the SMSRP-SP Nutrology Clinic, and 302 (95.5%) were diagnosed with obesity. Of these, 112 (35.4%) were children and 204 (64.6%) were adolescents (– **Table 1**).

Only 2.0% of the children and 2.0% of the adolescents did not consume soft drinks. In contrast, daily soft drinks consumption was reported by 23.6 and 25.7% of the children and adolescents, respectively.

Physical inactivity was observed in 31.8% of the children (predominantly in males), and in 35.8% of the adolescents (predominantly females), with no statistically significant difference between genders at each age group ($p > 0.05$). Among those who practiced some type of physical activity, 81.3% of the children and 78.2% of the adolescents did not meet the daily requirement of 60 minutes of moderate to vigorous activity recommended by the Brazilian Society of Pediatrics.⁹

Dropout rates within the 1st year were of 41.9% for children and of 34.3% for adolescents. During the 2nd year, the dropout rates were of 76.9% for children and of 73.8% for adolescents. Only 4.4% of the children and 4.9% of the adolescents were followed-up regularly for 2 years. In total, 21.4% of the children and 29% of the adolescents had a maximum of 2 visits.

Discussion

Although most referrals (95.5%) were motivated by obesity, the diagnosis of overweight also motivated some professionals to seek support for their patients in a specialized clinic. The changes in dietary patterns in recent decades occurring all over the world, including in Brazil, decreased malnutrition rates but increased excessive weight rates. The increased consumption of processed foods and sugary drinks, such as soft drinks, has been identified as one of the main factors responsible for the increased energy intake, favoring obesity.¹³ The increasing consumption of soft drinks over time is related to increased obesity levels in children and adolescents due to their high sugar content, high glycemic index, low satiety, changes in compensatory mechanisms leading to greater energy consumption,^{14,15} insulin resistance, and impaired β -cell function, increasing the risk of type II diabetes.¹⁶

Table 1 Distribution of children and adolescents cared for at the Nutrology Clinic from the Municipal Health Secretariat of Ribeirão Preto, São Paulo, Brazil (SMSRP-SP), from 2013 to 2017, according to gender, age group and excessive weight diagnosis

	2 to 9 years old				10 to 18 years old			
	males		females		males		females	
	n	%	n	%	n	%	n	%
Overweight (14)	–	–	3	21.4	9	64.3	2	14.2
Obesity (302)	52	17.2	57	18.9	103	34.1	90	29.8

In the United States, energy intake from sugary drinks nearly doubled in preschoolers during the last 30 years.¹⁶ In the first decade of the 21st century, soft drinks consumption by children and adolescents aged between 2 and 18 years old accounted for ~ 175 Kcal/day; in adolescents, this value was even higher, at 375 Kcal/day. Almost 44% of 2-year-olds had soft drinks at least 1 day of the week, and this prevalence increased to 70% in children aged between 2 and 5 years old.¹⁶

In Brazil, the per capita soft drinks consumption increased 400% from 1975 to 2003, and 16% from 2003 to 2009;¹⁷ these values are consistent with those from the United States, with a 500% increased consumption.¹³ In 2006, 22.1% of Brazilian children between 6 and 59 months old consumed soft drinks daily; 70% of them had soft drinks at least once a week, and 6.6% of the children from this age group were overweight for their age.¹³ Data from the Brazilian National Adolescent Student Health Survey showed that 23.8% of the adolescents were overweight and, among them, 21.7% reported daily consumption of soft drinks.¹⁸

In our study, ~ 52% of the children and 48% of the adolescents reported consuming soft drinks >3 times a week; among them, 23.6% of the children and 25.7% of the adolescents reported consuming soft drinks daily. Although there is no consensus yet on the causal relationship between soft drink consumption and excessive weight, a review study concluded that most papers reported a direct association between sugary drinks, weight gain, overweight and obesity in children and adolescents.¹⁹

Only 1 child and 2 adolescents reported daily physical activities, corresponding to <1% of the total sample. Although the benefits of physical activity are clearly defined, the worldwide prevalence of physical inactivity in adolescents aged between 13 and 15 years old is high, reaching almost 80%. The WHO recommends at least 60 minutes of daily moderate or vigorous physical activity.^{20,21}

Among Brazilian adolescents, 71% were considered inactive and 78% were classified as sedentary.²² In a cohort study from the city of Pelotas, state of Rio Grande do Sul, Brazil, an important decline in physical activity was reported at the age group between 11 and 18 years old.²³

The ERICA study, of national representation, demonstrated that more than half of the Brazilian adolescents (54.3%) do not follow the WHO recommendation of physical activity, that is, moderate to vigorous physical activity for ≥ 60 minutes per day, with the higher frequency of inactivity observed among girls.²⁰

The same is true for children. A case-control study from Spain found that obese children practiced, on average, 14.5 minutes per day of vigorous physical activity, while average-weighted children practiced 20.8 minutes per day.²⁴ Among American children, 26% of those overweight were less likely to perform adequate physical activity daily.²⁵

At the Child and Adolescent Obesity Outpatient Clinic from the Hospital das Clínicas, Universidade Estadual de Campinas (UNICAMP, in the Portuguese acronym), Campinas, state of São Paulo, Brazil, 17.9% of the respondents did not practice any type of physical activity, 5.1% practiced physical activities only once a week, 28.2% practiced them 3 times a week, 7.7%, 5

times a week, and 12.8%, 7 times a week.²⁶ In another prospective cohort study from the city of Pelotas, state of Rio Grande do Sul, Brazil, physical inactivity was reported by 71.2% of the patients; among school-aged children, 2.8% were considered active, 26% were moderately active, 54.5% were sedentary, and 16.7% were very sedentary.²⁷

One of the major challenges faced by specialized care services is the lack of adherence to follow-up and to the program directed to each individual patient. In the present study, more than a third of the patients (37%) did not return after the first visit, while 21.4% of the children and 29% of the adolescents had a maximum of 2 visits. In addition, dropout rates within the 1st year were of 41.9% for children and of 34.3% for adolescents. During the 2nd year, 76.9% of the children and 73.8% of the adolescents left the program. Only 4.4% of the children and 4.9% of the adolescents were followed-up regularly for 2 years.

Studies evaluating the treatment of obesity in children and adolescents have found elevated dropout rates, which vary between 27 and 73%, highlighting the need to identify the reasons and to correct the flaws accounting for the nonadherence to therapeutic proposals.²⁸ In Europe, a study carried out in 11 childhood obesity treatment centers revealed that the dropout rate after the first visit was of 30.2% for girls and of 34.2% for boys. After 2 years of follow-up, only 9.7% of the girls and 6.4% of the boys remained on treatment.²⁹ In Canada, dropout rates reach 61%, even in services in which return visits are scheduled according to patient demand and the treatment time is open.³⁰ In Brazil, the dropout rate observed at the Child and Adolescent Obesity Clinic from the Hospital de Clínicas of the UNICAMP was of 43%, with 25% of patients no longer attending after the first follow-up visit.³¹

Conclusion

Our study has some limitations. All data were obtained from medical records of the patients, which were filled-up by different professionals, which included age, gender, weight, height, BMI (determined previsit by a nurse), history taking, and physical examination (medical visit). Information regarding soft drinks consumption and physical activity habits may be subject to memory bias or even underreporting, as they were discussed during the first visit at a service specialized in obesity treatment, which can influence answers. On the other hand, although the results cannot be extrapolated to all overweight children and adolescents from the city of Ribeirão Preto, the information obtained can assist health care managers in implementing activities that will provide better care conditions to these patients.

Conflict of Interests

The authors have no conflict of interests to declare.

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