



ORIGINAL ARTICLE

Nutritional assessment of the menus served in municipal nursery schools in Granada[☆]



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Food consumption

Abstract

Introduction: The school canteen plays today an essential role in child nutrition and for consolidating appropriate eating habits. In Spain, the guidelines for school meals have been established by the NAOS strategy and the Perseus programme, and are especially aimed at school children of 6–10 years. However, there is a lack of information on menus offered in pre-school education centres, which take in children of pre-school age. The aim of this study was to evaluate the composition and the food supplied in pre-schools of the province of Granada.

Material and methods: A study was conducted on the menus offered in public pre-schools in Granada, with a population of 420 children aged 2–6 years old. A total of 20 menus were analyzed, and details were collected including direct information on the ingredients used, the proportion of these in each dish, and the form of preparation. The daily intake of energy and nutrients, as well as the frequency of weekly supply of the different food groups were studied.

Results: The average energy content of the menus was 512.5 kcal, distributed into protein (17.3%), carbohydrates (48.8%), and lipids (33.9%). A suitable supply of fibre (7.8 g/day) was observed, but content of calcium and zinc did not reach recommended levels. The supply of vegetables was adequate, with a daily presence of salad, as well as vegetables, meat, fish and fruit.

Conclusion: Menus evaluated represent an adequate content of energy, and proper supply of the different groups of foods, especially vegetables, fruits and salads. A great effort is observed in the centres to adapt meals to nutritional recommendations.

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PALABRAS CLAVE

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Etapa preescolar;
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Consumo alimentario

Evaluación nutricional de los menús servidos en las escuelas infantiles municipales de Granada

Resumen

Introducción: El comedor escolar realiza hoy día un papel esencial en la nutrición infantil y en la consolidación de los hábitos alimentarios. En España, existen directrices para los menús escolares dirigidas especialmente a niños de 6-10 años, pero hay una falta de información sobre los centros de educación infantil, que acogen a niños en edad preescolar. El objetivo de este trabajo fue evaluar la composición y la oferta alimentaria en centros de educación infantil de la provincia de Granada.

Material y métodos: Se realizó un estudio de los menús ofertados en escuelas municipales de Granada, con una población de 420 comensales de 2-6 años de edad. Se analizaron 20 menús, recogiendo información sobre ingredientes utilizados, proporción de los mismos en cada plato y forma de preparación. Se estudiaron el aporte de energía y nutrientes, y la frecuencia de la oferta semanal de los distintos grupos de alimentos.

Resultados: El contenido energético medio de los menús fue de 512,5 kcal, distribuido en proteínas (17,3%), hidratos de carbono (48,8%) y lípidos (33,9%). Se observó un aporte de fibra adecuado (7,8 g/día), pero escaso de calcio y cinc. La oferta de verduras y hortalizas fue adecuada, con una presencia diaria de ensalada, así como la de legumbres, carnes, pescados y frutas.

Conclusión: Los menús evaluados suponen un aporte energético adecuado, y una oferta correcta de los diferentes grupos de alimentos, especialmente verduras, frutas y ensaladas. Se aprecia un gran esfuerzo de los centros para adecuar las comidas a las recomendaciones nutricionales. © 2015 Asociación Española de Pediatría. Publicado por Elsevier España, S.L.U. Todos los derechos reservados.

Introduction

Childhood may be the most delicate stage of life when it comes to nutrition, on one hand due to the intense growth experienced by the child that demands additional nutrients for tissue development, and on the other because it is in this period that individuals acquire the dietary habits that will persist through adulthood and influence the prevention of multiple diseases related to nutrition.¹ Furthermore, children are a population subset that is particularly receptive to dietary changes and nutrition education.

The school lunchroom plays a key role in this stage, both in providing adequate nutrition for optimal growth and development and in the consolidation of appropriate dietary habits. It can become a cornerstone in the prevention of obesity, which is a priority objective in Western societies.² The demand for school dining services has increased considerably in recent times, in part due to parental time constraints associated to the incorporation of women to the workforce, and also due to increasing distances between homes and schools. According to recent statistics from the Ministry of Education, Culture and Sports, approximately 60% of schools registered in Spain offer dining services, but this figure rises to 75% in nurseries and preschools (ages 1–6 years).³ These centres have experienced substantial growth in Spain: while the total increase in the number of schools in the past 10 years has been of 20%, preschools have increased by more than 60%. It is estimated that 25% of schoolchildren in Spain use the dining services, with children enrolled in preschool and primary school amounting to 87.2% of the total users.⁴

This is because nearly all children enrolled in preschool use the school dining services. There is also a huge demand for school dining services in other countries: it is estimated that three million children in the United Kingdom⁵ and thirty million in the United States⁶ eat in school every day.

Given the importance of school cafeterias, most developed countries have created legislation to define nutrition standards for the preparation of school menus, drawing specific plans that aim at health promotion through nutrition in the paediatric population.^{7,8} In Spain, a *Consensus Document on Nutrition in Schools* was developed in the context of the Nutrition, Physical Activity and Obesity Prevention strategy (Nutrición, Actividad física y Prevención de la Obesidad [NAOS]), approved by the Consejo Interterritorial (Interterritorial Council) of the Spanish Health System and reviewed by the Federación Española de Sociedades de Nutrición, Alimentación y Dietética (Spanish Federation of Societies on Nutrition, Diet and Dietetics) and other associations of experts. The document established nutritional standards for the planning of school menus and the conditions that must be met by school canteens.⁹ In addition, the Pilot School-Based Reference Programme for Health and Exercise against Obesity (Programa Piloto Escolar de Referencia para la Salud y el Ejercicio contra la Obesidad [PERSEO])¹⁰ aims at promoting healthy dietary and exercise habits in schools settings. Its *Guideline on School Canteens* presents the guidelines for the preparation of school menus and the standards that must be met by school canteens, and is aimed at children aged 6–10 years. However, the legislation and dietary guidelines for lunchrooms in early childhood education centres

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