



ORIGINAL ARTICLE

Construction and validation of a questionnaire on the knowledge of healthy habits and risk factors for cardiovascular disease in schoolchildren^{☆,☆☆}



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KEYWORDS

Child;
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Questionnaires;
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Motor activity

Abstract

Objectives: To develop and analyze the reliability and validity of a questionnaire on the knowledge of healthy habits and risk factors for cardiovascular disease (CARDIOKID) to be used in schoolchildren.

Methods: The study included 145 children aged 7 to 11 years. The measured factors were the knowledge of healthy habits and risk factors for cardiovascular disease. Cronbach's alpha and intra-class correlation coefficient (ICC) were used to verify reliability, and exploratory factor analysis was used to assess the validity of the questionnaire.

Results: The sample consisted of 60% females and 40% males. In factorial analysis, the Kaiser-Meyer-Olkin (KMO) test result was measures of sampling adequacy (MSA) = 0.81 and Bartlett's test of sphericity was $\chi^2 = (66) = 458.64$ ($p < 0.001$). In the factorial analysis with varimax rotation, two dimensions were defined. The "healthy habits" dimension was composed of five factors (ICC = 0.87 and $\alpha = 0.93$) and the "cardiovascular risk factors" dimension was composed of seven factors (ICC = 0.83 and $\alpha = 0.91$). In the individual factor analysis, Cronbach's alphas were between 0.93 and 0.91. Total variance was 46.87%. There were no significant differences between test and retest applications.

Conclusion: The questionnaire presented satisfactory validity and reliability (internal consistency and reproducibility), allowing for its use in children.

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PALAVRAS-CHAVE

Criança;
Estudos de validação;
Questionários;
Comportamentos saudáveis;
Hábitos alimentares;
Atividade motora

Construção e validação de um questionário sobre conhecimento de hábitos saudáveis e fatores de risco para doenças cardiovasculares em estudantes

Resumo

Objetivos: Desenvolver e analisar a fidedignidade e a validade de um questionário sobre conhecimento de hábitos saudáveis e fatores de risco para doenças cardiovasculares (CARDIOKID), para utilização em crianças de idade escolar.

Métodos: Participaram do estudo 145 crianças de 7 a 11 anos de idade. Os fatores mensurados foram o conhecimento sobre hábitos saudáveis e fatores de risco para doenças cardiovasculares. O alfa de Cronbach (α) e a correlação intraclasse (CCI) foram utilizados para verificar a fidedignidade, e a análise fatorial exploratória para avaliar a validade do questionário.

Resultados: A amostra foi composta de 60% meninas e 40% meninos. Na análise fatorial, o teste de KMO teve resultado de 0,81 e o teste de esfericidade de Bartlett de $X^2 = (66) = 458,64$ ($p < 0,001$). Na análise fatorial com rotação varimax, foram definidas duas dimensões: a de "hábitos saudáveis" permaneceu com cinco fatores (CCI = 0,87 com $\alpha = 0,93$), e a de "fatores de risco para doenças cardiovasculares" com sete fatores (CCI = 0,83 $\alpha = 0,91$). Na análise de cada fator, o valor encontrado dos alfas de Cronbach manteve-se entre 0,93 e 0,91. A variância total manteve-se em 46,87%. Não houve diferença significativa entre as respostas no teste e reteste ($p < 0,292$).

Conclusão: O questionário demonstrou consistência interna e reprodutibilidade satisfatórias, possibilitando a sua utilização em crianças.

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Introduction

The increase in childhood obesity is currently the focus of great global concern, as it is considered an important risk factor for the development of cardiovascular disease in adulthood.¹ It is estimated that 43 million children (35 million in developing countries) are overweight, and that 92 million are at risk of overweight.² In Brazil, data show that in 2008, 20% of children between 5 and 9 years were overweight.² In Rio Grande do Sul, a recent study of children and adolescents demonstrated that 30% of this population was overweight or obese.³ This fact directly contributes to the development of chronic diseases in adulthood.⁴⁻⁶

A cohort study with 276,835 Danish schoolchildren aged 7 to 13 years showed that children with BMI > 85th percentile have an increased risk of cardiovascular events in adulthood. In this same scenario, it is worth mentioning that there are other risk factors independent from weight in adulthood. These include smoking, physical inactivity, hypertension, and the individual's quality of life,⁷ factors strongly related to cardiovascular diseases.

With the increase in chronic diseases and the emergence of a proposal based on health promotion in the last 25 years, the concept of health promotion has been thoroughly discussed, and has become a challenge for the scientific community.⁸ Recently published data demonstrated that, in Brazil, 72.4% of the population has some type of chronic illness, of which 31.3% are cardiovascular diseases. Recent studies conducted in Brazil and worldwide with patients with chronic diseases have shown that increased knowledge through educational interventions lead these individuals to better self-care, decreasing the number of hospitalizations.⁹⁻¹²

However, in a recently published meta-analysis on education and health, based on nutritional interventions and physical activity with obese children, the results indicated that the interventions showed good results concerning blood pressure control and decrease in waist measurements, but some did not show a positive response regarding the prevention of childhood obesity.¹³ In search for solutions to prevent obesity in childhood and adolescence, the self-care stimulus is emphasized; for that, it is necessary to develop tools that are easily applicable in children, which will be directed to verifying what knowledge they have regarding healthy habits and foods that are healthy for the pediatric population.

There are currently several tools that provide valid measures of food and nutrient consumption. However, some children have difficulties in completing some of the tools, due to cognitive problems. Therefore, brief and easily-applicable tools can contribute to the development of preventive strategies and to the evaluation of the effectiveness of intervention programs.

Considering these facts, this study aimed to develop a questionnaire on the knowledge of healthy habits and risk factors for cardiovascular disease, and assess its validity and reproducibility.

Methods

Tool design

The tool was developed in five stages: literature review, selection of variables, expert evaluation, pilot study, and evaluation of psychometric properties. The literature review was the base for the tool development, with the identification of studies on knowledge regarding healthy habits

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