

Short Communication

Evaluating preschool children knowledge about healthy lifestyle: Preliminary examination of the healthy lifestyle evaluation instrument

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Accepted 3 November, 2008

The aim of this study was to develop an instrument to evaluate the knowledge of preschool children about healthy lifestyle behavior. The innovation was that the instrument was designed to get direct evidence about healthy lifestyle from children aged 4 - 6 years old. Usually, children knowledge is estimated indirectly (parents, teachers), but the current study aspired to provide direct evidence by developing a valid and reliable instrument. To this respect, the initial psychometric properties were encouraging, supporting the appropriateness of the questionnaire. However, further research is needed in order to draw firm conclusions about the reliability and psychometric properties of the instrument.

Key words: Educational evaluation, early education, psychometric properties.

INTRODUCTION

Children unhealthy life style is one of the major concerns of the European societies. Lack of physical activities has led to the continuous increase of the percentage of the children who are overweighted (Canning et al., 2004; Elgar et al., 2005). In order to promote a healthier lifestyle for children, several attempts have been made, and many studies argued that education plays a vital role (James et al., 2004; Reynolds et al., 2000; Pate et al., Ward et al., 2005).

For the above mentioned purpose, a three-year international project Early Steps (<http://earlysteps.teithe.gr/>) was funded by a grant from the European Union (Comenius 2.1 Action, Project number: 118192-CP-1-2004-1-GR-COMENIUS-C21). The "Early Steps Physical Education Curriculum" (ESPEC) was based on the main standards of physical education

for children 4-6 years old, and included 24 daily lesson plans, which were conducted twice per week for a period of three months.

Generally, observation and interviews from parents are common means to estimate the knowledge of children aged 4-5 years old about a subject. Yet, these methods are time consuming and provide indirect evidence. In order to get direct information about the project's impact on the children's knowledge about healthy life style, a questionnaire was designed by the project's staff. Children at this age have undeveloped language and conceptual skills, but appropriate design (e.g. use of pictures), however, could be very helpful to overcome this problem (Wortham, 2005).

The purpose of the current study was to develop a valid and reliable instrument that can be used to receive direct responses from preschool children about their knowledge of healthy life style activities. The advantage of this instrument is that children will provide direct information that otherwise it could not be collected.

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Table 1. Factor loadings, percentage of correct responses of HLEI using Factor Program (Ver. 7) (Lorenzo-Seva and Ferrando, 2006).

Items**	Factor loadings	Correct responses
Can you move in many different ways?	.572	70.6%
If you want to develop your balance, which practices are good for that purpose?	.399	42.5%
The more exercise I get, the healthier my heart will be	.540	65.5%
In which of the following activities is more oxygen needed?	.509	45.0%
Which of the following activities cause me to breathe faster?	.518	59.4%
When do you sweat more?	.540	68.7%
When I start exercising, my body temperature...	.503	50.5%
Which one of the following foods helps me build stronger bones?	.474	57.8%
Which of the following sweets build a healthier body?	.361	54.3%
Breathing, heart rate, and perspiration are three body functions that change between exercising and relaxing	.544	64.5%
% explained variance	32	
Cronbach α	.774	

** Three items were excluded due to the low factor loadings (< .250)

METHOD

Participants

The participants of the current study comprised 332 children (168 male and 164 female) aged 4-5 years old ($M = 4y.$ and 7 months, $SD \pm 8$ months).

Instrument

The instrument used in the study, consisted of 13 items, designed to estimate the acquired knowledge of the children about issues which have been evolved during the implementation of the ESPEC-Healthy Life Style. From the two answer options available for every question only one was correct, moreover there was also an 'I do not know' option.

RESULTS AND DISCUSSION

Application of parallel analysis (Tsigilis et al., 2007) indicated that one reliable factor with 13 questions should be retained (Table 1). The analysis revealed adequate psychometric properties of the Health Lifestyle Evaluation Instrument (HLEI) examined in the current study, but additional studies are needed before it is claimed that is a sound and reliable instrument. Exploratory factor analysis should be used at first if the instrument contains items that had not been used before. Moreover, it assists to identify tricky or confusing items and resulting in further item reduction.

The purpose of the present study was to develop an instrument to assess pre-school children's knowledge of a healthy lifestyle. The advantage of the HLEI is that responses of items are indicated by the children, overcoming the barriers of reading and writing. Easy to use

instruments that collect information directly from the children could be useful tools. Other approaches, such as observation, or interviews from parents could provide also sound evidence, but these techniques are time consuming and use indirect sources of information. On the contrary, an easy to use instrument like HLEI saves a lot of time by the quickness and immediateness of its applicability. In turn, direct information from preschool children about a subject would provide educators useful knowledge.

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