

## “Zero Obesity Questionnaire” (ZOQ) - The development and validation of a novel questionnaire to assess nutrition knowledge, food behaviours and self image in school children

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### INTRODUCTION

Childhood Obesity is a public health priority<sup>1-3</sup>, with an estimated prevalence of overweight in children and adolescents of about 30%<sup>3-5</sup>. It has adverse psychological, social and health consequences in childhood and later in life, especially as far as cardiovascular disease, metabolic syndrome and associated mortality, are concerned<sup>6,7</sup>. Understanding how best to prevent it, remains a research question<sup>6</sup>. However the design of potentially effective interventions is hampered by the general lack of good-quality data available<sup>8,9</sup>. There is no available validated methodology that simultaneously assesses nutrition knowledge, food behaviours and self image in school age Portuguese children.

The Zero Obesity Questionnaire (ZOQ) was developed to produce a novel, valid, simple, quick and engaging method of accurately assessing 3 sections: nutrition knowledge (NK), food behaviours (FB) and self image (SI) in children, set within a user-friendly interface.

### METHODS

#### Participants and Sampling

A convenience sample of 75 children aged 6-10 years old were recruited from an elementary school (“Colégio Beiral”, Lisbon, Portugal) for a pilot study. Children less than 8 years was unable to complete the questionnaire because they haven’t developed the necessary immediate recall skills and time conceptualization necessary to complete the questionnaire without assistance.

#### Measures

The ZOQ (Figure 1) was developed within the obesity prevention project – *Zero Obesity Project* – to ensure thorough evaluation of process and outcome elements.

The final instrument comprised 13 questions – 10 NK items, 2 FB items and 1 SI item.

Items generation were developed through literature and expert opinion (nutritionists and psychologists) in order to create a list of items which encompasses the construct of interest.

Test-retest reliability addresses the question of how consistent the answers are from one occasion to the next. The questionnaire was administered on two occasions, two weeks apart, to the pilot population. The children were informed that this questionnaire was not part of their schoolwork, but it was important that they did not confer with each other.

Pearson correlation coefficients were computed between test and retest scores for the individual items and for the total score.

### RESULTS

In total 33 children took part in validation study; 17 girls (51,5%) and 16 boys (48,5%), aged 8-10 years (mean 8,7 years). All children spoke Portuguese as their first language. Time to complete ZOQ ranged from 5 to 16 minutes in first phase and 4 to 9 minutes in second phase, dependent primarily on reading ability.

The test-retest reliability for each of the sections was high and statistically significant, being higher on the self image section (NK, R = 0,68, P<0,01; FB, R = 0,771, P< 0,01; SI, R = 0,96, P<0,01).

Figure 1 – “Zero” Obesity Questionnaire (example of some items)



### CONCLUSIONS

The findings demonstrate that the questionnaire meets some of the criteria for reliability and provides a useful, low cost and friendly instrument to assess children’s nutrition knowledge, food behaviours and self image.

While the preliminary findings are positive, it is important to note that this was a very small pilot study with very little ethnic, social and cultural diversity. Further studies are therefore required within a nationally representative population. This could make a substantial contribution to future public health monitoring and research.

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