

Childhood Obesity Prevention in Emirates: A Conceptual Framework for an Anti-Obesogenic Pilot Intervention

Ihab Tewfik
Jennifer Mackenzie
Adam Cunliffe
University of Westminster, UK

Ayesha Al-Dhaheri
Habiba Ali
Sidiga Washi
Carine Platat
United Arab Emirates University, United Arab Emirates

Abstract: In essence, this proposed conceptual framework has been designed to address childhood obesity and its related risk factors through coherent public health nutrition strategy for intervention at school level. Today more than ever, there is an urgent demand for a multi-disciplinary team to build an 'anti-obesogenic' environment where healthy living is an effortless priority. The aims, objectives, expected outcomes, plan of action (intervention approach and methods) and method of assessing its effectiveness in this proposed pilot intervention were developed in an attempt to revert the rising trend of childhood obesity in United Arab Emirates. It also looks into the role of school, family and community as a whole on children's health and promotes healthy lifestyle approach to obtain sustainable changes. This employed public health methodology of prevention is seen as the most affordable and sustainable plan of actions to deal with obesity epidemic. It is anticipated that the emerged outcomes from this pilot programme assist policy makers and stakeholders to build a competent health promotion scenario and make sure that school children have access to healthy foods and exercise facilities. Immediate action, therefore, is needed to regress the rising trend of obesity and related chronic diseases.

Keywords: Childhood Obesity, Obesogenic Environment, Nutrition, Physical Activity, Pilot Intervention

1 Introduction

Globesity is the global public health problem of obesity, and it is increasing among children in both developed and developing countries (Connelly et al., 2007; McCallum et al., 2007; Nemet et al., 2008). Evidence for this growing trend has been reported in the United Arab Emirates (UAE) and underscores the epidemiological and nutritional transitions, which reflected in shifts in disease types, patterns, morbidity and mortality (Al-Haddad et al., 2000, 2005). Because of its long-term adverse effects, the prevention and management of childhood obesity have received the full World Health Organisation (WHO) recognition (Demattia et al., 2006). WHO has encouraged many countries to focus more on strategies to tackle this pandemic as a public health priority (Balakrishnan et al., 2008; Dehgham et al., 2005; Dixey et al., 2006).

Various research programmes have been established to identify and test the most effective methods for achieving individual behavioural change, for example, weight reduction, increased physical activity and dietary change (Connelly et al., 2007; McCallum et al., 2007; Nemet et al., 2008). Because childhood obesity has been attributed to unhealthy dietary and lifestyle behaviour, resulting from inconsistent knowledge, attitude and behaviour, this proposed conceptual framework outlines the design of pilot intervention programme to address childhood obesity in UAE and its related risk factors through behaviour modification approach that implements public health nutrition strategy (PHNS) for intervention at school level. The PHNS is focused to combat obesogenic environment inside and outside school by promoting balanced diet,

regular physical activity and healthy lifestyle (improved food choices/preferences and health habits) among school children in UAE (Wareham et al., 2005; Warren et al., 2003).

The proposed intervention is consisting of multi-component behaviour changes that take into account, daily consumption of five or more fruits and vegetables, 1 h/day physical activity, less than 2 h/day screen time, decreasing the consumption of high fat, salt and sugar foods and, in turn, alleviating overweight and obesity risk factors. This article reveals a conceptual framework for pilot intervention, which is designed to be conducted in primary public school in Al-Ain city (one for boys and one for girls) in UAE.

2 Study Design and Sampling Technique

Currently, in Al-Ain city, there are two schools for girls and four schools for boys, called 'Al-Namothajeyah' schools. One primary school for boys and another one for girls can undergo the intervention programme together with another two control schools (one for boys and another for girls) for one complete scholastic year (8-month average). The study should include baseline (pre-intervention) and end-line (post-intervention) assessments of both intervention and control schools. Details of actual sample size can be finalised once the approval of the study has been granted by the ministry of education in UAE.

3 Employed Methods for Data Collection and Analysis

Questionnaire: The data will be collected by trained interviewers through structured interviews of parents and/or children before and after this pilot intervention.

Anthropometric measurements: Childhood overweight/obesity prevalence and abdominal fat amongst recruited pupils will be assessed through measuring height, weight, waist, hip and mid upper arm circumference using appropriate cut-off points (Ashwell, 2005; Barlow, 2007; Savoye et al., 2007; Tewfik, 2008). All measurements will be carried out by trained personnel using WHO surveillance protocol.

Nutrition and physical education materials (toolkit): Culturally, appropriate training modules and health education materials for school children and similar materials suitable for school personnel (teachers, school nurses, etc.) as well as parents will be prepared to address lifestyle behaviour: healthy eating, physical activity, stress management, and their relation to health.

Based on the evaluation of effectiveness of this pilot intervention, it will be possible to develop a framework for implementing a sustainable school-based intervention programme to prevent and manage childhood obesity in UAE (Al-Haddad et al., 2000, 2005; Katz et al., 2005; Rudolf et al., 2006; Sacher et al., 2007; Sands et al., 2007; Van Sluijs et al., 2007).

4 Discussion

This conceptual framework for pilot intervention was established to prevent obesity in children in UAE. It is aimed at motivating and enabling children to use every opportunity for physical activity and to provide them with social support in an anti-obesogenic environment that encourages active lifestyle (Chadwick et al., 2008; Robertson et al., 2008). Young children were considered as a judicious target for this project, as they can easily participate in playful activities compared with adolescents and adults, a potential positive element for the success of the intervention. This multi-level programme, which is outlined in Figure 1, aims at modifying the personal, social and obesogenic environmental determinants, for example, introducing nutritional programmes (healthy snacks; nutrition education debates; school day on health diet) as well as promoting physical activity inside and outside school, to become as integral part of their lifestyle (Bamana et al., 2008; Golan, 2006). It involves several partnerships intervening at different levels, school, teachers and family. One specific goal was to transmit knowledge on health habits, nutrition awareness and skills related to physical activity to make it attractive and to foster in youth the development of lifelong active behaviours, through

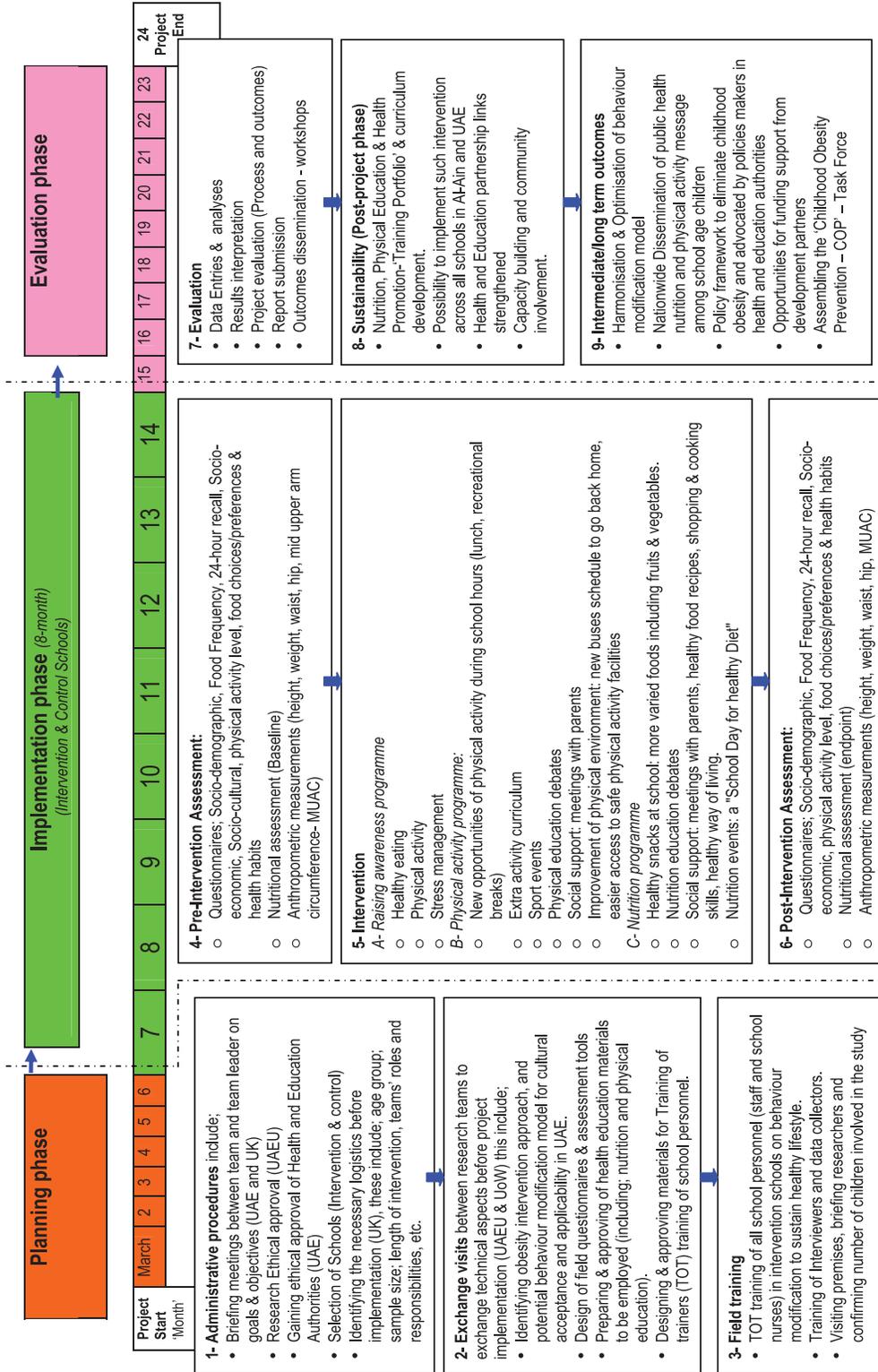


Figure 1 - Conceptual framework for childhood obesity prevention in emirates pilot intervention

debates and constant education. New opportunities to eat healthy food at school could be offered like fruits and vegetables for snacks and sessions to discover and develop the taste for healthy food products that are consumed less frequently by children and/or no more included into current their diet. Furthermore, this would enable the organisation of sport and nutrition events that gather children, teachers and families to encourage and sustain the dynamics of the project and create occasions to exchange ideas, opinions about the programme (Bamana et al., 2008; Berry et al., 2004; Golan, 2006). Parents and peers play important role in improving health behaviours among pupils (Lindsay et al., 2006). Such role is of paramount importance throughout the intervention particularly once it is scaled up at national level (Chadwick et al., 2008). Regular discussion meetings, short training sessions, seminars that disseminate information on healthy cooking and shopping will assure the achievement of the intervention (Clark et al., 2007; Edwards et al., 2005; Eisenmann et al., 2008; Gillis et al., 2007; Janicke et al., 2008; Marney et al., 2004). Nutrition educated teachers as well as improved school environment will promote healthy lifestyle and actively contribute to positive outcomes. School's outside environment is a key point to promote physical activity; local community can also be associated for actions to create a supportive environment: easier access to safe physical activity facilities, cycle to school programme and perhaps new buses schedule. Emerged outcomes following evaluation of effectiveness (outcomes, formative, process and cost-effectiveness) assist when implementing the national intervention and would sensibly shape the public health nutrition guidelines to improve nutritional status of school children and could serve policy makers and stakeholders to build capacity for behavioural changes among children and vulnerable population in UAE (Katz et al., 2005; Lean et al., 2006). It is anticipated that the lessons learnt from this intervention would be transferable to other settings/schools in UAE as well as neighbouring countries, which may be experiencing a similar impact of economic and nutrition transition.

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