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Review

The role of dental practitioners in addressing overweight and obesity among children: A scoping review of current interventions and strategies

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ABSTRACT

Introduction: With the growing prevalence of childhood obesity worldwide, there is a need for interventions to identify and address overweight and obesity in childhood. Although guidelines recommend general practitioners routinely screen for overweight and obesity among children, research suggests this is often not done. To address this, dental practitioners may be able to play a role in identifying and addressing overweight and obesity among children.

Methods: This review aimed to explore the evidence and efficacy of existing obesity and overweight interventions targeting children in the dental setting. A systematic search of nine electronic databases was conducted to identify relevant published and grey literature. This was expanded to also include strategies for promoting oral health in the dental setting.

Results: A total of 11 records were included in this review, which focussed on the current role and effectiveness of dental practitioners in addressing obesity among children, and the available strategies and resources. Although there was a paucity of research on the training of dental practitioners in this area and their efficacy in identifying and addressing obesity among children, evidence suggests that parents found it acceptable for dental practitioners to promote healthy practices to children who experience overweight or obesity. This review also identified screening tools and strategies for identifying and addressing overweight and obesity among children in dental practice.

Conclusion: There is a clear role for dental practitioners in addressing overweight and obesity among children, however further research is required to identify the most effective interventions to implement in dental practice.

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Introduction

Overweight and obesity among children is an increasingly prevalent global public health concern, with the number of children experiencing overweight and obesity worldwide having increased by 47.1% between 1980 and 2013, to over a fifth of children [1]. Evidence suggests children with overweight and obesity are more likely to experience obesity in adulthood and are at a higher risk of chronic disease at a younger age, including cardiovascular disease, diabetes, hypertension, sleep apnoea, musculoskeletal conditions, and some cancers [2]. Further, overweight can have a detrimental impact on a child's psychological wellbeing and quality of life [3]. Although the antecedents to obesity and overweight in children are multifactorial and genetics can have an influence, there are significant modifiable factors that increase the risk of excess weight in childhood [4]. These include nutritional practices such as consumption of sugar-sweetened beverages (SSBs), knowledge and beliefs of both children and parents/caregivers, and physical inactivity [5].

Numerous health promotion and disease prevention interventions have been designed and successfully implemented for children with overweight and obesity [6]. Many of these interventions address modifiable risk factors such as diet and physical activity and include EPODE (Ensemble Prevenons l'Obesite Des Enfants/Together Let's Prevent Childhood Obesity) from France, the Pacific Obesity Prevention in Communities (OPIC) Project in Australia, Fiji, New Zealand and Tonga, and the Collaboration of Community-based Obesity Prevention Sites (CO-OPS Collaboration) in Australia [6]. Yet despite the success of these interventions, the prevalence of children with obesity continues to increase [1]. Consequently there has been growing pressure on General Practitioners (GPs) to play a greater role in the identification of overweight and obesity among children through the use of Body Mass Index (BMI) percentile charts, however studies highlight that this is not prioritised, with the majority of GPs not routinely assessing BMI or overweight status [7–10].

Despite the challenges, work by Sanghavi and Siddiqui emphasise the potential for other health practitioners to play an instrumental role in the identification of overweight and obesity in children, including dental practitioners [11]. Recent evidence suggests that obesity may be associated with periodontal disease [12–14] and tooth decay [15]. In turn, periodontal disease may also be associated with an increased risk of developing insulin resistance and diabetes [16,17]. This growing evidence highlights that dental practitioners should have a vested interest in the management of overweight and obesity among their patients.

Further, dental practitioners are in an ideal position to identify, counsel and/or refer for overweight and obesity in children,

with children being a large patient group whom they see on a regular basis for periodic check-ups, and could potentially discuss modifiable risk factors for obesity and tooth decay, such as excess consumption of SSB and sugar intake [18–21]. Dental practitioners taking on a more active advocacy and counselling role, have the potential to meet a significant unmet need in this area, with a recent review of obesity interventions for children in primary care settings finding no evidence of programs effectively targeting and reducing sugar-sweetened beverage consumption [22]. While there is definite scope for the role of the dental practitioner in screening for overweight and obesity among children, to date no reviews have summarised the existing interventions in the dental setting.

Aim

This review aimed to explore the scope of evidence and potential efficacy of existing overweight and obesity interventions for children implemented in a dental setting. Specifically the review sought to address the following research areas:

1. Current evidence of the role and effectiveness of dental practitioners in addressing overweight and obesity among children.
2. Available resources and strategies for addressing overweight and obesity among children in the dental setting.

Terminology

Although there are several definitions of overweight and obesity in childhood, in this review we adopted the definitions as specified by the Centers for Disease Control and Prevention (CDC) [23]. These definitions utilise the Body Mass Index (BMI), which is calculated by dividing a person's weight in kilograms by the square of their height in metres. According to the CDC, among children older than 2 years, *overweight* refers to having a BMI from the 85th up to the 95th percentile for children of the same age and sex, and *obesity* is defined as having a BMI at or above the 95th percentile. The term *dental practitioner* was used to encompass all health practitioners working with dental qualifications, including general dentists, dental specialists, and those with diploma-level training such as dental hygienists, dental assistants or dental nurses. The term *recall* is used in this paper to refer to routinely scheduled dental visits at a dental clinic, which may also be referred to in the literature as *check-ups* or *periodic examinations*. This is in contrast to the term *follow-up*, which in this paper refers to visits scheduled with the specific purpose of monitoring progress following an intervention. *Screen time*

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