

The Presence of eHealth Support for Childhood Obesity Guidance

Shalmali DESHPANDE^{a,1}, Michael J. RIGBY^b, Mitch BLAIR^b

^a*Department of Primary Care and Public Health, Imperial College of Science, Technology, and Medicine, UK*

^b*Section of Paediatrics, Faculty of Medicine, Imperial College of Science, Technology, and Medicine, UK*

Abstract. A rising global obesity epidemic in children has implications for an increase in other chronic diseases and a negative social impact, which should not be ignored. A useful resource in this context could be eHealth due to its popularity amongst children. Additionally, telephone guidance is also considered a powerful health promotion tool. The aim of this study was to investigate the availability of mobile applications (apps), websites, helplines, and advice lines for child obesity guidance, in European countries. A survey was conducted in 28 European Member States and 2 European Economic Area countries, in 2017. Twenty-three responses were collected. Fourteen countries stated the presence of an obesity management website.

Keywords. children; obesity; eHealth; mobile applications; websites; helplines; advice lines; Europe.

1. Introduction

Globally, the prevalence of childhood obesity and overweight has been steadily on the rise over the last two decades [1]. This trend has been attributed to poor diet quality, physical inactivity, and an increase in an obesogenic environment, amongst other risky behaviours [2].

Childhood obesity is associated with an increased risk in other severe health problems, such as type II diabetes, cardiovascular disease, and mental health problems [3]. Furthermore, obesity can affect the quality of life, social development, and educational achievement- areas that are crucial to children's health and wellbeing. Therefore, childhood obesity is a major public health concern [4].

Obesity is a largely preventable disease, and the risk factors that contribute to it are modifiable. Why then, are rates continuously increasing? It is considered that the main barriers that stand in the way are unsupportive environments and communities, unwillingness to change behaviour, and government level stagnation [5]. Current methodologies have had little impact on public policies, whilst obesity treatment has solely concentrated on lifestyle change. Now, novel approaches are needed to incorporate a wholesome approach towards prevention [6].

¹ Shalmali Deshpande, Department of Primary Care and Public Health, Imperial College of Science, Technology and Medicine, Reynolds Building, St. Dunstan's Road, London, Hammersmith W6 6RP, United Kingdom; E-mail: Shalmali.deshpande16@imperial.ac.uk

Potential, innovative resources to encourage support and aid behavior change are electronic health (eHealth) and telephone interventions. In this context, they could act as a pathway to advise children about weight, diet, and physical activity in a positive way.

eHealth (applications (apps) and websites) is defined as the use of information communication technologies to enhance prevention, diagnosis, treatment, and other areas of healthcare [7]. Previous studies have displayed the effectiveness of eHealth interventions for behavior change interventions, especially amongst young people. Children frequently access health information using technology, where websites are the most popular. Telephone counselling through helplines and advice lines is also considered an effective way to convey health information [8].

Therefore, this study aimed to explore the availability of eHealth and telephone services for obesity guidance in children, in 28 European Union (EU) and 2 European Economic Area (EEA) countries. The presence of eHealth initiatives to promote child health is one supportive objective of the Horizon 2020 funded project Models of Child Health Appraised (MOCHA) [9].

2. Methods

The MOCHA methodology was employed to collect data for this study [10]. A key feature of MOCHA is the retention of a local expert, known as a Country Agent, in each of the 30 EU/EEA countries to gather country-specific information.

To examine the existing eHealth and telephone guidance mediums for child obesity guidance, a semi-structured survey design was used. Prior to the survey being administered, the question underwent a strict peer review process to ensure scientific validation and to confirm rationale, relevance, and clarity.

In the context of this study, MOCHA defined apps as “mobile device applications that provide information, assistance, support or advice in different circumstances”. Websites were defined in the same way as apps. An advice line was described as “a phone line or real time chat line offering advice on a specific health topic or a full range of health concerns”. The focus of an advice line is on providing information, contacts, or seeking access to specialist help. Helplines deal with immediate crises and offer instant personal assistance. Advice lines may be topic specific or general, and some advice lines and help lines may specifically seek to serve children.

Data collection occurred between 25th July to 29th January 2018 (and is being updated for new data). MOCHA Country Agents were asked to complete the questions based on their expertise, or in cases where this was not possible, to gather data from other sources or national experts on individual questionnaire items. The replies from all countries were analysed using descriptive statistics.

3. Results

Responses were initially received from 23 countries, of which 18 specified having either websites, helplines and advice lines for child obesity guidance. Four respondent countries identified apps for obesity guidance and 14 countries identified such websites. Five countries did not state any type of eHealth or telephone support for child obesity guidance (Table 1).

Table 1: An overview of apps, websites, health advice lines, and helplines for child obesity guidance.

Country	Guidance for Obesity/Healthy lifestyle promotion			
	Apps	Websites	Health advice line	Helplines
Austria		♦	♦	♦
Bulgaria				
Croatia				
Cyprus				
Czech Republic		♦		♦
Denmark		♦	♦	♦
Estonia	♦	♦	♦	♦
Finland			♦	♦
Germany	♦	♦	♦	♦
Greece		♦		
Iceland			♦	♦
Ireland	♦	♦		
Italy				
Latvia		♦	♦	
Lithuania				
Netherlands			♦	
Norway			♦	♦
Poland		♦		
Portugal		♦		
Romania		♦	♦	
Spain		♦		
Sweden		♦		
United Kingdom	♦	♦	♦	♦

3.1. Apps for obesity guidance

Estonia, Germany, Ireland, and the United Kingdom indicated the presence of an app to support children with obesity.

Estonia presented an app called ‘personalised obesity management in children’ created by the Tallinn Children’s Hospital Foundation. The app focuses on obesity management in adolescents and includes physical activity sessions and self-management techniques for a healthy diet. Germany detailed an app that supported overweight children by monitoring water intake, exercise, and healthy diet. The app also provides a nutrition diary to enable children to document what they have eaten.

In Ireland, one app, ‘Reactivate’, described promoting awareness and knowledge of food safety and nutrition issues. It was developed by healthcare professionals in an Irish children’s hospital, along with several universities specifically targeting adolescent obesity management. In the UK, each home country described a similar initiative, but under different names. England and Wales reported ‘Change4Life’, Scotland reported ‘Eat better, feel better’, and Northern Ireland reported ‘Get a life, get active’. The premise of these initiatives is to promote a healthy diet and an active lifestyle through creative and interactive methods.

3.2. Websites for obesity guidance

Fourteen of the respondent countries identified websites for child obesity guidance. Only the Portuguese website specifically focused on childhood obesity. It offered tips on healthy living, the importance of breakfast, tools for weight management, and a BMI calculator.

Four countries concentrated on eating disorders and associated mental health services. This included the Austrian, German, Irish, and Norwegian websites. In most cases, medical centres (the Medical University of Vienna) and health authorities (the German Federal Centre for Health Education) endorsed these websites.

The focus of other websites concentrated on nutritional and physical fitness information. To implement their '*National System for the Prevention and Combating of overweight and obesity in Childhood and Adolescence*', Greece reported a website with a section for children. Information about obesity, diet and recipes, and nutrition is given via songs, paintings, and fun, educational videos. The Czech Republic reported a novel idea. A paediatrician created an online twitter platform for obesity information, advice, and healthy recipes, allowing children to also contribute and ask questions.

The Danish website '*Julemærkehjemmene*' provides advice about healthy living, involving diet and exercise for children and adolescents but also offer programmes for obese children that support them in acquiring healthier living habits. A similar initiative is present in Estonia, provided by the Tallinn Children's Hospital Foundation, and in Germany through the Federal Centre for Health Education. Ireland, Latvia, Norway, Spain, Sweden, and the UK detailed websites that contained resources about nutrition, healthy eating, and exercise. Poland reported a similar website but also described websites promoting fruit and vegetable consumption at school and the importance of drinking water. Romania stated the presence of such a website, but no further details were expressed.

3.3. Health advice lines for obesity guidance

Eleven of the respondent countries reported the presence of a health advice line for child obesity guidance. Denmark, Estonia, Germany, and Latvia listed many general advice lines for young people, but there was no specific focus on obesity. Romania described the presence of a paediatric advice line, '*Alopedi*', directed towards nutritional importance. Germany specified an eating disorder advice line, which also provided information about healthy lifestyles. In Denmark, there are also online chat services or open forums, which aim to create a platform where adolescents can discuss their problems. The Netherlands mentioned a charity, *Kinertelefoon*, which is part of a worldwide network of child advice lines. For two countries, Austria and Norway, the websites also included an advice line for young people to call. Finland, Iceland, and the UK mentioned the presence of health advice lines but provided no further details.

3.4. Helplines for obesity guidance

Nine of the respondent countries reported the presence of helplines for child obesity guidance. No countries stated that there was a specific helpline for obesity guidance. Seven countries gave details about the presence of general helplines that provided confidential, trustworthy information to young people. Of these countries, Austria and Germany also stated a helpline for eating disorders. The Czech Republic has a specific helpline for adolescents, translated as the 'line of security', which is also a nationwide line for children and youth in crises. In Finland, support and crisis services are provided through telephone lines, and chat and web services. Iceland, Norway, and the United Kingdom stated the presence of helplines with no further details.

4. Conclusion

A study into the presence of eHealth and telephone support for child obesity guidance was conducted. The results showed that websites were the most used source and apps the least used. The majority of the sources focused predominantly on healthy lifestyle, nutrition, and physical activity rather than specifically on obesity. A few countries reported that there was not much distinction between an advice line and a helpline within their country. Where the distinction was clear, the extent of advice lines and helplines available, meant that no source that had been able to collate them in an accessible format.

This suggests that eHealth and telephone guidance mediums are targeting the risk factors to initiate behavior change. The study showed that support for children who are overweight or obese is present in Europe. Further research efforts into country level rates of obesity would indicate how effective current techniques and strategies are.

Acknowledgements

Acknowledgment is paid to the Country Agents of the MOCHA project as identified on the project website (<http://www.childhealthservicemodels.eu/partners/>). Their contributions ensured that the findings of this study are based on detailed and local indigenous knowledge.

The Models of Child Health Appraised (MOCHA) project is funded by the European Commission through the Horizon 2020 Framework under the grant agreement number: 634201. The sole responsibility for the content of this paper lies with the authors. It does not necessarily reflect the opinion of the European Union, or of the full project. The European Commission is not responsible for any use that may be made of the information contained therein.

References

- [1] M. de Onis, M. Blössner, E. Borghi, Global prevalence and trends of overweight and obesity among preschool children, *The American Journal of Clinical Nutrition* **92** (2010), 1257–1264.
- [2] World Health Organisation, Obesity and Overweight, (2016) URL <http://www.who.int/mediacentre/factsheets/fs311/en/> access date 06 Nov 2017.
- [3] M. Ng, T. Fleming, M. Robinson, et al., Global, regional, and national prevalence of overweight and obesity in children and adults during 1980-2013: A systematic analysis for the Global Burden of Disease Study 2013, *The Lancet* **384** (2014), 766–781.
- [4] T.J. Cole, M.C. Bellizzi, K.M. Flegal, et al., Establishing a standard definition for child overweight and obesity worldwide: international survey, *British Medical Journal* **320** (2000), 1–6.
- [5] World Health Organisation, WHO Global Action Plan for the Prevention and Control of Non-Communicable Diseases (2013) URL www.who.int/about/licensing/copyright_form/en/index.html access date 07 Nov 2017.
- [6] M.A Sabin, W. Kiess, Childhood obesity: Current and novel approaches, *Best Practice & Research Clinical Endocrinology & Metabolism* **29** (2015), 327-338.
- [7] European Commission, Report of the Working Group on mHealth Assessment Guidelines (2016), 1–10.
- [8] E. Oosterveen, F. Tzelepis, L. Ashton, et al., A systematic review of eHealth behavioral interventions targeting smoking, nutrition, alcohol, physical activity and/or obesity for young adults, *Preventive Medicine* **99** (2017), 197-206.
- [9] Models of Child Health Appraised, URL <http://www.childhealthservicemodels.eu/> access date 07 Nov 2017.
- [10] M.J. Rigby, G. Kühne, A. Majeed, M.E. Blair, Why Are Children's Interests Invisible in European National E-Health Strategies? *Studies in Health Technology and Informatics* **235** (2017), 58-62.