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Commentary

MEETING POPULATION DIETARY GOALS IN SCOTLAND AND MALTA: SHARED CHALLENGES AND OPPORTUNITIES FOR LEARNING

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Abstract. Scotland and Malta share a high prevalence of overweight and obesity: around two-thirds of adults are overweight (including obese), and one-third are obese. Reducing this burden of overweight and obesity is a priority for both Scottish and Maltese Governments, which involves setting dietary goals and monitoring the progress of the population to meeting those goals, and developing policies to improve health. This commentary summarises the progress of Scotland and Malta to meeting dietary goals, challenges to meeting the goals, and actions being taken. Whilst dietary guidelines are in place in both countries, Malta has yet to estimate average population dietary intakes and is awaiting results from its first national survey. In Scotland, however, there are various well-established dietary surveys which can be used to inform the development of policy, yet little progress towards the Scottish Dietary Goals has been seen between 2001 and 2015, and the prevalence of overweight and obesity has not changed since 2008. In order for dietary goals to be met, dietary guidelines need to be promoted, understood, and translated into changes in dietary behaviour. However, barriers to behaviour change need to be addressed, with research required to design long-term interventions that are successful and cost-effective in all population groups. Scotland can learn from Malta's dietary guidelines which treat fruit and vegetables as two separate groups, provide serving size and consumption guidelines, and incorporate the positive message to use herbs and spices for flavour. Also, Malta can learn from the methodologies of established Scottish and UK surveys to create its own programme of dietary surveys. The sharing of experiences of researchers, policy makers and health promoters in these countries is

therefore beneficial for tackling the current obesity epidemic and promoting a healthier future.

Keywords: Diet, food, nutrient, goals, Malta, Scotland

1 Introduction

Scotland and Malta share a significant obesity problem. In Scotland, the prevalence of overweight (including obesity) and obesity was 65% and 29% respectively in adults aged >16 years in 2016 (Bardsley, 2017). In Malta, the prevalence of overweight was 70% in adults aged 18–70 years in 2014–16, and 37% of men and 31% of women were obese (Cuschieri et al., 2016). Reducing the disease burden from unhealthy diets are priorities for Scottish and Maltese Governments. This involves setting dietary goals and monitoring the progress of the population to meeting those goals, which informs policies to improve health and wellbeing. This commentary summarises the progress of Scotland and Malta to meeting dietary goals, challenges to meeting the goals, and actions being taken. We conclude with recommendations based on the examination of strategies in place in each country.

2 Scottish Dietary Goals and Guidelines

The Scottish Dietary Goals were introduced in 1996 (The Scottish Office, 1996) and were based on the UK Dietary Reference Values (Department of Health, UK, 1991) for selected nutrients and foods. They were originally intended for achievement in 2005, although the timescale was later extended to 2010. The goals were most recently updated in 2016 to “indicate the direction of travel, and the extent of the dietary change needed, to reduce the burden of obesity and diet-related disease in Scotland” and to “underpin diet and health policy in Scotland” (Scottish Government, 2016). The goals are similar to those set in 1996 regarding fruit and vegetables, oily fish, total fat, saturated fat, and salt. Goals

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were also added for red meat, calories, trans fatty acids, free sugars, dietary fibre and total carbohydrate.

Most goals are monitored via secondary analysis of Scottish data from the Living Costs and Food Survey, which collects food purchase data from every person over seven years of age in each household for 14 days. Estimates of food waste are made before estimating consumption for a typical average household member (Barton et al., 2018). The National Diet and Nutrition Survey uses a four day estimated diary to monitor trans fatty acid intakes (Bates et al., 2017), and the urinary sodium survey monitors salt consumption (Scottish Centre for Social Research, 2011). The goal for calories is monitored using the Scottish Health Survey's estimates of overweight and obesity (Bardsley, 2017).

Table 1 shows recent estimated Scottish average intakes compared with the Scottish Dietary Goals. Energy density, and intakes of total fat, saturated fat, salt and free sugars (as non-milk extrinsic sugars) are considerably higher than recommended, and consumption of fruit and vegetables, oily fish and dietary fibre (as non-starch polysaccharides) is lower than recommended. There has also been little progress towards the goals between 2001 and 2015 (Barton et al., 2018). Therefore, the Scottish population require more support to improve their diet, through a combination of individual behavioural changes, reformulation by the food and drink industry, and changes to the obesogenic environment through a range of initiatives such as taxes on high fat/sugar products and policies to reduce easy accessibility to high fat/sugar foods and drinks.

Table 1: Average food and nutrient intakes in Scotland compared with the Scottish Dietary Goals (Scottish Government, 2016)

Food / Nutrient	Goal	Average Intake	Source
Energy density	Average energy density of the diet to be lowered to 125 kcal/100g	178 kcal/100g	Barton et al., 2018
Fruit & vegetables	Average intake to reach >400 g/day	257 g/day	Barton et al., 2018
Oily fish	Increase to 1 portion per person per week (140 g/week)	34 g/week	Barton et al., 2018
Red & processed meat	Average intake to be pegged at around 70 g per person per day	56 g/day	Barton et al., 2018
Total fat	Average intake to reduce to no more than 35% food energy	38.9% food energy	Barton et al., 2018
Saturated fat	Average intake to reduce to no more than 11% food energy	15.1% food energy	Barton et al., 2018
Trans fatty acids	Average intake to remain below 1% food energy	0.6–0.8% food energy	Bates et al., 2017
Free sugars	Average intake not to exceed 5% total energy	14.4% total energy ¹	Barton et al., 2018
Salt	Average intake to reduce to 6 g/day	8.8 g/day	Scottish Centre for Social Research, 2011
Fibre	Increase in average consumption for adults (>16 years) to 30 g/day	12 g/day ²	Barton et al., 2018
Total carbohydrate	Average intake of approximately 50% total dietary energy	46.6% food energy	Barton et al., 2018

¹Average intake of non-milk extrinsic sugars

²Average intake of non-starch polysaccharides (main component of dietary fibre)

Whilst the Scottish Dietary Goals act as a reference for organisations and stakeholders whose actions influence the population's diet, the Eatwell Guide is the key resource for consumers, providing recommendations on the proportions of each food group to achieve a healthy balanced diet (Public Health England, 2016). The Eatwell Guide divides

foods into five groups: (1) fruit and vegetables, (2) potatoes, bread, rice, pasta and other starchy carbohydrates, (3) dairy and alternatives, (4) beans, pulses, fish, eggs, meat and other proteins, and (5) oils and spreads. There are also recommendations regarding fluid intake, food label use, and reducing fat, salt and sugar (Table 2).

Table 2: Comparisons between the UK Eatwell Guide and Malta Healthy Plate

Components	UK Eatwell Guide	Malta Healthy Plate
<i>Within main illustration</i>		
Plate model	✓	✓
Number of food groups	5	6
Fat, sugar and salt reduction	✓	✓
Hydration	✓	✓

Components	UK Eatwell Guide	Malta Healthy Plate
Food labels	✓	X
Energy intake	✓	X
Limit alcohol intake	X	✓
Keep active and reduce sitting time	X	✓
Herbs and spices	X	✓
<i>Within full guidelines document</i>		
Vitamin and mineral supplements	✓	X
Oral health	X	✓
Avoid energy drinks	X	✓
Food safety	X	✓
Serving size and consumption guidelines	X	✓

3 Maltese Dietary Guidelines and Nutrient Goals

Malta has long recognised the need for promoting a healthy balanced diet in response to changes in local eating behaviours and increased obesity prevalence through the years. The first nutrient goals for Maltese adults were presented in 1986 and included guidelines for 12 nutrients, with recommendations to “eat less meat and have fish and poultry in preference to beef; substitute high-fat dairy products with low-fat alternatives; and eat fewer eggs, more fresh fruit and vegetables and wholegrain flour” (World Health Organisation, 1986). The first Food Based Dietary Guidelines were then launched in 1990 (Department of Health, Malta, 1990) and focused on: reducing fat, sugar and salt; increasing fibre; reducing meat with an emphasis on white meat and fish; less high-fat dairy and eggs; more fruit and vegetables and wholegrain products; and reducing alcohol consumption. In 2004, the guidelines were revised to represent a Malta Food Pyramid Guide, which recommended the highest daily consumption from the starchy foods group at the bottom of the pyramid, followed by fruit and vegetables, fewer daily servings of meat and alternatives and dairy products, and with the fats and oils group depicted at the top of the pyramid.

The adult dietary guidelines were last updated in 2015 (Health Promotion and Disease Prevention Directorate Malta, 2015, 2016) and considered recommendations from the 2015–20 ‘Food and Nutrition Policy and Action Plan for Malta’ (Health Promotion and Disease Prevention Directorate Malta, 2014). This latest guide, for adults aged 19–65 years, presents ‘The Healthy Plate’ versus the pyramid image, and depicts six food groups: (1) cereals and cereal products, (2) vegetables, (3) fruit, (4) milk and milk products, (5) lean meat, fish, poultry, eggs, legumes, nuts and seeds, and (6) fats and oils. It includes a focus on the

Mediterranean diet, serving sizes for all food groups, and the healthy lifestyle messages below (Table 2).

- (1) A focus on variety from the different food groups
- (2) Using herbs and spices for flavouring, without use of added salt
- (3) Drinking plenty of water
- (4) The importance of keeping active
- (5) Limiting intake of saturated and trans fats, sugar and salt, and consumption of alcohol and energy drinks
- (6) Good oral health
- (7) Food safety tips

It is intended to revise these guidelines once results are available from the first Maltese dietary survey – conducted in 2015–16 using standardised electronic software (GloboDiet) and 24-hour dietary recalls. However, it is expected that the population will not meet the dietary guidelines. The high prevalence of obesity, and data from general food consumption surveys like the Malta Food Consumption Survey (which used a 5-day food diary), suggest that sweets, biscuits and confectionery remain the most popular snacks, with a low intake of fresh fruit at 1.25 servings/day (Malta Standards Authority, 2010). Similarly the 2014–15 European Health Interview Survey (which used two lifestyle questionnaires) reported that 58% of Maltese adults consume fruit each day, with only 40% consuming vegetables daily (Gauci et al., 2018).

4 Barriers and solutions to healthier diets

In order for dietary goals to be met, dietary guidelines need to be promoted, understood, and translated into changes in dietary behaviour. However, barriers to behaviour change need to be addressed before the gap between guidelines and practice can be closed. We discuss two examples below:

reducing the prevalence of overweight and obesity, and increasing the consumption of fruit and vegetables.

4.1 *Overweight and obesity*

Individual, social and cultural, and environmental factors all contribute to weight gain. In a workshop conducted in July 2018 at the University of Malta, stakeholders discussed their opinions on what constituted the main barriers to weight loss. These were numerous and diverse and included time issues, the (higher) cost of healthy food, and taste (individual level), lack of support, cultural barriers and stigma (social and cultural level), and the obesogenic environment, i.e. easy availability of unhealthy food, lack of open spaces (for physical activity) and marketing of unhealthy products (environmental level) (Masson & Copperstone, 2018).

In British adults, the most common perceived cause of obesity was the food environment: 'people are overweight because there are so many unhealthy foods around' (61%) (Beeken & Wardle, 2013). Individuals were most supportive of policies involving healthy lifestyle campaigns (71%) and food labelling in restaurants and takeaways (66%), and least supportive of taxes on the sale of unhealthy foods (32%). However, in 2018, the UK Government introduced the Soft Drinks Industry Levy (the 'Sugar Tax') which requires soft drink companies to pay a fee if drinks contain too much added sugar. Since the policy was announced in 2016, over 50% of manufacturers have reformulated their drinks to contain less sugar (HM Treasury, 2018).

Also in 2018, the Scottish Government published its 'Diet and Healthy Weight Delivery Plan' which aims to achieve its vision for Scotland 'where everyone eats well and has a healthy weight' by working on five outcomes: (1) children have the best start in life – they eat well and have a healthy weight, (2) the food environment supports healthier choices, (3) people have access to effective weight management services, (4) leaders across all sectors promote healthy diet and weight, and (5) diet-related health inequalities are reduced. However, the Scottish Government's Obesity Route Map (2010) and Action Plan (2011) had little success: the prevalence of overweight and obesity is unchanged since 2008 (Bardsley, 2017). Nevertheless, a review of the Action Plan concluded that the situation may have been worse without the considerable effort in response to the Obesity Route Map (Kerr, 2015).

The Maltese 'Healthy Weight for Life Strategy' (2012–20) outlines initiatives relating to the promotion of healthy eating and physical activity and the provision of healthcare services including weight management programmes. Policies to tackle overweight and obesity in Malta include 'A Strategy for the Prevention and Control of Non-Communicable Diseases in Malta' and 'A Healthy Weight for Life Strategy' (Ministry for Health, the Elderly and Community Care, Malta, 2010, 2012), and various initiatives to promote healthy lifestyle, as outlined by the Malta Food and Nutrition Policy Action Plan (Health Promotion and Disease Prevention Directorate Malta, 2014), include increasing physical activity, eating

more fruit and vegetables, promotion of the Mediterranean diet, and reading of food labels.

4.2 *Fruit and vegetables*

The main barriers to increasing fruit and vegetable consumption have been reported to be 'cost' for fruit, but 'food preferences' and 'taste' for vegetables (Glasson et al., 2010). Stakeholders in Malta also identified taste, cost, lack of cooking skills and poor budgeting as individual barriers; stigma and peer pressure as social barriers; and poor marketing (more unhealthy food being advertised) as well as fear of high levels of pesticide residues as environmental barriers to consuming more fruit and vegetables (personal communication, 2018). A Maltese study with stakeholders including farmers and consumers revealed that prices and time to prepare healthy food were the main barriers for healthy, clean and fair food (The President's Foundation for the Wellbeing of Society, 2018).

The different determinants of consumption of fruit and vegetables, and their differing potential health benefits, support their treatment as two separate groups in health promotion strategies – as in the Malta Healthy Plate, but not the UK Eatwell Guide. In Scotland, the lack of improvement in fruit and vegetable consumption since 2001, and the lower consumption of both fruit and vegetables in more deprived areas (Barton et al., 2018), justifies the need for considerable work to develop long-term interventions that are successful and cost-effective in all population groups.

5 Recommendations

Scotland and Malta require food and drink policies that are effective in order to treat and further prevent overweight and obesity. Policies need to create an enabling environment for all sectors of the population, with priorities being children who need to learn healthy food preferences, and groups in more deprived areas who need to overcome barriers to express healthy preferences. We can benefit by learning about strategies in other countries which share similar challenges, and exploring opportunities for translating these practices into effective policies at home. For instance, Scotland can learn from Malta's dietary guidelines which treat fruit and vegetables as two separate groups, provide serving size and consumption guidelines, and incorporate the positive message to use herbs and spices for flavour. Also, Malta can learn from the methodologies of established Scottish and UK surveys to create its own programme of dietary surveys. The sharing of experiences of researchers, policy makers and health promoters in these countries is therefore beneficial for tackling the current obesity epidemic and promoting a healthier future.

6 Funding

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7 Conflicts of interest

The authors report no conflicts of interest.

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