



Research report

“It was an education in portion size”. Experience of eating a healthy diet and barriers to long term dietary change[☆]



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ABSTRACT

The aim of the study was to explore the expectations and experience of actually eating a healthy diet and using this experience to identify barriers to healthy eating and sustainable dietary change. Fifty participants (19–63 yrs) were provided with a healthy diet (i.e. complied with dietary recommendations) for three consecutive days. Afterwards a semi-structured interview was carried out to explore expectations, experience and barriers to healthy eating. Using a thematic analysis approach eight dominant themes emerged from the interviews. Four related to expectations and experience of healthy eating; realisation of what are appropriate portion sizes, an expectation to feel hungry, surprise that healthy diets comprised *normal* food, the desire for sweet snacks (e.g. chocolate). This demonstrated there are some misconception about healthy eating and distorted views of portion size. Four more themes emerged relating to barriers to healthy eating; competing priorities, social, peer and time pressure, importance of value for money, a lack of desire to cook. Poor knowledge of healthy eating or a lack of cooking skills were the least common barrier, suggesting that future interventions and policy to improve dietary intakes need to focus on social, cultural and economic issues rather than on lack of knowledge or skills.

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Introduction

Dietary advice, such as the fruit and vegetable ‘5-a-day’ message and restricting intakes of fat, sugar and salt, is generally well known among the population (Prior, Hall, Morris, & Draper, 2011). Despite having this knowledge, dietary intakes of saturated fatty acids (SFA), non-milk extrinsic sugars (NMES) and salt in the UK remain higher than recommended dietary intakes, and intakes of fibre, fruit and vegetables and fish lower than recommended levels (Bates, Lennox, Prentice, Bates, & Swan, 2012; Horsfield, 2011). Sustained poor dietary intakes and sedentary lifestyles are having an impact on health, which are reflected in the high prevalence of dietary related chronic diseases and obesity.

Government’s educational material about healthy eating is designed to show the relative proportion of five or six basic food groups that make up a healthy balanced diet (e.g. Eatwell plate in the UK (Department of Health, 2011) or MyPlate in the US (US

Department of Agriculture, 2012)). Supporting this approach, the Academy of Nutrition and Dietetics recently proposed that healthy eating advice should be based on a total diet approach rather than focusing on single food groups, stating that “*all foods can fit within this pattern if consumed in moderation with appropriate portion size*” (Freeland-Graves, 2013). This, however, presents the challenge of knowing how to combine appropriate quantities of food from the different food groups into everyday eating to make up a healthy balanced diet.

While dietary advice should improve knowledge about healthy eating there are many other factors that influence food choices, and it is recognised that knowledge alone is usually insufficient to change dietary behaviour. Worsley argues that nutritional knowledge plays ‘*a small but pivotal role*’ in healthy eating but little is known about how people translate and use nutritional knowledge or dietary messages (Worsley, 2002). Interpreting the different dietary messages, translating and applying them to everyday meals and snacks for a healthy balanced diet can be a complex cognitive task (Nutbeam, 2000; Peerson & Saunders, 2009). Food choices and decisions about healthy eating are also competing against a background of a food environment full of advertising and marketing of foods which often have different messages and attractions (Brewis & Jack, 2005). It is also important to recognise that health is not always a primary driving force in many dietary choices and that personal, social, cultural and environmental expectations and

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experiences can often have a greater influence on food choices (Bisogni, Jastran, Seligson, & Thompson, 2012).

Given the poor health record and dietary intakes in Scotland (Wrieden, Armstrong, Sherriff, Anderson, & Barton, 2013) the aim of this study was to explore the general public's perception and understanding of healthy eating. Unlike previous studies, in this study the participants actually ate a healthy diet (i.e. complied with dietary recommendations) for three consecutive days prior to being asked their opinions about healthy eating. The assumption behind this novel approach was that it would elicit a more realistic insight into views of a healthy diet having experienced it and using qualitative research methods it allowed this to be explored in depth. The study sought to answer two main research questions: *what are the expectations and experience of eating a healthy diet?* and *what are the perceived barriers to healthy eating after having experienced eating one?*

Methods

Participants and recruitment

Men and women were recruited using a purposive sampling strategy to represent a general adult population by age (18–65 yrs), sex and deprivation, but excluded people who were pregnant, seriously ill or had special dietary requirements. To reach participants from lower socio-economic groups 450 letters were sent out via three general medical practices located in areas of high deprivation in Aberdeen city. The 2009 Scottish Index of Multiple Deprivation (SIMD) was used to classify participants into quintiles of deprivation based on their home postcode; SIMD is a measure of neighbourhood socio-economic status based on 27 indicators from seven domains (i.e. income, housing, employment, health, crime, education and access to services) (Scottish Government, 2009). Additional participants were recruited through workplaces via an email sent to staff by the companies on our behalf. People who expressed an interest in the study ($n = 122$) were invited to attend a group information session where they were given more detail about the study (82 people attended a session). Consistent with the information sheet given prior to recruitment, at the meeting it was stressed that the study was about healthy eating not weight loss. Fifty-one people started the study and 50 completed; one person dropped out due to unexpected family commitments.

Study design

Participants were provided with a healthy diet for three consecutive days, which was considered as a sufficient period of time for someone to experience differences to their habitual diet while retaining compliance in the study. Participants first completed a 4-day food diary to assess their habitual diet, a short background questionnaire about themselves, collected a 24 h urine sample (to test selected urinary markers of nutrient status not reported in this paper) and had their height and weight measured.

Participants recorded in a food diary everything that they ate and drank for four days, which was analysed for energy and nutrient composition using the commercial dietary assessment computer program WinDiets (Univation Ltd, The Robert Gordon University, Aberdeen, UK). A questionnaire was used to collect background information about the participants; employment status, number of people living in their household and eating habits relating to convenience food (e.g. frequency of eating ready meals, takeaways and eating outside the home). Height and weight were measured from which body mass index (BMI) was calculated and then classified as BMI < 25.0 kg/m² normal weight, 25.0–29.9 kg/m² overweight, ≥ 30.0 kg/m² obese.

Five daily menus were designed each to meet dietary requirements for health, based on the dietary reference values for energy and nutrient requirements (Department of Health, 1991) and the food based guidelines (The Scottish Office Department of Health, 1996) (Table 1). The menus were planned to reflect a typical UK daily meal structure; breakfast (e.g. cereal, toast, fruit), lunch (e.g. a sandwich style lunch) and a cooked evening meal (examples of the menus in Table 2). The energy content varied between 9 MJ and 11 MJ per day and was matched to the energy requirement of the participant based on their estimated basal metabolic rate and a physical activity level ratio of 1.4 was used (Department of Health, 1991). Where a participant was particularly physically active the energy content of the diet was increased. Participants chose three of the five daily menus. All the food was prepared for each day in the Human Nutrition Research Unit at the Rowett Institute of Nutrition and Health. Participants could either to come to the Research Unit to eat their meals or have their food delivered daily to consume elsewhere (cooked items simply needed to be reheated). The description of the meals for each day were set out as a menu but when the participants were given their food for the day they were told that they could eat the food at any time they wanted during the day, in any combination or order. This was reiterated each day when they received their food. Beverages including tea and coffee were permitted with a daily milk allowance, however alcohol or sugary drink consumption were not allowed during the intervention period. On completion of the three day intervention a semi-structured face-to-face interview was carried out with each participant. No financial incentive was offered to participate but at the end of the study they received a 'healthy shopping basket' of food (value of £50). After completing the study participants were sent individual feedback on the nutritional quality of their habitual diet (based on their 4-day diet diary) along with suggestions of how they could be make their diet healthier.

The study received ethical approval from the North of Scotland Research Ethics Committee. All participants provided written informed consent prior to participation in the study.

Data collection

Semi-structured face-to-face interviews were used to gain an insight into the participants' personal experience and expectations of eating a healthy diet and any perceived barriers to continuing to eat a healthy diet. Individual interviews were used because the social, cultural and individual circumstance in which the diets were eaten would vary between participants and it was important to capture this in relation to their experience of eating a healthy diet. The first question asked about why they decided to take part in the

Table 1
Nutrient and food-based dietary recommendations^{a,b}.

Nutrients	Recommendations
Total fat	≤35% Food energy
Saturated fatty acid	≤11% Food energy
Non-milk extrinsic sugar	≤11% Food energy
Complex carbohydrate	155 g/day
Sodium	100 mmol/day (eq. <6 g salt/day)
<i>Foods</i>	
Bread (mainly wholemeal and brown bread)	154 g/day
Breakfast cereals	34 g/day
Fruit and vegetables	400 g/day
Fish	2 Portions/week (incl. 88 g/week oily fish)

^a Department of Health (1991) and The Scottish Office Department of Health (1996).

^b The Scottish Office (1996).

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