



Research report

Meals described as healthy or unhealthy match public health education in England

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ABSTRACT

Dietary guidelines for the general public aim to lower the incidence of nutrition-related diseases by influencing habitual food choices. Yet little is known about how well the guidelines are matched by the actual practices that people regard as healthy or unhealthy. In the present study, British residents were asked in a cognitive interview to write a description of an occasion when either they ate in an unhealthy way or the eating was healthy. The reported foods and drinks, as well as sort of occasion, location, people present and time of day, were categorised by verbal and semantic similarities. The number of mentions of terms in each category was then contrasted between groups in exact probability tests. Perceived unhealthy and healthy eating occasions differed reliably in the sorts of foods and the contexts reported. There was also full agreement with the national guidelines on eating plenty of fruit and vegetables, eating small amounts of foods and drinks high in fat and/or sugar, drinking plenty of water, and cutting down on alcohol. There was a tendency to regard choices of bread, rice, potatoes, pasta and other starchy foods as healthy. Reported healthy and unhealthy eating did not differ in incidences of meat, fish, eggs, beans and other non-dairy sources of protein or of dairy foods and milk. These results indicate that operationally clear recommendations by health professionals are well understood in this culture but members of the public do not make clear distinctions in the case of foods that can be included in moderate amounts in a healthy diet.

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Introduction

This paper presents an experiment on people's understanding of the words "unhealthy" and "healthy" when describing examples of their meals that fit these concepts. A large difference in effect of just the two letters distinguishing "unhealthy" from "healthy" was sought in participants' accounts of a recent occasion of eating.

The context of this study was that guidelines on healthy eating are meant to encourage diets that prevent disease and improve health. The primary question therefore is how the published guidance might be influencing actual dietary practices. Misconceptions of dietary guidelines have been reported to be common (Boylan, Louie, & Gill, 2012). However, most studies evaluated awareness or comprehension.

No study has assessed if the distinctions individuals describe between healthy and unhealthy eating resemble the dietary guidelines promoted in the population.

Words selected by individuals to talk about their everyday activities possess ecological validity within their culture, according to anthropological principles (Dressler, Oths, Ribeiro, & Dos Santos, 2008; Romney, Weller, & Batchelder, 1986; Wittgenstein, 1953). Salient features of any enacted behaviour are manifested as particular words used by the person to describe that event (Maguire & Dove, 2008). In this case, the vocabulary of a person's free account of when she or he ate healthily or unhealthily would indicate the features held in memory for the concepts of benefitting and risking health (Booth, Sharpe, Freeman, & Conner, 2011). This paper measures consensus among those personal standards in a convenience sample from a particular locality and then compares that consensus with online public health messages from government about eating choices.

Individuals are likely to report recent eating occasions because they are more available in memory than remote events (Conway, 2009). Recall of eating occasions has an accuracy of 80–90% over about a week (Armstrong et al., 2000; Smith, Jobe, & Mingay, 1991). Therefore reports of recent eating patterns could be valid and reliable, whether volunteered as healthy or unhealthy.

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Table 1
Messages about healthy eating from the UK Food Standards Agency (2010).

Try to eat
• Plenty of fruit and vegetables
• Plenty of bread, rice, potatoes, pasta and other starchy foods
• Some milk and dairy foods
• Some meat, fish, eggs, beans and other non-dairy sources of protein
• Just a small amount of foods and drinks high in fat and/or sugar
Try to eat less salt
• No more than 6 g a day
Drink plenty of water
• About 6 to 8 glasses of water, or other fluids, every day
Cut down alcohol
• Women: up to 2 to 3 units a day
• Men: up to 3 to 4 units a day

Source: <http://www.eatwell.gov.uk/healthydiet>; accessed 15.05.10.

It was hypothesised that the vocabulary used in written description of a meal would differ between conditions stated to be “healthy” or “unhealthy.” It was further hypothesised that the differences would correspond well with the concepts in national dietary guidance, at least when they were unequivocal (Table 1).

Method

Participants

The participants were visitors to the School of Psychology during the Open Day at the University of Birmingham in 2008. The volunteers for this experiment were mostly prospective students or their accompanying relatives or friends. A total of 39 people took part. No selection criteria were applied except that volunteers were British residents. Two students and one staff member of the University helped to pilot the study. Procedure and materials were not altered as a result of piloting, so those three people were also included. Participants categorised themselves as “child”, “young person” or “adult.” Only five wrote “child” who were female high school pupils, and so they were included in the younger group with 21 participants who wrote “young person”, mostly undergraduate students. The “adult” participants, constituting the older group, included parents as well as postgraduate students and university staff. All participants spoke English as their first language.

Design

The study had the experimental design of comparisons between subjects in two different conditions, eating perceived as unhealthy or healthy. Each participant had a single interview session. Attempting random assignment to conditions might have imposed the reporting of unhealthy eating on some who were unwilling to confess such practices. Therefore the volunteers were allowed to assign themselves from the initially proposed condition of “unhealthy” eating to the condition of “healthy” eating.

Recruitment

Volunteers were recruited by two researchers (one male and one female) in a room displaying some of the research carried out in the School. The experiment was presented as *Research on healthy eating* through a notice on the investigators' table inviting people to take part. Each investigator administered questionnaires to different attendees as they came to the table. The volunteers were asked the question: *Would you be willing to tell us about a time when you ate in an unhealthy way?* If the person seemed doubtful or did not say ‘yes’ immediately, the investigator offered the other option: ... or

you may prefer to tell us about when you ate in a healthy way. Volunteers who agreed to either of these options then described the respective occasion in writing.

Measurement questionnaire

Accurate accounts of everyday behaviour can be elicited by participant's free recall of recent activities, including eating occasions (Fries, Green, & Bowen, 1995; Smith et al., 1991). The specification of the occasion to be recalled needs to be sufficiently rich in detail to provide non-leading prompts to the mental reconstruction of that event. This principle is the basis of the cognitive interview: questions in a structured series serve as mnemonics, about time of day, location, people present and other features particular to one incident (Knibb & Booth, 2011). The answer about the timing of an occasion of a recognised piece of behaviour provides information about its frequency during that period of time and also distinguishes an autobiographical memory from general knowledge (Tulving, 1972).

Thus, participants responded in their own words to a sequence of question items that applied the principles of the Cognitive Interview to support recall of the eating episode that they regarded as healthy or unhealthy. The first item asked the participant to describe the eating occasion. This item included prompts to report the sort of occasion, the location, the number of people present and the food and drink consumed with rough quantities. The second item asked for the date and time of the episode. The third and fourth items asked the participant for factors that she or he thought would make eating in that way again in the future more likely (3rd item) or less likely (4th). The responses to these last questions are not presented in this paper since they were used as data in another study about influences on lapsing from a dietary change.

Analysis of data

The difference from 50% in the proportion of participants who opted to describe healthy eating rather than unhealthy eating was measured using Fisher's test of exact probabilities (FEP) with one-tailed *p* values. The difference between occasions of healthy and unhealthy eating in the reported time period between occurrence and recall was inferred by Mann–Whitney *U* test of ranks. A *p* value below 0.05 was used to reject the null hypothesis.

The words describing an occasion were divided into the Food intake, Sort of occasion, Location, and People present, corresponding to the CI prompts to recall. Within each of these features, words that were regarded by the investigators as meaning the same were assigned to one conceptual category. The number of times that each category had been written was contrasted between *healthy* and *unhealthy* eating episodes using FEP with two-tailed *p* values.

In addition, the agreement of elicited food words and their health attributions with current UK Food Standards Agency's dietary guidelines (Table 1) was assessed by a member of the research team (ALC) with a bachelor degree in human nutrition and checked by a registered research nutritionist (DAB).

Results

Choice to report healthy over unhealthy eating

A total of 61% of participants preferred not to report *unhealthy* eating, *p* = 0.07 (FEP; Table 2). Reliably higher proportions of adults as well as of females opted to describe *healthy* rather than *unhealthy* eating, *p* < 0.0002 and *p* < 0.01.

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