Research report

Optimising women's diets. An examination of factors that promote healthy eating and reduce the likelihood of unhealthy eating ☆

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A B S T R A C T

The majority of nutrition promotion research that has examined the determinants of unhealthy or healthy dietary behaviours has focused on factors that promote consumption of these foods, rather than factors that may both promote healthy eating and buffer or protect consumption of unhealthy foods. The purpose of this paper is to identify factors that both promote healthy eating and also reduce the likelihood of eating unhealthily amongst women. A community sample of 1013 Australian women participated in a cross-sectional self-report survey that assessed factors associated with diet and obesity. Multiple logistic regressions were used to examine the associations between a range of individual, social and environmental factors and aspects of both healthy and unhealthy eating, whilst controlling for key covariates. Results indicated that women with high self efficacy for healthy eating, taste preferences for fruit and vegetables, family support for healthy eating and the absence of perceived barriers to healthy eating (time and cost) were more likely to consume components of a healthy diet and less likely to consume components of a unhealthy diet. Optimal benefits in overall diet quality amongst women may be achieved by targeting factors associated with both healthy and unhealthy eating in nutrition promotion efforts.

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Introduction

Good nutrition is associated with reduced risk of morbidity and mortality from a range of chronic diseases for populations of developed countries (Crowe et al., 2011). Nutrition promotion research has primarily focussed on factors that either promote adherence to dietary recommendations or promote consumption of specific components of the diet, such as fruit and vegetables (Crawford, Ball, Mishra, Salmon, & Timperio, 2007; Van Duyn et al., 2001). It is increasingly recognised that individual, social and environmental factors constitute the leading pathways to determine healthy nutrition (Ball, Crawford, & Mishra, 2006; Williams, Ball, & Crawford, 2010). In terms of individual factors, research has shown that nutrition knowledge (Ball et al., 2006; Guillaumie, Godin, &

Vezina-Im, 2010; Maclellan, Gottschall-Pass, & Larsen, 2004), high self efficacy for healthy eating (Anderson, Winett, & Wojcik, 2007), taste preferences (Williams et al., 2010) and an absence of perceived barriers to healthy eating (e.g. lack of time) (Giskes, Turrell, Patterson, & Newman, 2002; Rose, 2007) are each positively associated with fruit and vegetable consumption. Social factors associated with components of healthy eating include family influences on food choices and support from family and friends to eat healthily (Ball et al., 2006; Inglis, Ball, & Crawford, 2005; Raine, 2005; Van Duyn et al., 2001). Aspects of the environment associated with fruit and vegetable consumption include perceptions of availability and affordability of healthy foods (Inglis, Ball, & Crawford, 2008; Kamphuis, van Lenthe, Giskes, Brug, & Mackenbach, 2007). What remains largely unknown from these studies, however, is whether factors that promote healthy eating are also those that discourage consumption of unhealthy foods, such as fast foods and energy-dense snack foods.

Research that has examined the determinants of unhealthy dietary behaviours has primarily focused on factors that promote consumption of unhealthy foods (e.g. perceived convenience of fast food, perceived value for money of fast food, low socio-economic position) (Dunn, Mohr, Wilson, & Wittert, 2008; French, Harnack, & Jeffery, 2000; Glanz, Basil, Maibach, Goldberg, & Snyder, 1998; Mohr, Wilson, Dunn, Brindal, & Wittert, 2007), rather than factors that reduce consumption of unhealthy foods. When focussing on promoters of food intake, it is important not to assume that the

absence of attributes associated with healthy eating are those that promote unhealthy eating. Healthy and unhealthy eating patterns are conceptually distinct, suggesting that those who eat less healthy diets (e.g. low fruit and vegetable consumption) are not necessarily the same as those who eat unhealthy diets (e.g. frequent fast food consumption). In one study, taste preferences for fruit were associated with increased consumption of both fruit and calorie-dense snack food (Wansink, Bascoul, & Chen, 2006), highlighting that taste preferences for fruit does not necessarily result in reduced unhealthy eating behaviours.

As more than half of the Australian adult female population regularly consume fast food and calorie-dense snack food (e.g. sweet biscuits, potato chips/crisps, cakes/muffins) (Worsley, Blasche, Ball, & Crawford, 2003, 2004), eating behaviours associated with indicators of poor health (e.g. elevated BMI) (French et al., 2000), reducing consumption of unhealthy foods is as important in nutrition promotion as efforts aimed at increasing consumption of healthy foods. Furthering our understanding of the individual, social and environmental attributes that facilitate healthy eating that are also protective of unhealthy eating is an important nutrition promotion priority. In reality, not all determinants of good nutrition can feasibly be incorporated into nutrition promotion interventions, highlighting the need to better identify key determinants that can improve consumption of healthy food and reduce consumption of unhealthy food. The purpose of this paper is to identify factors that both promote healthy eating and also reduce the likelihood of eating unhealthily. Fruit and vegetable consumption (separately) were used as the indicators of healthy eating. Two indicators of unhealthy eating were used: fast food/takeaway (most often consumed as a meal) and energy-dense snack food consumption.

Methods

Sample and procedures

Analyses presented are from a sample of 1013 women recruited using a stratified random sampling procedure from 45 Melbourne neighbourhoods. Participants were part of a larger study conducted in 2003–2004 that assessed individual, social and environmental factors associated with women's physical activity, diet and obesity (SESAW study). This study was approved by the Deakin University Human Research Ethics Committee. Full details of the SESAW study are described elsewhere (Ball et al., 2006). According to the methods described by Dillman (1978), women were initially mailed a letter advising them that they had been selected to take part in a study of women's health behaviours. One week later a self-completion dietary questionnaire was posted to a random sample of 2400 women aged 18–65 years who were drawn from each of the 45 neighbourhoods using the electoral role. Of these, 1136 (47.3%) women completed the survey. A second independent sample (*N* = 2400) was invited to complete a separate physical activity survey and participants completing that survey were asked if they were also willing to complete the dietary survey. This yielded an additional 444 participants. From the 1580 participants, 567 participants were excluded from analyses due to missing data on at least one of the variables considered in the current paper.

Measures

Fruit and vegetable consumption

Participants were asked in two separate questions: how many servings of fruit, and how many servings of vegetables they usually consumed each day. The five response categories were; none, one serve, two serves, three to four serves, and five serves or more. Fruit and vegetable consumption has previously been shown to

be an indicator of consumption of other healthy foods (Staser et al., 2011). These questions have been validated elsewhere (Ball et al., 2006) and were adapted from the Australian National Nutrition Survey (Australian Bureau of Statistics (ABS)), in which they were shown to adequately discriminate between groups with different fruit and vegetable intakes assessed by 24-h recall. Those that met the Australian dietary guidelines for fruit consumption (two or more servings per day) were classed as high fruit consumers and those that failed to meet the guidelines (less than two servings each day) as low fruit consumers. Too few respondents (5.7%) met the dietary guideline for vegetable consumption (five or more serves each day). Therefore, to enable meaningful analysis, those who consumed three or more serves of vegetables each day were classified as high vegetable consumers, and those who consumed less than three serves of vegetables each day as low vegetable consumers.

Fast food consumption

Fast food consumption was assessed with the questions: "How many times per week, including breakfast, lunch and dinner, do you eat meals that are from fast food restaurants (e.g. pizza, McDonalds, Red Rooster, fish and chips), eaten (a) in the fast food restaurant? and (b) as 'take-away' at home/work/study (including home delivery)?" Responses for both questions were: never; less than one meal/week; about one meal/week; two to three meals/week; four to five meals/week; six to seven meals/week or more. These two questions were summed to create total fast food consumption. Women were then categorised as infrequent fast food consumers (one fast food meal per week or less) or frequent fast food consumers (more than one fast food meal per week). Although there are currently no well established validated measures of fast food consumption, this cut-off point has been shown to distinguish women at risk of weight gain (Ball, Brown, & Crawford, 2002).

Energy-dense snack food consumption

High calorie snack food consumption was assessed with the questions: 'In the past 12 months, about how often have you consumed the following?' Several food categories were included in the survey from which the following six were identified as 'energy-dense snacks' and were selected for the current paper: 'cakes, sweet muffins, scones or pikelets', 'sweet pies or sweet pastries', 'plain sweet biscuits', 'cream or chocolate biscuits', 'meat pie, sausage roll or other savory pastries', 'chocolate (including chocolate bars)' and 'other confectionary/lollies (sweets)'. Response options ranged from: 'never or less than once/month', to 'six or more times/day' (Cronbach's alpha 0.74). These questions were adapted from the Australian National Nutrition Survey (Australian Bureau of Statistics, 1998) and have been used in prior studies (e.g. Worsley et al., 2004). Consumption of frequency responses for all intake items were subsequently converted into daily equivalent scores (e.g. 'never or less than once/month' = 0 p/day, '1–3 times/month' = 0.07 p/day, 'once/week' = 0.14 p/day, etc.). Women were then categorised as infrequent high calorie snack food consumers (less than one serve p/day) or frequent high calorie snack food consumers (more than one serve p/day).

Individual, social and environmental measures

Nutrition knowledge. An eight-item nutrition knowledge scale was adapted from an existing scale (Turrell, 1997). Respondents answered 'true', 'false', or 'do not know' to eight statements about the nutrient sources of various foods (e.g. 'meat, chicken and fish are the best sources of calcium') and the health effects associated with different dietary components (e.g. 'A diet high in fruits and vegetables and low in salt may help prevent high blood pressure'). The number of correct responses were calculated, and dichotomised as all correct or one or more incorrect.