Food Policy 41 (2013) 184–192

Contents lists available at SciVerse ScienceDirect

Food Policy

journal homepage: www.elsevier.com/locate/foodpol

Gender differences in the influence of food safety and health concerns on dietary and physical activity habits

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ARTICLE INFO

Article history:
Received 4 April 2012
Received in revised form 22 May 2013
Accepted 27 May 2013
Available online 2 July 2013

Keywords:
Food safety concerns
Dietary and physical activity habits
Personal values
Survey
Australia

ABSTRACT

The purpose of the study was to examine middle aged Australians' dietary and physical activity habits and to investigate their relationships with their food safety concerns, body weight, demographics, and personal values (guiding principles in people's lives). A mail survey was conducted among a random sample of men and women aged between 38 and 79 years; 1095 usable questionnaires were obtained. Multigroup structural equation modelling was used to examine the relationships between the variables among men and women. Findings suggest that food safety concerns played central roles in the relationships between demographics, body weight, personal values and dietary and physical activity habits for both men and women. However, there were significant differences between the genders in the ways the food safety concerns impacted these relationships. For example, body weight was negatively related to women's physical activity behaviours but not men's; the concerns were associated with dining out habits among women but not men; age influenced women's concerns and physical activity but not those of men. Therefore, men and women's dietary and physical activity habits were impacted directly by personal background characteristics, body weight, and personal values, and indirectly through food safety concerns. The implications of the study are that for food policy makers, a gendered focus on food safety concerns, and other relatively malleable variables such as personal values, may be more likely to change dietary and physical activity habits in the short term than a focus on more stable socio-demographic characteristics.

Introduction

One of the key issues in food policy is the response to the chronic disease epidemic (Popkin and Gordon-Larsen, 2004) in which dietary behaviours and physical activity play key causal roles (Curioni and Lourenco, 2005). Over the past three decades various models have been proposed to account for influences over these behaviours in order to identify ways to make them healthier. Public health investigators have noted the influence of structural factors such as social class (Marmot and Wilkinson, 2006), age and gender, which are often embedded within ecological models (Bronfenbrenner, 1992; Glass and McAtee, 2006; Hancock, 1993). Behaviourists, on the other hand, have emphasised 'downstream influences' such as attitudes, beliefs, self-efficacy and other cognitive constructs in several popular models (social cognitive model, theory of planned behaviour and other expectancy value models). Lately these models have been criticised, particularly with regard to dietary behaviours, for not accounting for non-cognitive factors such as affect and habit (Hamlin, 2010; Kahneman, 2011; Wansink, 2010).

The 'structural models' identify well the influence of stable, difficult to change factors (like social class) whilst the behavioural models may be too general and incomplete. In terms of food policy, it would be useful to identify intermediary variables between the structural factors and behaviours which could be altered in a fairly ready manner. The possible intermediaries are consumers' broad range of food and health concerns (e.g., food safety, food and disease). There has been a long history of academic interest in these issues. For example, Wandel and Bugge (1997) were among the first to report public perceptions of food safety; and, Frewer and her colleagues have provided detailed accounts of consumers' worries about the safety of the food they eat (de Jonge et al., 2004; Fischer and Frewer, 2009a,b). There is increasing evidence, however, that consumers have many other concerns about food in addition to its safety (Hughes, 2005; UK Cabinet Office, 2008). For example, many product labels carry 'credence logos' signifying environmental, fair trade, low-fat, or other supposed properties of the food product (Dunbar, 2010; McEachern, 2008; McEachern and Warnaby, 2008).

Several studies have shown that several types of concerns were held by consumers relating to safety and microbiological

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http://dx.doi.org/10.1016/j.foodpol.2013.05.011

contamination, chemical additives, concern for animal welfare and less fortunate people, health outcomes, food marketing and promotion of 'junk' foods, and environmental issues (Hohl and Gaskell, 2008; Worsley and Lea, 2008; Worsley and Scott, 2000; Worsley and Skrzypiec, 1998). In these studies, older people, women, and those on lower incomes and with less education, tended to be more concerned about most of these issues. It was also shown that consumers who held strong universalism values (Schwartz, 1992) were more likely to be more concerned about most issues (Worsley and Lea, 2008). Universalism values have been shown to be related to humanist and ecological social ideologies (Lindeman and Sirelius, 2001).

Previous work (Beardsworth et al., 2002; Worsley and Scott, 2000) on food concerns has shown that they are related to structural or stable factors especially gender. Women are more aware of higher levels of threat and concern because they usually have more responsibility for complex decision-making in everyday food preparation and consumption (e.g., Socrates-Grundtvig, 2006). Therefore, men and women are likely to hold different perceptions about the risks posed by food.

In the present study, we examined food safety concerns reflected by six items (see Table 2). The aims of the study were (1) to identify the role of food safety concerns as possible intermediaries between demographics, body weight, and personal values, and, dietary and physical activity habits; (2) to examine whether the items measured food safety concerns, and dietary and physical activity habits in the same way across the gender groups; and (3) to assess whether the relationships between the predictor variables, food safety concerns, and dietary and physical activity habits were the same between the gender groups.

Personal background characteristics

Body Mass Index (BMI)

People who are overweight or obese, probably find it difficult to control their health behaviours, may be exposed to more health risk factors, and may experience greater concern about food and health issues (Edwards, 2011; Marmot and Wilkinson, 2006).

Demographics

Older individuals tend to have different food consumption habits to younger people (Dean et al., 2009; The Food in Later Life Team, 2009; McKie, 1999). Generally older people, with their greater morbidity (Australian Institute of Health and Welfare, 2007), may be more likely to experience greater concerns about the effects of food on their health. Women tend to choose more nutritious foods than men and generally are more concerned about health and food issues (Beardsworth et al., 2002; Worsley, 1988; Worsley and Scott, 2000; Worsley and Skrzypiec, 1997, 1998). People from lower socio-economic status (SES) backgrounds tend to consume more energy dense foods (Drewnowski and Specter, 2004; Turrell et al., 2002; Worsley et al., 2003; Worsley et al., 2004) though in some circumstance they may choose highly nutritious food (Cole-Hamilton and Lang, 1986). In addition, the food behaviour of married people tends to be more consistent with the dietary guidelines (Roos et al., 1998). Therefore, we hypothesized, that gender, age, education, family income and marital status would be strongly associated with food safety concerns, and subsequently, to dietary and physical activity habits. In general, we expected the demographic differences observed in food consumption studies to be reflected in concerns about food and health issues.

Personal values

Personal values are considered to be at the centre of attitude–behaviour models (Feather, 1982) which have been shown to predict food consumption (Grunert and Juhl, 1995; Povey et al., 2000; Sparks et al., 1992). There is considerable evidence that personal values are related to food choice (Allen and Baines, 2002; Feather et al., 1998), to the practice of vegetarian diets (Allen and Baines, 2002; Sims, 1978), food concerns (Worsley and Lea, 2008; Worsley and Scott, 2000), support for school food policies (Worsley, 2006), and to trust in sources of nutrition information (Worsley and Lea, 2003), as well as purchasing decisions (Belk, 1983; Belk, 1985). Therefore, we expected values like universalism and conformity (Schwartz, 1992) to be positively related to food safety concerns, and dietary and physical activity habits. Universalism reflects the values of understanding, appreciation, tolerance, and protection for the welfare of all people and for the nature (Schwartz, 1992). Conformity values tend to be positively related to universalism; they reflect the characteristics of tradition, self-discipline, honouring of parents and elders, and obedience.

Food safety concerns

Finally, we hypothesised that people who have concerns about food and health issues (perceive more dangers posed by foods; Bedford and Barr, 2005) will be more likely to attempt to control their dietary habits, for example, by eating reduced portion sizes and controlling their energy intake. We also expected that they would engage more often in physical activity than those who were less concerned about these health issues, because physical activity is a popular way to safeguard health.

Methods

The findings reported here are based on data from middle-aged Australian survey, a random population survey among 38–79 year olds living in Victoria, Australia. This survey was one of a series of studies of middle aged people's food and health behaviours (e.g., Hunter and Worsley, 2009; Wang et al., 2009; Worsley et al., 2010).

Participants

The survey was administered to a simple random sample drawn from the Electoral Rolls, Victoria, Australia. Enrolment is compulsory for everyone over 18 years of age. Two thousand four hundred and seventy-two people aged over 35 years were invited to participate in 2008, of whom 1095 returned completed questionnaires, indicating a reasonable response rate of 44.3% for this mail survey (Dillman, 2009).

Procedure

The survey was mailed to the sample following the procedures recommended by Dillman (2009). First, a preparatory letter was sent followed a week later by the questionnaire along with an explanatory letter; 2 weeks later a reminder postcard, and 2 weeks thereafter, a replacement questionnaire, was sent to non-respondents. The demographic characteristics of the respondents are described in Table 1.

Questionnaire

The questionnaire, entitled: addressing future food and health needs of Baby boomers: planning for the future was in several parts. Only data from the section of the questionnaire on food safety concerns, dietary and physical activity habits, personal values, body weight (BMI), and demographics are analysed and presented here.