



Research report

Association of overweight and obesity with interest in healthy eating, subjective health and perceived risk of chronic diseases in three European countries

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ABSTRACT

This paper analyses cultural differences in consumers' interest in healthy eating, subjective health and perceived risk of (chronic) diseases, and identifies the association between nutritional status (obesity and overweight) and the above mentioned variables as well as people's socio-demographic characteristics and health conditions that may influence food choice. Cross-sectional data were collected through a consumer survey ($n = 2400$) in 2008 with samples representative for age and region in France, Poland and Spain. Body-mass-index (BMI) was inversely associated with education and positively associated with age. Women were less likely to be overweight than men. Subjective health was negatively associated with the likelihood of being obese. The likelihood of being obese decreased with higher perceived risk of suffering from stress and from cancer, whilst the likelihood of being overweight decreased with higher perceived risk of suffering from stress. Despite a tendency of lower interest in healthy eating among obese consumers, interest in healthy eating was not significantly associated with the likelihood of being obese or overweight after Holm–Bonferroni correction. The findings of this study suggest that health consequences and disease risks of excessive weight should be better communicated to European populations. Furthermore, factors associated with obesity such as subjective health and perceived risk of chronic diseases should be considered both at individual counselling and at public health policy levels.

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Introduction

Obesity represents one of the most serious public health and societal problems for the coming decades. Excess body weight is one of the most important risk factors contributing to the overall burden of disease and mortality worldwide (James, 2008a). Obesity and overweight have been associated with a multitude of diseases, including heart diseases, diabetes, hypertension, and certain cancers (Baldelli et al., 2008; Deshpande, Harris-Hayes, & Schootman, 2008; Poirier et al., 2006).

According to the WHO Europe, overweight affects 30–80% of adults and about 20% of children and adolescents in European countries (WHO Europe, 2007). However, the prevalence levels and/or the secular trends in obesity in Europe have been until now estimated on the basis of country-specific or local surveys (Slimani et al., 2002). Most of the surveys differ in the methodology of data collection, the year of survey, the population age ranges, and the sample sizes. Therefore, direct comparison between countries or

studies is not straightforward (Lobstein & Millstone, 2007; Paradis & Cabanac, 2008). Thus far, the principal focus of public health campaigns and surveillance in Europe and the developed world has largely been the relationship between chronic diseases and dietary intake (Allen et al., 2008; Benetou et al., 2008; Trichopoulou, Psaltopoulou, Orfanos, Hsieh, & Trichopoulos, 2007). Furthermore, scientific evidence that obesity has a negative impact on self-rated general health has been provided in the United States (Okosun, Choi, Matamoros, & Dever, 2001) and some European countries, e.g. Sweden (Svedberg, Bardage, Sandin, & Pedersen, 2006). Nevertheless, many other behavioural and attitudinal factors, which may be related to or a consequence of obesity have not yet been considered (James, 2008b).

The purpose of this study was twofold. First, this study intends to test for cross-cultural differences and the validity of perceived risk of (chronic) diseases, interest in healthy eating, and subjective health. Second, it explores, in three European countries, the association between nutritional status (obesity and overweight) with people's socio-demographic characteristics, interest in healthy eating, subjective health, perceived risk of (chronic) diseases, and health conditions (such as the presence of diseases) that may influence consumers' food choice.

Interest in healthy eating is considered as a proxy/alternative to involvement with food and healthy eating and covers aspects of

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perceived relevance of, or importance attached to healthy eating (Pieniak, Verbeke, Scholderer, et al., 2008). In the consumer behaviour research literature, the concept of involvement has been used widely and has been shown to have robust effects on explaining consumers' purchase and eating decisions (Beharrell & Denison, 1995; Marshall & Bell, 2004; Verbeke & Vackier, 2005; Zaichkowsky, 1985), including fish consumption (Olsen, 2001; Pieniak, Verbeke, Scholderer, et al., 2008). Diehr and Beresford (2003) demonstrated that following a healthy eating pattern was associated with better health behaviour and in some cases also with better factual baseline health. Therefore, the assumption is that consumers' interest in healthy eating will be negatively associated with the excess body weight.

While there is ample scientific evidence that excessive weight increases morbidity and mortality, only few studies have examined empirically how the perception of health risks is actually associated with overweight and obesity. Previous studies have focused mostly on perceived risk of diseases by certain vulnerable groups, such as smokers (Lundborg & Lindgren, 2004; Schoenbaum, 1997). Results from these studies have shown that despite the fact that people may link certain risk factors with poorer health, they respond differently when estimating how risky behaviours are likely to affect their own health. Few studies have investigated the impact of excess body weight on perceived health risks with conflicting findings (Falba & Busch, 2005; Finkelstein, Brown, & Evans, 2008). For instance, U.S. individuals seem to underestimate the mortality risks of excessive weight (Falba & Busch, 2005). Opposite findings from another U.S. study suggest that overweight and obese adults are able to recognise several personal health risks associated with obesity. Excess weight was also associated with greater self-perceived risk of developing diabetes, cancer, heart disease, and stroke (Finkelstein et al., 2008). The association between overweight/obesity and self-reported health symptoms of chronic diseases has also been examined (Peytremann-Bridevaux & Santos-Eggimann, 2008). To our knowledge, no European study has investigated the association between excess body weight and perceived risk of chronic diseases yet.

The monitoring of factors associated with nutritional status, such as subjective health, perceived risk of chronic diseases or the current family situation, has become of utmost importance for public health purposes (James, 2008a). Understanding other attitudinal factors affecting the likelihood of being obese and/or overweight may require knowledge about the extent to which health conditions may influence consumers' food choice.

This study is part of a survey carried out in three different EU countries, namely Spain, Poland and France. Those three countries are relevant for a European cross-cultural study focusing on food and nutrition issues. Spain represents a Mediterranean country, Poland,

is a Central-European country, and France has been selected as an example of Western European country. Those countries differ in their cultural, geographical and gastronomic inheritance background, as has been demonstrated by, e.g. Guerrero et al. (2009).

Materials and methods

Data collection

Quantitative data were collected through a cross-sectional web-based consumer survey with samples representative for age and region in France, Spain, and Poland. Total sample size was 2400 respondents, i.e. exactly 800 respondents in each of the three considered European countries. The sample was composed of 1560 women (65%) and 840 men (35%). This gender distribution reflects the criterion that all respondents were the main person responsible for food purchase in the household. A quota sampling procedure with age and region as main control variables was applied. The age of the population was defined as 20–70 years. The mean age of the sample was 41.8 (SD = 13.1). Participants were randomly selected from the representative IPSOS Access Panel (Malhotra & Peterson, 2006) according to the national population distributions for age and region. Such panels consist of individuals who have been recruited through off-line recruitment methods (e.g. random walk or street contact procedures) and who agreed to take part in future surveys. All contact and questionnaire administration procedures were electronic. Data collection was performed during the period from April 27 until May 8, 2008. All relevant international guidelines and standards relating to the collection and processing of personal data from human beings have been followed. Participants in the consumer studies were adult volunteers from whom written informed consent has been obtained. Table 1 shows the sample characteristics. The distribution of participants was balanced across countries and socio-demographic characteristics.

Measures

A questionnaire was developed in English and further translated into French, Polish, and Spanish by professional translation services within each country. The back-translation method was used to verify the multilingual versions of the questionnaire. The questionnaires, measuring a wide variety of constructs including behaviour, attitudes, subjective health, and risk of chronic diseases had been pre-tested in the national languages through pilot studies.

Body-mass-index (BMI) was calculated from self-reported heights and weights. Respondents were classified according to

Table 1
Sample characteristics.

	France percent (N)	Poland percent (N)	Spain percent (N)	Total percent (N)
<i>Gender</i>				
Male	35.0 (280)	35.0 (280)	35.0 (280)	35.0 (840)
Female	65.0 (520)	65.0 (520)	65.0 (520)	65.0 (1560)
Age (mean ± SD)	42.9 (±13.6)	40.2 (±12.6)	42.3 (±13.0)	41.8 (±13.1)
<i>Education (years of age)</i>				
Lower secondary or lower (<15)	7.7 (61)	5.0 (40)	17.4 (140)	10 (241)
Higher secondary (15–18)	35.4 (284)	43.1 (345)	35.9 (287)	38.2 (916)
Higher (>18)	56.9 (455)	51.9 (415)	46.7 (373)	51.8 (1,243)
<i>Nutritional status</i>				
Underweight (BMI < 18.5)	3.9 (31)	2.4 (19)	3.0 (24)	3.1 (74)
Normal (18.5 ≤ BMI < 25)	48.6 (385)	52.4 (419)	47.1 (373)	49.4 (1,176)
Overweight (25 ≤ BMI < 30)	30.9 (245)	31.4 (251)	34.6 (274)	32.3 (769)
Obesity (BMI ≥ 30)	16.6 (132)	13.8 (111)	15.3 (121)	15.2 (363)

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