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European consumers' perceived seriousness of their eating habits relative to other personal health risks

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ABSTRACT

Objective. Poor eating habits are a key priority on the European public health agenda due to their large health and economic implications. Healthy eating interventions may be more effective if consumers perceive their eating habits as a more serious personal health risk. This study investigates European consumers' perceived seriousness of their eating habits, its determinants and relative importance among other potential personal health risks including weight, stress and pollution.

Method. A quantitative survey was conducted during Spring 2011 among samples representative for age, gender and region in five European countries (n = 3003).

Results. Participants were neutral towards the seriousness of their eating habits for personal health. Eating habits were ranked third after stress and weight. Gender, age, country, health motive, body mass index, and subjective health status were important determinants of the perceived seriousness of their eating habits, whereas perceived financial condition, smoking and education were insignificant.

Conclusion. Eating habits were perceived more seriously by women, Italians, obese, and younger individuals with stronger health motives and fair subjective health status. Nevertheless, other health risks were often considered more important than eating habits. More or specific efforts are required to increase Europeans' awareness of the seriousness of their eating habits for personal health.

Introduction

With the public's increased awareness of causative and preventive effects of certain foods on health, food-related health has been of increasing importance for consumer food choice (Grunert, 2006). The rising prevalence of diet-related non-communicable chronic diseases like obesity suggests that many consumers are not capable and/or as motivated as they claim, to make healthy food choices. For these reasons, nutrition is a key priority in the European Union (EU) public health policies (Commission of The European Communities, 2007). Many EU Member States have developed policy interventions to promote healthy eating habits whose effectiveness may strongly differ between individuals and cases (Capacci et al., 2012; Traill et al., 2010). Next to health, taste and price have been competing priorities in relation to food choice (Drichoutis et al., 2005). Consumers may prefer the immediate benefits of a tasteful food product over the long-term benefits of a healthy food (Verbeke, 2006). Also consumers' awareness of the seriousness of specific health-related behaviours may not necessarily be reflected in their own behaviour (van der Pligt, 1998). For example, smokers generally agree with the adverse health impact of smoking, but do not believe themselves to be personally at risk (Lee, 1989; Mckenna et al., 1993).

Perceived seriousness or severity is at the core of several theoretical models of preventive health behaviour, essentially the Health Belief Model (Rosenstock, 1974) and related models (e.g. Theory of Protection Motivation (Rogers, 1975)), and it is also implicit as behavioural belief in the Theory of Planned Behaviour (Ajzen, 1991; Mazzocchi et al., 2008). These models posit that the more serious a person perceives his/her personal risk from a behaviour, the higher the personal relevance of that behaviour and the more receptive one is to any information and other cues concerning the behaviour, which potentially drives a person to take appropriate action. While there is a growing body of literature on the association between perceived seriousness of preventive health behaviour and the behaviour itself (e.g. Harvey and Lawson, 2009; Marcell and Halpern-Felsher, 2005; McLeod and Johnson, 2011; Milne et al., 2000), to the authors' knowledge no study thus far has investigated the perceived seriousness of eating habits as such and relative to other health-related personal risks in a cross-cultural setting.

Based on previous theoretical models, the basic assumption from which the study departed was that the higher a person's perceived seriousness of his/her eating habits, the higher the probability of being

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receptive to health promotion activities and policy measures. Three questions were raised. First, to what extent do Europeans consider their eating habits as a potentially serious risk for their personal health? Second, how seriously do they consider it among other potential personal risks? Third, what explains potential differences in the perceived seriousness of eating habits? Consequently, the objective of this paper was to investigate the determinants of European consumers' perceived seriousness of eating habits and its relative importance among other potential personal health risks including weight, stress and pollution. The health risks including weight, stress and pollution were selected based on the list of major global health risks reported by WHO (2009).

Methods

Study design and population

Cross-European data were collected during Spring 2011 through a cross-sectional quantitative survey with samples representative for age, gender and region in five European countries: UK (n = 603), Italy (n = 600), Belgium (n = 600), Denmark (n = 600) and Poland (n = 600). These countries were selected in order to cover the geographical North–South and East–West axes of Europe. A total of 3003 participants between the ages of 16 and 99 years were selected by means of probabilistic sampling from the online access proprietary panel of the GfK NOP market research agency. Corrective post-stratification weights were applied to ensure national representativeness in terms of age and gender. All procedures for contact and questionnaire administration were electronic through Computer Assisted Web Interviewing.

Measurement and scaling

European consumers' perceived seriousness of personal health risks was measured using a 7-point interval scale using the statement "Thinking about your own health, how serious do you consider your eating habits/your weight/your stress level to be/pollution where you live", based on Oliver and Lee (2005). The anchor points of the scale were: "not at all serious" (=1), "neutral" (=4) and "very serious" (=7). The response categories 2 and 3 ("rather not serious"), and 5 and 6 ("rather serious") were merged for the final regression analysis for facilitating the interpretation and clarity of presentation. From this set of questions, a variable was created to measure how the perceived seriousness of eating habits ranks compared to the other health risks; i.e. the relative perceived seriousness of eating habits for personal health. The variable assumes discrete values between 1 and 4, where the value of 1 indicates that all other conditions are perceived as more serious than the eating habits. A value equal to 4 means that no other health risk is perceived as more serious than the eating habits, i.e. eating habits are considered a top risk in terms of perceived seriousness for personal health.

Explanatory variables included socio-demographics such as gender, country (UK, Italy, Belgium, Denmark and Poland), educational level (low: primary and lower secondary education completed; medium: higher secondary education completed; high: university-level diploma and higher completed), perceived financial condition ((very) bad, fair, (very) good) and age. Additional variables included the body mass index (BMI) based on self-reported weights and heights (underweight: <18.5 kg/m^2, normal weight: 18.5–24.9 kg/m^2, overweight: 25–29.9, obese: ≥30 kg/m^2), subjective health status (SHS) ((very) bad, fair, (very) good), smoking status (non-smoker: either never smoked or quitted smoking; light smoker: ≤five cigarettes per day; medium smoker: 6–20 cigarettes per day; heavy smoker: >20 cigarettes per day), and health motive underlying meal choices. The latter was measured based on a scale developed and validated in the EU FP5 project Trust (Lobb et al., 2007; Mazzocchi et al., 2008) and pilot-tested here. This four-item scale was validated by means of a confirmatory factor analysis, indicating good internal reliability (Cronbach's alpha = 0.88) and reporting significant factor loadings (ranging from 0.85 to 0.92). Participants were asked to rate on a 7-point scale how important (ranging from "extremely unimportant" to "extremely important") the "Fat content", "Calorie content", "Cholesterol content", "Healthiness of foods" (among others) are to their household main meal.

The master questionnaire was developed in English and translated into the national languages using back-translation to ensure linguistic equivalence (Brislin, 1970; Maneesriwongul and Dixon, 2004). Before starting with the fieldwork, the questionnaire was extensively pretested through personal interviews with 15–20 participants in each country. No modifications were required for the questions considered here after pretesting.

Statistical analyses

Descriptive statistics including frequency distributions and cross-tabulations were reported. An ordinal regression was applied to explain the perceived seriousness of the eating habits as such (Model 1) and relative to other personal health risks (Model 2). Since the assumption of parallel lines was violated in some independent variables, a Generalized ordered logit model with partial proportional odds (PPO) was estimated instead of the more conservative Ordered logit model with proportional odds (O'Connell, 2006). Violation of the parallel-lines assumption means that at least some independent variables systematically interacted with differential response categories of the dependent variable. For instance, the odds of perceiving the eating habits as a top risk (in terms of perceived seriousness) decreased, but the odds of perceiving it as the lowest risk (among other personal risks) increased for obese compared to normal weight people in Model 2 (Table 3). Results are reported as odds ratio (OR) with 95% confidence intervals (95% CI). OR above 1 indicates that higher values on the independent variable make it more likely that the individual will be in a higher category of the dependent variable than the current one, whereas OR below 1 indicates that higher values on the independent variable increase the likelihood of the respondent to be in the current or a lower category of the dependent variable. McFadden's pseudo R^2 is reported as an indicator of the model fit (McFadden, 1973). Note that this value cannot be interpreted in terms of the R^2 statistic of the linear regression, particularly because of its downward bias in ordinal outcome variables (Veall and Zimmermann, 1996).

Descriptive statistics were calculated with SPSS Statistics 20.0 (IBM SPSS, Armonk, NY, USA). Ordinal regression based on the PPO model was performed with Stata 11.0 software (Statacorp, College Station, TX, USA) using the gologit2 command and its autofit option (Williams, 2006). The autofit option searches for the best model fit while iteratively upholding or releasing the parallel lines' assumption for the separate independent variables.

Results

Sample characteristics including socio-demographics, health behaviours and conditions, and the association with the perceived seriousness of eating habits are presented in Table 1. Both genders were equally represented as the study population was intentionally not restricted to the main responsible for food purchasing. About 40% of the sample had higher education and an almost equal number had medium education. Most participants were non-smokers with normal weight who perceived their health status as good and for whom the health motive is rather important for food choices. Overall, participants perceived their eating habits neither serious nor unserious (mean = 4.07 ± 1.79 on a 7-point scale). The highest perceived seriousness of eating habits for personal health was observed for women, Italians, people with obesity, individuals with medium education and those who perceived their financial condition to be (very) bad and their health status fair to very bad. Eating habits were perceived less serious than stress (mean = 4.31 ± 1.82) and weight (mean = 4.25 ± 1.91), but more serious than pollution (mean = 3.92 ± 1.84) (all paired test p-values < 0.001).

Table 2 reports the results of the regression model of European consumers' perceived seriousness of their eating habits for personal health by their socio-demographic characteristics, health behaviour and determinants, and health condition (Model 1). Female, overweight and obese people (compared to normal weight) and people with a stronger health motive were significantly more likely to perceive their eating habits seriously. Increasing age decreased the odds of perceiving the eating habits as serious. Cross-country differences were observed, where the perceived seriousness of eating habits was highest among Italians, followed by British and Belgians, and the lowest among Polish and Danish. The perceived financial condition and smoking status were weakly related to the perceived seriousness of eating habits, while educational level was not related. People who perceived their health status as very good were more likely to perceive their eating habits as not at all serious compared to those who perceived their health status as good. A fair