Appetite 53 (2009) 34–43

Contents lists available at ScienceDirect

Appetite

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

Research report

"Functional foods compensate for an unhealthy lifestyle". Some Swedish consumers' impressions and perceived need of functional foods

Eva Landström *, Ulla-Kaisa Koivisto Hursti, Maria Magnusson

Department of Public Health and Caring Sciences, Caring Sciences, Uppsala Science Park, SE-751 83 Uppsala, Sweden

ARTICLE INFO

Article history:
Received 12 August 2008
Received in revised form 23 April 2009
Accepted 24 April 2009

Keywords:
Functional foods
Consumers
Perception
Natural
Swedish
Lifestyle

ABSTRACT

The aim of the present study was to explore some Swedish consumers' impressions of and perceived need of functional foods. Data were collected through 10 focus groups. A total of 46 individuals participated (31 females, 18–75 years, and 16 males, 18–78 years). The interviews were transcribed verbatim and analysed by the use of content analysis. Uncertainties—e.g., if functional foods are normal foods or medicines, if the foods would give additional physiological effects and/or if the ingredients and substances could cause harm—caused questions among the interviewees of trustworthiness and a feeling of losing control. The interviewees debated on the necessity of functional foods. Apart from perceiving functional foods as unnatural, the interviewees thought that functional foods would falsely compensate for an unhealthy lifestyle. The use of functional foods was considered to be justified when a healthy lifestyle is incapable of improving people's health. The interviewees perceived themselves to be in no need of functional foods. They thought that the foods were meant for others, for those in unquestionable need. We conclude that the impressions of FF among Swedish consumers are complex and versatile. The necessity of FF was justified unless no other lifestyle changes were able to improve a person's state of health.

Introduction

Functional foods (FF), here defined as foods with health claims, are food products which, in addition to their basic nutritional value, contain nutrients or other substances or have a nutritional composition that may prevent or reduce the risk of a diet-related disease or enhance a certain physiological function (Diplock et al., 1999). FF products are produced both in order to increase the interest in food and health among the public and to facilitate for individuals to take responsibility for eating a healthy diet (Bruce, 2000). Health claims are intended both to support and protect consumers so that they can make informed choices (Bruce, 2000; Regulation (EC) No. 1924/2006). However, an informed food choice regarding nutritional contents is only one aspect out of several when consumers choose foods (Magnusson, Arvola, Koivisto Hursti, Åberg, & Sjödén, 2001). Factors like taste, price, availability, and socio-cultural situations do have a larger influence on consumer food choices (Shepherd, 1989).

The consumption of foods is closely linked to our social belonging, culture, and traditions. Food manifests, through its nutrients but also its symbolic value, who we are and where we belong. "We are what we eat" (Fischler, 1988, p. 279) is true both in regard to our biology and to our identity. Also: "If we do not know what we eat, how can we know who we are?" (Fischler, 1988, p. 282). Nowadays, the contents of foods have more than ever become anonymous to consumers, resulting in increased food-related anxieties (Beardsworth & Keil, 2001). Unknown production processes and food additives are, for example, viewed as increasing the uncertain future risks of consuming the food (Hansen, Holm, Frewer, Robinson, & Sandøe, 2003). Consumers trust the link between naturalness and healthiness (Beardsworth & Keil, 2001) and mistrust processed foods and added substances (Devcich, Pedersen, & Petrie, 2007; Jonas & Beckmann, 1998).

Historically, long-established food traditions and the knowledge of what foods are and how they should be eaten have neutralised the food-related anxieties. Nowadays, medical science, food science and nutrition have replaced those traditions and set up new rules for our eating. Both science and research are, however, to be questioned and criticised, controversial and changeable. The rules around food and eating are therefore changing constantly. The changes of food rules do not act as to neutralise food-related anxieties but they rather increase this dilemma (Beardsworth & Keil, 2001).

Abbreviations: EFSA, European Food and Safety Authority; FF, functional foods; LDL, low density lipoprotein.

* Corresponding author.
E-mail addresses: Eva.Landstrom@pubcare.uu.se (E. Landström), Ulla-Kaisa.KoivistoHursti@slv.se (U.-K. Hursti), Maria.Magnusson@pubcare.uu.se (M. Magnusson).

0195-6663/$ – see front matter © 2009 Elsevier Ltd. All rights reserved.
doi:10.1016/j.appet.2009.04.219

Therefore people now long for the old days of natural living close to nature and animals, when everyone cooked their own food from pure, natural ingredients, with no anxiety concerning the contents of the foods and whether the food was healthy or not (Lupton, 1996). People find nature and natural foods to be opposed to stressful, modern city life and technological, industrially processed foods. Food additives and enriched or fortified foods (i.e., FF), even though the enrichment may be extracted from nature, are believed to disturb the balance and perfection of original, natural food (Lupton, 1996; Niva, 2007; Rozin, 2005). Therefore, consumers are not as suspicious of new organic foods, which are perceived as natural and trustworthy, than they are of new technological foods, such as FF (Bäckström, Pirttilä-Backman, & Tuorila, 2004). FF are believed to be designed to be healthy as opposed to foods which are naturally healthy (Niva, 2007).

Medical and nutritional science has brought forward the knowledge of how to eat and live in order to increase the likelihood of remaining healthy. The awareness of what is regarded as healthy living has also increased among the public (Beardsworth & Keil, 2001). A healthy person also has a balance in his/her diet in regard to, for example, health and pleasure and the amount of food intake (Lupton, 1996). The rationality of eating has brought with it an underlying meaning that if you know how to eat to stay healthy, you should act accordingly (Lupton, 1996). Thus, the knowledge of the nutrients in foods and their physiological effects in human beings has become every individual's dilemma and responsibility (Coveney, 2006; Lupton, 1996).

Within the field of how we perceive food risks, there is a phenomenon called optimistic bias (Weinstein, 1982, 1987). This explains our perception of other people being in larger risks of health problems and food hazards than ourselves (Miles & Scaife, 2003). Also, consumers perceive the risks associated with food technology as larger than the risks associated with their lifestyle and diet, or risks occurring naturally (Hansen et al., 2003; Knox, 2000; Miles & Scaife, 2003; Verbeke, Frewer, Scholderer, & De Brabander, 2007). This risk perception partially explains the insignificant impact of health messages on health behaviours (Miles & Scaife, 2003) and consumers' scepticism towards FF (Frewer, Scholderer, & Lambert, 2003). Thus, FF are thought to improve health among others, among those at larger risk than oneself (Frewer et al., 2003; Korzen-Bohr & O'Doherty Jensen, 2006).

In 1990, Sweden was the first country in the world with rules and regulations on health claims made on foods, called the Code of Practice in the labelling of foods with health claims (Asp, Laser Reuterswärd, & Liljeberg, 1998). Thereby attitudes to FF among Swedish consumers could differ to those of other countries. Several studies on the attitudes to FF have been conducted in European countries (Bäckström et al., 2004; Bech-Larsen & Grunert, 2003; Labrecque, Doyon, Bellavance, & Kolodinsky, 2006; Niva & Mäkelä, 2005; Urala & Lähteenmäki, 2007; Verbeke, 2005). However, the Swedish food culture differs from other European countries—even the Nordic countries—which is why investigations on the attitudes to FF among other European consumers could have low transferability to the Swedish consumers. Also, the type of FF products found on the food markets differs between the European and the Nordic countries due to different food cultures. The type of FF investigated can influence the results, which leads to further problems regarding transferability.

Various food cultures in Europe define healthy eating differently (Margetts, Martinez, Saba, Holm, & Kearney, 1997). Swedish consumers, compared to Finnish and Danish ones, more often define healthy eating as eating fresh and natural foods (Lappalainen, Kearney, & Gibney, 1998; Margetts et al., 1997). In Sweden the interest in the naturalness of foods seems to have increased due to the debates of food additives and the processes used to produce food products (Nilsson, 2008). In Finland consumers appear to trust the use of the technology which produces health enhancing foods (Niva & Mäkelä, 2005).

The above literature overview displays complex socio-cultural factors influencing consumers' perception of healthy foods and FF. There are few studies on Swedish consumers' perception of FF and no previous published focus group study. The aim of this study is to explore Swedish consumers' impressions of, trust in and perceived need of FF.

Methods

Definitions

The Swedish Code of Practice in the labelling of *foods with health claims* was applicable at the time of this study (Swedish Nutrition Foundation, 2004). The Code mainly suggests three types of health claims on foods: *generic nutrient function claim, generic reduction of disease risk claim* and *product specific physiological claim* (Swedish Nutrition Foundation, 2004). The products used in the present study were labelled with at least one of the above health claims. Therefore, FF will here be defined as *foods with health claims*. There is no common expression of these foods among Swedish consumers and there is no official definition of the phrase "functional foods" (FF) in Sweden. In perspective, the Swedish definitions of *generic reduction of disease risk claim* and *product specific physiological claim* are comparable with the definitions used in the newly adopted EC regulation on Nutrition and Health Claims (Asp & Bryngelsson, 2007; Regulation (EC) No. 1924/2006).

Participants

In Uppsala, Sweden, interviewees aged 18–75 were recruited for focus group interviews during the spring and autumn of 2003. Interviewees were recruited through advertisements in papers and in public places, such as food-stores, gyms, university campus buildings and employment agencies in the city of Uppsala. By telephone or e-mail those interested (women: $n = 57$, men: $n = 26$) contacted the first author, who suggested several dates and times for an interview in each age group. The date/time was selected when most interviewees were able to participate. A particular time when all people interested could participate was unachievable and, thus, some interviewees dropped out. A total of 46 (31 women and 16 men) participated. There were four male and six female groups. See Table 1 for demographic interviewee characteristics.

Focus group discussion

A few days before the discussions took place, the interviewees received a confirmation letter. Enclosed were information about the aim of the discussion and a description of foods with health claims and the different claims on hand in Sweden. This was intended to stimulate the discussions and ensure that all interviewees were familiar with the focus group topic. The focus groups lasted 1–2 h. During this time the interviewees were served a light meal including one to three FF products to taste; one portion of every food item for each participant. The FF products were provided in their original packages, including information on health claims, nutrition, and ingredients. The FF products were: (1) low-fat margarine with the product-specific health claim *lowers total and LDL cholesterol* (Johnson, Mensink, & Pedersen, 2002) containing plant sterols or a low-fat margarine with the health claim *for lowered cholesterol uptake* containing plant stanols (Johnson, Mensink, & Pedersen, 2006); (2) individual portions of low-fat yoghurt with muesli inside the lid with the product-specific health claim *smoothens out blood sugar level* (Almér,

Table 1
Characteristics of interviewees in the focus groups. Characteristics explained at group level.

Gender	Age	*N*	Occupation (*N*)	Educational level (*N*)
Women	18–19	4	Student (4)	Upper secondary school (4)
Women	20–25	5	Student (5)	University (5)
Women	26–35	5	Student (3) Unemployed (2)	University (5)
Women	36–50	6	Sick leave/unemployed (3) Hotel receptionist (2) Shop assistant (1)	Upper secondary school (3) University (3)
Women	Over 51 (group 1)	6	Pensioner (5) Unemployed (1)	Upper secondary school (3) University (3)
Women	Over 51 (group 2)	5	Employment officer (1) Unemployed (1) Pensioner (3)	Lower secondary school (1) Upper secondary school (2) University (2)
Men	18–25	4	Student (4)	University (4)
Men	26–35	4	Student (2) Office cleaner (1) Safety conveyor (1)	Upper secondary school (2) University (2)
Men	36–50	4	Student (1) Unemployed (1) Safety conveyor (1) Computer technician (1)	Upper secondary school (1) University (3)
Men	Over 51	4	Clinical trial assessor (1) Pensioner (3)	University (4)

Hermansen, & Vessby, 2002); (3) omega-3 fatty acids enriched wholemeal bread with a *reduction of disease risk claim*, concerning the cholesterol-lowering effects of a diet high in soluble fibre and the contents of soluble fibres in the bread; (4) fruit drink with probiotic bacteria with the product-specific health claim *reduces flatulence* (Danielsson, Brummer, & Lauritsen, 2003); and (5) fruit yoghurt with probiotic bacteria with the health claim *helps to keep or retain the balance in your stomach*.

The aim of the discussions was to explore Swedish consumers' attitudes to FF and their health claims. The Swedish phrase for food with health claims was used all the time in the focus groups. The moderator (first author) initiated the focus groups, guided the interviewees through topics concerning FF and encouraged everyone to express their thoughts. During the focus groups the moderator gave no further information about the products, except for the information provided in the confirmation letter. The interview guide contained topics like: interviewees' experiences of FF; what they thought/knew about the physiological effects of the particular FF presented to them; if they believed that the FF had any positive or negative properties; their thoughts on the need for FF; if they themselves would consider buying the FF. If a topic above was not approached by the interviewees, the moderator posed these topics as questions, such as; "do you think there is something positive with these products?" At the end of the interviews, the interviewees received a voucher of 50SEK (5€), usable in all stores in Uppsala.

The interview guide was tested in a pilot study, including two focus groups of male and female undergraduate students at Uppsala University. After the pilot study, some of the interview guide questions were slightly rephrased. At all interviews an observer (second author) took notes of the order of speaking so as to facilitate the transcription of the interviews. The interviews were tape-recorded—by permission of the interviewees—and transcribed verbatim.

Analysis of data

The transcripts were analysed by the use of content analysis, as described by Graneheim and Lundman (2004). The transcribed texts were read several times to gain an overall understanding of the interviews. An open coding was performed where sentences and paragraphs in relation to the research question were identified and extracted for further analysis. Meaning units, such as words, sentences and paragraphs, were identified in the extracted texts. The meaning units were condensed into shorter texts while their meaning was preserved, i.e., the core of the text. The condensed, meaning units were then labelled with codes. The codes and their meaning units which were related through their contents and contexts were merged into categories. The whole text was read again while the codes and categories were compared in order to verify that no text in relation to the research question had been left out and that the categories were mutually exclusive. Categories with similar underlying meanings were then merged into themes and sub-themes. This process relates to a latent analysis which focuses on the underlying meaning of the contents (Graneheim & Lundman, 2004).

The transcribed texts have been discussed at several seminars with fellow researchers. Also a fellow researcher, Clara Aarts (Department of Public Health and Caring Sciences, Uppsala University), read 30% of the analysed text to verify the content analysis (Graneheim & Lundman, 2004). The fellow researcher read the text several times and then used the sub-themes and themes to label the text in order to control that the whole text fitted into the themes and sub-themes. The seminar discussions and the verification by our fellow-researcher resulted in changes of the contents of some of the themes and sub-themes.

Results

The level of knowledge of food and nutrients varied between the interviewees in each focus group. There were informative discussions with disparate impressions of what the FF products are, and for what and when they are needed. Three major themes emerged from the analysis: (1) *comparing and defining*; (2) *distrust or trust in FF*; and (3) *the necessity of FF*. Each theme contained two to four sub-themes. The themes and sub-themes correspond to the titles and sub-titles in the result section and are also presented in Table 2. In the focus groups, quotations are referred to by the

Table 2
Themes and sub-themes.

Themes	Sub-themes
Comparing and defining	Functional versus "normal" foods Unknown substances and effects
Distrust or trust in FF	Deluding effects Dangerous effects or substances Trust in FF Losing control
The necessity of FF	Ethical dilemma The need among others Compensation for an unhealthy lifestyle Personal preferences

interviewees' age and gender (w, women; m, men). For example, a quotation by women aged 26–35 reads: (w 26–35).

Comparing and defining

Few interviewees were familiar with the FF presented to them. This initiated discussions on what FF are, what substances and ingredients they contain, what effects they have and how they are, possibly, dissimilar to other foods.

Functional versus "normal" foods

The FF were defined or mentioned as health foods, diet foods, scientifically designed foods, low-fat products, and special foods. The interviewees also defined them as FF. However, it was ambiguous what made FF more functional than "*normal*" or "*natural*" foods. There was confusion concerning the difference between healthy and unhealthy foods, and between FF, health foods (such as nutraceuticals and dietary supplements), and pharmaceuticals. It was not clear whether the foods were medicines or foods and the interviewees therefore wondered if everyone can eat FF or if FF are meant for the ill.

W1—But is this for those who are ill or should everyone eat this [*cholesterol-lowering margarine*]*?*

W2—Well, yes, everyone can eat this.

W3—I've understood that... that it's for every, every person.

W4—But it [*cholesterol-lowering margarine*] *wasn't so strong then? It's not like a medicine??* (w +51).

While trying to define FF, comparisons between FF and normal foods were made. For example, weight-watchers' foods, diet cookies, cheese made of plant fat, probiotic yoghurts, low-fat margarine, rolled oats with sour milk, and wholemeal breads were assumed to belong to the FF category. The interviewees were convinced that the FF contain identical substances as do normal and natural foods. FF were thought merely to be more refined or artificial versions of natural foods. The more processed the foods and the more additives they contained, the more unnatural they were perceived. Ingredients such as "*thickener, emulsifier, preservatives and acidity regulators*" (w +51, gr2) in margarines were regarded as artificial and therefore unnecessary. The interviewees wanted to know where the effective ingredients could be found in nature and thereby consumed naturally.

W1—There is omega-3 in fatty fish too, isn't there? So, one can eat fish instead, normal food.

W2—That's what I was just going to say, where do you find it naturally? (w 36–50).

Taste comparisons between natural foods and FF showed that FF and other healthy foods were perceived to taste worse, more artificial and more medicine-like than natural or normal foods. Also, there seemed to be a reluctance to find medical ingredients or effects in foods. When a food was believed to contain medical ingredients, these ingredients caused the food to taste healthier or medicine-like, which was not generally the preferred taste.

M1—When you drink this [*probiotic*] *bilberry drink, it feels as though it's healthy, because it gets, it's like...you're sort of being cheated out of normal bilberry soup, in a way. And then it has to be healthy* (*laugh*).

M2—Yes, that's right, I've got to try it.

M1—And you will notice... you know what I mean?

M2—(*laugh*) *Yes, yeah, it's almost a bit like medicine.*

M1—Yes, that's right, exactly, healthy, that's it (m 26–35).

However, one man in the same group found a distinct and natural taste of blueberry in the probiotic fruit drink and he did not seem bothered about the medicine-like taste which the other group members perceived.

The price was, furthermore, recognised as the largest difference between FF and normal foods. Unless the prices mirrored the differences between FF and normal foods in reference to their physiological effects, higher prices were not regarded as justified.

Unknown substances and effects

The numerous unknown substances in the extensive ingredient lists of the FF bewildered the interviewees. They therefore became sceptical of the naturalness and, further, the healthiness of the foods. Discussions of the ingredients of the FF and which of the ingredients affect your body and how, were frequent. The baffling information of the effective substance annoyed the interviewees. Still, after careful reading on the package of cholesterol-lowering margarine, the interviewees were uncertain if the plant sterols were natural fats, fibres, or even plastics.

M1—Plant stan..., plant anol, plant Stanol (giggle), and what's that, what is stanol? Anyone?

M2—It's like that which you find in low-fat margarine, like this, isn't it. I've heard that it is like, not plastic, but like... I don't know if there are plastic substances in it. Is that what stanols is (*—ahaa*!) *or what?* (m 18–25).

There was perplexity concerning which of the substances in the FF would cause an effect, i.e., what the bacteria in the probiotic products did or whether other ingredients affected the gut. Questions arose of which substance in, for example, the yoghurt with muesli affects your blood sugar. The interviewees wondered how the yoghurt with muesli would affect their own body.

—'Smoothens out blood sugar level after meal'. AND? A bit like, ahem, 'well, how does that affect me?' Or will it make me less tired in an hour or, ahem..., yes..., does it actually affect me in any way? (w 20–25).

Distrust or trust in FF

The uncertainties of what the FF products are, what substances and ingredients they contain and what effects they have initiated questions of trustworthiness and a feeling of losing control.

Deluding effects

There were questions if FF were more effective than normal foods, and if so, how much more effective. Clearly, there were disbeliefs in the physiological effects of FF. The absence on the packages of explanations of the physiological effects annoyed the interviewees. FF were believed to delude consumers by claiming to have effects which would not appear after consumption. The claim that margarine would lower the cholesterol levels was confusing as fat is considered to raise cholesterol levels, not to lower them.

> —*I become a bit sceptic, you know. It [cholesterol-lowering margarine] is fat and then it says [on the package] that it will lower the cholesterol level (laughter). You know, it's against my common sense* (w 26–35).

The higher prices of FF were thought to delude people to believe that FF are better than they are, due to placebo effects. Presumably one feels the effect because one believes in the higher quality of expensive products. It *"feels a bit nice. I'll buy the more expensive one. It's better for me"* (m 26–35). Normally, health foods were believed to be over-advertised and claimed to be healthier than they actually are. Thus, the manufacturers are misleading us. The manufacturers and the commercials were accused of creating the need for FF: "*The commercials make us believe that we must have these products to, yes, be able to live a decent life at all*" (m 36–50). Instead of just trusting the manufacturers, some interviewees thought we should be able to feel what nutrients our bodies require—and eat accordingly.

Dangerous effects or substances

Most interviewees disbelieved the claimed healthiness of health foods (i.e., FF) because of reports of untrustworthiness or hazard. Health foods, such as light or diet products and FF, which contain additives, were not regarded as healthy because the additives were believed to be hazardous.

> —*I don't particularly like these margarines, which contain a lot of additives, ahem, which are said to be so healthy but contain a lot of additives* (w +51, gr1).

Due to this the interviewees expressed worries regarding what to eat and if FF were safe. Apparently, "*It's rather hard as a consumer to know when you're on safe grounds, health-wise*" (m 36–50).

FF were thought to generate the "*diet product effect*", the over-consumption of low-fat, diet foods. FF products were regarded fat-free and/or tasteless; consequently, you consume more and, thus, you overconsume. The interviewees saw risks connected to the unknown effects when combining health foods. They thought that perhaps the lack of nutritional awareness or knowledge would make people consume more than they need or combine the wrong foods, thereby creating negative side-effects of over-dosage.

> —*What I'm afraid of is that one can get too much of omega-3, because... I eat a lot of salmon and in addition I used to take an omega-3 tablet... daily and now, now I'm doing like this: the days when I know I'm going to eat salmon then I don't take one of those* [*omega-3 tablets*]. (—*really*)*... There is so much you don't know, actually* (—*yes*) (m +51).

Trust in FF

On the package of a cholesterol-lowering margarine the text explained that the margarine is not a miracle boost, but other lifestyle changes are required in order to achieve an effect. This text and the information on the food packages made some interviewees perceive the manufacturers as honest and "*scientific*". This was considered positive and increased the trustworthiness of the manufacturers. The interviewees who trusted FF were primarily those who had experienced physiological effects themselves, or possessed nutritional knowledge. They did not find risks with FF but perceived them as healthy and reliable.

> —*When it comes to these Primaliv* [*yoghurt with muesli*] *and Proviva* [*probiotic fruit-drink*]*, then it seems, it seems like the concept is thorough. It doesn't seem like it could be such a bad mistake as, for example, the fat-free products, that it has an adverse effect, so to speak...* (w 20–25).

However, some interviewees with nutritional knowledge trusted the FF the least and they expressed a feeling of losing control and responsibility. This will be considered in more depth in the next sub-theme.

Losing control

The interviewees felt loss of control and responsibility for their health, as the manufacturers nowadays master the responsibility for our health; "*they think for me and then I become dependent on it*" (w 26–35). To regain control you yourself could cook foods with the same effect as the FF. Contradictory to this, some interviewees were reluctant to become aware of the contents of everything they eat in order to control their health. They thought that there is an inherent knowledge in our bodies of what we should eat. Instead of listening to the manufacturers we should, as natural beings, be able to feel what nutrients our bodies require and listen to these requirements. It was also thought that our genes, rather than our diets, decide whether we will be taken ill or stay healthy. Therefore, FF products are not able to rescue us from future diseases.

FF were thought to be consumed by individuals who want to control everything they ingest and also the risk of falling ill. Using FF makes people feel that they are keeping themselves healthy and free from future diseases. However, there was a risk associated with believing FF to be healthier than normal foods. It could make people exchange a varied diet for a monotonous FF diet, possibly causing nutrition deficiencies.

It was considered to be too large a responsibility for an individual to start using FF—as long as they are healthy—without consulting a physician or dietician in advance. An individual was thought to not possess enough nutritional knowledge to buy FF without the consultation of trusted authorities. Two women discussed:

> *W1—No, but I would rather discuss with someone who, who think they know more about the subject [before buying], or a physician.*
>
> *W2—Who knows science*! (w +51).

FF were suggested to be marketed through trusted authorities, e.g., physicians or dieticians, knowledgeable in nutritional science. Contradicting, the elderly men thought that physicians were sceptical towards and ridiculing FF because of their unfamiliarity with the concepts. Therefore, doctors cannot be consulted prior to people's consuming cholesterol-lowering margarine.

The necessity of FF

The discussions of the insecurity and disbeliefs in the effects resulted in debates of the necessity of FF.

Ethical dilemmas

Ethical dilemmas considering the existence and use of FF emerged. Health was perceived as a class issue, as the well-educated in general are believed to live healthier lives, eat better

and search for information, whereas the low-educated neither care nor can afford expensive foods. The FF, being expensive, would not help equalise health between different socio-economic classes and, thus, would not promote public health. Instead, FF products were perceived as counterproductive in a health perspective, by increasing the health of the healthy. FF are being marketed towards those knowledgeable in health and nutrition, named "*health freaks*", and those who can afford to buy FF. The men in the quote below comment that FF will be bought by the healthy individuals and not by those who are thought to be in need.

M1—But with these products I think that most of those who'll snatch up on them are already those who... keep themselves going pretty well, who use the gym and exercise and such things... it's not sort of the big crowd who go on sick-leave that'll eat these healthy things, I think.

M2—No, unfortunately not. I think so, too.

M1—And then it doesn't matter, then it's, it's almost no better in the health perspective (m 18–25).

The manufacturers' who profit by improving people's health was another ethical dilemma. FF are justified when produced to help individuals become healthier, but unethical when produced for manufacturers to profit from consumers' health concerns. Opposed to this, the existence of FF was argued as ethical if FF could decrease even one individual's risk of coronary vascular disease, despite the producer's profiting on it.

Compensation for an unhealthy lifestyle

The interviewees were convinced that FF would be unnecessary if people lived like our ancestors did—which means eating a proper, varied diet with an abundance of fruits and vegetables—and if they exercised. It was commonly believed that if we would eat what is "right" and live a life that is "right" for us, we would not need FF.

W1—If you eat right you won't need all these special [*foods*] [...].

W2—Yes, if you live healthily and exercise, you don't need all this (w +51, gr2).

One FF product only cannot contribute to better health for someone at risk of a diet-related disease, especially as a particular diet often does not show results until 20 years later. Individuals at risk require several dietary changes, and a change of their whole lifestyle, because *"one parameter does not make a difference"* (m 18–25). However, one interviewee had managed to lower her blood lipids by eating omega-3 enriched fibre-rich bread, thus reducing the risk of coronary vascular disease by consuming one FF product. Despite this, the interviewees thought that there are no short-cuts to health and a healthy lifestyle. The interviewees often mentioned the importance of eating a balanced diet and living a balanced life. They believed that life is about reaching a balance between activity and recreation, health and indulgence. This balance should be achieved by natural means. Therefore FF were not thought to be the way to achieve this goal. The interviewees considered FF to delude people into believing in simple solutions. This was recognised as a risk because FF could be used by us to falsely compensate for an unhealthy lifestyle and diet, instead of our learning to live healthy lives with healthy foods and exercise. Thus: *"We shouldn't use these things* [*FF*] *just to get a grip of our public health diseases"* (w 36–50). FF were believed solely to cover the symptoms of diseases, "*like a fake diet*" (w 36–50), rather than change the reasons behind the diseases.

—It's a quick fix for things, kind of cheating a bit, 'eat this and you'll become healthy. You don't need to think things through too much', which is, I think, the biggest problem because then you haven't really changed your lifestyle (*—yes, exactly*) (w 26–35).

Nevertheless, the interviewees also perceived the production of FF to mean caring for people's health. There are those who, because of a handicap or inherited genes, cannot alter their lifestyle or state of health. Furthermore, FF were thought to facilitate active choices; individuals can simply exchange one or two unhealthy foods for healthier alternatives, without excluding foods from their diets. It is a change that can be made with little effort and, thus, does not impair their quality of life.

—It has to be something that's not difficult, you know. To buy this margarine [*cholesterol-lowering*] *instead of some other low-fat margarine isn't difficult and it doesn't change my quality of life in any way, because, you know, to the worse.* [...] *if you want people to change their lifestyle then it has to be... in a way that they don't think their quality of life is impaired* (w 18–19).

The need among others

A distinction between "us" and "them" was made. Thus, FF were considered more necessary for others than for the interviewees themselves. FF products are produced for individuals with imperfect and unbalanced lives, who are ignorant of their health. FF is for people in indisputable need, those with health problems, an upset stomach, diabetes, high cholesterol, or other diet-related diseases.

—Honestly, isn't it mainly about people with problems, I mean, food digestion or nutrition balance or, well... diabetics or, and so on, that should be attentive to these things? (m 36–50).

The younger interviewees thought that FF are for old, diseased people needing to change their lifestyle. Therefore, cholesterol-lowering margarine was called "*the pensioner's butter*" (m 26–35). The older interviewees thought that FF were mainly for the young, for those with no time or interest to cook or care for their health.

The men might consider buying FF if it was "*a matter of life or death*" (m 36–50), while the women preferred to make lifestyle and dietary changes instead of using FF. The interviewees considered themselves either having a good enough diet and lifestyle or not having enough health problems for using FF.

Personal preferences

Whether a FF was a less preferred or more disliked type of food, it did not appeal to the interviewees. They could consider buying FF if there was proof of a guaranteed effect, if their taste was not bad and if the price was not higher than their conventional counterparts. Otherwise, they could cook the same, healthy food themselves.

The younger interviewees found FF useful as quick and healthy foods in this fast-moving world, with the lack of time to take one's health into account. The quote below, from the end of the interview with men 36–50 years of age, tells us that the tastiest foods are preferred until illness is present.

M1—I buy the tastiest [*foods*]*, you know.*

M2—Yes, so do I too. As long as I don't have a problem, I'll do that (m 36–50).

Discussion

The results of the present study primarily reveal that consumers are confused because of the ambiguity of what the FF products are

and what they contain. Due to the unknown and artificial substances there were distrustful attitudes and scepticism expressed about the FF. Therefore, the willingness to define and understand what new foods are and what they contain were highlighted. In general, the interviewees perceived FF as unnecessary; individuals with health problems should primarily change their lifestyle and their whole diet, not just add or exchange one food item for another. The interviewees perceived a risk if FF were to be regarded as a quick fix and used in order to compensate for a sedentary lifestyle.

The interviewees in the present study discussed ethical dilemmas in connection with the use of FF, both in regard to the manufacturer and the consumer. The interviewees perceived the manufacturers as unethical because they sell FF and make extensive profits on the existence of public health diseases. This was deeply felt, as public health diseases were thought mostly to affect the economically vulnerable. The manufacturers of FF, like the producers of organic foods, are criticised for food prices only affordable by the affluent (Frewer et al., 2003). The high prices cause an obstacle for purchasing the foods (Magnusson et al., 2001). Further, the interviewees thought that FF products were consumed by the "health freaks", the knowledgeable, or the affluent. These individuals are the ones with big enough interest, knowledge or economy to consume these higher priced foods, but they are also the ones least in need of FF. Therefore, the interviewees thought FF to be contra-productive in a health perspective by increasing the health differences between different groups of people.

On the other hand, the interviewees thought that FF would compensate for a sedentary lifestyle. The interviewees thought that individuals with risk behaviour ought primarily to change their lifestyle but they also thought that the use of FF was justified if a lifestyle change was incapable of effectively altering the biomarkers, such as high cholesterol. According to the interviewees in the present study, health is achieved through a balance between lifestyle factors—and FF are not included in such a balance. Before the state of imbalance, the interviewees thought that balance and control in life is achieved by natural means. According to others (Coveney, 2006; Lupton, 1996), imbalanced health or a body out of control historically indicated an individual not being a "good" citizen—unable to control his/hers bodily health—nor able to make the "right" decisions according to what constitutes the healthy life. Today, science has linked some of our health problems to sedentary lifestyles and diets; accordingly, these health problems can be managed and cured by a change of lifestyle and diet. Thus, there are moral meanings of what constitutes healthy foods and a healthy person (Lupton, 1996). According to the findings in the present study, these moral meanings and judgments appear to be current when Swedish consumers discuss the need of FF. The interviewees expressed that those in need of FF are degenerative individuals who have not made the "right" decisions concerning their health. These moral attitudes in connection to FF are, to our knowledge, unique for the Swedish consumer. As long as health problems are being explained as people having an immoral lifestyle, thus giving them a bad conscience, FF will not be perceived as everyday foods.

Furthermore, people—apart from the interviewees themselves—were perceived of as in greater need of FF, thus confirming the likelihood of us finding others to run greater risks of health problems than we ourselves. The phenomenon of perceiving other people at greater risk of health problems than oneself is acknowledged within research on consumers' risk perception (Hansen et al., 2003; Knox, 2000; Weinstein, 1982; Verbeke et al., 2007). Further, risks caused by food technology, such as food processes and additives, are considered to be out of our control, whereas lifestyle and dietary risks are perceived to be in our control (Weinstein, 1982). Factors perceived to be in our control are of less concern to us and therefore without the need of adjustment (Verbeke et al., 2007). Not perceiving oneself at risk of a health problem prevents people from apprehending health information and from changing their lifestyle, even though they could be at risk (Frewer et al., 2003; Knox, 2000; Korzen-Bohr & O'Doherty Jensen, 2006; Weinstein, 1982). As long as no health problems are at stake, lay people prefer to improve their diet by changing their choice of natural foods rather than processed, novel foods (Frewer et al., 2003). Therefore, this lack of perceiving oneself as running a health risk could explain the interviewees' views on FF as useless to themselves.

There is, furthermore, a stereotypical idea among lay people of who runs a risk of health problems (Frewer et al., 2003; Weinstein, 1987). As Frewer et al. mention (2003), if there is a certain stereotype that consumers believe to fit in with the user of FF, they are unwilling to be identified with this stereotype. In the present study there were primarily two stereotypes connected to FF: the "health freak" and the "unhealthy, sedentary" person. Previously, consumers perceived the buyer of healthy foods and FF to be more self-disciplined (Saher, Arvola, Lindeman, & Lähteenmäki, 2003). The reluctance of perceiving oneself in a need of FF, as mentioned by the interviewees in this study, could be—with the influence of Fischler (1988)—interpreted as: "We don't want to eat what we don't want to be".

A willingness to define what is FF emerged among the interviewees. They wondered what the FF presented to them really were "normal" foods or medicine-like foods. The consumers' uncertainties of the foods and an ambiguity whether FF products are foods or medicines have also emerged in recent research (Korzen-Bohr & O'Doherty Jensen, 2006). Due to the uncertainty and confusion of what the foods are and what they contain, the interviewees felt sceptical and distrustful towards FF. According to Fischler (1988), individuals feel a loss of control of their food ingestion and, consequently, their bodies when they lack understanding of what they eat. The interviewees thought that the manufacturers only, driven by unethical principles and therefore not to be trusted, were responsible for the knowledge and control of food contents. When consumers distrust manufacturers and authorities they adhere to personal experiences of dieting or exercise regimes in order to regain control of their food ingestion and body (Fischler, 1988; Lupton & Chapman, 1995). This is possibly the reason why FF are not included in these regimes.

As the interviewees expressed in the present study, they felt uncertain whether unnatural, processed, health-claiming foods are actually healthy, as they contain additives. Consumers' reluctance to unnatural and processed foods may be explained by a belief that unnatural foods are more difficult than natural foods for the body to digest (Lupton, 1996). Lupton (1996) also claims that we believe that we know what we eat if the food is natural and free from treatment, additives and processes. By eating the unnatural and processed foods we lack control of what we are eating and, again, we do not know who we are (Fischler, 1988). Other researchers claim that consumers do not perceive foods containing additives and artificial substances as healthy because processed foods, such as FF, are not natural and therefore not healthy per se (Bäckström, Pirttilä-Backman, & Tuorila, 2003; Hansen et al., 2003; Jonas & Beckmann, 1998; Niva, 2007). According to consumers enriched foods, such as FF, could carry unforeseen and dangerous side-effects (Niva, 2007) or even cause cancer or allergy (Haukenes, 2004). This understanding of FF as synonymous with unnatural and dangerous substances hinders the impression of FF as essentially healthy (Niva, 2007).

The debates of production methods and artificial ingredients in processed foods have become more intense in Sweden in recent years (Nilsson, 2008). Swedish people more often perceive natural and fresh foods as synonymous to healthiness, as compared to Danes and Finns (Lappalainen et al., 1998; Margetts et al., 1997). A marketing agency (AC Nielsen) reveals an increased interest for "natural" products and "tastes" on the Swedish market, while the light-products step back (Ringholm, 2008). Thus the market for artificial and processed foods appears, for some product ranges, vague. Therefore, the processed FF could meet with difficulties in becoming accepted on the Swedish food market. Recently, during the spring of 2008, one of the products (yoghurt with muesli smoothening out blood sugar level) used in the focus groups, has been taken out of production due to too low a consumer interest (personal communication with the dairy factory). Still, the FF products are comparable to the foods commonly found in Swedish homes. Some of the probiotic fruit drinks are alike traditional bilberry or rosehip soup eaten as a snack or dessert. Others are comparable to fruit juices, a common drink for breakfast. The cholesterol-lowering margarines are alike margarine spreads normally used on bread. Yoghurt with muesli smoothing out the blood sugar level is comparable to light yoghurt with cereal, commonly used as a breakfast meal, and the fibre-rich bread with omega-3 fatty acids is similar, except for the omega-3 fatty acids, to traditional and customary whole meal rye bread (Möller, 2008).

It is difficult to foresee how the newly adopted EC regulation on foods with health claim (Regulation (EC) No. 1924/2006) will affect attitudes to FF among consumers. In Sweden, the EC is perceived as distant, why it will probably take some time before we put our trust in the European Food and Safety Authority (EFSA) and its regulation and control of foods with health claims. Also, two consumer researchers have expressed their scepticism towards the enlarging potential which the new EC regulation is believed to have on the FF market (Bech-Larsen & Scholderer, 2007). Bech-Larsen and Scholderer (2007) assume that the EC regulation will not accept health claims on foods focusing on general well-being. Instead, they think that newly produced and invented foods with more complex claims will primarily be accepted by EFSA (Bech-Larsen & Scholderer, 2007). Previous research states that more complex and product-specific health claims will find it harder to gain acceptance and trust among the general public (Urala, Arvola, & Lähteenmäki, 2003). Within the new EC regulation EFSA will independently review and verify the health claims on foods in Europe (Regulation (EC) No. 1924/2006). All health claims will be verified with sufficient and substantial scientific evidence and it is believed that the consumers will then trust the health claims (Aggett, Antoine, & Asp, 2005; Coppens, da Silva, & Pettman, 2006). However, there is a risk that the complex regulations and extensive flora of different criteria of the various types of health claims, suggested by EFSA, confuses the consumer further, which could lead to decreased trust in the health claims and their products.

Methodological considerations

In qualitative investigations the concepts of credibility, dependability and transferability represent different aspects of trustworthiness and should therefore be taken into consideration (Graneheim & Lundman, 2004). In order to increase the credibility, our interviewees were recruited from various places and public institutions in a middle-sized city. The city is, however, dominated by two large universities, which is possibly why the interviewees were rather well-educated. The self-selected interviewees were to a larger extent unemployed and on sick-leave, than would have been expected. The interviewees were presumably more interested in food than the average Swedish person. The authors maintain that the interviewees represent a wide range of consumers of different gender, age and experience, which is of importance in qualitative research (Sandelowski, 1995).

Important for the credibility is the outcome of the discussions in the focus groups and the interviewees' possibilities to express their thoughts. The setting of the focus group is of importance for this issue, as homogenous groups can increase the comfort within the groups. In what way the focus group should be homogenous depends on the topic of discussion and the aim of the study (Krueger & Casey, 2000). In the present study the focus groups were homogenous regarding gender and also, to some extent, regarding age. Men have a tendency to dominate a group of both genders (Krueger & Casey, 2000), but since the topic here was food—and women tend to be more involved in these questions (Beardsworth et al., 2002)—it could have been that the women dominated the men. Some of the male interviews were less informative, whereas the corresponding female groups contained extensive discussions, why our keeping women and men separate possibly did increase the comfort in the groups. An indication of a comfortable focus group environment was the disparate opinions of the FF in each focus group discussion. Thus, it is to be assumed that the interviewees freely expressed their opinions.

The credibility of the results is also increased by the discussions and agreements among fellow researchers and authors, and by the presentations of interview quotations (Graneheim & Lundman, 2004). There were several seminar discussions about the results—and also verifications of the themes and sub-themes by a fellow researcher familiar with the analysis method.

In order to minimise threats of dependability, all focus groups were moderated by the same person (first author), who followed the same interview guide through all focus groups and who transcribed all interviews verbatim (Graneheim & Lundman, 2004). The authors have been influenced by the literature while analysing the data, however the analysis and the presentation of the results have taken new findings into account.

The transferability of the results is to be judged by the reader. Factors which should be taken into considerations are the demographics of the participants (presented in Table 1), the products used in the focus groups and the fact that the study was conducted with Swedish consumers. Although the FF products chosen as stimuli during the focus groups were alike food products easily found in Swedish homes, they may have influenced the outcome. Products with less distinct physiological advantages, such as the yoghurt with muesli, made the interviewees more sceptical. The muesli neither tasted nor looked like regular muesli—"*rather like pellets*"—and therefore it was perceived by most participants as having a strange appearance, which possibly caused less positive attitudes (Lyly, Roininen, Honkapää, Poutanen, & Lähteenmäki, 2007; Verbeke, 2006). One of the cholesterol-lowering margarine packages contains a brochure with information about the product—its contents, effect and for whom it has been designed. This information could have influenced the discussion and the interviewees' attitudes towards the product. Fibre-rich bread is customary in the Swedish diet, but omega-3 fatty acids (i.e., fish oil) in bread are not. Therefore, the bread caused more sceptical thoughts.

Conclusion

The impressions of FF among Swedish consumers are complex and versatile. In the focus groups almost all arguments were

followed by counter-arguments. Hence, an unequivocal picture of the impressions of FF is unachievable. Nevertheless, scepticism and questions of trustworthiness regarding the unknown additives and vague effects were evident. FF products were not regarded as useful for the interviewees themselves but for those in real need. The interviewees thought that FF are being used to compensate for an unhealthy lifestyle, which was perceived as a risk. This attitude appears, to our knowledge, restricted to the Swedish consumers. In the interviewees' opinion people should eat and live a healthy life and manage without FF. These results give new perspectives on consumers' impressions and perceived need of FF, though, the result should be transferred with caution to other food cultures. However, further studies on the attitudes to FF will be needed to reveal how the health claims, accepted according to the EC regulation, are perceived by the consumers.

Acknowledgement

This study was financed by VINNOVA, the Swedish Governmental Agency for Innovation System. Eva Landström was responsible for data collection, qualitative analysis, and manuscript preparation. Ulla-Kaisa Koivisto Hursti was, in co-operation with Eva Landström, responsible for data collection as well as discussions of manuscript. Maria Magnusson was responsible for critical discussions of qualitative analysis and manuscript. The authors wish to thank all the participants in the focus group interviews. The authors wish to thank Ylva Mattsson Sydner for critical discussion of the qualitative analysis and Clara Aarts for examining the content and concepts of the sub-themes and themes.

References

Aggett, P. J., Antoine, J. M., Asp, N. G., Bellisle, F., Contor, L., Cummings, J. H., et al. (2005). PASSCLAIM: consensus on criteria.. *European Journal of Nutrition, 44*(Suppl. 1), i5–i30.

Almér, L. O., Hermansen, K., & Vessby, B. (2002). *Statement concerning evaluation of the scientific documentation behind a product specific health claim. Product: primaliv yoghurt (200 g) with muesli (26.5 g)*. Lund: SSN Foundation.

Asp, N. G., & Bryngelsson, S. (2007). Health claims in the labelling and marketing of food products: the Swedish food sector's Code of Practice in a European perspective. *Scandinavian Journal of Nutrition, 51*(3), 107–119.

Asp, N. G., Laser Reuterswärd, A., & Liljeberg, H. (1998). *Product specific physiological claims—suggestions for extension of the Self-regulation program [in Swedish: produktspecifika fysiologiska påståenden (PFP)-Förslag till utvidgning av egenåtgärdsprogrammet]*. Lund: Swedish Nutrition Foundation.

Bäckström, A., Pirttilä-Backman, A.-M., & Tuorila, H. (2003). Dimensions of novelty: a social representation approach to new foods. *Appetite, 40*, 299–307.

Bäckström, A., Pirttilä-Backman, A. M., & Tuorila, H. (2004). Willingness to try new foods as predicted by social representations and attitude and trait scales. *Appetite, 43*(1), 75–83.

Beardsworth, A., Bryman, A., Keil, T., Goode, J., Haslam, C., & Lancashire, E. (2002). Women, men and food: the significance of gender for nutritional attitudes and choices. *British Food Journal, 104*(7), 470–491.

Beardsworth, A., & Keil, T. (2001). *Sociology on the menu—an invitation to the study of food and society*. London and New York: Routledge.

Bech-Larsen, T. G., & Grunert, K. G. (2003). The perceived healthiness of functional foods. A conjoint study of Danish, Finnish and American consumers' perception of functional foods. *Appetite, 40*, 9–14.

Bech-Larsen, T., & Scholderer, J. (2007). Functional foods in Europe: consumer research, market and regulatory aspects. *Trends in Food Science and Technology, 18*, 231–234.

Bruce, Å. (2000). *Food for health and long life?—investigation regarding product specific health claims [In Swedish: livsmedel för hälsa och långt liv?—utredning om produktspecifika hälsopåståenden] (No. 6)* Uppsala: National Food Administration.

Coppens, P., da Silva, M. F., & Pettman, S. (2006). European regulations on nutraceuticals, dietary supplements and functional foods: a framework based on safety. *Toxicology, 221*, 59–74.

Coveney, J. (2006). *Food, morals and meaning—the pleasure and anxiety of eating* (2nd ed.). London and New York: Routledge, Taylor and Francis Group.

Danielsson, Å. , Brummer, R. J., & Lauritsen, K. (2003). *Statement concerning evaluation of the scientific documentation behind a product specific health claim. Product: proviva fruit drink with Lactobacillus plantarum 299v*. Lund: Swedish Nutrition Foundation.

Devcich, D. A., Pedersen, I. K., & Petrie, K. J. (2007). You eat what you are: modern health worries and the acceptance of natural and synthetic additives in functional foods. *Appetite, 48*(3), 333–337.

Diplock, A. T., Aggett, P. J., Ashwell, M., Bornet, F., Fern, E. B., & Roberfroid, M. B. (1999). Scientific concepts of functional foods in Europe: consensus document. *British Journal of Nutrition, 81*(S1), S1–S27.

Fischler, C. (1988). Food, self and identity. *Social Science Information, 27*(2), 275–292.

Frewer, L. J., Scholderer, J., & Lambert, N. (2003). Consumer acceptance of functional foods: issues for the future. *British Food Journal, 105*, 714–731.

Graneheim, U. H., & Lundman, B. (2004). Qualitative content analysis in nursing research: concepts, procedures and measures to achieve trustworthiness. *Nurse Education Today, 24*, 105–112.

Hansen, J., Holm, L., Frewer, L. J., Robinson, P., & Sandøe, P. (2003). Beyond the knowledge deficit: recent research into lay and expert attitudes to food risks. *Appetite, 41*, 111–121.

Haukenes, A. (2004). Perceived health risks and perception of expert consensus in modern food society. *Journal of Risk Research, 7*(7–8), 759–774.

Johnson, O., Mensink, R. P., & Pedersen, J. I. (2002). *Statement concerning evaluation of the scientific documentation behind a product specific health claim Product: Becel pro-activ—35.0% spread with 8.0% plant sterols*. Lund: SSN Foundation.

Johnson, O., Mensink, R. P., & Pedersen, J. I. (2006). *Statement concerning evaluation of the scientific documentation behind a product-specific health claim. Product: benecol spreads with added plant stanol esters*. Lund: SSN Foundation.

Jonas, M., & Beckmann, S.C. (1998). *Functional foods: consumer perception in Denmark and England.* (No. Working paper no. 55). Aarhus: MAPP—Centre for Marketing Surveillance Research and Strategy for the Food Sector, The Aarhus School of Business.

Knox, B. (2000). Consumer perception and understanding of risk from food. *British Medical Bulletin, 56*(1), 97–109.

Korzen-Bohr, S., & O'Doherty Jensen, K. (2006). Heart disease among post-menopausal women: acceptability of functional foods as a preventative measure. *Appetite, 46*(2), 152–163.

Krueger, R. A., & Casey, M. A. (2000). *Focus groups: a practical guide for applied research* (3 ed.). Thousand Oaks: Sage Publications Inc United States of America.

Labrecque, J., Doyon, M., Bellavance, F., & Kolodinsky, J. (2006). Acceptance of functional foods: a comparison of French, American, and French Canadian consumers. *Canadian Journal of Agriculture Economics, 54*, 647–661.

Lappalainen, R., Kearney, J. M., & Gibney, M. J. (1998). A PAN EU survey of consumer attitudes to food, nutrition and health: an overview. *Food Quality and Preference, 9*(6), 467–478.

Lupton, D. (1996). (1 ed.). *Food the body and the self* (vol. 1). London, Thousand Oaks, New Delhi: SAGE Publications Ltd.

Lupton, D., & Chapman, S. (1995). 'A healthy lifestyle might be the death of you': discourses on diet, cholesterol control and heart disease in the press and among the lay public. *Sociology of Health and Illness, 17*(4), 477–494.

Lyly, M., Roininen, K., Honkapää, K., Poutanen, K., & Lähteenmäki, L. (2007). Factors influencing consumers' willingness to use beverages and ready-to-eat frozen soups containing oat β-glucan in Finland, France and Sweden. *Food Quality and Preference, 18*(2), 242–255.

Magnusson, M., Arvola, A., Koivisto Hursti, U. K., Åberg, L., & Sjödén, P. (2001). Attitudes towards organic foods among Swedish consumers. *British Food Journal, 103*(3), 209–236.

Margetts, B., Martinez, J., Saba, A., Holm, L., & Kearney, M. (1997). Definitions of "healthy" eating: a pan-EU survey of consumer attitudes to food, nutrition and health. *European Journal of Clinical Nutrition, 51*(Suppl. 2), S23–S29.

Miles, S., & Scaife, V. (2003). Optimistic bias and food. *Nutrition Research Reviews, 16*, 3–19.

Möller, E. (2008). *SwedMeal—part I. Assessing the most commonöy consumed food products and beverages for breakfast and snack meals in the adult Swedish population*. Unpublished Master thesis, Stockholm University and Karolinska Institute, Stockholm.

Nilsson, M.-E. (2008). *The secret chef: the unknown cheatings with the food on your plate. [In Swedish: Den hemlige kocken: det okända fusket med maten på din tallrik]*. Falun, Ordfront Förlag AB.

Niva, M. (2007). 'All foods affect health': understandings of functional foods and healthy eating among health-oriented Finns. *Appetite, 48*(3), 384–393.

Niva, M., & Mäkelä, J. (2005). Finns and functional foods: socio-demographics, health efforts, notions of technology and the acceptability of health-promoting food. *International Journal of Consumer Studies, 31*(34–35), 34–45.

Regulation (EC) No. 1924/2006 of the European Parliament and of the Council 20 December 2006 on nutrition and health claims made on foods. *Official Journal of the European Union* OJ L12 pp. 3–18. Corrigendum 18.1.2007.

Ringholm, M. (2008). *The Swedes choose taste and naturalness instead of diet food [In Swedish: Svenskarna väljer smak och naturlighet framför lightprodukter]*. Retrieved 2008-08-18, from http://www.acnielsen.se/news/release080204.shtml.

Rozin, P. (2005). The meaning of "Natural". *Psychological Science, 16*(8), 652–658.

Saher, M., Arvola, A., Lindeman, M., & Lähteenmäki, L. (2003). Impressions of functional food consumers. *Appetite, 42*, 79–89.

Sandelowski, M. (1995). Focus on qualitative methods—sample size in qualitative research. *Research in Nursing & Health, 18*, 179–183.

Shepherd, R. (1989). Factors influencing food preferences and choice. In R. Shepherd (Ed.), *Handbook of the psychophysiology of human eating* (1st ed., pp. 3–24). Chichester: John Wiley & Sons Ltd.

Swedish Nutrition Foundation (2004). *Health Claims—in the Labelling and Marketing of Food Products, The Foods Sector's Code of Practice* (No. 2004:1). Swedish Nutrition Foundation, Livsmedelsföretagen, Svensk Daglivaruhandel. SNF Swedish Nutrition Foundation, Lund.

Urala, N., Arvola, A., & Lähteenmäki, L. (2003). Strength of health-related claims and their perceived advantage. *International Journal of Food Science and Technology, 38*, 815–826.
Urala, N., & Lähteenmäki, L. (2007). Consumers' changing attitudes towards functional foods. *Food Quality and Preference, 18*, 1–12.
Verbeke, W. (2005). Consumer acceptance of functional foods: socio-demographic, cognitive and attitudinal determinants. *Food Quality and Preference, 16*, 45– 57.
Verbeke, W. (2006). Functional foods: consumer willingness to compromise on taste for health. *Food Quality and Preference, 17*(1–2), 126–131.
Verbeke, W., Frewer, L. J., Scholderer, J., & De Brabander, H. F. (2007). Why consumers behave as they do with respect to food safety and risk information. *Analytica Chimica Acta, 586*(1–2), 2–7.
Weinstein, N. D. (1982). Unrealistic optimism about susceptibility to health problems. *Journal of Behavioral Medicine, 5*(4), 441–460.
Weinstein, N. D. (1987). Unrealistic optimism about susceptibility to health problems: conclusions from a community-wide sample. *Journal of Behavioral Medicine, 10*(5), 481–500.