



Exploration of projective techniques to unravel health perception

Techniques to
unravel health
perception

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Abstract

Purpose – This paper seeks to explore the design, organisation and application of group discussions in which projective techniques (expressive and associative) are used to unravel health perception of consumers in cognitive and affective terms.

Design/methodology/approach – A trained moderator led four group discussions in which 24 Dutch women, divided into two groups of six women aged between 50 and 65, and two groups of women with young children (0-7 years old) participated. By means of expressive and associative techniques participants discuss health and food based on non-verbal expressions, namely, drawings and abstract paintings made by themselves. The participants selected and discussed relevant terms related to food and health based on their interpretations and associations of images.

Findings – Participants related healthy to feeling free and happy (affective) and implied a balance between being active and passive. “Health” and “food” are associated with terms of nature (e.g. season, water and sun), specific products (vegetables and fruits), ingredients (vitamins, fibres, minerals) and no additives (cognitive).

Originality/value – The expressive and associative group discussions proved to be a promising, fascinating and participant-friendly approach to gain an insight into the affective and the cognitive aspects that consumers relate to health-promoting product characteristics.

Keywords Personal health, Health foods, Perception, Consumers, Group discussion, The Netherlands

Paper type General review



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Introduction

Consumer-oriented product development takes consumer needs as the starting point for the new product development process, and the product and production technology as a derivative thereof (Van Trijp and Steenkamp, 1998). Such an approach requires insight in consumer needs and the perception of related product characteristics. The implementation of this approach requires a methodology, which is able to give insight in the different aspects of consumer perception of products and its characteristics. Perception is the process of selection, organisation and interpretation of stimuli to a meaningful picture of the world around us. It includes both cognitive (i.e. the knowledge consumers have about foods) and affective factors (i.e. feelings and emotions) (Van Trijp and Meulenberg, 1996).

Most research methods are biased toward reason (Zaltman, 1997). By using methods for engaging and/or monitoring imagic activity, more complete representations can be provided of consumer thoughts and accounts of their behaviour (Zaltman, 1997). For a better understanding of consumer feelings, beliefs, attitudes and motivation which many consumers find difficult to articulate, projective techniques are beneficial (Goodyear, 1998; Webb, 1992). Projective techniques in particular based on expressive tasks like psycho drawing and association tasks might be a useful method for consumer oriented product development.

The aim of this research is to design, explore and apply projective techniques with an expressive and associative character to unravel health perception in cognitive and affective consumer terms.

Perception

It is demonstrated that both liking and behaviour attitudinal components towards an object inherently combine a con-summatory affective dimension with an instrumental/utilitarian cognitive dimension (Cantin and Dubé, 1999). The cognitive component of attitude about a food item may contain beliefs about its nutritional value and convenience, whereas the affective component of the food item may contain the encoded sensations, emotions and feelings associated with the object. Letarte *et al.* (1997) reviewed categories and subcategories of affective and cognitive origins of food-likes and dislikes. This interesting division demonstrates the relation of cognitive and affective aspects with food products and its characteristics. Sensorial, emotional and social aspects represent the affective part. The physiological consequences, functional and symbolic aspects represent the cognitive part. Consequently, it is important to pay attention to the cognitive aspects as well as to affective aspects of perception when trying to measure perception of consumers. In our study this categorisation is adapted (Letarte *et al.*, 1997) (see Table I). Health was regarded as an example of a physiological consequence of a product (Letarte *et al.*, 1997), while in our study health is considered in a wider perspective, namely the consumer perception of health, which includes cognitive as well as the affective aspects. Besides, the perception of quality, specific ideologies such as nature, environment and production were defined as symbolic aspects all with a cognitive character, but in our study these are described as the extrinsic characteristics (Dekker and Linnemann, 1998). Moreover, a symbolic category is added to represent the associations of consumer perception of health with an affective nature of origin, comprising aspects like harvest and sun. The authors are aware that sensorial aspects might be considered with cognitive bases, for example

Nature of origin	Category	Sub-category
Affective	Sensory aspect	Taste, texture, smell, visual appearance, food combinations, pleasure/displeasure, intense pleasure/displeasure, temperature, other
	Emotional aspect	Relaxation, happiness/love/friendship, stress/anxiety, reward
	Social aspect	Family tradition, cultural tradition, interrelation with people, other memories, in family, in pairs (lovers), with friends, alone
Cognitive	Symbolic	Sea, sun, flower
	Physiological consequences	Nutritional value, satiety, anticipated reactions, health
	Functional aspect	Flexibility, preparation, variety, price, innovation, consumption, storage
	Extrinsic aspect	Identification of beliefs about origin or about quality, specific ideologies such as nature, environment, etc.

Table I.
Codification scheme for
the origins of food likes
and dislikes

Source: Letarte *et al.* (1997)

when measuring sweetness or crispiness. In our study the sensorial aspects have affective bases, because those aspects comprehend pleasure and are put in contextual perspective. Although this division is useful to structure attitudes and perceptions of consumers, it is emphasised that the affective and cognitive aspects are inextricably related. This description about attitudes shows overlap with the above-mentioned description about the two aspects of perception (Van Trijp and Meulenberg, 1996). In this study the background of attitudes is used to interpret consumers' perception. An attitude is a lasting, general evaluation of people (including oneself), objects or issues (Solomon *et al.*, 1999). Attitudes consist of opinions towards an item or subject based on value judgement with a long-term character, while perception is an observation of stimuli, an activity of the brains with a more short-term character. Although the terms have a different meaning, there is a mutual influence of attitudes and perception. Moreover, both attitudes and perceptions are related to behaviour. Behaviour is described as the actual things that people do, like consuming, buying, choosing, and preferring. Many studies in the field of food sciences are related to the actual consumption of products, but in our study the considerations and emotions related to foods are central.

Demarcation

The research field was demarcated by selecting an important wish of the present consumer in industrialised countries, namely the wish to live a healthy life, and as a part thereof the intention to eat healthy. People are more aware of what is good for their health and what not. In the UK in the mid-1980s consumer attention and concern revolved around the content and ingredients in food rather than around specific products (Armistad, 1998). Consumers paid attention to ingredients like, for example, fat and additives, while nowadays consumers take their whole consumption pattern into consideration. As the 1990s have progressed, a macro view emerged with the focus on the healthiness of the diet as a whole and the benefits of a "balanced diet" rather than on the healthiness of individual constituents of the diet. Nevertheless, attitudes

towards health and food change relatively slowly over time (Lennernäs *et al.*, 1997). This study (Lennernäs *et al.*, 1997) concluded that European consumers mention “quality or freshness”, “price”, “taste”, “trying to eat healthy” and “family preferences” as the five most important factors influencing food choice. Females are more interested in health aspects of foods than males (e.g. Rozin, 1996; Roininen *et al.*, 1999; Nayga, 1998). Females, older and the more educated people are more likely than others to select “trying to eat healthy” as having a major influence on food choice (Lennernäs *et al.*, 1997). In general consumers relate health to feeling fit and/or not being ill. In our study the idea, feeling, image or sensation that consumers have, is part of consumer perception. A consumer might consider a product as healthy because of specific characteristics or image. These characteristics might be related to ingredients like vitamins, fat and additives or production methods. Nutritionists prefer to talk about a healthy diet or lifestyles in which some products suit better than others, like for example fruits and vegetables compared to sweets. In this study a product is considered to be healthy when it is healthy from a consumer’s perspective. Thus, in this phase of the study the scientific viewpoint of what is healthy is not taken into consideration.

Health is the starting point of our study, and additional demarcation is based on the food perception model based on social-psychological literature (Sijtsema *et al.*, 2002). The four determinants of food perception in this model, namely individual (demography, physiology, psychology and attitude), food (product characteristics and production system), environment (family and society) and context (time and place of consumption moment) are used to structure and demarcate the research field.

Selection of individuals, food products, context and environment

Individuals. Consumers are the individuals who buy and consume food and provide us with their ideas and beliefs about health and food. In this study consumers are selected who have a more than average interest in food and health, because it is expected that these participants are more willing to talk about it and can give more relevant information. In 1996 27 per cent male and 37 per cent female persons in the EU selected “trying to eat healthy” as one of the three most important influences on food choice (IEFS, 1996a). On the other hand, 44 per cent of the male and 32 per cent of the female persons selected taste as one of the three most important influences on food choice (IEFS, 1996a). In a study comparing four different cultures, namely consumers in the USA, France, Japan and Belgium, women showed greater concerns about the food-health link, compared to men (Rozin, 1996). Therefore, in this study women are the research group. Especially mothers with young children have a high interest in healthy aspects of food. Moreover, in our ageing societies women at the age of 50-65 are interesting participants, because of their interest in functional food, and health (e.g. IEFS, 1996; Costa, 2003). The comparison of these two groups is relevant because of the different stage of life, which is related to different life experiences.

Food products. In this exploratory stage food in general will be discussed to get an overall idea of what consumers perceive as healthy. When going more into detail, the moderator will talk about a traditional Dutch dinner, which consists of soup as a starter dish, a main course with meat, vegetables and potatoes, and a dessert of yoghurt or pudding. Especially vegetables are interesting to study, consumers consider it as healthy, but at present vegetable consumption is decreasing

(The Netherlands Nutrition Centre, 1998). Meat is fascinating because on one hand the attitude of consumers is that meat is unhealthy, and on the other hand the food culture associated with meat and the consumption of meat on a daily basis (Holm and Møhl, 2000).

Context and environment. Since a traditional Dutch dinner was selected, context is defined as the consumption moment of a meal at home in a everyday life situation. A traditional Dutch dinner is served at 18.00 hrs. Besides the aspects related to time and place of consumption also aspects with a social character were used to demarcate the research field. The environment is characterised as a setting, which is embedded in the Dutch culture. For structuring the discussion, talking about situations in the everyday life of a family setting seemed appropriate.

Methods background and implementation

Projective techniques help to enter the private worlds of subjects to uncover their inner perspectives in a way they feel comfortable (Gorden and Langmaid, 1988). It enables to get a better understanding of consumers' feelings (Goodyear, 1998). Gorden and Langmaid (1988) give five main types of projective techniques: association, completing procedures, construction procedures, expressive procedures and choice ordering procedures. For our study association and expressive procedures were selected, with psycho drawing being part of an expressive procedure, and indicating words by presented stimuli as associative technique. The chosen techniques were selected together with an expert discussion leader of projective techniques in the sphere of product development. When using expressive projective techniques participants are asked to role-play, act, draw or paint a specific concept or situation (Donoghue, 2000). Association means that the participants are presented a stimulus and they respond by indicating the first word, image or thought by the stimulus (Donoghue, 2000).

For each of the four expressive and associative group discussions, six participants were recruited. Three of the groups consisted of women with middle or higher education. One of the groups with women of 50-65 years old consisted of participants that were lower or middle educated.

The three-hour session consisted of three sections and included a break – see Table II for the experimental design. The session started with a general introduction of the researcher, the moderator, the method and the participants in order to focus the minds of the participants. After that, the participants introduced themselves by telling their names, ages, family situation, job, hobbies and the shops they visit. The group

Section	Procedure	Instruction
	Plenary introduction	Introduction of moderator, about topic, participants and method
1	Getting familiar with the method and the topic health	Make a drawing of the moment that you felt very healthy
2	Central part about health and food	Explanation of drawing and discussion Make an abstract painting of food and health
3	Selection terms of section 2	Interpretation of the paintings and discussion Select the most relevant terms, attributes and discussion

Table II.
Experimental design of
the expressive and
associative group
discussions

discussion started with the instruction to make a drawing, on A3 format, with wax crayon of a moment in life when they felt very healthy; this first task was used to get familiar with the topic, the procedure and the other participants. Next, each participant elucidated her drawing by explaining why she chose that particular moment and what she wanted to express with it. Afterwards, the six participants were asked whether they observed differences and similarities between the drawings. The second instruction was to make an abstract painting of food and health on A2 format. It was emphasised that everything they would paint was all right, because there is no good or false in this method. The participants used watercolour to express their ideas. Subsequently, they were asked to write down the title of the painting they made. The following step of this second section was that the group of participants, excluding the person who painted the drawing, extensively discussed what they saw objectively and subjectively. They were also stimulated to think of an appropriate title for the painting, but not forced to mention one. Many terms related to the central theme were gathered during this discussion of section 2. Section 3 started with a selection of the most relevant terms by asking the participants to put stickers behind the terms they thought were very important when talking about the central theme food and health. An extensive discussion, with specific questions about the terms gathered and the related products and product characteristics, followed to get more detailed information about the selected terms.

Results

The results of this alternative approach as part of consumer oriented product development is described in the same steps parallel with the group discussion and the thinking steps the participants made. The authors are aware that this might be confusing in the light of traditional way of data presentation. However, this way of presenting data makes sense when taking the thinking steps of consumers as guideline. The presentation of the results starts with feelings of consumers and ends with food and its characteristics

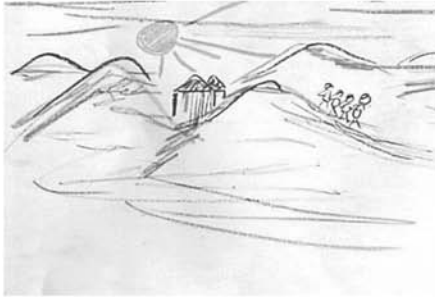
First section – feeling healthy

In the first section the drawings showed for nearly all participants a moment outside in spare time, e.g. celebrating holidays either active or relaxing. Different aspects of nature were depicted: sun, trees, hills, water represented by a sea or a lake. See Figure 1 for a representative example and the most frequently mentioned terms. Nearly all participants drew not only themselves, but also their partner or a friend. They used different, realistic colours. In the explanation they mentioned that healthiness means that you feel well, happy or free, that you can do whatever you want to do. After each individual presentation the participants talked about similarities and differences between the drawings. They discussed the importance of a balance in being active or not. In addition, enjoying nature is seen as healthy as well as relaxing.

Second section – health and food

Figure 1 shows a representative example of a painting of a mother with children of 0-8 years old and a women of 50-65 years old, together with the terms generated by the participants and the titles including the one of the painter herself. Only four titles were mentioned in the session, since the participants were not forced to give a title. In all of

Drawing and subjective terms of healthy moment



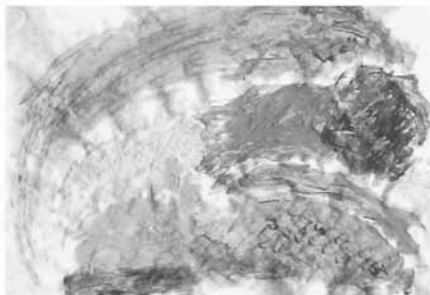
Nature	sun (light), trees (wood), water (sea), nice weather, outside/outdoor
Emotions	happiness, feeling dynamic, enjoyment, relaxing, feeling fine
Miscellaneous	being active, balance of active/passive, spare time, quietness

Abstract painting of health and food, objective and subjective terms and titles of paintings generated by mothers with children between 0-8 years old



Objective terms	dots, curls (spirals), mixed colours, paper is filled
Subjective terms	colourful, flower, bulb – something that grows, heart, love for nature, decorations strings, happy, spring, soil
Titles	outburst, spring, happiness, abundance of fruits and vegetables

Abstract painting of health and food, objective and subjective terms describing and titles of paintings generated by women between 50-65 years old



Objective terms	red, blue, yellow and green, 3 stripes, division, waving green, decreasing line, wave form, clear division
Subjective terms	river, wood, blue air, beach, corn field, heath, fire, red monster, course of the seasons
Titles	a bit of everything, everything in it's place, seasons, richness of the earth

Figure 1.
Results of the expressive
and associative group
discussions

the sessions the objective terms listed by the participants contain different forms and colours, e.g. yellow circles, blue stripes or red waves. Nearly all participants used all the colours they were given (yellow, blue, green and red). Some participants mixed colours, but in general the participants used the pure colours. Most participants used the whole sheet of paper for their painting. During the discussion about the subjective interpretation of the paintings many terms were enumerated.

Third section – selection and discussion

In the third section the participants selected the expressions they preferred by putting stickers behind the terms they related to food and health. They selected terms like; water, season, sun, (symbolic); nutritional value, easily digestible, fibres, water and no fat (physiological); variation and balanced (functional). Based on these selected terms a discussion was held. In all groups part of the discussion dealt with nature in a wide perspective, e.g. harvest, landscape, field of corn, sea, season. Talking about health and environmental influences meant clear water, fresh air, no poison or additives. When the group participants came closer to the topic of food and health, they agreed that this implied the absence of additives and the use of raw materials with no or little processing. Moreover, variation was often mentioned in combination with different products and a balanced diet. Also, easy digestion was often related to health-promoting food. Closer to the product level, the participants named many different health-promoting food products as part of a diet, e.g. apples, strawberries, tomatoes, cucumbers, but also product groups like fruits and vegetables. A very important aspect dealt with the taste and pleasure of the product, which was mentioned every now and then during the discussion. A participant stated it as follows: “pleasure is healthy”. Thus, participants stated that a balance between healthy and pleasant is very important. The participants deemed this balance necessary within a diet and dinner, but also within a meal.

Although most of the topics mentioned in the two groups of women were comparable, yet the level of abstractness was different. Mothers of children talked in quite tangible terms like specific products or processing steps, while the women between 50-65 years used more abstract terms to describe their paintings. Moreover, the young mothers related health often to the environment, whereas the women of 50-65 put it in a personal perspective.

With respect to the design and the implementation of the research methodology it was noted that the participants at first hesitated and felt insecure about doing it right. They could easily be reassured by stressing that what they did was always right, because their ideas and beliefs were the central issue. After a while the participants lost themselves in the discussion and afterwards they claimed that they really liked this way of dealing with and talking about the subject. Further, starting each section with an individual task was very satisfactory since this resulted in valuable input of all individual participants, and decreased the influence of dominant persons. In addition, an expert moderator proved important to guide the discussion, because other aspects not related to the topic were put forward, but also strong personal opinions and emotions. Considering this, an expert moderator is important to deal with these personal emotions to avoid confounding with the research objective. Finally, a group of six participants was efficient to work with.

Discussion

The application of the expressive and associative techniques resulted in data on both affective and cognitive aspects. In the first section only affective aspects, particularly social and emotional aspects related to health, were mentioned. The participants described health-related emotions like feeling happy, no stress and enjoying life. The presence of a partner, family or friends illustrated the social aspect related to consumers' health experience. As there are no right or wrong answers, it is hoped that the participants projected their own unconscious feelings in their answers (see also Solomon *et al.*, 1999). The second section consisted of the transition of affective aspects, like optimism, love and interaction, via aspects with a symbolic character like sun, season, and harvest to cognitive aspects such as vegetables. In the third section mainly cognitive aspects were discussed, in terms of product characteristics related to the more abstract terms mentioned in section one and two. An exception was the sensory aspect, a part of the affective component, which was mainly mentioned in the third section. During the session there was a change from talking about affective aspects to cognitive aspects. This might be caused by the questions stated in section three, which rationalise participants' thoughts. The verbalisation of the perception might cause the disappearance of the affective component of health perception.

In the sessions the participants mainly mentioned the aspects that have a positive influence on health, e.g. vitamins, feeling well. They had less attention for the aspects, which have a negative influence on health. This was probably caused by the instruction stated in the first section, which dealt with the positive associations of health. In the first section positive aspects were discussed, while in section three the discussion covered details about health and food, which included also the negative aspects; i.e. presence of fat, sugar and additives.

Participants view health and pleasure as inextricably related aspects of food.

Usually gustatory pleasure and healthy eating is related to unhealthy foods (e.g. Rozin *et al.*, 1999; Raghunathan *et al.*, 2006). In the group discussion healthy is discussed in a wider sense than only healthy eating, the starting point was feeling healthy in general and this feeling related to food. To be more precise health is discussed in a positive setting because positive elements of health were the starting point of the discussion, this might have influenced the direction of the discussion, while there was only little discussion about unhealthy aspects of food. In this perspective the participants also dealt with pleasure, which is also discussed in a wider sense, it includes gustatory pleasure as well as the feeling of enjoyment related to food consumption.

Especially in section three the participants mentioned pleasure often as an aspect influencing their food choice. This suggested that although healthy food is important to them, pleasure is an even more decisive element in food related behaviour.

Since women in different stages of their life were asked, different settings of everyday life of the family were considered. The only difference was that women between 50-65 years took health more personal, while mothers of young children put more emphasis on the environment. This different way of thinking could be influenced through their interpretation of the future. Women between 50-65 years old were probably more confronted with health problems of themselves, family and friends, which might influence their attitudes and behaviour according to food choice and daily activities. Moreover, they seemed to have more time for reflection, while the mothers of

young children put health in an environmental perspective to emphasise the health of their children, now and in the future. Although this difference is observed, concerning the affective aspects and product characteristics or attributes, no differences showed up.

Females are more interested in health issues than males. It was therefore expected that females would have stronger opinions and thoughts about the topic at stake, and would thus be able to provide the most valuable input. If the same discussion would have been held with participants who were less interested in health, it might have affected the depth of the discussion and the range of issues addressed. Future research could be done to get insight in the effects of interest in the topic on the results. Literature does not give a clue whether there are differences in expressing feelings while using projective techniques for specific groups of consumers, i.e. sex, age, educational background, thus further research is needed.

The rule of thumb is that at least three focus groups are conducted about each group you are interested in (Casey and Krueger, 1994). This is in accordance with the four expressive and associative group discussions in this study.

With respect to the methodology of the expressive and associative sessions, an accurate instruction is necessary to achieve an open-minded discussion atmosphere as soon as possible. The first drawing assignment might be considered as difficult, because in general adults are not expressing themselves by drawing. But after making the first drawing the initial hesitation invariably changed into inspiration. The alternation of individual and group tasks made that each participant was highly involved and that the possible influence of dominant participants was minimised. Moreover, making the paintings themselves means that the participants had a high involvement in the topic. This is important because the nature of the stimuli should however offer enough direction to evoke some association with the concept of interest (Gorden and Langmaid, 1988). During the discussions the participants showed that they liked to talk about the topic in this setting. Afterwards, they said that they appreciated this way of exchanging experiences and beliefs about food and health.

The selection of terms by participants in section three is an important step in the procedure, because it gives additional value to the method. The selected terms are the most relevant ones to the participants and therefore are an interesting starting point of consumer oriented product development. The discussion about the selected terms is crucial to get insight in the terms and product characteristics, which the participants relate to the central topic. In the four group discussions participants selected terms with a cognitive bases. Whether those terms are more relevant than the terms with an affective base needs further research, methodological as well as with respect to content. Points of attention are the questions stated during the discussion and more insight is needed in the position of the affective and cognitive aspects influencing food perception.

Usually, focus-group discussions encompass six to nine persons (Casey and Krueger, 1994). In our sessions six participants were selected because it was feared that in a larger group the discussion about the paintings would take too much time and would easily become boring to the participants. In a smaller group, with less than six participants, there might be too little inspiration and material to discuss, and the participants might not feel free to talk.

In conclusion, this research method of expressive and associative sessions was a useful tool to investigate consumers' perceptions of health-promoting product characteristics. The method appears suited to investigate other consumers' wishes as well, e.g. convenience, food safety or environment-friendly production. For those wishes cognitive and affective aspects influencing the perception will be unravelled and relevant product characteristics for food product development will be assessed.

Implications for future research and practice

Variation was mentioned as a component of a health-promoting diet in the group discussions. This means that the participants consider their diet in general when they talk about food related to health. Consequently, the consumption of a specific product or meal is always put in the context of the diet, this observation is in accordance with (Armistadt, 1998).

In the expressive and associative sessions the participants mentioned several health-promoting products, terms describing product attributes and product characteristics. These will be useful input for the development of health-promoting food products. The terms the participants mentioned were still on an abstract level, e.g. fresh and natural. Additional research is worthwhile to link these terms to product characteristics of a specific product. In a quantitative approach those generated terms will be made tangible for different groups of consumers to support the product development process (Sijtsema, 2003).

The food perception model for consumer-oriented product development (Sijtsema *et al.*, 2002) is a useful tool to select relevant variables that have to be taken in consideration in the food product development process. Additional steps have to be made to get insight in the contribution of the different variables of the determinants influencing perception to develop this approach into a fully-fledged tool. It requires, for instance, directions to make a well-balanced selection for operationalisation of the most relevant variables. Based on the determinants of the food perception model the next remarks are made. First, the implementation of the method with other groups of consumers will increase our knowledge on the perceptions of different consumer groups. A suggestion is to investigate the perceptions of, e.g. men and women of different ages, with a different kind of health interest. Second, the consumption moment and social environment have to be researched as important influences on health perception. For example, health perception related to out of home consumption is of interest because the amount of out of home consumption is increasing. Third, the perception of health is measured related to a specific topic and under specific circumstances. It has to be realised that both situation and environment and also the other determinants of the food perception model are important aspects influencing health perception of consumers. Especially, context might be seen as an important one. Therefore, generalising these results of consumers' health perception needs caution.

The participants in this study were very enthusiastic after the expressive and associative sessions. This might be a result of the way they talked about the topic, they experienced it as learning from one another, they were not confronted with threatening questions and whatever they did it was right.

In the expressive and associative group discussions mainly positive health-related aspects were mentioned, which might be a result of the introduction in which the

participants were asked to imagine a healthy moment in their life and in that sense rendered a positive perspective of health in their minds.

When considering the reliability of the method there needs to be insight in the stability of the data. The number of four group discussions is in accordance with the number of at least three suggested by Casey and Krueger (1994). If big differences were found between the different groups of women than for each group an additional session has to be done for a higher reliability. The selection of the relevant terms is done by the participants themselves, therefore there are no problems expected with interpretation reliability.

After applying this projective technique in food product development it would be worthwhile to get insight in whether this method is complementary or alternative to existing models. Furthermore, it is interesting to get insight in the usefulness of the approach for other food related topics. For example Costa *et al.* (2003) did a comparable research on convenience using collages in product design. Moreover, Ells (2001) mentioned that qualitative methods have proved effective in offering some insight into the changing role of food.

To get insight in the appropriateness of the method comparison of other methods to the expressive and associative group discussion would be worthwhile.

The external validity is quite small because the sample consisted of only women living in the same province of The Netherlands and therefore are not representative for the Dutch female population.

Concluding remarks

In this exploratory research the expressive and associative group discussions have turned out to be a method with enthusiastic participants and interesting results, which seem a worthwhile contribution to consumer-oriented product development. It gave insight in the affective as well as the cognitive aspects consumers relate to health-promoting product characteristics. The major findings are that health and pleasure are inextricable related to food perception of the participants, and that participants always consider their diet in general. The terms linked to health promoting product attributes are interesting starting points for a quantitative follow up to increase the insight in food perception.

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