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Research report

Knowledge, perceptions and preferences of elderly regarding protein-enriched functional food [☆]



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ABSTRACT

Promoting protein consumption in the elderly population may contribute to improving the quality of their later years in life. Our study aimed to explore knowledge, perceptions and preferences of elderly consumers regarding protein-enriched food. We conducted three focus groups with independently living (ID) elderly (N = 24, M_{age} = 67 years) and three with elderly living in a residential home (RH) (N = 18, M_{age} = 83 years). Both the ID and RH elderly were predominantly sceptical about functional food in general. Confusion, distrust and a perceived lack of personal relevance were main perceived barriers to purchasing and consuming these products, although a majority of the participants did report occasionally consuming at least one type of functional food. For the ID elderly, medical advice was an important facilitator that could overcome barriers to purchasing and consuming protein-enriched food, indicating the importance of personal relevance for this group. For the RH elderly, in contrast, sensory appeal of protein-enriched foods was a facilitator. Carrier preferences were similar for the two groups; the elderly preferred protein-enriched foods based on healthy products that they consumed frequently. Future studies should explore ways to deal with the confusion and distrust regarding functional food within the heterogeneous population of elderly.

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Introduction

Proteins are essential components of all cells of the body and serve, among other things, to maintain the body's immune system, produce muscles, transport molecules and speed up biochemical reactions. The recommended amount of protein intake per day is .8 g of protein per kilogram of body weight for adults, regardless of age (European Food Safety Authority, 2012; Institute of Medicine, 2005). This recommendation reflects the minimum protein intake necessary to avoid a negative nitrogen balance, which causes progressive loss of lean body mass.

This recommendation was made, however, despite research indicating that elderly require greater amounts of protein to maintain nitrogen balance (Morais, Chevalier, & Gougeon, 2006). In

addition, increased protein intake has been related to a range of health benefits in elderly, for example: faster rehabilitation after hip fractures (Schurch et al., 1998), increased lean body mass and strength (Boersheim et al., 2008) and a lowered risk of becoming frail (Beasley et al., 2010). The finding that the elderly body uses protein inefficiently (Morais et al., 2006) may explain these effects and supports the recommendation of a greater daily intake of protein by elderly (Wolfe, Miller, & Miller, 2008).

Because the world population is greying and life expectancy is increasing (National Institute on Aging, 2011), it becomes increasingly relevant to improve the quality of the later years in life. This way, elderly can remain living independently for longer and health care costs can be reduced. Promoting protein consumption in the elderly population may contribute to both (Wolfe et al., 2008). Increasing nutrient intake in elderly has been challenging, however, especially in elderly with malnutrition (Dunne & Dahl, 2007) who could benefit from increased protein intake the most (Morais et al., 2006). Simply increasing portion sizes or meal frequency is usually not successful in elderly because of physical problems with eating or decreased appetite (Best & Appleton, 2013; Taylor & Barr, 2006).

Specialized, nutrient-dense foods, in contrast, provide large amounts of nutrients in relatively small amounts of food and may be more appropriate (Dunne & Dahl, 2007). In line with this, it has been shown that small, nutrient-dense meals can increase protein intake in elderly without lowering their overall energy intake

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(Lorefält, Wissing, & Unosson, 2005; Smoliner et al., 2008). Replacing conventional foods with protein-enriched foods may thus be an effective way to increase protein intake in elderly.

Functional food

Protein-enriched food may be considered a type of functional food; products widely described as providing health benefits beyond simply satisfying hunger and delivering their basic nutritional value (Menrad, 2003; Roberfroid, 2002). However, no single definition of functional foods has been agreed upon so far. Although most foods provide some additional health benefits (i.e. through vitamins or minerals) (Crowe & Francis, 2013), most literature is limited to functional foods that are enriched with micronutrients (e.g. vitamin-enriched yoghurt, in Krutulyte et al., 2011) or macronutrients (e.g. protein-enriched crackers, in Hooker & Teratanavat, 2008). We will only refer to these enriched types of functional food throughout the remainder of this paper.

Functional foods are often perceived to be healthier than conventional foods (Ares, Giménez, & Gámbaro, 2008; Vassallo et al., 2009) and willingness to try them is generally high, especially in older adults (Poulsen, 1999; Siegrist, Stampfli, & Kastenholz, 2008). This has been explained by the finding that elderly are more interested in the health aspects of food (Roininen, Lahteenmaki, & Tuorila, 1999) and are more willing to compromise on taste for health than younger adults (Urala & Lähteenmäki, 2004; Verbeke, 2006). From a marketing perspective, elderly may thus also be a suitable target group for protein-enriched food.

Nevertheless, a variety of barriers to functional food acceptance exists, for example: consumers expect functional food to taste poorly (Verbeke, 2006), to be expensive (Poulsen, 1999; Verbeke, Scholderer, & Lähteenmäki, 2009) and unnatural (Landström, Koivisto, & Magnusson, 2009; Poulsen, 1999). In addition, health claims attached to functional food are sometimes thought to lack personal relevance (van Kleef, van Trijp, & Luning, 2005) or to be merely advertising tools (Verbeke et al., 2009) and are confusing to both consumers (Sääksjärvi, Holmlund, & Tanskanen, 2009) and dieticians (de Jong, Hoendervangers, Bleeker, & Ocké, 2004). Moreover, elderly consumers report various barriers to making healthy food choices in general. Besides the barriers already mentioned, elderly may feel constrained by inconvenience in food preparation and purchase, being on a special diet (Herne, 1995; Locher & Sharkey, 2009) and by the influence of others on meal preparation (de Almeida, Graça, Afonso, Kearney, & Gibney, 2001; Herne, 1995).

Next to these perceived barriers, a lack of nutritional knowledge has been found to limit acceptance of functional foods (Ares et al., 2008; Menrad, 2003). More specifically, both attribute knowledge (i.e. about the nutrients in food) and consequence knowledge (i.e. about the effect of nutrients on the body) are found to be necessary for functional food acceptance (Wansink, Westgren, & Cheney, 2005). Identifying a lack of attribute or consequence knowledge in elderly consumers may provide a concrete basis for intervention.

Considering the preferences and physiological needs of consumers in the process of developing functional foods may help to overcome some of the barriers to functional food acceptance. Among the various attributes that make up a functional food product (e.g. product or carrier type, functional ingredient, health claim, brand, price), carrier preferences are generally found to predict functional food acceptance most strongly (Ares & Gámbaro, 2007; Bech-Larsen & Grunert, 2003; Krutulyte et al., 2011; Siegrist et al., 2008). Elderly consumers are found to prefer healthy carriers to unhealthy ones (Vella, Stratton, Sheeshka, & Duncan, 2013) and consumers, in general, are found to prefer carriers that originally contained large amounts of the enrichment (in this case protein) (Ares & Gámbaro, 2007; Poulsen, 1999).

Current study

Although various types of functional food have been studied, protein-enriched food has not received much attention. Given that functional food acceptance also depends on the functional ingredient (Siegrist et al., 2008), it is unclear whether research findings can be generalized to this type of functional food.

Our study aims to explore the knowledge, perceptions and preferences of elderly consumers regarding protein-enriched food. We will do this by conducting focus groups, following a semi-structured protocol. Given that elderly have had a lifetime of unique experiences with food, they differ strongly in how they think about food and what role food plays in their lives (Locher & Sharkey, 2009; Sobal, Bisogni, Devine, & Jastran, 2006). These differences are probably especially strong when comparing healthy, independently living elderly with less healthy elderly living in residential homes, given that elderly in the latter group generally no longer take care of their own meals. Therefore, we will conduct focus groups among both independently living elderly and elderly living in residential homes.

Material and methods

Participants

A total of 42 elderly (14 males, 28 females, aged 55+) participated in six focus groups, consisting of four to eight participants each. Three focus groups were conducted among independently living (ID) elderly (N = 24, age range 58–81) and three among elderly living in a residential home (RH) (N = 18, age range 73–93). The ID elderly were recruited by e-mail using the Internet-based senior network SenTo (Senioren van de Toekomst/Seniors of the Future; Kremer, 2012). The RH elderly were recruited by staff of the residential home. The study was approved by the Social Science Ethics Committee of Wageningen University and all participants gave informed consents.

The ID and RH elderly inevitably differed from each other on various demographics. The RH elderly were overall older (M = 82.2, SD = 5.56) than the ID elderly (M = 67.7, SD = 5.92), $t(39) = -8.037$, $p < .001$ and the RH elderly were more often widowed (16 out of 18) than the ID elderly (3 out of 24), $X^2(1, N = 42) = 24.22$, $p < .001$. In addition, the ID elderly rated their subjective health more positively (median = 2 range = 1–5) than the RH elderly (median = 3 range = 1–5) (U = 104.0, $p < .01$, $r = .43$) (1 = “excellent”, 2 = “good”, 3 = “average”, 4 = “fair” and 5 = “poor”) and the RH elderly no longer prepared their own meals. Moreover, the RH elderly were less highly educated (median = 2 range = 1–2) than the ID elderly (median = 2, range = 2–3) (1 = “primary”, 2 = “secondary”, 3 = “tertiary”) (U = 140.0, $p < .01$, $r = .44$), which can likely be explained by the age difference between these groups.

Procedure

The focus groups were conducted according to a predetermined protocol to facilitate semi-structured data collection (Table 1). For the independently living (ID) elderly, focus groups were located at a research facility attached to Restaurant of the Future at Wageningen University, whereas for the residential home (RH) elderly, the location was their residential home in the city of Ede. In both locations, participants sat around a large table in a private room, a facilitator was standing near a flip chart and an assistant was sitting outside the group. The first author, who was trained in interviewing techniques, facilitated all discussions. Discussions took place between 09.30 AM and 12.00 AM, lasted about two hours and were video and audiotaped for later transcription. Participants were rewarded 20 euros for completing the focus group.

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