

EXPLORING SNACKING BEHAVIOUR OF ELDERLY FOR DEVELOPMENT OF CONCEPT MEAT PRODUCTS

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I. INTRODUCTION

Ageing populations all over the world are having a great impact in the food industry since sensory perception and food preferences change as we age. Too often, older adults' nutrition practices are ignored which impede health maximization and quality of life improvement [1]. Furthermore, elderly consumers' needs and wants have not been widely explored in terms of consumption of meat and meat products. This study aimed to investigate meal and snacking behaviour of older adults towards meat products, understand the desirable characteristics of those products and where they would fit best in terms of consumption using a Quantitative Multivariate Analysis (QMA) with focus groups [2].

II. MATERIALS AND METHODS

Sixteen (13 female, 3 male) meat consumers, who were selected for having active lifestyles and being 65-79 years old, were recruited for two focus groups ($n=8$ in each focus group). The sample size of sixteen was determined according to saturation principles [3] and all participants gave informed consent, signed allergen forms and received small compensation. Data were collected in three stages. *Stage 1*: 5Ws (When, What, Why, Where, Who and What With) table of snacking behaviour. Participants were asked to report their eating habits throughout the day. *Stage 2*: Tasting of seven commercially available meat products including meat bolognese, cocktail sausage, prosciutto, tasty sticks, meat floss, liver pate, and Chinese beef jerky. These products were chosen to provide stimuli across a range of textures and familiarity. Participants completed a questionnaire regarding attributes of appearance, texture contrast, flavour/aroma for each product. Products were purchased at local stores and kept under refrigeration (5 °C) where required. Cocktail sausages were cooked with boiling water and meat bolognese was heated in a microwave before serving. *Stage 3*: QMA perceptual mapping of commonly consumed snack foods was conducted, which consisted of ranking pictures provided into a two dimensional map with the X-axis being: 'Everyday' to 'Indulgent' and Y-axis being 'Likely to Eat' to 'Less Likely to Eat'. Video-taped and recorded sessions lasted for 2 hours following a semi-structured protocol. After the QMA mapping, the consumer generated groups that allowed for identification of linkages between different product's traits and potential opportunity spaces to create new products. Data was transcribed and used to identify recurring themes across sessions.

III. RESULTS AND DISCUSSION

Key findings are summarised in Table 1. Participants declared that they start eating around mid-morning (~ 11:00 am) with a light snack, continue to snack across the day and consume the biggest portion of food in the afternoon (~ 4:00 pm).

Table 1. Insights into the eating behaviour of older adults ($n=16$) across the sessions and stages

Stage 1	<ul style="list-style-type: none">No 'proper' breakfast or dinner consumedMost food is consumed in the afternoon due to hunger or habit
Stage 2	<ul style="list-style-type: none">Chinese beef jerky was the only meat product classified as 'beefy'Meat floss was considered to be too 'fibrous'Prosciutto and cocktail sausage were considered to be 'salty'The skin of the cocktail sausage was considered to be too hard
Stage 3	<ul style="list-style-type: none">'Unhealthy' is defined as high fat, sugar and/or salt contentSome of the participants do not cook anymore

Figure 1 shows the results of Stage 3. The foods placed in the Likely to Eat – Everyday quadrant by participants comprised regularly eaten foods that were familiar, and often crunchy sweet or salty foods (green circle). The Likely to Eat – Indulgent quadrant (red circle) comprised foods considered a ‘treat’ or eaten for a special occasion. Chocolate was considered as ‘Likely to eat’, and more indulgent for some participants than others. Cheese sticks were placed in the Everyday – Less likely to Eat quadrant due to the negative perception the participants had of processed foods. The last quadrant, Less Likely to Eat – Indulgent, consisted of a variety of foods (yellow and purple boxes). Gummies and fruit smoothies (yellow circle) were considered, by participants, as unhealthy for the high amount of sugar they have. Tasty sticks and Chinese beef jerky were found to be ‘too hard’ whilst meat floss was the more unfamiliar product of all. Interestingly, the target for innovation (blue circle) was empty.

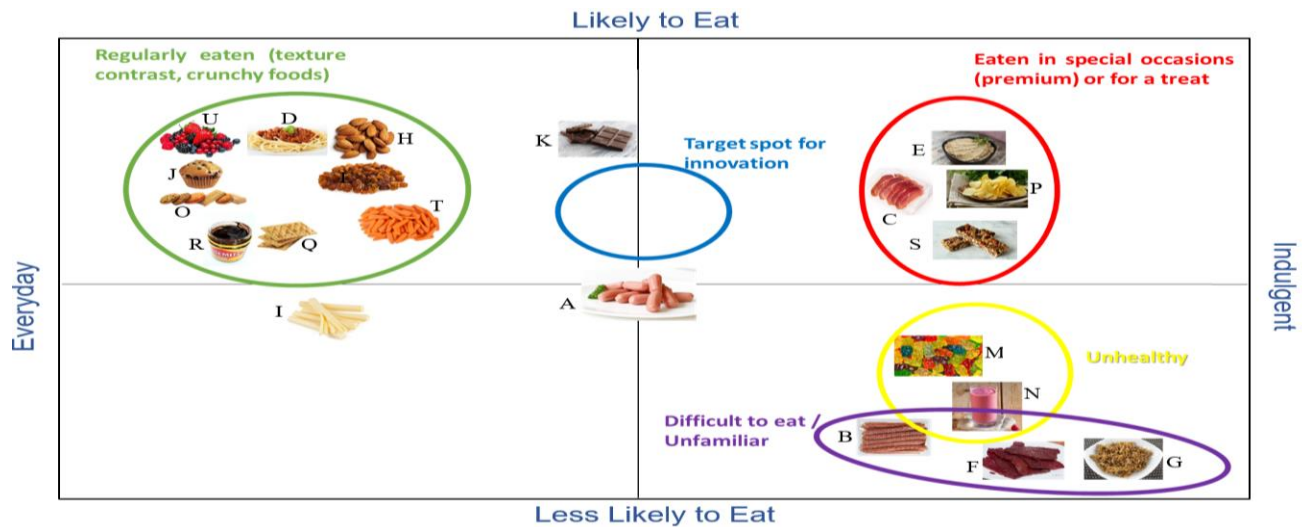


Figure 1. Perceptual map generated by participants in the QMA discussions. The cocktail sausage image was the first shown, and everything else was mapped relative to it. A, Cocktail sausages; B, Meat sticks; C, Prosciutto; D, Meat bolognese, E, Liver pate, F, Chinese beef jerky, G, Meat floss; H, Almonds, I, Cheese sticks, J, Muffin; K, Chocolate, L, Raisins, M, Gummies, N, Smoothie, O, Sweet biscuits, P, Potato crisps; Q, Crackers; R, Vegemite, S, Granola bar, T, Baby carrots, U, Mixed berries. The blue circle is drawn around the ‘target spot for innovation’ and the foods in this target category would be frequently eaten with the desired texture contrast that can be consumed solo or shared with others.

IV. CONCLUSION

Results from this study demonstrated that the elderly need more healthy choices in their snacking behaviours. Clearly, there is opportunity to create a nutrient dense product to improve their wellness. In line with our findings, the novel product should be a ready to eat, bite size product to align with the snacking behaviour of the elderly. The empty blue circle being the ‘target spot for innovation’ indicates the opportunity for developing a healthy meat-based snack.

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