

Eating behaviour change and food well-being improvement with a food app: A pilot study with vulnerable consumers

Patricia GURVIEZ, Professor, UMR SayFood, Université Paris-Saclay, INRAE,
AgroParisTech, 16, rue Claude Bernard, 75005 Paris
patricia.gurviez@agroparistech.fr

Ophélie MUGEL, Associate Professor, FERRANDI Paris (IRG EA 2354), 28,
rue de l'Abbé Grégoire, 75006 Paris, omugel@ferrandi-paris.fr

Abstract

Following Block et al (2011) seminal work on food well-being, this paper addresses the potential influence of a food app on literacy and behaviour change. The pilot study consists in the observation of 21 vulnerable families which have previously been provided with a food app. The data of the interviews conducted 3 times during a 2 months period are analyzed according to the grounded theory. The analysis reveals the influence of the food app on attitude, behaviour change and literacy and the different roles that the food app can play within the family unit.

Keywords

Food behaviour/ Food well-being/ Food literacy/ Food App/ Vulnerability/Social marketing

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Introduction and Objectives

Overweight and low food well-being (FWB) have become a public health issue, especially for low SES families. Although these disadvantaged populations are aware of the guidelines for healthy eating, they often do not follow them because of their social, economic and cultural background (Regnier and Chauvel, 2018). Can a digital device help them to fight overweight and enhance their FWB?

Promoting FWB and health behaviour is now carried out on multiple media, both physical and digital. Although less effective than face-to-face programs, many programs mediated by communication technologies have proven effective, especially for weight loss (Besson, Gurviez and Carins, 2020). However, the question of how the vulnerable consumers appropriate the food knowledge and how they turn into practice remains not studied. This ongoing research, conducted in deprived areas, focuses on the influence of a food app on both food behaviour change and food literacy.

Research Question

The aim of this ongoing research is to analyze the influence of the use of a food app (Yuka) on vulnerable consumers' behaviours and attitudes and to deepen our understanding of the roles of the use of an app in improving their food practices and food well-being.

Literature Review

In 2011, Block et al. proposed the concept of food well-being, « *a positive psychological, physical, emotional, and social relationship with food at both the individual and societal levels* » (p. 5) and underlined five domains which contribute to reinforce it: food socialization, food policy, food availability, food marketing and food literacy. Food literacy is defined not only as knowledge but also includes the motivation to apply nutrition knowledge to healthier food choices (Bublitz et al., 2013; Worsley, 2002). Therefore, as stated by Block et al. 2011, food literacy has three components: 1. conceptual or factual knowledge about food and nutrition; 2. procedural knowledge (such as purchasing or cooking meals) and 3. « *the ability, opportunity and motivation to apply or use that knowledge* ». The findings of a qualitative study with 594 participants on the behavioral outcomes of a digital commercial weight management program reveal that the last three variables (Motivation, Ability and Opportunity) influence not only weight loss outcomes but other health and well-being outcomes as well (Willmott and Parkinson, 2017).

The crucial role of motivation to fulfill three human basic needs, competence, autonomy and relatedness, has been long ago pointed out when behavioural and habits changes are needed for a better health and well-being (Ryan and Deci 2000; Ryan et al., 2008). In a eudaimonic perspective, Mugel, Gurviez and Decrop (2019) show that experiences of FWB satisfy these three basic psychological needs that shape well-being.

Therefore food literacy has become a major issue in improving consumer FWB, food security and health, especially for low SES adults (West et al., 2020). It is also necessary that food knowledge is invested in the consumers' personal food practices, which can be an issue for vulnerable families. Baker, Gentry, and Rittenburg (2005) defined vulnerability not unique to certain individuals, but as an experience that any person may live depending on their individual characteristics, economic, social, and environmental conditions.

Methods

We used Yuka (<https://yuka.io/>), an app that allows consumers to scan food and cosmetic products for detailed information on the impact of a product on health via a color code ranging from green to red. We selected Yuka because it is the most downloaded food app in France with more than 10 million downloads and seems very satisfying people with a mark of 4.4/5 on Play store (58000 voters).

During the last months of 2020, we conducted a longitudinal field study (9 weeks) with 21 persons in charge of household purchases in vulnerable families recruited through welfare centers of Les Hauts de France region. In our study, we focused on families' food vulnerability that can be defined by the economic, cultural and social resources necessary for families to eat well but also by their ability to control these resources. In addition to this food vulnerability, three conditions predefined the recruitment; we were looking for families: 1. with school-aged children, 2. equipped with a smartphone, 3. living in Les Hauts de France, one of the poorest regions in France. Our sample is diversified in terms of age, size of family, working situation, previous knowledge about Yuka and food issues, such as overweight, obesity, diabetes (see Appendix 1). The sample size was determined according to the principles of the theoretical saturation (Glaser and Strauss, 1967).

The study involved three phases of interviews. The first one consisted in identifying consumption habits and food knowledge as well as presenting the app Yuka and understanding the expectations to use it. The second interview (2 weeks after) provided access to feedback on the first uses. The goal of the last interview (2 months after the beginning) was to identify the increase of food knowledge as well as the declared changes in the food attitude and behaviour.

Our informants received 50€ for their participation. To respect privacy, each informant chose a nickname that we use here to refer to them (the number refers to the 1st, 2nd or 3rd interview). One family decided to quit, another one stopped responding to our solicitations. The grounded theory approach (Glaser and Strauss, 1967) was used for analysis and interpretation. It includes a constant comparison of data and interpretations.

Emerging findings

This ongoing research allows us to 1. Identify a food knowledge enhancement, 2. List behavioral changes within the family unit and 3. Analyze three roles of the use of the app Yuka.

1. Towards a food knowledge enhancement

Our research highlights changes in attitudes about some products that were previously considered good for health according families: *"There are things we can't imagine, for example: « La Vache qui rit » or « Babybel », it's bad (...) We say to ourselves: cheese is good for your health but no!"* (Orchidée, 2). We also note a loss of trust in some food brands for these consumers, as informants feel that they lied to them: *"(The app) surprised us, we said to ourselves: "In fact, we don't have to buy the brand rather the private label in order to say that it be better because sometimes, it is misleading "* (Mina 2). By using Yuka, they express a food knowledge enhancement which leads them to unravel the possible deceptions in the marketplace: *"Yep, you can be tempted to choose the packaging claiming "fresh eggs" or "pure butter" but finally... One pound cake: you think that « pure better » means healthier. But actually no. It contains more sugar. So Yuka, it is useful to cope with marketing attempts of deception."* (Rose, 3). Eventually they can compare brands by referring to their own enhanced knowledge: *"Sometimes we were surprised that the cheapest [product] was healthier than the most expensive."* (Mina, 3)

2. Changes in food behaviour within the family unit

The mistrust and their change of attitudes indeed lead to a change in eating behaviour, not only for our informants but also for their close kin (husband, children or teens). *“You know, he [her young son] wants some candies so he comes shopping with me. But when he scans the product and sees how it’s bad, I can tell him “look, it’s junk food” and he prefers to eat a piece of bread and butter rather than candies. Or eat a banana, well you know, he succeeded in changing!”* (Orchidée, 2). Sometimes, it leads to radical changes beyond the scope of food: our informant Plume chose to stop smoking in order to buy healthier but more expensive brands for her kids!

The application's suggestions also involve changes to food products deemed to be healthier, especially during highly ritualized consumption moments such as breakfast: *“This morning, my daughter didn't eat Nutella, she ate jam. And I said to myself: “wow”. Well, it won't happen every morning but this morning, she said to me: “Mum, I'm going to eat some jam”* (Cochon d’Inde, 3). Yuka’s influence seems lasting: *« I don’t forget it [when shopping]. Because one always wants to know if it’s healthy or not. Before [using it] I was taking food... as long as my children could eat, that we had to eat, well...I was not really checking if it was healthy or not. Now it changes...Yes, it [Yuka] will stay in my phone.* (Rocky, 3]

3. The three roles of the use of the food-app

These changes in attitudes and eating behaviours seem to come from the empowerment of families around the app Yuka, which takes on several roles: a comforting role linked to faith and trust feelings, an entertaining role seen as a game and a unifying role of Yuka within the family unit.

The comforting role of Yuka

Informants feel confident when they use the app; they trust the information communicated: *“At the beginning, I was a bit shocked by some products (...) but not enough to say Yuka is lying. It’s just that we think we know...”* (Iris 3). At first, the app is seen as a precious help which will enable consumers to enhance their food knowledge: *“The more we know, the better”* (Prada 1); *“I hope this app will help me to deal with our food”* (Orchidée 1). Using the app can be a control tool with regards to one’s diet: *“It would be more to see if I eat correctly”* (Plume 1) or for his/her family’s diet: *“It is mostly for the children, I don’t want them to gain weight”* (Lilou 1).

The app then becomes a guide, an “educator” (Caramel 2) who wants them well. Some informants even feel free from any judgment that could affect their food choice: *““When we speak to a doctor, (...) we feel a little shame, or even a little fear to say: “Can I eat that or that? (...) [With Yuka] we are not too supervised. A little bit free, it’s better”* (Fleur rose 2).

The entertaining role of the use of Yuka

For some informants, the use of Yuka is akin to a game: *“it’s true, it’s like a game. Even my children, to make them do it by themselves, they click, they’re locked at”* (Rocky 1). They perceive the interest of using the app for their children, who can play for example the role of a cashier: *“when you go shopping, they are looking for barcodes to know the price and say what I’m going to pay. So, for them, it’s like being the cashier and they scan barcodes so they just scan and see, I think it can interest them”* (Rocky 1). The entertaining dimension of the app can re-enchant the family shopping experience: *“To go shopping with Yuka, it’s not so easy, but my son (...) he played, he really enjoyed getting more information on what he eats”* (Orchidée 2).

The unifying role of Yuka in the family unit

The use of Yuka is a way to involve family members in food tasks and to promote food education: “[my son] always cooks with mom. So, I think being with mummy and saying this we can’t, that we can (...) it will be fun for him” (Mina 1). Yuka seems to empower family members in food tasks: “the three of us participate and that’s great”(Orchidée 3). Gaming can be an opportunity to pass on his/her food knowledge within the family: “It’ starts like a game and then, (...) I have explained them all, and it was like a small class about all which is good and bad for our body” (Chien 62, 3). Yuka can reinforce the interest of culinary practices and can reaffirm implemented practices: “(My daughter) didn’t forget to tell me: you see mom, your packet soup is orange. I said: According to you, why am I doing it by myself?” (Caramel 1).

Discussion

This exploratory research shows that the use of a food app can help people to question and improve their food knowledge, to change both their attitudes and consumption behaviour. The use of the application can cause mistrust on food brands, which were previously a guarantee of confidence for these families and can help to cope with marketplace deception attempts. These preliminary findings seem to show that using a food app such as Yuka may enhance food literacy of vulnerable consumers. We know that consumers can make healthier food decisions when they possess food knowledge (Block et al., 2011; Worsley, 2002). However, possessing this knowledge is not sufficient to nourish a person’s pursuit of food goals and well-being (Block et al., 2011; Scott et al., 2008). The playful dimension of using Yuka seems to help vulnerable consumers to invest these food knowledge enhancement in their family food practices. Likewise, bringing the family together around the app improves the opportunity and motivation to use it. These roles make family members more autonomous, competent and united about food tasks. Echoing the self-determination theory (Deci, & Ryan, 1985), the use of a food app seems to respond to the three basic needs, enhancing FWB in a eudaimonic perspective (Mugel, Gurviez, and Decrop, 2019). These findings are in line with previous findings regarding the link between Yuka and FWB in the general population (Bezançon, Le Borgne, & Morrongiello, 2019)

Conclusion, recommendations, limits and further research

According to our primary findings, using an app as Yuka could be of great help for local authorities to support vulnerable families improving food literacy and FWB. The three roles (comforting, entertaining, unifying) represent communication levers which promote consumer engagement in using food app. Nevertheless, the app limits that our informants pointed out were of two kinds. On one hand, they could be unable to acknowledge their unhealthy choices, which makes them feel guilty and lead them to stop using the app. On another hand, the algorithm overrates organic products, which are often too expensive for our informants. These limits have to be addressed before developing programs towards low SES populations. Unlike populations more financially and socially well-established, they would probably need a mixed approach, with at first counsellors to mediate interaction between them and the app. Eventually, some key advantages could be the “no stigmatization effect” and the playful side which allows sharing with family and kin. The limitation of our study remains its lack of visibility on mid and long terms. For the moment, we cannot predict the lasting effect on food literacy and behaviours of the use of such an app after the 2 months of our observation. Further research should adopt an ethnographic methodology to better determine the lasting influence of a food app on vulnerable families’ food behaviour changes and FWB.

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Appendix

Specifications of our sample

Gender	Age	Marital situation	Working situation	Knowledge about Yuka	Food issues
20 females +1 male	26 to 50 years old	Engage : 15 Living alone: 6	Stay-at-home:12 Unemployed : 2 Disabled: 1 Workers: 6	Never heard about : 13 Known but never used : 4 Already downloaded but hardly used: 3 Used actively one year before and stopped:1	Weight problems for them or their children: 15 Surgical procedure to lose weight: 3 Diabetics : 4 Fear about additives : 3