Views and Experiences of People Living With Obesity and Food Insecurity on Supermarket Messaging: a Reflexive Thematic Analysis

Hannah C Greatwood1, Thomas Sawzcuk1,2, Emma Hunter3, Rebecca A. Stone4, Marta Lonnie5, Mark S. Gilthorpe1, Alexandra M Johnstone5, Adrian Brown6, Charlotte A. Hardman7, Emma Wilkins4, Flora Douglas3, Maddie Thomas8, Nilani Sritharan8, Claire Griffiths1 on behalf of the FIO-Food Team

1Obesity Institute, School of Sport, Leeds Beckett University, Leeds, LS6 3QT, UK; 2Carnegie Applied Rugby Research (CARR) Centre, Carnegie School of Sport, LBU, Leeds, UK; 3The School of Health, Robert Gordon University, Aberdeen UK; 4School of Food Science and Nutrition, Stead House, Willow Terrace Road, Leeds, UK; 5Rowett Institute, School of Medicine, Medical Sciences and Nutrition, University of Aberdeen, Aberdeen, UK; 6Centre for Obesity Research, Rayne Building, University Street, University College London, London, UK; 7Department of Psychology, Institute of Population Health, University of Liverpool, Liverpool, UK. 8Sainburys Plc, London UK.

### Corresponding Author:

Hannah Greatwood, Obesity Institute and School of Sport, Leeds Beckett University, Leeds, LS6 3QT, UK. Email: [H.greatwood@leedsbeckett.ac.uk](mailto:H.greatwood@leedsbeckett.ac.uk). Tel: +44 (0)113 8124688

# Abstract

**Background:** People experiencing food insecurity (FI) are more likely to live with obesity and purchase foods of lower dietary quality. Retail campaigns have the potential to influence food purchasing behaviours. Still, little is known about how the retailers’ messaging is perceived by people living with obesity (PLWO) and FI. This qualitative paper explores the insights of PLWO and FI on two national online and in-store campaigns targeted at i) supporting customers with increased food prices, and ii) promoting the consumption of healthier and more environmentally sustainable meals.

**Methods:** Participants who self-reported as living with obesity and FI (*n*=39) expressed their perceptions of campaign images, from one retailer, through four in-person focus groups. Findings from the focus groups were then presented to the retail partner in an online participatory workshop. Themes were generated using reflexive thematic analysis.

**Results:** Five themes and 12 subthemes were generated from the focus groups: (i) ‘Do I have the resources needed?’ Finances and, or time influenced participants’ food purchasing. (ii) ‘Do I know what it means?’ Participants did not always understand the images presented. (iii) ‘Do I trust it?’ Participants questioned whether the prices or images in the campaigns were authentic. (iv) ‘Do I want it?’ Participants questioned whether the food presented in the images appealed to them. (v) ‘Recommendations for future promotional communications’. Participants outlined how they wanted messaging to apply to them by using ethnically diverse food images that are suitable for a range of health conditions. From the retail partner participatory workshop we identified one theme and three subthemes. (i) ‘It is a conundrum’, the diverse needs of subgroups for national campaigns make it challenging for retailers to communicate healthy sustainable food promotions.

**Conclusions:** These findings provide insights for retailers on the need for tailored communications, that reflect the requirements of different customers, to support PLWO and FI to purchase healthier and more sustainable foods. Acknowledging and addressing the inherent complexity of promoting healthier and more environmentally sustainable food is vital to making meaningful improvements to the food environment.

# Keywords

Living with Obesity, Food Insecurity, Focus Groups, Supermarkets, Qualitative Research, Retail Campaigns

# Background

Currently, 68% of adults in England are classified as living with overweight or obesity and this statistic is projected to keep rising (1). A disproportionate rise in people living with obesity (PLWO) has occurred in socially disadvantaged groups over the past 60 years, and these individuals are also more likely to be food insecure (2). Food insecurity (FI) refers to the limited or uncertain availability of nutritionally adequate and safe to consume food (3). People experiencing higher levels of FI may be exposed to less healthy food environments, resulting in limited access to healthy foods and subsequently lower diet quality, compared to those who are food-secure (4–6). This may lead to an increased incidence of diet-related chronic diseases, including obesity (6,7).

The UK food system includes a wide spectrum of interconnected system actors involved in food production through farming, processing, sales, consumption, and waste management (8). The food system exerts a significant impact on the environment, including degrading ecosystems, depleting water resources, and driving climate change (9,10). The One Blue Dot report (11) from the British Dietetic Association details the need to support a change in eating habits that are both healthy and sustainable for the environment. Healthy sustainable eating patterns, that promote the consumption of plant-based foods, have been associated with improved planetary and health outcomes, for example, reduced risk of obesity and reduced rates of diabetes and heart disease, which could result in reductions in total mortality by 6–16% (11). Sustainable dietary patterns promote all dimensions of individuals’ health and wellbeing; they have low environmental pressure and impact; are accessible, affordable, safe and equitable; and are culturally acceptable (3). The Carbon Trust Report (12) indicates that the Eatwell Guide has a significantly lower environmental impact compared to the current UK diet. However, given the complexity of food systems transitioning from current dietary behaviours to more sustainable practices is highly challenging, especially for those individuals living with FI (13), where on average, more healthy foods are over twice as expensive as less healthy foods per calorie (14).

Supermarkets have the potential to influence consumer food purchasing behaviour, with 83% of grocery shopping currently undertaken within supermarkets (15). Within the UK, several voluntary (e.g., government reformulation and reduction targets (16)) and mandatory (e.g., The Food (Promotion and Placement) (England) Regulations (2021/1368), (17)) guidelines have been recommended to improve the food environment by ensuring healthier food is more easily accessible and more visible in shops, which ultimately supports people to lead healthier lives. Despite these actions, in exploratory analyses, Stone et al. (18) reported PLWO and FI who were more adversely impacted by the cost-of-living crisis had poorer diet quality compared to those less impacted, and higher use of budgeting was associated with poorer diet quality. Furthermore, in qualitative interviews with PLWO and FI, Hunter et al. (19) generated a “Restricted Consumer” theme, which reflected how budgetary constraints often hampered individuals’ ability to purchase and consume a healthy, sustainable diet when navigating the retail environment.

Retailers use campaigns to influence customers’ purchasing behaviour. However, changing consumer behaviour is challenging (20). Previous literature has considered how best to communicate retail promotional material, and outlined the importance of delivering the “right message, at the right time, to the right customers” (21). Gaining insights on how supermarket messaging is perceived by those with lived experiences supports the development of campaigns that are culturally sensitive and contextually relevant, thereby addressing the complex interplay of factors influencing food purchasing behaviours. Therefore, the aim of this study was to gain qualitative insights on how promotional communications that are used in real-world retail campaigns to promote healthy sustainable food purchasing were perceived by PLWO and FI. The second aim of the study was to gain food retailer perspectives of those consumer viewpoints and consider how those might be implemented in future promotions of healthy and sustainable foods.

# Methods

The current study is part of the FIO Food project (22), which explores how to support healthier and more sustainable food purchasing in the UK retail food environment for PLWO and FI. The current study is grounded in a constructivist epistemology, which posits that reality is a social construct, emphasising the co-creation of knowledge between the researcher and the participants (23). This perspective seeks to understand lived experiences and the essence of phenomena. From an ontological perspective, we acknowledge the existence of real-world structures and mechanisms that affect purchasing behaviours. Our comprehension of these influences is shaped by interpretative processes. Recognising that the researchers' backgrounds and perspectives could impact the research process, reflexivity was maintained throughout the study with engagement in regular discussions among co-authors. This study was approved by Leeds Beckett University Local Research Ethics Committee (Reference 135671). Subjects all gave informed consent.

## Reflexivity

During data collection, analysis, interpretation, and manuscript writing, the research team considered how their experiences and perspectives shaped the work. The first author (HG) (a white, female, with extensive experience in dietary behaviour research and a familiarity with the literature on food systems) was primarily responsible for data collection and analysis. Throughout the facilitation of the focus groups and participatory workshop, HG was mindful to generate rapport with stakeholders and participants but sought to act only as a facilitator in the discussion between participants. TS (a white male, post-doctoral research fellow in sport and computer sciences), MSG (a white, male, Professor of Statistical Epidemiology) and CG (a white, female reader in systems approaches to population obesity) supported the analytic process during the development of themes. Themes were presented to the wider interdisciplinary FIO Food team who have extensive experience in qualitative research design, data collection, analysis, interpretation, and reporting.

# Design

Data collection took place between April and June 2024. The study was conducted in a small town in Northern England which encompasses neighbourhoods classified as having the highest risk for FI prevalence in the UK (24), and has an ethnically diverse population, with 48.0% of people identifying as Pakistani and 36.3% identifying as white (25). In-person focus groups, with people who self-identified as living with obesity and FI, were held within appropriate settings identified by relevant gatekeepers (Community Nutritionist and Family Centre Manager), including a community centre and community family unit. Data collection continued until data saturation was reached (26). Focus groups were recorded audibly using a digital audio recorder (Olympus VN-541PC Digital Voice Recorder). All data were transcribed verbatim and any identifiable information was removed. Field notes were also generated as the focus groups took place which were based on the researcher’s observations and other notable and relevant information.

## Focus Group

Participants were recruited through purposeful convenience sampling strategies (27). One focus (FG1) group included participants engaged in a locally run community weight management programme, whilst the participants involved in the other three focus groups (FG2, FG3 and FG4) were recruited from a local primary school and included parents and carers of children attending that school. Participants had to reside in the town, be over the age of 18 years, self-report as living with obesity and finding it “hard to afford to buy healthy food”. Gatekeepers (Community Nutritionist and Family Centre Manager) were provided with copies of recruitment posters, participant information letters, and consent forms to distribute to potential participants. Demographic and anthropometric measures (e.g., height and weight) were not used to recruit participants as previous research suggests that asking for this information can discourage participation (28). Further Participants received a £25 voucher to recompense them for their time and expertise.

A semi-structured topic guide was co-produced with a major retail partner (~15% grocery market share in the UK (29)). The topic guide was informed by findings from research within the FIO Food project (18,19) and provided an interview template to guide the focus group discussions (Supplement 1). Campaigns from two recent national marketing campaigns (both online and in-store) that aim to (1) highlight value in the context of a balanced diet, through matching food prices with a discount retailer store (campaign 1; figure 1) and (2) promote more healthy and sustainable diets by reducing the meat content of traditional meals with beans, pulses and peas (campaign 2: figure 2). A co-production approach was applied, where a FIO Food project Patient and Public Involvement (PPI) partner helped inform the development of focus group materials including reviewing participant documents (invitation letter, information sheet, consent forms) as well as reviewing the content and phrasing of the questions within the topic guide. The semi-structured nature of the topic guide allowed specific questions to be asked around potential mediators of promotional communications in the supermarket context while also providing flexibility to ask follow-up questions on topics of interest, allowing for the generation of themes/ subthemes around which we have no preconceived notions.

A poster of food and drinks

Description automatically generated with medium confidence

Figure 1 Communications to promote healthy low-cost foods

A group of posters with food on them

Description automatically generated

Figure 2 Communications to promote sustainable dietary behaviours

## Retail Partner Participatory Online Workshop

For each campaign, the themes that were generated from the focus groups were developed into an infographic (Supplement 2) and provided to the retail partner ahead of a participatory workshop with their marketing division (n=8). The themes generated from the focus group provided a semi-structured guide for the workshop to help facilitate discussions around the insights provided by participants. Ahead of the participatory workshop, personnel were provided with an information letter and consent form. The online workshop was delivered and recorded via Microsoft Teams and used the embedded transcription service for text capture. The recordings were listened back to check the accuracy of the transcription. Due to the sensitive nature of working with a retail partner, it was agreed that direct quotes would not be reported, only themes would be generated.

## Data analysis

A reflexive thematic analysis (RTA) (30–32) was implemented for the interpretation of findings from the four focus groups and retail participatory workshop. A six-phase analytical process was followed to facilitate the analysis of the focus groups and participatory workshop (30,32). The transcripts and field notes were thematically analysed by the lead authors (HG) following steps outlined by Braun and Clarke (27–29); this process involved exploring and becoming familiar with the data (HG), generating initial descriptive codes (HG), reviewing (TS, MSG, CG) and discussing the codes (HG, TS, MSG, CG). Repeated iterations of coding and further familiarisation, helped to identify which codes were conducive to interpreting themes and address the research question (33). Queries or differences of opinion on emerging codes and categories were discussed with all authors through presentations and reflections on the data during research meetings. This process continued until the main theme and subtheme labels were finalised. NNVivo 12 software was used to manage and support data analyses. The datasets used and analysed during the current study are available from the corresponding author on reasonable request.

# Results

Data saturation was reached after four focus group discussions, with a total of 39 participants (range of 8-11 participants in each focus group; 92% female) (Table 1). Individual demographic details were not collected from the participants, as the research team were keen to encourage participation from this hard-to-reach sample, however Table 1 provides an overview of the ethnicity of participants within the different focus groups and co-morbidities that were described by participants within the focus groups discussions. From the focus groups with PLWO and FI, five themes and 12 subthemes were generated (Table 2). From the participatory workshop one theme and three subthemes were generated. Each theme is now defined and described, using quotes from participants to illustrate findings. The themes and subthemes are presented under independent subheadings to help with their interpretation; however, it is important to recognise that there is a relationship between each of the themes which highlights the complexity when interpreting the narrative.

**Table 1 Summary of focus groups of PLWO and FI**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Focus group | Setting | Number of participants (n) | Participant details | Ethnicity | Participant self-reported co-morbidities identified through focus group discussions |
| FG1 | Community Centre – weight management group | 8 | Female n=8  Male n=0 | White | Diverticulitis  Allergies  Anxiety  Diabetes  Arthritus  High cholesterol |
| FG2 | Family Centre | 11 | Female n=11  Male n=0 | Pakistani, Bangladeshi  Other Asian | Non-mentioned |
| FG3 | Family Centre | 10 | Female n=10  Male n=1 | Pakistani, Bangladeshi  White | High cholesterol  Diabetes  Asthma  High blood pressure |
| FG4 | Family Centre | 9 | Female n=7  Male n=2 | Pakistani, Bangladeshi  White | Physical disability  Autism  High blood pressure |

**Table 2 Summary of Themes and Subthemes following Thematic Analysis of focus groups of PLWO and FI**

|  |  |  |
| --- | --- | --- |
| Theme | Subtheme | Example quote |
| PLWO and FI Focus Groups (n=39) | |  |
| Do I have the resource? | I still can’t afford it | *“Not everybody could afford to buy the kiwi and a pineapple at the same time”* |
|  | Time is of the essence | *“I go into every supermarket every day to price check, before I can go back and buy my food.”* |
| Do I know what it means? | It is not clear | *“You don't know if that means 95p for the porridge. Does it cost 95p to make that meal?”* |
|  | I don’t know how it affects my health | *“You have to think about health condition, because I'm a diabetic person, so when I'm looking at that, thinking, if I eat that, my sugar levels could go high? …. It's easy to say, you know, when you see that, oh, that's nice and tasty, but will it actually lower your sugar levels, or will it go high or something like that?”* |
|  | These images help me | *“Although visually you can see it um because it's quite invisible what they've added like the beans are I don't know it's looking quite big like even the text what they've added like you know where they're saying that protein as well as what they've added as an alternative.”* |
| Do I trust it? | I don’t believe them | *“It says here that it's cheap, but when you get there it's not cheap”* |
|  | The images are not authentic | *“For me it’s better to go into shop than looking at things like this. They always doing beautiful pictures but when you go to buy it looks horrible.”* |
| Do I want it? | It doesn’t appeal to me | *“Honestly, if I saw it, that doesn't appeal to me.”* |
|  | I already do this | *“If I am making a meal, because I have a big family, I have to still think about adding potatoes or anything to add bulk.”* |
|  | It gives me ideas | *“Yes, because I was straight away thinking that oh that's um alternative to maybe adding if I was to get two pounds of minced meat I could reduce it to one pound and be like let me add it I don't know other stuff yeah okay so it's giving an option it doesn't have to be the beans for instance, it doesn’t have to be the chickpeas to make something else.”* |
| Recommendations for promotional communications | Make them apply to us | *“I think to put maybe Asian languages into languages and maybe when they're advertising as well, make them sort of friendly, more diverse.”* |
| Creative suggestions | *“Have a takeaway leaflet or recipe card that you can take home... You can have a look at it at home so next time you go shopping you might make that choice.”* |
| Retail Participatory Workshop (n=8) | | Explanation |
| It’s a conundrum | Accommodating different community requirements | Different subgroups, have differing requirements, which are challenging when developing national communications. |
|  | Unexplored factors | Many food promotions focus on mainstream products which may overlook cultural, regional dietary staples, income appropriate or medical needs. |
|  | We can make small changes | Participants recognised the insights from the focus group as being thought provoking in how they tailor future messaging. |

## Focus Groups

## Theme 1: Do I have the resources needed?

### All our participants described the challenges they faced when shopping. For many, recent shopping experiences were discussed as being impacted by financial challenges in being able to purchase the foods they would like. When reviewing the images from both campaigns 1 and 2 participants described how despite promotional material suggesting they were of lower price, those foods were still not accessible to them ‘I still can’t afford it’. Additional resources that were discussed were about the time available to them, described as ‘time is of the essence’ in being able to interpret and utilise the messaging on the promotional material (Figures 1 and 2).

### Subtheme 1.1: I still can’t afford it

The high cost of food was a central theme within all four focus groups. The increasing price of food, resulting from the cost-of-living crisis, has exacerbated the challenges of food purchasing for all participants. Whilst the images within campaign 1 suggest that the supermarket is making it possible to purchase healthy food at low costs, a theme of discussion, was that the images depicted foods that were still out of participants’ price range, as exemplified in the following quotes,

*“Not everybody could afford to buy the kiwi and a pineapple at the same time”*

(FG4 referring to Figure 1)

“People see it, but then it just drops on their head because nobody can afford it”

(FG4 referring to Figure 1)

Furthermore, within campaign 2, the images portrayed the cooking of dried beans, but high fuel prices prohibiting cooking was reported as an issue for some, with one participant describing the time and therefore cost of fuel for cooking beans was out of their price range.

We want to use beans. Okay. But the gas is so expensive. Who will cook it?

(FG2 referring to Figure 2)

### Subtheme 1.2: Time is of the essence

Beyond the cost of the food, participants discussed time as a resource. Participants talked about the demands on their time when trying to find the best deals:

“I go into every supermarket every day to price check before I can go back and buy my food.”

(FG2)

For other participants, they discussed whether they had the time to shop around for deals, or if they needed to go to one discount store for consistently low prices. Time was expressed as a barrier to being able to purchase healthy sustainable foods. However, campaign 1, that used images that help participants save time were perceived as beneficial. The messaging regarding the price match campaign (Figure 1) meant that some participants had less feeling of guilt associated with not shopping around when they purchased a product that was price matched to a discount store. The following illustrative quote describes how it can help time pressures if they do not have to go to multiple stores:

“It always makes me feel better when I go buy stuff from them. Because I notice that and I'm like, I don't need to go to [discount store], I'll just grab those bits here. But the stuff that I have noticed cheaper somewhere else, I'd go get from there. If I've seen it, it says there, it saves me a journey going there.”

(FG3 referring to Figure 1)

## Theme 2: Do I know what it means?

When presented with the images from the two campaigns all participants were able to discuss whether they understood what the promotion was from just looking at the images *‘do I know what it means?’* Participants expressed concerns about the lack of detail and context of the images within campaign 1 (Figure 1), specifically what the foods were and what was included in the price, which generated the subtheme *‘it is not clear’.* Some participants extended this lack of understanding further when interpreting how the foods within the images would apply to their health: *‘I don’t know how it affects my health’*. There was a strong preference for the images from Campaign 2 as they were perceived to provide more information with labels identifying what the foods were, and therefore some participants explained that *‘the images help them’.*

### Subtheme 2.1: It is not clear

Participants expressed concerns about the lack of detail and context of the images within campaign 1 (Figure 1), specifically what the foods were and what was included in the price. This confusion led to them not wanting to purchase the items, as exemplified in the quote below, one participant explained that they were not clear in knowing what the total cost of the meal was:

“You don't know if that means 95p for the porridge. Does it cost 95p to make that meal?”

(FG1 referring to Figure 1)

Within campaign one there were several images of foods. Some participants talked about how the perception of adding high-priced fruits like, “mango, pineapple and kiwi” to porridge might discourage them from participating in the campaign because they were fruits they “could not afford”. For other participants they were not clear on what foods were included within the images. For example, the below quotes are firstly a participant discussing the image of porridge with pineapple and kiwi on it, and secondly discussing what the images of pasta with meatballs and Tacos were. Within the quotes the lack of clarity on what the foods are and what the total price of the illustrated food would be, again was a reason they would be discouraged from purchasing it:

“Like you've got the biggest picture on here what is that muesli what what's the base? You don't know what the base is then you've got obviously got kiwi but then is that cheese inside of it or chips or do you know what I mean.”

(FG4 referring to Figure 1)

“I'm just looking at this it's like got spaghetti with green I don't know what they are, looks like, I don't know what it looks like. How can you relate and think that's healthy when you don't know what it is. Uh these in middle they look like tacos but they don't there's no [information]. It says 50p, but what’s actually in that … is it all three of them that cost 50p, or is it just one … I only have a quid, if I go in to try and buy all [of] them for a quid it ain’t happening.”

(FG4 referring to Figure 1)

### Subtheme 2.2: I don’t know how it affects my health

Throughout the focus groups, participants discussed health co-morbidities (Table 1) that influenced food choices. In the example quoted below, a participant living with diabetes, who was currently engaged in a weight management programme, was uncertain about the suitability of foods presented in the campaigns on their blood sugar levels:

“You have to think about health condition, because I'm a diabetic person, so when I'm looking at that, thinking, if I eat that, my sugar levels could go high? …. It's easy to say, you know, when you see that, oh, that's nice and tasty, but will it actually lower your sugar levels, or will it go high or something like that?”

### (FG1 referring to Figure 1)

Other participants had similar viewpoints, explaining that they were uncertain about how the foods would affect *‘blood pressure’* or *‘blood cholesterol’.*

### Subtheme 2.3: The images help me

There was a strong preference for the images from campaign 2 (figure 2). They were perceived by the participants to provide more information from the additional text that explained what the foods were. In this illustrative quote one participant explains that they like that the image is visual, and informative with the text explaining the nutrients provided by the alternative food:

“Although visually you can see it um because it's quite invisible what they've added like the beans are I don't know it's looking quite big like even the text what they've added like you know where they're saying that protein as well as what they've added as an alternative.”

(FG4 referring to Figure 2)

## Theme 3: Do I trust it?

Theme three describes the element of trust in the images presented within the two campaigns. This was discussed by participants in all four focus groups independently of the topic guide or facilitator of the focus groups and generated two subthemes *‘I don’t believe them’* and *‘the images are not authentic’*.

### Subtheme 3.1: I don’t believe them

Participants were sceptical of the messaging presented by the retailer, specifically related to the price of foods presented. This was specifically evidenced in campaign 1, where the price of foods were included in the images (Figure 1). Participants discussed their experiences of shopping for the foods presented in the images, for example, fruit juice, fruit, and meat, and that whilst campaign 1 suggests that they are low in price, this was not their experience, which lowered their trust in the overall campaign:

“It says here that it's cheap, but when you get there it's not cheap”

(FG1 referring to Figure 1)

“They talk about the price as well like here, but you can go to the shop and the prices have changed. So, it's not consistent.”

(FG2 referring to Figure 1)

### Subtheme 3.2: The images are not authentic

Part of the reason for a lack of trust in the messaging was because of participants not feeling that the images, as part of the campaigns, were authentic. Specifically, participants discussed that their experience of seeing the fresh food in store did not look like products presented in the pictures. Further to this, one participant suggested that the images were not of ‘real food’, hence the difference between the images and their experience of seeing the food in store.

“For me it’s better to go into shop than looking at things like this. They always doing beautiful pictures but when you go to buy it looks horrible.”

(FG1 referring to Figure 1)

“Do you know actually how they make these pictures? Like in Adverts? They don't use real food, you know. For example, the cereal adverts, it's all jelly, and then on top of the jelly is white glue, and then the cereal's been stuck on it and they make a picture.”

(FG3 referring to Figure 1)

## Theme 4: Do I want it?

Throughout all focus groups, participants’ preferences for the foods depicted in the images were discussed, and whether they were foods that they and their families would want to purchase and consume: *do I want it?* The main sub-themes that emerged from this theme included *‘it doesn’t appeal to me’*, ‘*I already do this’,* and ‘*it gives me ideas’.*

### Subtheme 4.1: It doesn’t appeal to me

A central discussion formed throughout all four focus groups regarding whether the images of food were dishes that appealed to the participants. Many of the participants suggested that the images were not appealing to them. When exploring the reasoning why the images were not appealing, participants explained that the images from campaign 1 were not those they were familiar with:

“Honestly, if I saw it, that doesn't appeal to me.”

(FG3 referring to Figure 1)

### Subtheme 4.2: I already do this

The images within campaign 2 were more familiar to participants. Participants talked about cooking curry and shepherds pie as they were foods that their families would consume, but they also consistently explained how they added cheaper ingredients to meals to make them stretch further at a lower price. This illustrative quote indicates how the participant describes the need to add foods to be able to feed their family:

“If I am making a meal, because I have a big family, I have to still think about adding potatoes or anything to add bulk.”

(FG1 referring to Figure 2)

### Subtheme 4.2: It gives me ideas

Whilst participants consistently reported that the images from campaign 1 were “not appealing”, in contrast, some participants liked the images from campaign 2. They suggested the images provided ideas of foods to purchase and ways of saving money. Whilst the focus of the images in campaign 2 was around more sustainable food purchasing, this promotion appeared to better resonate with participants. Within the example quote below, the participant explains that the images give her ideas of how to substitute high price meat with cheaper alternatives, therefore reducing overall costs, while maintaining health.

“Yes, because I was straight away thinking that oh that's um alternative to maybe adding if I was to get two pounds of minced meat I could reduce it to one pound and be like let me add it I don't know other stuff yeah okay so it's giving an option it doesn't have to be the beans for instance, it doesn’t have to be the chickpeas to make something else.”

(FG4 referring to Figure 2)

## Theme 5: Recommendations for promotional communications

A final theme from the focus groups provided recommendations on how the communications could be developed to target PLWO and FI. Although the price of food was consistently the main influence of participants purchasing behaviours, as alluded to within the quote below, two further subthemes have been generated.

“I think the only thing is a reduction in prices. Price. Yes. I guess that's the main thing because all of us are going and just looking at the prices and buying stuff. It's not in our brains, in our minds, that we are going for the healthier option. Okay. We are only going for the, you know, less price option. Mostly. So, I guess the price reduction is more important.”

(FG2)

### Subtheme 5.1: Make them apply to us

Throughout the focus groups, participants talked about a perceived lack of application of the campaign images to themselves. When making recommendations for supermarkets to improve healthy and sustainable food purchasing, participants highlighted several considerations for future promotions. A key consideration was the influence of co-morbidities and other health conditions that influence shopping; for example, the influence of the promoted products on blood pressure.

“I just want to have more information about people that are, you know, suffering from high blood pressure. So, things like that. You know, in supermarkets, I mentioned, you know, about all these healthy foods, but then, like, foods that would help and support with high blood pressure and things like that as well.”

(FG3)

Participants also wanted to see more “vibrant” communications that promoted healthy, sustainable, low-cost foods that were relatable to what they could afford in different languages, using foods from a range of different cultures.

“I think to put maybe Asian languages into languages and maybe when they're advertising as well, make them sort of friendly, more diverse.”

(FG2)

“No, I think they could have advertised it a bit more better to um you know to make it look more vibrant okay because I especially when it's like I think everywhere you go now it's very multicultural and this to me I think you could eat healthier with eating like for instance I don't know if you were craving Chinese or something you could eat a healthier version of Chinese or food or you can eat a you know Indian dish which is healthier they could have maybe versatile you know put a bit of different thing attached to it because it looks quite normal.”

(FG4)

### Subtheme 5.2: Creative suggestions

Participants made many different suggestions concerning how future promotional communications could influence them. As exemplified in the following quote, participants suggested that by promoting supermarket campaigns through social media and within the community, supermarkets can more effectively reach and support low-income individuals, helping them access healthier and more sustainable food options while respecting their financial constraints and cultural context.

“I think it depends on different people. Because I wouldn't go into [retail store] normally. But if it was advertised. Or a social media thing. Then I'm more likely to see it. And be ooh. I'll go try that. So, I think a bit of both really. So that it caters to everybody.”

(FG1)

During each of the focus groups, participants discussed what sustainability meant to them. The term environmentally sustainable was not something they were familiar with. Indeed, they wanted more information on cheap and healthy food that would last longer and prevent waste. A consistent concern was that they did not know how to cook new foods, and this was a barrier to wanting to try different products, including beans and legumes:

“But with these, the chickpeas and lentils, that's not something that I know how to cook.”

(FG1)

Participants from all four focus groups independently discussed how recipe cards with cooking instructions could be helpful:

“Have a takeaway leaflet or recipe card that you can take home... You can have a look at it at home so next time you go shopping you might make that choice.”

(FG1)

Ultimately, price was the biggest influence on food purchasing. Participants discussed how better in-store signage about the total meal cost would be beneficial for them. The quote below explains how if the promotional campaign information presented the savings associated with purchasing more sustainable ingredients (for example beans) it would help them make a change to their purchasing behaviour:

“If you say you're walking around the supermarket and they are actually like this [Figure 2] as you're walking around … people will regularly see them and think oh that's nice, I fancy that tonight, and then they'll buy the ingredients but then instead of … going around and buying two pounds of beef and thinking I can't afford it, well a tin of beans is only 80p yeah you know I mean let's make it but let's try it with beans tonight you … so it'd be feasible and cheap and a cheaper way of doing it.”

(FG4)

Customers with low incomes have tight budgets and therefore need to plan ahead of going to the supermarket for what they intend to purchase. Participant perceptions of changing promotions make it difficult for them to shop, and therefore as exemplified in the below quote, they suggested offers need to last longer with price stability for them to be able to include them within their menu plans:

“You plan and then go [shopping], but you can't find it because A, they've sold out or B, they've stopped doing it, or C the price has gone up.”

(FG1)

## Supermarket Participatory Workshop

## Theme: It’s a conundrum

Throughout the workshop, retail respondents consistently drew attention to the challenges that retailers face in developing acceptable and effective promotional communications. This underscored the complexity that exists within the retail environment, as part of the wider food system. Three subthemes were generated from these discussions.

### Subtheme 1: Accommodating different community requirements

Retail respondents recognised the importance of supporting customers living with obesity and FI to purchase healthy sustainable foods and how food retail communications play a fundamental role in shaping customers’ shopping experiences and guiding purchasing decisions. Within the workshop, retail respondents highlighted that the purpose of the images within the campaigns was to inspire and promote the breadth of products available to customers. However, retail respondents also recognised that meeting the complex needs of different population groups when developing national communications is challenging.

### Subtheme 2: Unexplored factors

Retail respondents reported that many food promotions focus on mainstream products, which may overlook cultural (e.g., halal, kosher, or traditional Asian ingredients), regional dietary staples, foods out of price range, or the effect they may have on health (e.g., blood pressure, or blood sugar levels). Retail respondents recognised that this may alienate customers who do not see their needs being illustrated within promotional material. Whilst retail respondents reflected on the images and recognised the feedback for including diverse images, meet medical conditions, and consider food prices it was acknowledged that the messaging used could land in an unintended manner. For example, the aim of the marketing material depicted in campaign 2 was to encourage customers to consider sustainable food purchasing by reducing the amount of meat bought and replacing meat with beans. However, focus group participants interpreted the images as a way to decrease the cost of food.

### Subtheme 3: We can make small changes

Retail respondents recognised the insights from the focus group as being thought-provoking in how they tailor future messaging. They discussed making small changes to future communications, such as including in-store navigation to support consumers who are time-poor. This links to the subtheme ‘*time is of the essence’* and was recommended within the subtheme ‘*creative suggestions’.* The retail respondents recognised the need for customers living with obesity and FI to meal plan ahead of shopping to ensure they were able to afford the food they needed. They discussed the feasibility of including costs on promotions as part of a small change that may have a beneficial effect. Focus group participants requested more recipe cards, however, retail respondents highlighted that past promotions that have used recipe cards were expensive and were not always effective in changing the sales of food items. Retail participants recognised that recipe ideas could be integrated into promotions using different formats, for example, budget-friendly meals for four people for under £5.

Retail respondents also reflected on how they might better support research agencies to include more diverse participants in future market research, which aligns with the subtheme ‘*make them apply to us’.* Whilst they recognised that access to people with low incomes, the lived experience of obesity and other diversities is challenging, the findings presented to them from the focus groups were insightful and within the participatory workshop, retail respondents reflected that a more diverse range of views should be represented when developing national retail campaigns.

# Discussion

Using focus groups from people who self-reported as living with obesity and FI, this study explored perspectives of two national supermarket campaigns targeted at: i) supporting customers with increased food prices; and ii) promoting the consumption of healthy sustainable meals. We identified five themes and 12 subthemes. Participants were influenced by the resources (finance and time) it took to be able to purchase foods advertised, whether they understood the promotion or not, whether they trusted the details on the promotional material, or not, and whether they wanted the food presented within the campaign images or not. As part of these discussions, participants recommended that if their food purchasing behaviour was to be influenced by promotional material, retailers needed communications to be relatable and provided creative suggestions to support this. Findings related to the promotional campaigns and recommendations for future promotions were shared with the retail partner in a participatory workshop. From the participatory workshop we identified one theme and three subthemes. We report the diverse needs of subgroups for national campaigns make it challenging for retailers to communicate healthy and sustainable food promotions.

The price of foods, and the limited or uncertain ability to afford healthy food, were a central conversation throughout all the focus groups. When reviewing the promotional communications, respondents’ initial interpretation was of the affordability of the foods within the images. These findings support previous work with PLWO and FI that suggest the main behaviour-change lever to enable healthier, more sustainable food purchases is both price and incentivisation, for example, strategies that use rewards, benefits, or incentives to encourage consumers to make healthier or more sustainable purchasing decisions (18,19,34). Within the retail discussions, it was highlighted that a “say-do” gap can exist between what customers say they want and what they purchase, even when products are promoted (34). This suggests that further to the impact of price, there are other influences on purchasing behaviour. Our participants talked about the time taken to shop, and the challenges of navigating retail promotions. Previous literature has recognised the resourcefulness, skills, and strategies to acquire food and prepare meals on a tight budget (19,35,36), and as such retailers need to consider what resources, time and cost, are required by customers if they are to be influenced by promotional campaigns.

Our findings, regarding the trust of supermarket messaging *‘do I trust it?,’* support those from the consumer group *Which?*, who report that, on a scale ranging from -100 to 100, trust in UK supermarkets among consumers has dropped to a score of 30 in June 2023, the lowest score since February 2013 (37). During discussions with the participants, it became apparent that one reason for the lack of trust in supermarkets was the constantly changing price of food. This made it difficult for PLWO and FI to be able to effectively plan their purchases prior to visiting the supermarket. Indeed, Hartmann-Boyce et al, (20) suggest that manipulating prices, by lowering them, and managing product availability can have a positive impact on purchasing. Within the participatory workshop this was discussed and the retail response supported those of a recent study by Stone et al. (34), where retail nutritionists explained that commercial viability has to be a driver within the retail sector, and price reductions can only be sustained for a certain period. The wider food environment (for example, climate change or civil unrest), may also affect food availability and influence prices (38,39). This can have serious implications for the design and development of retail campaigns to promote healthy and sustainable foods and suggests a need to shift our thinking about their role within the food environment.

The retail environment provides a potential opportunity to support purchasing behaviour that is beneficial to overall health. Obesity is a complex, chronic, multifactorial condition and increases the risk of developing co-morbidities (40). Increased information on promotions for PLWO and FI may enable better awareness of how food can impact health; for example, reduced salt products can reduce blood pressure. Providing clear images also makes it easier and more convenient to budget and allows for more effective planning. Convenience is a characteristic of food environments that have been reported as an important driver of food choices in a range of population groups (41–43). Budgeting, planning, and convenience are vital when managing limited resources (19,35,36). With the rising cost of food and fuel, the cost of the shopping basket and relevant retailer promotions are important for those living with obesity FI.

Communications need to align with the wants and needs of the customers, as well as be clear in their messaging to be effective. It is necessary for shoppers on a low income to prepare meals with food products they can afford, whilst also aligning with their families' preferences to ensure the food is consumed (19,35). Our findings echo those of Palascha and Chang (44) who, in a sample of customers with low socio-economic status in Italy, reported that retail messaging about food-related socioeconomic risks and benefits of healthy canned/frozen products were thought to be more influential than healthy eating recommendations. The complexity of the supermarket environment makes it difficult to always predict how customers will respond to communications. However, promotions that resonate with and address challenges faced by customers are more likely to be effective, and therefore for PLWO and FI, communications could focus on the price of food items rather than their environmental sustainability.

While there is a plethora of research describing the extent of dietary inequalities across different social groups, there is far less evidence on how to effectively address these inequalities. Gaps exist between retailer intentions and customer perceptions. Co-creatively designing interventions with actors from different contexts (e.g., supermarkets, and those with the lived experience) may facilitate the effectiveness of the intervention within the food retail environment, thus enhancing sustainability and impact (45). Addressing overlooked aspects within food retail campaigns, such as diversity and medical conditions, as identified by our participants, may create a more inclusive and supportive shopping environment. However, providing an ideal setting within which to leverage the processes to encourage a shift towards the purchasing of healthier and more sustainable diets (6,7) is challenging and it is important to recognise that retail organisations are part of the wider food system. Using a systems approach to address health inequalities is crucial because health disparities arise from complex, interconnected factors that cannot be adequately addressed through isolated interventions. A systems approach to address health inequalities that recognises the dynamic interplay between individual, societal, and structural determinants of health and provides a framework to identify and address these interdependencies effectively is required (46).

The current study had numerous strengths; particularly, we collected insights from a hard-to-reach population group on how they perceived retail communications, and the study enabled the sharing of those findings back to the retail partner. While participants were from only one geographical location, in the north of England who were experiencing high levels of FI, the aim of this qualitative research was not representativeness, but rather an exploration of insights from PLWO and FI on retail campaigns. Data saturation was reached, which helped to mitigate the limitation posed by the small sample size. However, this work was only undertaken with one retail partner, and participants were not necessarily regular shoppers within that supermarket. Indeed, many participants discussed shopping at multiple food environments to get the best deals, and this predominantly included discount supermarkets, where products are sold at prices that are in principle lower than an actual or supposed full retail price. As retail entities are already offering their products at the lowest possible price, it would be interesting in future research to explore their promotions related to the purchase of healthy sustainable foods. Acknowledging and addressing the food environment’s inherent complexity is vital to making meaningful improvements. Future studies should aim to gain insights into factors and mechanisms underlying the local or place-based food environments, in areas of high FI, to identify leverage points and system-based actions to foster equitable access to healthy and sustainable foods for all.

# Conclusion

Findings provide insights from the lived experience, on the need for tailored campaigns and communications that support PLWO and FI to purchase healthier and more sustainable foods. Acknowledging and addressing the inherent complexity of promoting healthy sustainable food is vital to making meaningful improvements to the food environment. Promotional material needs to reflect the requirements of different customers, which is challenging for supermarkets, but may be achieved by working with diverse groups to ensure campaign materials are acceptable. Retailers do have an important role in acknowledging and addressing this inherent complexity in promoting healthy, sustainable food as part of the wider food system.

# List of abbreviations

PLWO – People Living With Obesity

FI – Food Insecurity

# Declarations

None

# Ethics approval and consent to participate

The Ethic approval was obtained from the Institutional Review Board at Leeds Beckett University, UK. Written informed consent was obtained from participants. All methods were carried out in accordance with the Declaration of Helsinki.

## Consent for publication

Not applicable

## Clinical trial number

Not applicable.

## Availability of data and materials

The datasets used analysed during the current study available from the corresponding author on reasonable request.

## Competing interests

MSG is a director of Causal Insights Solutions Ltd, which provides causal inference training and may benefit from any study that demonstrates the value of causal inference methods. AMJ holds a voluntary Advisory Committee role with British Nutrition Foundation. CAH has received research funding from the American Beverage Association (paid to institution), personal honoraria from International Sweeteners Association and International Food Information Council, and is primary supervisor on a PhD studentship funded by Coca-Cola, all for work unrelated to the submitted manuscript. CAH reports personal fees for their role on the Food Standards Agency’s Advisory Committee on Social Sciences, and an unpaid role as a trustee of Feeding Liverpool. Maddie Thomas works for Sainburys Plc. No other authors declare that they have any competing interests.

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## Authors' contributions

**Hannah C Greatwood:** Conceptualization, Data curation, Formal analysis, Investigation, Methodology, Project administration, Writing – original draft. Writing – review & editing. **Thomas Sawzcuk:** Methodology, Formal analysis, Writing – review & editing. **Emma Hunter:** Writing – review & editing. **Rebecca A. Stone:** Writing – review & editing. **Marta Lonnie:** Visualization, Writing – review & editing. **Mark S Gilthorpe:** Funding acquisition, Conceptualization, Formal analysis, Writing – review & editing. **Alexandra M Johnstone**: Funding acquisition, Writing – review & editing. Flora Douglas: Funding acquisition, Writing – review & editing. **Adrian Brown**: Funding acquisition, Writing – review & editing. **Charlotte A. Hardman**: Funding acquisition, Writing – review & editing. **Emma Wilkins**: Writing – review & editing. **Flora Douglas:** Funding acquisition, Writing – review & editing. **Maddie Thomas:** Methodology, Writing – review & editing. **Nilani Sritharan:** Methodology, Writing – review & editing. **Claire Griffiths:** Funding acquisition, Conceptualization, Formal analysis, Methodology, Writing – review & editing.

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Supplement 1 Topic Guide

**Topic Guide: Focus Groups**

**Introduction to the topic and instructions:**

Hello and welcome to our focus group. Thank you for agreeing to take part. My name is…. and I’ll be facilitating the focus group today.

Before I introduce the topic in a little more detail, I just have some focus group housekeeping I would like to mention.

* What we will talk about today is quite a big topic area, and everyone may have a different opinion or experiences to the questions and I am keen to hear as many of your opinions and experiences as I can.
* I know I do have a set of questions to ask but we may not stick to them, if you are thinking of things as we go through that are important to you, please feel free to share them.
* I am here to learn from you, I will offer questions for you to consider, and hope this will create a discussion between you all, so I encourage you to ask questions to one another.
* Please can I invite and encourage everyone to be open and participate in the discussions. You may have similar or different experiences and that’s great, so I would like to hear from you.
* If, at any point I ask a question you are unsure of please feel free to ask for clarification.
* And then finally, everything discussed today will be treated in confidence, meaning that your name will not be used at any time to be able to identify you.

Before we start do you have any questions or concerns you’d like to raise that have occurred to you since you agreed to take part?

Our research project is concerned with helping people who want to lose weight and who are living on a tight or inconsistent budget to shop more easily for the food items they believe will help them to do that. We are also interested to understand your views about sustainability, and how or if this issue fits in when you are shopping for food.

The focus group should last up to 60 minutes, but it depends on how much or as little you feel you have to say about the things we will talk about today, we are grateful for the time you are giving and the insights you are sharing with us today. There will be time at the end when you can ask any questions you might have. We will be recording today’s discussion so we don’t miss anything important or have to write down everything you say. If you would like to take a break at any point, you can let me know and we can continue when you are ready. Just to let you know, you will be provided with a £25 shopping voucher as a thank you for taking part.

Do you have any questions before we start?

**Opening Question**

Thinking about those broad questions our project is focused on:

* How would you describe your experience of shopping for food?
  + *Prompt: Think about a usual trip to the supermarket, how does it feel when you are shopping?*
* Do you shop online as well as in-store? (or vice versa if they discuss online shopping first)
  + *If yes:*

\*How do those experiences differ?

\*Which do you prefer and why?

**Choice of retailer:**

Next, we’d like to ask a few questions about where you typically shop:

* Where would you say you normally do the majority of your shopping?
  + *Prompt*: *What are the reasons, would you say, that means you normally shop in these places?*
  + *If they state more than one shop/ supermarket, explore: Can you tell us a little bit more about the types of things you buy at the different stores?*
* *(If not covered above)* What are your experiences of shopping at [supermarket/ store]?
  + *Prompt: What do you like about shopping at [supermarket/ store]? What do you dislike?*
* Are there any places or shops that you would not use for food shopping?
  + *Prompt: Why do you avoid using those shops/ places?*

* Have other people in the supermarket, such as supermarket staff, check-out operators, other shoppers had any influence on where you shop?
  + *If yes, explore*: *What influence have they had (i.e. shopping habits/ purchases made/ how often they attend/ length of time spent considering what to buy?)*

**Cost of living**

* Over the past year food prices have been increasing. Have you changed how you shop because of this? If so can you explain how?

**Health/Sustainability**

We realise it can be a struggle to buy healthy, good quality food and the FIO Food study is looking at ways we can help support people buy the foods they would like to so they can eat well, improve their health and reduce their weight.

* Can I ask what does healthy eating mean to you?
  + *Prompt: examples from the Eatwell Guide.*
* Is the healthiness of the food you buy something you tend to think about when you are shopping?
  + *If yes: prompt*

*\*In what way does this influence what you buy or eat?*

*\*How do you find out information on the health of the food you buy?*

*\*Does any supermarket communications help you in making those decisions? How? (any specific communications/supermarkets have been helpful)*

* + *If no: prompt*

*\*Would you like to make more healthy food purchases or meals?*

*If yes: What sort of changes might you like to make?*

*If no: Would you be willing to share your reasons for not wanting to make these changes? Do you ever notice anything in-store/online/on products about sustainability?*

* When you either go to the supermarket or shop online, have you noticed any campaigns or signs that are promoting healthy eating?
  + *Prompt: If yes:*

*\*What you were?*

*\*Do you take any notice of them?*

*\*Do you like/dislike them?*

*\*Which supermarkets do they think does the best/worst healthy eating promotions?*

**The FIO Food Study is also interested in the environmental aspect of food, the sustainability or the impact of our diet on the planet. I’m not sure if this is something you have thought about before and it’s completely fine if you haven’t but I’d like to ask a few questions on sustainability.**

* When I say sustainable foods or food sustainability, what does that mean to you?
  + *Prompt example:*

*…Greenhouse gas emissions*

*…Land use*

*…Water use*

*…Buying local produce*

* Is the environmental impact of the food you buy something you tend to think about when you are shopping?
  + *If yes prompt:*

*In what way does this influence what you buy or eat?*

*How do you find out information on the sustainability of the food you buy?*

*Does any supermarket communications help you in making those decisions? How? (probe if any specific communications/supermarkets have been helpful)*

* + *If no prompt:*

*Would you like to make more environmentally sustainable food purchases or meals?*

*If yes: What sort of changes might you like to make?*

*…meals with less meat*

*…meat free meals*

*…bulking out meals with beans, peas, lentils or other veg*

*If no: Would you be willing to share your reasons for not wating to make these changes? Do you ever notice anything in store/online/on product about sustainability?*

* When you either go the supermarket or shop online, have you noticed any campaigns or signs that are promoting healthy eating?
  + *If yes prompt:*

*\*What they were?*

*\*Do you take any notice of them?*

*\*Do you like/dislike them?*

*\*Which supermarkets do you think does the best/worst healthy eating promotions?*

**Supermarket Messaging**

Thanks, your views are really useful and so we would now like to ask about some messaging that a retailer has used both in-store and online.

**Aldi Price Match (provide handouts of images)**

A supermarket recently had an Aldi Price Match campaign where they added new healthy and better-for-you products to the campaign to create a ‘balanced’ basket accompanied by messaging and recipes on balanced diets, with over 150 products that were price matched to the discount supermarket Aldi.

A sign with a picture of food on it

Description automatically generatedA group of posters with food on them

Description automatically generated

* Has anyone see any of these adverts before?
  + If yes, where? *Prompt: in store, press release, direct mail, email, supermarket website?*
* What do you think this advert is trying to tell you? *Prompt: affordability, healthy eating?*
* How do you feel about this advert?
* If you see pictures like this does it make you want to change how you shop? And the foods you buy?

If yes, how, why? *Prompt: If you usually shop at a discount store, does the messaging mean you would shop at this supermarket as the foods would cost the same?*

* + If no, why not? what would, if anything?
* Do you think there could be a better way to present this messaging that would help you make healthier food choices?
  + *Prompt: Have you seen anything from other brands/retailers?*

**Sustainable Campaign (provide handouts of images)**

In the autumn a supermarket campaign aimed to show how mixing half pulses with half meat in well-loved recipes like curries, lasagnes, and casseroles can help us to eat better, one plate at a time.

A casserole in a white dish

Description automatically generatedA pot of food with text

Description automatically generatedA food on a plate

Description automatically generated

* Has anyone seen any of these adverts before?
  + If yes, where?*Prompt: in store, press release, TV, radio, supermarket website*
* What do you think this advert is trying to tell you? *Prompt: affordability, healthy eating, sustainable eating, lower cost?*
* How do you feel about this advert?
  + Would it make you change where and how you shop?
  + If no, what would, if anything?
* Do you think there could be a better way to present this messaging that would help you consider the planet when you are food shopping? *Prompt: Have you seen anything from other brands/retailers?*
* If you see pictures like this does it make you want to change how you shop? And the foods you buy?
  + If yes, how, why?
  + If no, why not?

Overall

* Do you think the supermarkets could do anything to make buying healthier food easier?

*If yes:* What could they do?

* Do you think the supermarkets could do anything to make buying environmentally sustainable food easier?

*If yes:* What could they do?

**Concluding the session:**

That’s all the questions I have today. Is there anything else anybody would like to add?

Do you have any other questions before we finish? Your contribution today is appreciated and we would like to take this opportunity to thank you for taking part.