

## A qualitative investigation of the health behaviours of young children from refugee families using photo elicitation interviews

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### ABSTRACT

**Objectives:** To explore the experiences and perspectives of refugee parents regarding health behaviour changes among their children (i.e. changes in diet, levels of physical activity) and the impact of these changes on the health of their children aged 2–12 years.

**Design:** A qualitative approach using semi-structured interviews supported by photo-elicitation.

**Methods:** Parents of 2–12 years old children who had relocated to the UK within the past three or more years were recruited from two refugee organisations in the UK. Semi-structured face-to-face interviews and photo-elicitation were used to stimulate face-to-face in-depth discussions with participants. Data were analysed using an inductive and latent thematic analysis approach.

**Results:** Twenty-seven parent refugees were recruited. Participants were primarily mothers (85%) and from Syria (70%). Other countries of origin were Sudan, Eritrea, Iraq, Kuwait, Libya and Tunisia. Twenty-six interviews were conducted in Arabic and one in English. The analysis identified three themes: (1) Reflection on acculturation, (2) Changed parental role, and (3) Environmental barriers to being healthy. Participants described facing substantial changes to their lifestyle and personal context, including a restricted living space, restricted neighbourhood/community and inclement weather. These differences in the environment required parents to adjust their roles, and practices around their own and their child's eating habits. These changes influenced refugee children's health behaviours. Of particular concern to parents were increased sedentary behaviour and consumption of unhealthy snacks.



**Conclusions:** Multiple factors were identified relating to changes in family circumstances and environments that influenced refugee children's health behaviours. Targeting these behaviours in tailored interventions may help improve refugee children's health.

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## Introduction

Childhood overweight/obesity is a major public health issues worldwide and is associated with poor health consequences in childhood such as hypertension, insulin resistance, orthopaedic problems, and poor quality of life (WHO, 2021). Childhood obesity also has well-recognised effects on the longer-term wellbeing of individuals, such as obesity in adulthood, cardiovascular disease, diabetes, musculoskeletal disorders and cancers (Freedman et al., 2007; Pinhas-Hamiel & Zeitler, 2007; Taylor, 2006; WHO, 2021). Recent increases in the obesity rate have been particularly pronounced among refugee children settled in developed countries; a recent review reported that obesity rose in refugee children from between 9% and 17% at arrival to between 21% and 35% after settlement in the host country (Kumar et al., 2021). There is therefore a need for intervention to prevent obesity in young child refugees settled in developed countries.

The early environment has been recognised as exerting a powerful, long-lasting effect on a child's health including the development of obesity (Anzman et al., 2010). Most excess weight prior to entering puberty is gained before 5 years of age, illustrating the critical importance of this early period in contributing to childhood obesity (Gardner et al., 2009; Hui et al., 2008; Monteiro & Victora, 2005; Ong & Loos, 2006). As a consequence of this, focusing on early childhood is fundamentally important in addressing health behaviours related to childhood obesity (Anzman et al., 2010; Lanigan et al., 2010). This assertion is supported by the position of the UK health policy, which recognises the importance of early environment interventions in tackling the obesity problem (HealthCommittee, 2004).

To build an intervention it is important to identify the key behaviours that influence obesity – such as food consumption and physical activity (Raj & Kumar, 2010; Smith et al., 2011). Obesity is attributed to a multitude of factors including direct influences on food consumption (e.g. portion size) and physical activity (e.g. level of physical activity) (Vandenbroeck et al., 2007). It is also important to understand other factors that influence these key behaviours such as media (e.g. exposure to food advertising), social (e.g. peer pressure), psychological (e.g. food literacy), economic (e.g. affordability of healthy foods), environmental infrastructure (e.g. walkability of local environment), developmental (e.g. quality/quantity of breast feeding), biological (e.g. metabolism) and medical factors (e.g. level of infections) (Vandenbroeck et al., 2007).

A recent systematic review of studies that reported on factors related to obesity in child refugees following resettlement in developed countries found evidence for many of the above multiple influences on obesity (Alsubhi et al., 2020). Factors directly related to unhealthy food choices included poor food literacy, increased availability of unhealthy foods, and decreased availability of healthy foods (Alsubhi et al., 2020). Factors related to overconsumption of food included temptation from increased food variety and abundance relative to their home countries and reacting to previous food insecurity by overeating whilst food was available (Alsubhi et al., 2020). Factors related directly to activity were lack of opportunity to exercise due to poor weather, reduced domestic activity due to labour saving devices, and lack of value given to sporting activities (Alsubhi et al., 2020).

Regarding factors that influence food consumption and activity there were many influences. Media effects were mentioned such as exposure to advertisements for unhealthy foods and the availability of passive entertainment such as TV, social media

and video games (Alsubhi et al., 2020). Social influences included being embarrassed about eating traditional foods when others are eating host country foods, peer pressure to try unhealthy foods, cultural body size preferences affecting food choices and activity levels and being unable to exercise because of a mismatch between religiously recommended loose clothing and gym requirements (Alsubhi et al., 2020). Psychological influences include stress from the refugee experience (from previous trauma and current environment) leading to negative mood and the consumption of unhealthy foods, not knowing how to prepare unfamiliar foods without being able to read instructions due to language barriers and perceived lack of safety to resulting in a lack of opportunity to exercise outside the home (Alsubhi et al., 2020). Economic factors included lack of affordable exercise facilities and healthy food and inexpensive energy dense junk foods. Environmental infrastructure influences included the increased availability of public transport and cars precluding the need to walk (Alsubhi et al., 2020). There was mention of a biological influence in the terms of tiredness in Winter affecting ability to be active (Alsubhi et al., 2020). There were no developmental (i.e. quality and quantity of breastfeeding or appropriate conditions that affected maternal, fetal or child growth), or medical (i.e. level of infection, reliance on surgical or pharmacological interventions) influences (Alsubhi et al., 2020).

The systematic review provided a wealth of information on factors related to obesity in refugee children that could be used to inform interventions. However, there were some limitations of the review as there were few studies that focused on young children in particular, few studies that reported solely about refugees (they often included non-refugee immigrant experiences) and there were no studies that reported the influences on refugee children's food consumption and physical activity in the UK. In an attempt to address these issues, the aim of the current study is to explore the experiences and perspectives of refugee parents regarding their children's health behaviour (i.e. food consumption and physical activity). Specifically, the objectives are to identify the role played by parents in influencing the diet and physical activity of their children, with specific reference to current eating practices and their perspectives regarding factors that might influence their children's levels of physical activity and food consumption after resettlement in the UK. In addition, this study will explore whether these levels could be linked to the changes in their children's weight. These findings will identify the factors that parents perceive to be important in their child's weight changes, thereby informing the design of a culturally appropriate intervention to promote healthy growth (e.g. increased physical activity, following a healthy diet) targeting refugee families with young children. This study aimed to: (1) gather parental perspectives of refugee families regarding the changes in health behaviours from pre-resettlement to post-resettlement; (2) identify the salient factors that influence the pre/post-settlement changes in the health behaviours of parents; and (3) explore the role of parents in influencing their children's health behaviours.

## Methods

### Design

The study used qualitative methods with parents of refugee children comprising semi-structured interviews and participant-driven photo-elicitation in combination with

participant, public involvement. Photo-elicitation interview (PEI) is a qualitative technique where the researcher uses photographs or other images as stimuli to elicit responses, reactions, and insights from participants (Collier, 1957; Collier & Collier, 1986; Harper, 2002) – in this study PEI was used to gain insights into the ways in which refugee parents make sense of their experience and their roles regarding their children's diet and physical activity (Elliot et al., 2017; Hurworth et al., 2005; King et al., 2018). Patient and public involvement (PPI) is where patients or the public are actively involved in the generation of the data (not merely as participants; Clark-Ibáñez, 2004; Frohmann, 2005; Jansen & Rae Davis, 1998), in this instance a group of refugee parents provided the images that the interviews revolve around (see the methods section for more detail).

These methods were used as they are particularly useful for use with vulnerable populations such as refugees who have often experienced traumatic events that may cause them to feel emotional or sensitive when reflecting upon the changes in their lifestyle after resettlement (Gifford et al., 2007; Svensson et al., 2009). This method provides (a) forum for the participant to discuss potentially sensitive topics by allowing them to select images that evoke reactions, emotional responses, and meanings that may not have been accessible using verbal methods alone (Harper, 2002; King et al., 2018), (b) a highly effective way of building trust and rapport with participants (Gifford et al., 2007) with shared control of the interview process (Hurworth et al., 2005; Orellana, 1999) to reduce the historical power dynamics between researcher and participants because the participants are capable of defining what is important (Lapenta, 2011), and (c) helps the researcher to access a world that may not be familiar, thereby providing a shared understanding of the participants' experience. The methods also enhances the rigor of qualitative methods through multi-method triangulation (Hurworth et al., 2005; Orellana, 1999).

## **Data collection**

### **Patient and public involvement and engagement**

The study materials were developed based upon discussions with members of the targeted population. Three refugee mothers of young children were selected purposely to reflect the targeted population, e.g. members of a group with specific defined characteristics. They provided assistance in evaluating and assessing the participant information sheets and the interviews topic guide in terms of the clarity and accessibility of these documents to the targeted sample population e.g. PIS for readability, photos for relevance, etc (Please see Appendix B for PIS). The discussions with the mothers resulted in a number of changes being made to the participant information sheets, including the addition of further explanations of the study aims and the provision of examples of health behaviours (e.g. healthy diet, being physically active). The refugee mothers also helped in assessing and formulating some of the interview questions (Please see Appendix C for topic guide). This was important as interview questions are essential for eliciting rich responses and are most effective when participants are able to understand the meaning of the questions. They also had been involved in generating the photos that used in the interviews. This was important to ensure that these pictures were reflecting the daily lives of refugee families after their resettlement in the host country.

## Interviews

The study materials were developed based on results from the systematic review (Alsubhi et al., 2020) from previously available research, and from discussion with participants from the study population. We used the social cognitive theory (SCT) to develop the interview guide for multiple reasons (Bandura, 2004). This theory recognises the interaction between individual factors (e.g. self-efficacy to eat a healthy diet or being physically active) and social environmental factors (e.g. social support networks) on behaviour change (Wieland et al., 2018). In addition, low self-efficacy is considered as one of the influential barriers to eating a healthy diet and being physically active (Sheeshka et al., 1993; Trost et al., 2002). Furthermore, a supportive family environment has an important, positive influence on health behaviours among immigrant families (Marquez & McAuley, 2006). This theory has been instrumental in forming the conceptual base of previous research targeting refugee families (Morrison et al., 2017; Tiedje et al., 2014; Wieland et al., 2015; Wieland et al., 2018).

Therefore, the interview topic guide included questions that assessed: (1) participants' understanding of what comprises a healthy diet, descriptions of food and types of physical activity, food environment, and dietary patterns; (2) participants' perceived barriers to eating healthy food and being physically active for their children and as a family; and (3) differences in dietary patterns and levels of physical activity 'back home' and in the UK.

## Photo elicitation

Three mothers agreed to be part of the PPI group; they represented the targeted population and were considered eligible according to the inclusion criteria. The PPI group were involved in generating and selecting the photos that would be used in the interviews and reviewing the topic guide and information sheet. At the PPI meetings, the researcher gave a brief outline of the rationale of this study, and then provided guidance on the type of photos that needed to be generated and the topics and content of the photos. First, examples of photos were selected from free image bank, with the assistance of and discussions with the research team (which involved three experts in health psychology and behaviour change), to help PPI understand what type of photos they should generate, the photos were from free image banks reflecting refugee life after resettlement (Refugee Child iStock, 2019). For example, photos were about meal time, eating behaviours, shopping practices, home environment, and examples of types of physical activity during the week, and the type of snacks their children have. Second, ethical considerations of the content of the photos were taken into account, such as PPI members being asked to share photos where their children could not be identified from the pictures.

The PPI group generated the majority of the photos used in the interviews. The final selection of photos resulted from a two-stage process, with the PPI group generating the photos and then participating in a discussion regarding the final selection of photos that followed all the ethical considerations. The research team made a final decision on the numbers and the photos that would be used in the interviews.

The researcher displayed a photo that related to the topic, using each image as a prompt to initiate further dialogue and to follow up new, emerging ideas, as well as

the use of probes. For example, when asking participants about their meal routine, the researcher would present a photo that represented meal time in their Culture, which enhanced the opportunity for participants to share more and for the researcher to further explore their experiences.

## Participants

Twenty seven parent refugees took part. Participants were primarily mothers (85%) and from Syria (70%). Other countries of origin were Sudan, Eritrea, Iraq, Kuwait, Libya and Tunisia. The characteristics of participants are illustrated in Table 1. It has been suggested that greater heterogeneity and improved representativeness in studying refugees can be achieved by increasing sample sizes, using quotas for key demographic variables (Sulaiman-Hill & Thompson, 2011). Therefore this sample was large to achieve the sufficient information power this sample holds (Mthuli et al., 2021).

Participants were recruited from two different refugee organisations (Rethink Rebuild, Rainbow Haven), which operate in a large northern city in the UK. Potential participants were identified with the assistance of national and local refugee organisations, where posters and leaflets of the study were distributed within the organisations. In addition the professionals working with refugees would provide potential participants with information sheets that describe the study and will obtain permission from those interested in taking part for the research team to contact with further information; whilst fathers were included in the eligibility criteria, none volunteered.

**Table 1.** Characteristics of Participants.

Pseudonym	Age (years)	Country of origin	Years lived in UK	Education level
P1	30	Syria	9 years	Primary School or less
P2	43	Syria	4 years	Primary School or less
P3	28	Syria	4 years	Primary School or less
P4	28	Syria	4 years	Some high school
P5	44	Syria	3 years	Primary School or less
P6	37	Syria	4 years	Primary School or less
P7	21	Syria	3 years	Primary School or less
P8	30	Syria	5 years	University degree
P9	54	Syria	4 years	Some high school
P10	50	Syria	4 years	Some high school
P11	34	Syria	3 years	University degree
P12	40	Syria	7 years	University degree
P13	30	Syria	4 years	Some high school
P14	35	Syria	8 years	University degree
P15	33	Syria	4 years	Primary School or less
P16	32	Syria	3 years	Primary School or less
P17	26	Syria	3 years	Primary School or less
P18	34	Syria	4 years	Some high school
P19	37	Kuwait	6 years	Primary School or less
P20	26	Libya	5 years	University degree
P21	38	Sudan	5 years	Primary School or less
P22	32	Sudan	4 years	Primary School or less
P23	30	Sudan	3 years	Some high school
P24	40	Sudan	4 years	Primary School or less
P25	30	Iraq	5 years	University degree
P26	29	Eritrea	5 years	Some high school
P27	32	Tunisia	8 years	University degree

Eligible participants under the selection criteria were refugee parents (mothers and fathers) of young children (aged 2–12), who have been resettled in the UK for more than three years. We decided to focus on the refugee parents of young children aged 2–12 who have resettled in the UK for more than three years. These criteria were selected due to the fact that childhood obesity is one of the long term effects of forced migration post-settlement in developed countries, with many studies showing an association between weight gain and the time since arriving to the developed country (Rhodes et al., 2016). In addition, as the intervention was preventative and targeted at parents, we took the pragmatic approach of targeting parents of younger, more dependent children and exclude semi-autonomous teenagers and older children.

### **Ethics statement**

Ethical approval was granted by a University ethics committee (2019-6539-10925).

### **Data transcription and analysis**

Among the twenty-seven interviews, 26 were conducted in Arabic and only one in English. Data from the interviews were audio-recorded with the participant's consent and transcribed verbatim directly to English. To ensure translation quality assurance a professional translator conducted a comprehensive, independent cross-check (Lincoln & Gonzalez, 2008; Squires, 2008; Wong & Poon, 2010). To encourage parents to speak freely about their experience and to increase trust in the researcher, participants were made aware that the interview was confidential and non-judgemental and that there were no right or wrong answers. The right to withdraw was clearly and continuously emphasised and participants were also be made aware that participation is entirely voluntary. Before, during and following the study, participants had opportunities to ask any questions that they might have.

Parents' views were analysed using thematic analysis (TA). We chose this approach because it is useful for summarising key features and generating unanticipated insights (Braun & Clarke, 2006, 2021). We followed the six phases proposed by Braun and Clarke which consist of: (1) data familiarisation and writing familiarisation notes; (2) systematic data coding; (3) generating initial themes from coded and collated data; (4) developing and reviewing themes; (5) refining, defining and naming themes; and (6) writing the report. In phase one, interviews were read several times and make notes about what was interesting or relevant to our research questions. This allowed the researcher to become familiar and engaged with the data. In phase two, a more formal coding process was conducted, which involved discussion and modification to the codes between the research team. In phase three, we collated codes featuring similar contents into initial themes. In phase four, Themes were developed and reviewed within the research team. In phase five, we refined the developed themes further which included defining and naming them. The data was organised with NVivo11 software (Edlund & McDougall, 2016). Furthermore, establishing the trustworthiness of the analysis is considered a key concept in qualitative research, which is as Lincoln and Guba (1985) describes, a way of assuring the reader that research findings are grounded in the data (Lincoln & Guba, 1985). Lincoln and Guba (1985) introduce the criteria of credibility,

transferability, dependability, and confirmability to fulfil trustworthiness which is considered one of the widely accepted and easily recognised criteria (Nowell et al., 2017). In an attempt to ensure that the analysis was conducted in a rigorous and methodical manner to yield meaningful and useful results a step-by-step approach to conduct a trustworthy thematic analysis developed by Nowell et al. (2017) was followed, in which the analysis process involved sharing the initial codes with other researchers in the team who regularly met to discuss and refine the coding and thematic framework and refined it (Nowell et al., 2017).

### **Reflexivity**

Throughout the study, the research team met regularly to share reflections on their positionality in relation to the incoming data and analysis. The team were all female with a background in psychology, and had varying levels of experience in conducting qualitative interviews with diverse communities. We considered the concept of insider/outsider-researcher status, reflecting that this is better conceptualised as a continuum rather than a dichotomy (Breen, 2007). Whilst none of the research team had lived experience of forced migration, the lead researcher (who undertook the interviews and led on the analysis) identified as Arabic and had relocated from a country, with a culture similar to the study participants, to live in the UK. The remaining researchers identified as White British. Three quarters of the research team had lived experience as parents of young children. Pertinent reflections from the lead author on her positionality are provided below:

From the early stages of this research, I was aware of the influence of my background as an Arabic researcher on the direction and interpretation of the research results. As a female researcher from a similar culture to the population under study, as well as speaking the same language and having a similar experience of being from a developing country and resettling in a high income country, meant that I was likely to have a better understanding of their experiences. At the same time, it was important to recognise and be aware of the influence of my personal perspective and experiences on the research. During the interviews, my role as the primary researcher and I also allowed myself to connect to the participants as a mother with young children (I considered myself as insider), which had a positive impact on the recruitment process, as well as fostering engagement and building the rapport with the refugee parents. However, I felt that my experiences were very helpful in understanding the challenges that they faced in the resettlement period. In addition, my deep understanding of the culture and speaking a different dialect of the same language allowed me to be accepted by the refugee community, facilitated the recruitment and, perhaps most importantly, reduced the misunderstandings and miscommunications usually associated with the ethnic minorities research. However, being a female researcher from Saudi Arabia acted as barrier to the recruitment of a sufficient sample of fathers in the study. I sensed that when I approached fathers, they would ask me to speak to their wives instead, which likely reflected some level of gender effect and certain cultural norms (Hayfield & Huxley, 2015). Although this position was considered an advantage as it enabled more straightforward access to authentic data and a deeper understanding of the culture of this hard-to-reach population, there was a potential risk, especially during the data analysis, of overlooking parts of the data where assumptions around the content are hard. (LaSala, 2003; Perry, Thurston, & Green, 2004)



## **Thematic analysis results**

Twenty seven parent refugees participated in the study, 81% of them were mothers. Their age ranged between 21 and 54, and all of them were married. 55% of the mothers reported having only a primary school education, 31% reported having a high school education, and only 14% had a university education. 90% of the participants were currently unemployed. These parents had resettled in the UK as refugees for more than 3 years.

The analysis identified three broad themes within the data: (1) Reflection on acculturation under this theme, there are two sub-themes (Navigating the changed environment, changes in meal routine and navigating new norms and assumptions). (2) Changed parental role under this we have three sub-themes (Adjusting parenting role and responsibility, Control of food choices, Awareness of change). (3) Environmental barriers to being healthy under this theme there is two sub-themes (Food availability and School environment). In the sections below, each are described in turn and supported with illustrative examples from across the data set.

### **Reflection on acculturation**

Parents talked about some changes in their new life in the UK. These changes included changes in their environment, roles, eating patterns and types of physical activity. There were differences between the environments of participants' home countries and the UK which required parents to adjust their roles and responsibilities accordingly.

**Navigating the changed environment.** Having relocated to a new environment, refugee parents face profound changes to their lifestyle and personal context, many of which can directly or indirectly influence health behaviours. Several changes were identified, including living space, inclement weather, and restricted neighbourhood/community.

All participants expressed clear differences between their lifestyle pre-settlement and post-resettlement, reporting that they used to live in safe, close-knit communities in their home countries. However, despite experiencing life in war zones and traumatic journeys to their host countries, refugee parents stated that they still felt that their old communities were safe and close-knit. It is interesting to note that, despite experiencing war, these families refer to their home community and home neighbourhood prior to the war as being safe. These feelings of unsafety and unfamiliarity with the customs and culture of the host country manifested in a reluctance to let their children play outside and interact with the neighbours. This was attributed to restricted access to the wider community; limited or no access to opportunities to meet or get to know other people were implicit in the narratives of participants.

While here we do not have social relationships with friends or relatives like in Syria so we do not visit people and spend time together so my children feel bored and we do not have anything to do in vacations. (P1)

The concerns that parents expressed about the safety of their neighbourhood may have had a detrimental effect on the levels of physical activity among their children. Additionally, many parents were wary of their children speaking to strangers or adopting bad habits from others in their neighbourhood. This could be a result of their history of

traumatic experiences, particularly exposure to war, and their corresponding protectiveness toward their children. The other important point implied here pertains to their feeling unsafe in outside spaces, which also restricts opportunities for outside play.

It is considered as a new place for us here and we are afraid of our children when they go out to play at a park since we do not want them to talk to strangers or learn bad things. (P12)

One father explained reasons for restricting their children from playing outside, including the perceived fear that the different environment was unsafe or that they were cautious of the neighbours and did not wish to cause disruption.

British people have their own routine here, but we do not have such a routine here. It is considered as a new place for us here and we are afraid of our children when they go out to play at a park since we do not want them to talk to strangers or learn bad things. (P17)

Most participants commented on the ways that the weather and restricted living spaces affected their children's physical activity. Participants came from countries with mostly hot climates, meaning that they had to adapt to the colder, wetter UK climate. The new climate discouraged participants from allowing their children to be outside for long periods of time, particularly in the winter, the consequence of which was that their children less active than in their countries of origin.

The weather actually plays a key role here since the rainy and cold weather makes my children eat too much and they stay at home with not doing any kind of activity. (P15)

In their home countries, refugee families typically lived in wide, open areas, such as farms or rural communities. These provided more opportunities for their children to play safely and be active. In contrast, their houses/flats in the UK were much smaller, with comparatively less space for activities. Post-resettlement, these families usually have low incomes, which means they cannot afford spacious homes; therefore, they live in smaller homes/poorer living conditions. Thus, they are more likely to be exposed to gang culture, drugs, etc., consequently, they are less inclined to let their children outside. Participants described how their children's play was restricted inside their homes, with very limited opportunities to play outside.

I mean they used to play in big houses and the weather was good when we were in Sudan where they were more active than here. My children do less physical activities here as the size of our house is small and we do not have a garden or space at our home where they can play in. (P3)

*Changes in meal routine.* Participants described critical changes in their new lifestyle post-resettlement, and one of the main changes was apparent in the narrative, the daily meal routine of the families. Most families share the same culture, which considers meal time a social event where the whole family sets with each other several times per day. Most of the families expressed that the number of meals they ate together was reduced from three meals to one, typically the evening dinner, after resettlement in the UK. They explained that the long school day in the UK means that children sometimes have their breakfast and lunch at school, only sharing the evening dinner together. These mothers compared their meal routine here in the UK and back home; they explained how they used to sit and eat three meals together as a family, and that

created an opportunity for parents to observe and impact their children's diet. Some mothers explained how they would have the time and support to prepare proper meals for their families. They highlighted that they used to eat together with their extended family three times a day which means that all the children would encourage each other to eat and finish their plates. Therefore, this change adversely affected their ability to exert control over their children's diet.

We used to eat three meals together every day in Syria, but here we only eat together in the dinner time since the breakfast and lunch meals are eaten outside the home. (P 10)

Social life and relationships are considered essential to these families especially since they used to live with their extended family back home, so they used to eat together, and that changed here after they moved to the UK. One mother explained how she faced difficulties at the beginning in contacting other people and her feelings about leaving her family behind.

I was crying when I first moved to here since it was a new place and I just left my beloved family. Also, I was struggling with contacting people in English language and I was shy when I go out or when I go to a hospital. I feel much better now and I want to learn more things in this country. (P11)

This quote shows how they feel after they were forced to move away of their families for the first time. This big change in these families social life affected their meal routine and as result their diet in general. One of the impacts was the quantity of food prepared from scratch and eaten together as a family was reduced, as they had no need to prepare large meals that could feed a big family or last for several days or that can be shared with neighbours and guests.

There are a lot of changes, for example in Sudan we eat and prepare a lot of food and I used to cook large quantity of food but we do not eat a lot because we share it with guests and neighbours. So here I cook small amount of food so I only prepare what my kids love. (P1)

Participants explained that this change was mainly due to their limited social life in the UK, which meant that these mothers would only make one small meal for their families. In addition, the narrative also uncovers changes in the type of meals they would prepare, in which they do not prepare some of their traditional dishes that takes long time instead they learned how to make simple and quick meals that suit the busy lifestyle in the UK. Some mothers explained how their children's taste preferences changed after they moved to the UK and that could be informed by the changed environment. For example, this mother shared she noted that the taste of her children had changed a lot and now they want to eat the food that they see in the host country. This shifting preference could reflect children desire to 'fit in' and avoid being different.

Our food system has changed when we moved to the UK. For example, we used to eat (labnah), olives, cheese, hummus, and falafel at the breakfast, but now my children do not eat such food and they prefer eating pasta and pizza to the Syrian and healthy food such as vegetables or rice, they like to imitate their friends at school and buy what they bring with them to the school. (P13)

However, this was not the case for all the families, some of the parents who moved to the UK when their children were a little bit older (i.e. Older than 6 years) expressed how

they would prepare school-packed lunch for their children since they did not like school meals. This mother explained how her older children did not like the food at school.

my other children were too annoyed of this and they did not like the food at their schools.  
(P13)

It was clear from this quote that younger children are more likely to adopt the habits and behaviours of the UK. It may be due to the fact that they have little memory of their pre-settlement lives, so their eating habits have become like those of children in the UK. As compared to older children who were more familiar with their traditional food.

*Navigating new norms and assumptions.* Assumptions and norms around health held by participants could contrast with those experienced in the UK context. These focused on what food is acceptable to eat as part of a healthy diet and healthy body shapes.

Participants cited to living in rural areas in their home countries, where fresh and organic food was ubiquitous. After resettling in the UK, organic food remained the preferred choice, however identifying and purchasing organic food was more challenging. Participants were sceptical about the chemicals and processing methods used in some foods, leading them to question whether the non-organic food that was more accessible in the UK was safe and healthy for them and their children.

I felt there is a huge difference for example when I go shopping for vegetables I take long time and I wonder whether these vegetables were genetically modified or not? Was it organic or not? These questions really worry me. During grocery shopping you find different kind of food from different countries and that make me confused and I ask myself which one is suitable for my kids' health. (P23)

Parents' cultural beliefs about body shape affected feeding practices and their children's eating patterns. Some parents stated that they associated thinness with hunger and living during a war, whereas heavier weights reflected health and stability. Therefore, participants perceived that eating more and gaining weight were positive signs of good health.

And their health is much better than when were in Syria they used to be really thin but now they gain more weight and eat everything. (P12)

Another mother emphasised this cultural belief regarding body shape, when she compared her children weight between when they were in their home country and now after five years post resettlement.

We have been here for five years and my children are in good health and their weights increased a lot comparing to when we first moved here. It depends on the mother and her way of feeding her children. (P3)

### *Changes to parenting*

This theme denotes the parental influences on children's health behaviours, which include whether they noticed changes in the health behaviour of their young children, how their own eating habits had an influence, and what they considered healthy and unhealthy.

*Adjusting parenting role and responsibility.* Clear differences in gender roles were identified in the narrative. For example, some mothers stated a belief that their role has changed after their resettlement in the UK. Many had come from markedly different cultures, such as the Syrian culture, where mothers are responsible for raising the children, while fathers are the head of the family (i.e. in charge of the budget and did the shopping).

Some mothers stated that after moving to the UK, especially after a few years post-resettlement, they had extra responsibilities in the family. For example, many mothers explained how here in the UK they become responsible for shopping, which had previously been the role of men in the family; they explained that this change was after few years from settling in the UK because in the first period after resettling fathers usually have all the responsibilities until their families settle down and mothers feel more confident in sharing some of these responsibilities. This mother shared the shift in their responsibility by explaining how her husband used to buy in the beginning the general food but then she took that responsibility.

In the beginning, their father used to buy some general food, then I started to buy what my children like and I also buy their preferred food. For example, they like rice and sweets, so I try to purchase the food they like every time I go for food shopping. (P6)

In regards to mothers taking more responsibility, there were some conflicting views. In some cases, women who took on extra responsibilities felt more dependent on their husbands, while others felt the burden was added.

In Syria, my husband used to buy me all the ingredients that I need to cook but now I have to go by myself to buy the groceries here and it is very difficult to find some of the Arabic (traditional) ingredients. (P4)

Participants suggested that because fathers need to work late or simply did not consider matters pertaining to food, this led mothers to take on extra responsibilities.

Actually, because my husband works until late, so I always buy food by myself most of the time. I play an important role in food shopping. (P11)

Some of the mothers made it clear that they hold the responsibility for diet and feeding their children.

I am controlling their food consumption. I usually make some sweets for my children at home and cook what they like since it is a clean food that made at home. (P8)

Other mothers experienced a conflict in the feeding practices between them and the fathers. This quote explains that further.

Their father buys them such unhealthy food as he likes them and he side he wants to provide them with everything they want. (P15)

Participants perceived that fathers were responsible for physical activity. In their culture, fathers are typically the main source of authority, especially if they were in a different country and, therefore less aware of the local culture and language. Some interviewees stated that their husbands were supportive and that they encouraged their children to engage in activities by taking them to activities like swimming and football.

My husband always asks them to do different activities at home and also he encourages them to eat such healthy food. He is helping me in their food and their physical activity as well. (P13)

However, other fathers explained how they do not allow their children to play outside the house, which greatly restricts their physical activity. One father stated that he does not allow his children to play and he meant by that the street in front of his house and mentioned some reasons which were mentioned before by other parents which include (feeling of unsafety, busy lifestyle).

I cannot allow them to play at the street on their own here as I feel it is not a safe place for playing. However, I used to leave them playing in the street when we were in Sudan and I was not worried at all because it was my country. (P1)

Parents felt that their own habits influenced their children. For example, they stated that they were themselves tempted to buy unhealthy foods because of the relative affordability of these products, easier access to a range of cheap options, and argued that this can negatively influence the eating habits of their children.

I used to bring sweets to home in our first days in the UK as we just move to a new environment. For example, my daughter gained weight because she is eating such unhealthy snacks and then I asked her to stop eating more sweets. A child does not know what is good or bad for his or her health, so they eat what they find in the front of their eyes. (P8)

Parental differences can have a variable influence on feeding practices, such as in the situation when only one parent is healthy or has healthy behaviours. These changes can be understood in terms of key issues, as discussed below.

*Snacks as a reward to compensate for hard times.* In the narrative, it was clear that some parents would use food provision to communicate their emotions to their children, where they sometimes use snacks and sweets to show love and care. In particular, many stated that their children had experienced hardship and deprivation in their early experiences of war and during their journey to the UK. Hence, the parents used food as both a reward and a means of compensating for the hard times that their children had experienced.

Honestly I can't deprive my children of having anything they really want especially they have been through a lot during war and so on I really feel sad for them when they ask me, so sometimes I allow my son to buy snacks. (P10)

Participants expressed a lack of control over the quantities of food and companionship with their children when they ask for more food.

It's very hard to control the child when you feel hungry you just can't you know you cannot refuse giving him food that's only a child but here the only thing that we can manipulate with is the type of that food. (P1)

*Control of food choices.* Participants noted the different strategies that they had adopted to control food choices and limit selections exclusively to traditional dishes. One mother even reported the use of more forceful techniques to ensure that her children ate foods from their home country. For example, some mothers mentioned forcing their young

children to drink milk. In these situations, traditional food was presented as positive and healthy.

Sometimes I force them to eat what I have cooked, even if they said they are full I tell them that they have to eat at home ... My daughter doesn't like milk so I force her to drink it. (P10)

Other parents offered more choices to their children, such as cooking more than one dish for each meal as a way to encourage their children to eat. However, this approach may have caused some parents to lose control over the eating practices in their households, effectively resulting in the children controlling their own diet.

I buy what they want to eat to break the routine when they do not like the dishes that their mom cooked so we go to restaurant but most of the time we take away the order to let my son eats with us as family. (P16)

*Awareness of change.* A minority of parents were unaware of any changes to their children's diet or activity levels. However, some parents had noticed changes in their children's diet and physical activity levels. Within this group, some believed that such changes were negative and could be linked to health consequences, such as weight gain and dental problems. This was more prevalent in parents who could see the direct effect of unhealthy eating, such as toothaches, which caused them to feel more anxious about change and more willing to acknowledge the effects of these changes.

For example my older daughter she is sweet tooth and love eating too much of chocolate then she noticed that she is putting on weight. So now she starts to cut chocolate off and do more exercise I think she does not want anyone make fun of her weight my children really sensitive especially after what they been through. (P14)

Other parents perceived the changes to be positive, noting that there are more opportunities to eat healthily in the UK and that their children had become more active in the post-resettlement period.

There are more chances where we can eat such healthy foods here. First of all the environment here very clean I can trust the vegetables and fruits and anything I eat it here. (P20)

### *Environmental barriers to being healthy*

This change that had occurred post-resettlement had influenced the eating habits of these refugee families and their children. On the other hand, some parents explained how the availability of different types of food was perceived as positive.

*Food availability.* Most of the mothers explained how the availability of different types of food in the UK, especially in supermarkets, offered more choices to them. This positively impacted some families; they explained how this provided a greater choice to them and allowed access to an array of foods that were not previously available.

We found out that the food options here are various. For example, there are many kinds of food here where we only used to have one product's type in my home country such as the buttermilk, lettuce, and beans. (P14)

In addition, parents explained how they could access healthy options that were not available in their home country, such as avocado

we eat healthy food here like avocado as the prices are very affordable and available all the year round incomparable to Syria where we only used to eat seasonal fruits and vegetables. I read online information about healthy food and I buy them for my family. I used to have organic food as I lived in a small village in Syria and the food was very fresh. (P14)

While other mothers perceived the availability of different types of food in the supermarket as a negative thing. Some participants (more than one) felt that their lack of familiarity with certain foods could be confusing, particularly when individuals had limited language skills, as this could exacerbate the challenge of sourcing key ingredients and further limit their options.

This picture (pointing at one of the pictures that describes a refugee women looking at lots of options of pasta). When I first come here, I was suffering from finding some food that I do not know its name in English and I just buy food that I know like flour and eggs. This photo really describes me when I was looking for food. (P2)

In addition, other mothers felt that the combination of having more money here in the UK and how the sweets and other unhealthy snacks were cheap were among the reasons for consuming lots of unhealthy options. This mother explained how they were tempted to buy unhealthy foods because of the relative affordability of these products or ease her access to a range of cheap options.

This might be because of the cheap prices of sweets and snacks compared to Syria. We have a good income here that helps us to buy what we want at any time. (P3)

Another mother shared her experience with her daughter and how her consumption of sweets has increased as a result of the availability of these types of snacks and argued that this has negatively influenced her daughter's eating habits and led to an increase in her weight.

Actually, they eat too much chocolate and sweets here and my daughter's weight has increased a little bit. We had control on their food when we were in Syria. However, they find sweets and chocolate easily here. They become more addicted to such sweets. (P5)

Another mother compared their consumption of sweets in their home country and here in the UK to show the big shift in their eating habit.

The food quantities are increased and become more than what we have used to eat in Syria. For instance, we used to buy sweets only in Eid's time (Muslim's celebration after fasting Ramadan), but now they are available all the time here. (P14)

The availability of ready-made meals and snacks that suit the busy lifestyle here in the UK were also reasons mothers mentioned behind their increased consumption of these snacks and pre-prepared meals here in the UK. One mother mentioned how these ready-made meals are simpler to prepare for time-restricted families.

Another thing they love snack because it is on the go they do not set on the table and follow certain rules. (P1)



**School environment.** Participants expressed the importance of schools in raising the awareness regarding eating healthily, and parents explained how the teachers actively raised awareness regarding eating healthy meals. For example, one mother expressed that she must be careful about the lunch she sends to her young children at primary school.

Their teachers sometimes send a note with my children if the food is not considered as a complete meal that contains of protein and carbs. (P3)

At school, my children learn healthy eating habits and this help them to be aware of what is a healthy food and what does it consist of. (P5)

On the other hand, some parents perceived that even though the schools have a role in raising the awareness, most schools fail to provide healthy options and so they prefer to send their children to school with food prepared and packed at home.

My children's school plays a key role in raising their awareness of eating healthy food, but their school sometimes serve unhealthy food that it is frozen and loaded with preservatives such as chips and pizza that are full of carbohydrates. (P15)

In addition, participants shed a light on schools' role in influencing children's physical activity. One mother mentioned how her young children do more activity in school days.

In school days they do a lot of activities, but when they come back home they usually feel tired and do not do much, so I feel sad for them and leave them to have a rest. (P10)

## Discussion

This study contributes to the limited literature around refugee experiences, specifically relating to the health behaviours of refugee families with young children. Prior studies have noted the importance of parents' role in influencing their children's diet and physical activity. Therefore, this study aimed to explore the experiences and perspectives of refugee parents regarding health behaviour changes (i.e. changes in diet, levels of physical activity) and the impact of these changes on the weight of their young children. This is the first study that has focused on the role of parents in the diet of young children (aged 2–12). Our findings discussed parents' reflection on acculturation, and changing parental roles and environmental barriers to being healthy. The results of this study indicate that these parents experienced lots of forced changes by their new environment and that these environmental changes affected their children's health behaviours. Parents also reflected on their changing role in influencing their children's diet and level of physical activity.

The current study found that parents hold the perception that the new environment is restricted and unsafe, especially outside, which negatively affects their willingness to allow outside play, thereby reducing the physical activity of their children. Participants explained how the cold and rainy weather in the UK has been one of the reasons restricting their children's physical activity. In addition to climatic factors, participants noted that their children have become less active in response to the safety of their new living environments, despite the fact that many of these families experienced some dramatic events during their journey to the UK. According to their responses, past experiences have influenced the participants and their families, shaping the ways that they interact

with their new living environment. This is consistent with other qualitative research conducted with refugee populations and immigrant caregivers in the US, which found an emphasis on the caregivers' perception of the host community as being less safe than their living situation prior to migration (Dawson-Hahn et al., 2020; Masten & Narayan, 2012). This perception could be related to a history of stress and trauma, particularly the experience of living in a period of war and in refugee camps. After migration, refugee parents referred to having issues with knowledge about and trust in the food in the host country, creating issues in easily accessing these fresh, non-processed foods and organic foods grown without pesticides, especially in comparison to their home country. These results support observations in earlier studies on refugee parents settling in the USA, which found that there was an emphasis on fresh food in their traditional foods, contrasting with limited access to and different taste of fresh food in the traditional American diet (Tiedje et al., 2014; Vue et al., 2011). However, some contrasting views regards the availability of non-seasonal food around the year and international items of foods which was perceived in a positive way by some mothers. This interesting finding echoed previous research in the literature which has shown that younger migrants feel enthusiastic about the different types of non-seasonal food options and international options, both of which are expected by the young generation. In our study, it was interesting to see mothers perceiving these options positively (Wilson et al., 2010).

An important finding was that refugees had needed to modify their roles and responsibilities to cope with their lifestyle changes. Such changes meant that these parents could be burdened by extra responsibilities and changing roles. Mothers explained how they were responsible for shopping and cooking, meaning a correspondingly greater responsibility for the diet of their children, whereas the fathers were deemed to have greater responsibility for the physical activity undertaken by their children. These changes resulted in less time to prepare meals and be active with their children. This finding is consistent with multiple studies that have shown that refugee families can experience rapidly changing roles as parents and children adjust to their new location, context, and culture (Renzaho et al., 2011; Simich et al., 2010; Stewart et al., 2012). This analysis relates not only to the social and physical environments in which families from refugee backgrounds live but also to the attitudes of the host community (Marlowe, 2011). Moreover, Deng and Marlowe (2013) showed that refugee parents commonly experience changes in their family dynamics after their resettlement, especially in terms of their roles in the family (Deng & Marlowe, 2013). Furthermore, refugee parents reflected on the indirect impact of their own diet and eating practices on the diets of their children. Mothers explained that their diet and cooking ways had changed in response to their new living environment. This supports the findings of Romanos-Nanclares et al. (2018), who showed that parental eating attitudes influence the diet quality of children (Romanos-Nanclares et al., 2018). After migration to the UK, refugee parents described referenced using emotional feeding practices where they use unhealthy snacks to attempt to communicate support to their children, as well as to compensate for the harrowing events that their children had experienced prior to relocation in the UK. This finding supports previous research into ethnic differences in parental feeding behaviours, which found that ethnic minorities in the UK, especially South Asian parents, commonly scored higher on emotional feeding (Gu et al., 2017).

In the transition from pre- to post-migration, refugee parents showed that they had an influence on their children's diet and physical activity. Some mothers in this sample described how they used to live in rural areas in their home country, and this was related to conflicting beliefs about what they considered a healthy food, especially organic food. These mothers define healthy food as being organic only and this definition was informed by their previous environment. Some parents shared issues accessing organic food because of the prices and unfamiliarity and how these beliefs lead to restrictions of their food choices. This aligns with the literature, which demonstrates that refugees and immigrants hold perceptions around what is considered a healthy food, as well as including discussions around the definition of organic food (Dawson-Hahn et al., 2020); this played a part in shaping and restricting their food choices and consumption, as well as their diet in general.

Another interesting finding was the contrasting views between parents regarding their children's weight changes. Some parents expressed cultural beliefs regarding body shape, where some mothers explained how they connected to hunger and living through a war with being thin, while heavier weights represented health and stability. This result echoed the wide literature where previous research showed how immigrant's parents hold cultural beliefs regarding body shape. A recent systematic review on the cultural influences on childhood obesity in ethnic minorities found that the majority of ethnic groups believed that chubby babies are signs of good parenting (Chatham & Mixer, 2020). However, some mothers were concerned that their children were gaining weight and that it could be unhealthy. These mothers reflected on their influence on their children's dietary intake and weight. This contrasting could be because the different levels of acculturation between parents. This was supported by previous research that has suggested that this may be related to acculturation levels and their influence on parents' awareness levels (Chen et al., 2011).

Overall, the findings indicate that refugee parents viewed their new environment as restricted, leading them to adjust their roles and responsibilities accordingly, with a corresponding impact on the diet and levels of physical activity of their young children.

This study had a number of strengths. Primarily, it provided insights into the experiences of refugee parents and provided a valuable focus on the experiences of families with young children (aged 2–12). The use of photo elicitation interviews with refugee participants provided a viable, accessible way for participants to express and explain their experiences. In addition, this study provided an important opportunity to advance the understanding of the parental perspectives of refugee families regarding the changes in health behaviours from pre-resettlement to post-resettlement.

However, one of the limitations of the current study is that the sample involved more mothers than fathers despite the aim being to target both parents, based on a deep understanding of the importance of paternal impact on their children's health behaviours, particularly physical activity (Bond, 2019). However, there were many issues that affected the involvement of fathers in this study. Studies targeting hard-to-reach populations, such as refugees and specifically refugee fathers, require time to build a trusting relationship. Interviews especially require openness about a variety of very sensitive issues, such as parenting, gender roles and situations in their new country (Phares et al., 2006). Some fathers were reluctant to participate in the study. A number of reasons were cited, including insufficient time due to work commitments and a belief that their parental role was

less important, as evidenced by multiple fathers informing the researcher that talking to their wives would be more appropriate. This could reflect the pattern of behaviour in this sample.

Future research could aim to increase the involvement of fathers, encouraging them to share their experiences and perspectives regarding their children's health behaviours and more specifically, changes in their children's levels of physical activity. Future research could seek to uncover the relationship between the impact of parental beliefs about what is considered healthy according to cultural norms and changes in terms of their children's weight gains.

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