Food practices adaptation: Exploring the coping strategies of low-socioeconomic status families in times of disruption

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Abstract

COVID-19 impact on global and national food systems, along with associated physical restrictions, lockdowns, and school closures, have led to dramatic changes in families' everyday food practices. Our research explored the way food practices adapted and emerged, allowing families to cope with the disruption caused by COVID-19. We recruited 18 low socio-economic status families with primary school children across the United Kingdom and New Zealand to partake in two interviews, a survey, and the use of an ethnographic app. Analysis illuminates that this disruption triggered the emergence of three practices that were necessary to carry on and mitigate the impact of disrupted food practices; 'asking for help', 'planning' and 'research and experimentation'. As a way to deal with disruption to their food practices, many participants called on the support of the community, including the use of food banks and the sharing of food. Participants discussed the way they had to plan their food, which often involved the expansion of practices formerly enacted to a small degree, such as curation of online shopping lists and stockpiling. Food research and experimentation also emerged as largely new practices, such as freezing foods, learning new recipes online (YouTube), experimenting with new ingredients and recipes. As such, for some participants, experimentation and research transformed cooking practices into leisure practices. The findings have practical implications for policy makers and non-governmental organisations, such as providing formal support that is accessible while reducing any associated stigma. Designing interventions that integrate planning routines within food practices can help build skills (e.g., bulk cooking and freezing) which can be vital during disruptions, aiding families to cope with the difficulties and aftermath of sudden and large-scale disruption, such as a pandemic.

1. Introduction

In March 2020, most countries around the world imposed restrictions to combat the spread of COVID-19. Public health measures included travel restrictions, closure or limited hours for non-essential business activities, social distancing rules, school closures, and working from home rules. These restrictions affected many aspects of families' daily activities including culinary behaviours (Trofholz, Hersch, Norderud, Berge, & Loth, 2022). These culinary behaviours can be seen as assemblages of interconnected household food practices, such as food acquisition, preparation, consumption, storage and disposal, guided by practice templates including materials, bodily routines, norms, habits and practical understandings (Delormier, Frohlich, & Potvin, 2009; Plessz, Dubuisson-Quellier, Gojard, & Barrey, 2016; White, Ballantine, & Ozanne, 2022). Extant research illuminates that with the stresses and disruptions of COVID-19, food practices were routinely reconfigured or adapted. Furthermore, new practices emerged so that people could stabilise disrupted practices and cope with the stress and insecurity triggered by this disruption (Carolan, 2021; Forno, Laamanen, & Wahlen, 2022; Hoolohan et al., 2022). Moreover, consumption research emphasises that when habituated activities that constitute practice performances are disrupted, a process of adaptation begins, as consumers reconfigure practices in order to carry on (Phipps & Ozanne, 2017; Woermann & Rokka, 2015).

Our research aims to explore changes to food practices of low-socioeconomic status families as a result of the disruptions caused by the COVID-19 pandemic. We were particularly interested in understanding the way food practices adapted and emerged, allowing families to cope with the disruption caused by COVID-19. We focus on low socio-economic households

with primary school children because these families faced major disruptions during the pandemic, such as increased caring responsibilities and home-schooling. We also focus our efforts on the UK and NZ context, both historically and culturally linked but with very different COVID-19 responses (Murphy et al., 2020). These differences provide interesting and unexplored insights to help us understand the impact of the pandemic on food practices and how disruptions could be mitigated in future crisis.

2. Disruption in food practices during COVID-19

There is plenty of quantitative evidence to demonstrate how COVID-19 has changed consumers food shopping, preparation, consumption and waste. Panic buying and supply chain issues resulted in lack of food availability (Hall, Prayag, Fieger, & Dyason, 2020). Fear of catching the virus and long queues meant consumers had to change their usual food shopping practices, with many bulk buying to avoid regular trips to the supermarket (Murphy et al., 2020). Others took to online shopping and 'click and collect' services (Gerritsen et al., 2021). Food planning also gained greater prominence (Murphy et al., 2020) and many consumers indicated they spent more on food during the pandemic (Watkins, Aitken, Robertson, Williams, & Thyne, 2021). Food preparation skills became extremely important as dynamics of home cooking and eating changed, such as more family meals and more time to cook (Sarda, Delamaire, Serry, & Ducrot, 2022; Tribst, Tramontt, & Baraldi, 2021). Indeed, many people increased their home cooking (Gerritsen et al., 2021; Ronto, Nanayakkara, Worsley, & Rathi, 2021) and shared their experiences of baking and cooking new recipes via social media. Research also indicates family involvement was a key motivator in meal preparation during the lockdowns (Snuggs & McGregor, 2021).

Eating habits also changed for some people towards healthier and for others towards unhealthier practices than before the pandemic (Gerritsen et al., 2021; Laguna, Fiszman, Puerta, Chaya, & Tárrega, 2020). For example, during lockdowns in New Zealand, increased consumption of sweet snacks (41%), salty snacks (33%), alcohol (33%), and sugary drinks (20%) (Gerritsen et al., 2021) and use of 'comforting' recipes (75.8%) (Roy et al., 2021) were reported. A French study found mixed results with some people eating fresher products (i.e., fruits and vegetables) and others eating more comfort food or snacking (Sarda et al., 2022). There is also evidence that household food waste was reduced during the pandemic showing the potential positive environmental impact that the lockdown disruptions had (Sharp et al., 2021).

In addition to the plethora of quantitative studies, some qualitative research explored the lived experience of COVID-19 disruptions on food consumption and culinary behaviours. For example, Menon et al. (2022) looked at the factors influencing dietary changes and changes in culinary behaviours in India. They found changes in cooking behaviours (increased household cooking, involvement of children and partners, experimentation in the kitchen), meal planning and food shopping (online shopping, bulk buying, food shortage), and food choices (reduced 'outside' food, greater variety in home cooked meals, snacking, and seeking foods based on health/immunity). A similar study by Ronto et al. (2021) in Australia found transformation in culinary behaviours (increased home cooking, experimentation, and different cooking responsibilities), changes in food purchasing and planning (reduced shopping, increased takeaways, food hoarding, changes in shopping venue and meal planning), modified dietary choices and behaviours (increased quality of meals, snacking, food intake) and increased family meals.

This previous research focuses on understanding changes to eating, shopping and cooking during COVID-19. That is, they focus on 'behaviour', i.e. food/culinary behaviours, that are the result of values, attitudes, norms, interests, desires and choices (Welch, 2016, pp. 237–256). As such, this approach elides focus on social and shared understandings, rules and norms that condition habitual activities. As such, we follow others in consumption and food research who take a practice theoretic approach to overcome problematic emphasis on individual behaviours and choices (Blue, Shove, Carmona, & Kelly, 2016; Evans, Parsons, Jackson, Greenwood, and Ryan., 2020). Rather, we contend that a focus on the social practices involving food helps to illuminate and theorize how broadscale disruption to everyday activities is navigated by citizens, and how the interconnected practices involving food evolve, emerge and adapt (Phipps & Ozanne, 2017).

3. Social practice in COVID-19 research

Practice theoretic understandings of everyday activities focus on the recursive and dynamic interplay between social structures and agency in the organisation and reconstitution of shared, mundane activities (e.g., Cappellini, Marshall, & Parsons, 2016; Delormier et al., 2009; Warde, 2014). Although a number of typologies of practice exist, according to Shove, Watson, Hand, and Ingram (2007), practices are established and reproduced when materials (objects, tools, and infrastructure), meanings (mental activities, emotions, expectations, and conventions), and competencies (skills and knowledge) are available and sufficiently intertwined. When these elements are integrated, practice performance ensues. For example, the practice of cooking dinner for the family involves materials of kitchen appliances and eating utensils, the knowledge and skills of cooking and preparing a meal, and the cultural meanings of the family dinner as place for healthy, hearty meals with the enjoyment of catching up with family members. When specific configuration of meanings, competencies, and materials are disrupted, the trajectory of the practice entity can be changed and become unstable, and even disintegrate (Shove et al., 2007). Furthermore, at the performance level, disruption represents a 'breach' in the stable, easy flow of mundane practices like eating and shopping (Hill, Canniford, & Mol, 2014). This can shake practitioners (Phipps & Ozanne, 2017). Thus the practice theoretical framework focuses our attention on the shared social practices that are the units of analysis (Spurling, McMeekin, Shove, Southerton, & Welch, 2013), and in the context of disruption, on the way food practices adapt, emerge and evolve through the performances of practitioners.

So far, only limited research has explored changes in food practices during COVID-19 (Carolan, 2021; Forno et al., 2022; Hoolohan et al., 2022). Carolan (2021) explored ethical food practices, while Forno et al. (2022) and Hoolohan et al. (2022) sought to understand how food practices were adapted, especially interested in the transition towards sustainability. Hoolohan et al. (2022) found that shopping became disconnected from other practices such as work, school, and leisure activities; that risk and hygiene were incorporated through new shopping practices, and that planning, stocking, and storing food resulted in adapted food practices as well as the reassembly of sociable food practices and novel culinary practices. Following and advancing this practice-theoretic research, we frame the present study within a social ontology of practice.

Hoolohan et al. (2022) discusses the importance of considering practice adaptation and change within the "wider socio-material conditions that constrain and enable opportunities for readjustment" (p.16). Households with children, especially those in low socio-economic households, had their lives significantly impacted due to school closures, furloughs, and job

losses. A New Zealand study found that 'at-risk consumers' due to the COVID-19 pandemic included Māori, Pasifika, younger consumers, and households with children (MBIE, 2021). They were more likely to have lost their job recently, worked less than they want or need, and have decreased income (MBIE, 2021). Indeed, NZ and the UK saw a significant increase in the use of food banks, for example; over double the usual requests in March–April 2020 lockdowns and almost triple in Aug–Oct 2021 lockdowns in NZ (Auckland City Mission, 2021). In the UK, it has been reported that 40% of people had difficulty accessing the basic food they required at the start of lockdown, and the number of people reporting being food insecure increased fourfold in March 2020 (Brown, Mills, & Albani, 2022). There was an 89% increase in food parcels in April 2020 from the year before (Trussell Trust, 2020b) and a 61% increase in October–December 2020 (Trussell Trust, 2020a). Again, families with children reported the greatest need for food parcels (Trussell Trust, 2020a). Many also relied on government support schemes (i.e., wage subsidy). These changes in food practices are very likely to be long-term due to the economic downturn, pushing families into poverty and more into food insecurity (Kent et al., 2020) and therefore an investigation and understanding into how food practices have been disrupted and adapted is vital to enhance food security for these groups. The research question guiding our study was 'During COVID-19, how were food practices disrupted and how did they adapt for lower socio-economic status families in NZ and the UK?'

4. Methods

To explore the disruption of food practices and the adoption of new food routines due to the pandemic, we used a mixed methods approach, collecting both qualitative and quantitative data in a four-phase study. During the COVID-19 pandemic, we explored how families shopped, prepared and stored food, what and how families were eating, and sought to understand how they experienced the disruption and how adaptation of their food practices was enacted.

We provide a cross-continental comparison, comparing New Zealand and the UK as these countries differed in their COVID-19 management policies. New Zealand was seen as an interesting success case in controlling and eliminating the virus, including strict border controls and lockdown restrictions (Gerritsen et al., 2021; Murphy et al., 2020). The New Zealand government closed borders on 19 March 2020 and a State of National Emergency was declared from March 31, 2020 to May 5, 2020 with schools opening after this period (Auckland schools closed again Aug–Oct 2021). New Zealand was one of the first nations to implement a colour-coded, alert level system on 21 March and had a low case count until the start of 2021 with few community outbreaks and one of the lowest global mortality rates (Baker, Wilson, & Anglemyer, 2020). The UK implemented a national lockdown in March 2020 and lockdown measures legally came into force, ordering people to 'stay at home'. Schools and nurseries were closed (except to vulnerable or 'keyworker' children) between March 2020–September 2020 and January 2020–March 2021 leaving parents responsible for their children's home-schooling. This comparison allows us see how different governmental approaches (i.e., 'hard and early' vs 'wait and see', level of restrictions) may have affected food practices.

4.1. Sampling and recruitment

Purposive sampling was used to recruit participants. In the NZ recruitment process, participants were contacted by a charity representative who had connections with food insecure individuals. The charity was established to provide spiritual, physical, and social assistance to those in need. Participants were provided with a $NZD50 koha (offering/contribution) for each completion of the major study elements (first interview, second interview, ethnographic app). In the UK recruitment process participants were contacted by a representative from a charity that helps people to find employment. Participants were also recruited via food banks Facebook pages across the UK. Participants were the primary food shoppers for their families, meaning the sampling was skewed heavily towards females (we had one male participant). UK participants were provided with supermarket vouchers of their choice, including a £20 voucher after the first interview, a £35 voucher after the ethnographic tasks, and a £20 voucher at the end of the second interview.

Our aim was to recruit 20 participants in total considering time, participant availability and cost. This figure also falls within recommended sampling from several sources (e.g. Creswell, 2007; Francis et al., 2010; Guest, Bunce, & Johnson, 2006). However, we allowed for the possibility of further recruitment if we found data saturation had not been met; after analysis was completed, we felt data saturation had been reached (i.e., repeated observations, no new emerging themes). One participant dropped out in each country leading to nine people who fully participated in all stages per country (n = 18).

Once the participants showed interest to participate, a detailed participant information document along with a consent form was shared with them. Before the data collection, the researchers ensured that participants fully understood the project aim, their involvement and issues around anonymity, data management, and dissemination of the findings, as well as their right to withdraw at any time without any consequences. Participants were also informed about these issues before each phase to ensure that informed consent applies to every element of the study.

4.2. Data collection methods

The study involved four different phases. These included a survey, two interviews and the use of an ethnographic app for seven days.

Phase 1- (May–June 2021): Before commencing the interview, participants were sent the questionnaire, purpose-designed using Qualtrics. The questionnaire contained 32 questions. Participants received a link and were advised to complete the questionnaire online before their first interview. NZ participants who did not have access to the online questionnaire completed a paper version before commencing the interview. To determine changes in food practices, participants were asked to report how often they personally consumed 11 categories: (1) fresh vegetables and fruit, (2) fresh meat, (3) fresh fish, (4) bread, (5) dairy products, (6) frozen food, (7) canned food, (8) ready-made meals, (9) cakes and biscuits, (10) chocolate, candies, (11) beer, wine, and other alcoholic drinks, during and before the pandemic. The food frequency questionnaire contained a six-point scale ranging from "less than once a fortnight or never" to "daily". Moreover, participants were asked to report their activities before and during the pandemic, certain changes due to COVID-19, including changes in household income and closure of their physical workplace, the extent to which their household had been afflicted with COVID-19, and their own perceived risk of the

disease, along with demographic details of their household and themselves. The complete list of questionnaire items can be retrieved from Janssen et al. (2021).

Phase 2 (May–June 2021): Semi-structured interviews allow researchers to explore the everyday lives of individuals and provide an in-depth account of personal experiences and actions (Barriball & While, 1994). Participants, once they completed the online questionnaire, were invited to participate in the first in-depth interview either via telephone or online due to COVID-19 restrictions. In both countries, the first interviews occurred between May–June 2021. This first interview discussed participants' experiences of COVID-19 and the lockdown(s). Particularly, participants were asked about: (a) their household members and their involvement with food, (b) their households' relationship with food in general, (c) their food shopping, preparation, storing, and disposal of food before and during COVID-19, (d) what has changed in terms of food practices and (e) how they dealt with any disruptions that have affected their food practices.

Phase 3 (June–July 2021): After the first interview, the Indeemo qualitative mobile ethnography app was used. The use of an ethnography app is an emerging, novel qualitative research tool that can be used to explore participants' daily activities such as food purchases, planning, preparation, consumption, and disposal of food. The app affording the generation of a daily diary, with options to add text, photos, and videos. Alongside the second interview, the app's entries allowed users to "reflect upon, explain, and contextualise their actions based on detailed log data" (Kaufmann, 2018, p. 235) explaining and contextualising their food practice performances. Participants were given 'how to' guide with an email contact if help was needed. Following the involved Universities' data management policies and in line with data protection laws, the data was stored by Indeemo until it was sent to the owners (the researchers), then the data was deleted off Indeemo's servers. Data was sent through to the researchers as video (mp4), images (JPEG), Excel (CSV) and Word files.

Phase 4 (July 2021): The second interview was tasked with uncovering everyday food practices occurring 'in the moment' (i.e., current) and occurred in July 2021. As a source of elicitation in the second interview, data collected from the Indeemo qualitative ethnographic app was used to ground experiences (Dowling, Lloyd, & Suchet-Pearson, 2016) and the interview guides were designed around participants' previous responses along with questions about how do they see their food practices in the future.

Data from all phases was anonymised before the analysis commenced.

4.3. Data analysis

From the survey, we identified individual changes in food practices by comparing consumption frequencies during the pandemic and before. All quantitative analyses were undertaken using SPSS Statistics Version 26. For each of the 11 food categories, we determined whether participants had increased, decreased, or not changed their consumption. These descriptive analyses complemented understanding of food practice changes illuminated in the qualitative research.

Qualitative interview data were analysed manually to identify different, interrelating themes through an approach guided by reflexive thematic analysis (Clarke & Braun, 2021). Initial codes were developed through inductive and broad deductive coding. That is, each country team created initial codes representing meaning identified in each country's data. As a cross-

cultural research team, initial coders were immersed in the data collection and data analysis before coming back together to discuss the themes and codes. There were no major differences between countries for their coding. Together themes were developed in line with the practice-oriented research question and in relation to researchers' interpretations of the meanings in the data. Through reflexive collaboration between the research team, final themes and their relationships were identified, presented in Fig. 1:
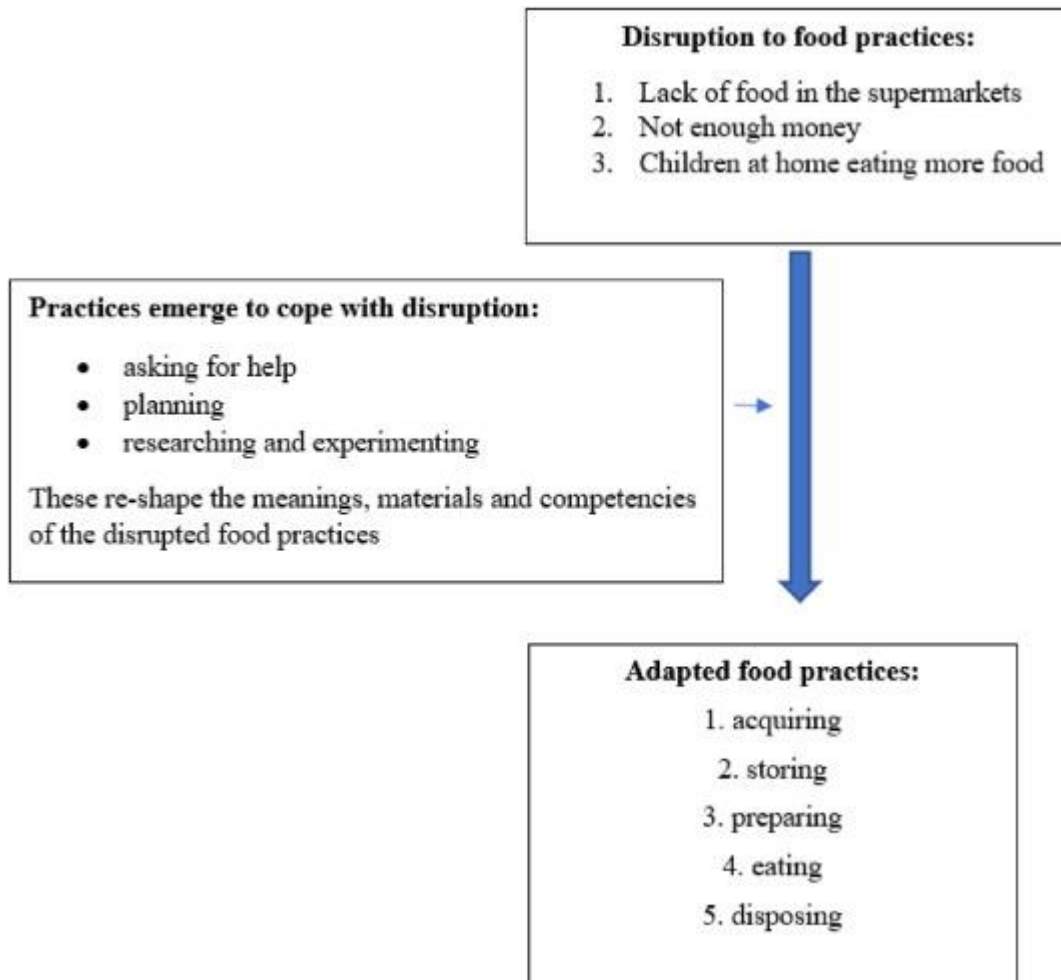
Disruption to food practices:

1. Lack of food in the supermarkets
2. Not enough money
3. Children at home eating more food

Practices emerge to cope with disruption:

- asking for help
- planning
- researching and experimenting

These re-shape the meanings, materials and competencies of the disrupted food practices

Adapted food practices:

1. acquiring
2. storing
3. preparing
4. eating
5. disposing

Fig. 1. Disrupted, adapted and emergent practices.

5. Findings

Our analysis illuminates that disruption to food practices during the pandemic is the result of changes to a number of intersecting practices including working, parenting and schooling practices. These disruptions (Theme 1) 'shake' participants, disturbing the easy habituation of everyday life that formerly characterised their food conduct, for example 1ack of food in the supermarkets (sub-theme 1a), children at home eating more food (sub-theme 1b), and not enough money for food (sub-theme 1c). Analysis illuminates that this disruption triggers the emergence of three practices that were necessary to carry on and mitigate the impact of disrupted food practices (Theme 2); 'asking for help' (sub-theme 2a), 'planning' (sub-theme 2b) and 'research and experimentation'(sub-theme 2c). These practices further shape the dynamics of interrelated food practices and contribute to the adaptation of food practices in active ways (Theme 3), including new or adapted practices of acquiring (sub-theme 3a),

storing (sub-theme 3b), preparing (sub-theme 3c), eating (sub-theme 3d) and disposing (sub-theme 3e) food. Below, we first explore the disruptions that COVID-19 restrictions triggered for everyday food practices, before presenting our analysis of the emergent practices that enabled practitioners to carry on and the impacts these had on everyday food practices.

5.1. Disruption to food practices

The lockdowns disrupted normal household, work and food routines, resulting in changes to temporal sequencing of practices, the dynamic ways they interconnect and to the household organisation of eating (Hoolohan et al., 2022). For example, school practices were disrupted, leading to children being at home. This meant families had to provide more food for their children at home, which on some occasions resulted in a lack of food. Given the disruptions to working practices and the strain on household budgets, this created intense financial insecurity for some families, as these excerpts suggest:

"We really only ate normally when I got food parcels, because I know my normal budget doesn't allow us [to] eat regular, three meals a day." Mai, NZ

Because the lockdown meant that everybody had to stay indoors. There was a lot more eating going on and so we struggled a bit for food trying to make it last from week to week. I think the kids were just mainly picking up food because they were bored". Tammy, NZ

Due to reduced or no earnings during lockdowns, food budgets were routinely cut to accommodate other pressing needs such as electricity bills and rent. Sixty percent of NZ participants and a quarter of UK participants reported that their household income changed because of COVID-19. As a result, people had to spend less on food. For example, Aliha explains how she would buy lower cost items to help her budget stretch:

"When power bill goes up and we cut costs from grocery money, we'd buy less meat and more things like two-minute noodles or more tin foods.' Aliha, NZ

More time spent at home during lockdown by all family members meant higher food costs.

However, from interviews and ethnographic data, our findings also show an increase in indulgent and comfort food with more snacking throughout the day, not solely attributable to the need to feed more people. Forty-two percent of NZ participants ate snacks before COVID-19, and this went up to 58% during COVID-19. UK families reported eating chocolate, sweets, crisps, and other snacks more often (40% snacked before Covid-19 and 60% snacked during COVID-19). Snacking was reported to be due to boredom and for 'comfort eating', as Aissa suggests:

"[My son] used to stay at home and he had to work from home, so I think it was like a bit of comfort eating maybe because I did find he had to sneak behind my back to get crisps or chocolates …" Aissa, UK

As well as snacking, the pressure of the pandemic changed the type of food participants purchased. They were buying less meat and fresh fruit, and more canned items. Most participants discussed how the pandemic had impacted them financially, although most of the UK families and all NZ families reported always checking prices even before the pandemic. In general, UK families argued that they have been more concerned with the value and

freshness of the products while opting for the less expensive foods/brands when possible. NZ families focused on rationing food as most of the families were benefit recipients and constantly in financial hardship (also further exacerbated by the COVID-19 pandemic). Volume and price of available food dominated participants' concerns, balanced against quality and freshness.

Experiences of shopping for food also changed during the pandemic. Disruptions to supermarket practices made food shopping a stressful experience for families. There were concerns about the availability of food, experiences of rationing, empty shelves and new rules about shopping such as staggered entry to shops and queuing. The new emphasis was on making the food last and 'peace of mind'.

"And then when the COVID-19 happened I felt I had to prepare food before in hand just to have that, just to give myself peace of mind that food is going to last us at least one, two weeks." Aissa, UK

The changes to formerly habituated shopping practices meant participants felt uncomfortable and unsettled. 56% of our NZ participants and 88% of the UK participants reported occasionally feeling anxious about obtaining enough food during COVID-19.

Furthermore, there was anxiety associated with going to the supermarket during the COVID-19 pandemic, bringing new meanings to supermarket shopping practices. Therefore, families shifted to shopping online and bulk buying.

"Well, to be honest, it wasn't easy (…) Before you can just go (to the supermarket) and then buy whatever is missing. And all of a sudden you can't or it's rather not safe. It was a lot of anxiety for sure, from my side (…) Because of that, I was worried obviously about my husband as well, that he might catch something. I'm not in a good position (pregnant) to go through COVID, if I caught something from him." Jessica, UK

The shift to buying more non-perishable and inexpensive foods led UK participants to buy more unknown brands, which some had never done before:

"I never thought I would eat non-Heinz ketchup. It's a rule in my house. We always have Heinz ketchup. But because of lockdown, and thinking twice about the money because it is expensive, we do have a decent amount of people in our house, we tried the Aldi ketchup and it tasted as good. You can't tell the difference. So now, instead of buying a two pound bottle of ketchup, I pay 45 pence or 49 pence." Karima, UK

Furthermore, UK participants also decreased their meat consumption. While 22% purchased meat weekly before COVID-19, this decreased to 12.5% during COVID-19. Although families expressed their desire to eat fresh fruit and vegetables, it was costly for them. Participant families reported that being unable to provide adequate and nutritious food for their children was upsetting and disappointing. Some admitted that they felt ashamed for not being able to afford decent, healthy meals for their families. Jane describes this dilemma:

"Because of the amount of people in this house, I've got to think of feeding everybody rather than getting the quality of food. And it's what's affordable at the supermarkets at the time we go shopping, what's on special." Jane, NZ

Before COVID-19, 40% of the NZ participants purchased fresh fruits and vegetables four times a week which remained the same during COVID-19, but weekly purchases of fresh meat went down from 30% to 22%, and fresh fish went down from 22% to none during COVID-19.

UK participants similarly ate less fresh produce. 78% of the UK participants purchased fruits and vegetables 4–6 times a week, 22% purchased fresh meat weekly, 56% purchased bread daily before COVID-19, this went down to 63%, 12.5%, 38% respectively, during COVID-19. In NZ, rather than buying fresh foods, participants usually opted for canned (30% of participants) and frozen foods (40% of participants) because they are cheaper and have more quantity for less price as reported by participants in the questionnaire text boxes.

To help budgets stretch during COVID-19, participants also reported skipping meals or adjusting meals due to lack of resources, as Karima explained:

"There would be times, where we would let the children eat first because we're running out of shopping. We would make sure the children have eaten first, and then me and my husband would eat. There have been a few times where the food's finished, so then me and my husband would basically put the kids to bed, would make ourself a cup of tea, and we'd just eat biscuits, or something that wasn't healthy, just to fill our stomach up for a little while." Karima, UK

Other participants also adapted their eating practices to match their budget and the availability of food items, ensuring food items 'lasted' longer. Across the UK interviews, respondents reported a reduction in using ready meals (78% purchasing these at least once a fortnight before COVID-19 and only 25% purchasing these at least once a fortnight during Covid-19), takeaways (went down from 56% of participants to 44% during COVID-19), and a shift towards homemade options (went up from 43% of participants to 57% during COVID-19). NZ families particularly reported that food banks enabled them to get more balanced and nutritious food items. Food parcels meant they had more food and ate more fresh fruits, vegetables, and meat during the lockdown. Also, supermarket gift cards, a new scheme being trialled at the charity in NZ, provided families with food parcels. This supported healthier eating and gave families the opportunity to choose the food they preferred.

Our findings illuminate that COVID-19 disrupted a wide range of formerly habituated practices involved food, creating unsettling experiences and requiring participants to acquire, prepare and consume food in ways that were new or different. Changes were commonly driven by a need to stretch budgets, by food scarcity and through motivations to feed families in the healthiest way possible. The disruptions changed many of the fundamental building blocks of food practices; their meanings, materials and competences. The next section focuses on the way three new practices involving food emerged and helped shape food practice adaptation; asking for help, planning, and researching and experimenting.

5.2. Emergent practices

5.2.1. Asking for help

As a way to deal with disruption to their food practices, many participants called on the support of the community, including the use of food banks and the sharing of food. For many, this was an entirely new practice. 60% of NZ participants and 40% of UK participants

received food from food banks and charities during COVID-19. The UK participants were familiar with food banks even before the pandemic. However, they noticed a change in the availability/amount of food available in the food bank. As people lost their jobs, there was more people waiting in line to collect their parcel, which resulted in less food available. Similarly, NZ participants were utilizing the services of the charity prior to the pandemic, however, the reliance on food banks increased during lockdown.

"During lockdown, I reached out to [the charity] more often and mainly relied on food parcels. I stretched the food parcels to last to up to 2 weeks, and baked more often" Liza, NZ.

UK participants who went to food banks reported that there were long queues outside the centre/building, standing outside to collect their food parcels. For the NZ participants, some described the need to take multiple forms of public transport, taking a lot of time, to get access to a food bank with supplies. Adola uses the term 'survive', claiming she did not feel safe standing in line and choose to forgo milk:

"I can eat rice or porridge for the whole week, we did not have any money, I can't go to the food bank because I went last week it was too much people there. I did not feel ok. There was no milk in the house, but I survived, I told my daughter, "there's no milk, we can just eat porridge and then have a drink, that's it, and cook food. We eat food, that's it." we stayed one milk without milk. I did not have money to go buy, we survived without milk for one week." Adola, UK

Furthermore, participants in the UK who did not usually receive food parcels discussed food sharing, describing their neighbours as a 'blessing':

"They (neighbours) were sharing their food as well. Basically, when my husband got COVID-19 in January, we've been all self isolating for two weeks. So because we don't have any family whatsoever in the UK, we just had to rely on the neighbors. So that was really the blessing you can say, because, obviously we could do some like delivery from the shop, online delivery or something. But sometimes you just needed something immediately, like from the shop. So I could call someone or text someone, "Look, are you going to the shop? Can you bring me this and that and something?" Jessica, UK

While the crisis has had a major impact on levels of household insecurity in the UK and NZ, a wave of solidarity has been noticeable within families' local communities and neighbourhoods, shaping new meaning of food practices. Families expressed their deep concern and care for others, voicing their willingness to help others that are close to them by giving out food.

5.2.2. Planning practices

Participants discussed the careful way they had to plan their food, which often involved the expansion of practices formerly enacted to a small degree. In New Zealand, 40% and in the UK 50% of the participants reported planning grocery shopping much more during COVID-19 than before. For some, this involved careful curation of online shopping lists (from 33% before COVID-19 to 67% during COVID-19) and particularly managing bulk buying (38% of UK participants reported bulk buying much more) to stockpile certain ingredients such as flour, tins, rice, and pasta. Others reporting making greater use of grocery lists and apps on their mobile phones. Such adapted and new planning practices occurred in the context of

reduced frequency of shopping trips, careful budgeting and accounting for poor availability of some food items. Participants noted that their planning led to fewer impulsive purchases, but also took extra time:

"I actually plan now whereas I didn't use to. I used to just know what I was going to need … I know what the kids liked and what I liked, and I would just buy the bits for what I needed without thinking about actually, do I want to cook that meal on that day? Do I want to cook this meal on that day? Now I make a weekly menu, work out what I need for each meal, and then that's what I buy". Anna, UK

As a result of careful planning, meanings associated with shopping shifted. Rather than a sometimes spontaneous, even pleasurable activity involving 'going around the shops', shopping was now carefully curated in the context of existing home food supplies and budgets. Rani and Adola explain the shift in shopping now that careful planning is necessary:

"Before lockdown, I used to go, not too much, but I used to go out maybe going around shops. Sometimes even if you pass to the shop, 'Let me buy milk or buy bread.' Sometimes you've still got another bread in the house, but you want to buy another one and maybe that one is half. But this lockdown, you make sure that you buy things when you see the things are completely finished". Adola, UK

"Well normally I'm not a person of buying weekly. I mostly just go shopping whenever I need something, or when I'm passing a supermarket, I'll just go and take something. But during lockdown, I used to buy a once a week only". Rani, NZ

Furthermore, food provisioning and storage practices also adapted to enhanced planning practices since families were unable to go out food shopping as frequently as they used to before the pandemic, as well as due to self-isolation, poor food availability and budget cuts. For example, participants described far more freezing of foods, using up leftovers, and batch cooking:

"I started freezing fruits and vegetables from [the charity] to make them last longer". Lisa, NZ

"So when I was making some meals I was making more than I needed, so that I could put into tubs and then I would freeze those. So that they were meals in the freezer, for if there were days where I didn't feel like cooking, but then there's still a homemade meal in the freezer for dinner". Anna, UK

Such preparation and batch cooking provided a sense of security in case food ran out in the shops or they fell ill.

"But then when the COVID-19 happened, I started researching online and looking at what I can do, how to prep food and what to do. I mean, the last thing I wanted last minute for my son to have no food and what if I can't go to the shops? What if I'm unable to? What if everything's ran out? I mean, the main thing was I don't want my son to starve or anything". Adola, UK

Adola's anxiety infuses her food preparation practices and illuminates the interconnections between food practices and parenting (Molander & Hartmann, 2018).

Besides, storing and freezing meals in containers or small batches enabled families to feel more in control and use up fresh ingredients. Other participants also discussed a better and more carefully planned use of ingredients they had in the house to prepare food instead of going out to buy food.

"At the start of lockdown, one of the things I did is I went and brought a whack of airtight containers, to store food in. All the batch cooking and leftovers were stored in the fridge. One of the things I did quite often is as soon as dinner's finished, if there's any leftovers or if someone doesn't want their dinner, it goes into an airtight container and gets put in the freezer. Which come in handy if someone's hungry". Lisa, NZ

Mariyah described how instead of going out for milkshakes they made it themselves, allowing the family to replicate a treat usually purchased and consumed outside the house, while Susan, in the quote below, discusses how she makes a large batch of cookies.

"I have a recipe for chocolate chip biscuits and the recipe itself makes about 45 biscuits. And in these biscuits, I put in hazelnuts, walnuts, almonds, and cashews and peanuts, and I chop it all up super fine and just throw it in and so then it makes the biscuits go even further. It probably costs about $10 to make, but they'll last for the week as opposed to going and spending $30 on six packets of biscuits". Susan, NZ

These emergent shopping and storing practices were facilitated by the use of new materials including mobile apps such as 'Freezor' that was used to keep track of what is in their fridge as well as apps to create shopping lists.

"Even though it's supposed to be an app that tracks what's inside your freezer, I use it to track everything, all the food items and all the non-food items in my house, such as washing up powder, toothpaste, soap, and all the items of food is listed in the app. I do that because it shows me how many of each things there are. Because of COVID I've learned that, rather than just impulse buying, think about what you have at hand, and make the food according to that." Karima, UK

Furthermore, new skills also emerged as participants used techniques to keep their product fresh and tasty by chopping ingredients and freezing them in Ziplock bags. Jessica discusses how she utilises food items going off first, demonstrating increased skill. This practice enabled participants to use up more of their food than they would have in their normal daily routines, reducing food waste.

"Before I was just cooking whatever I was thinking. Let's say, I was asking my children, "Oh, do you want me to cook the pizza today or do you want me to cook this or that or something?" Without any planning beforehand, and now I'm more planning to make something if I see that I've got like for example, red pepper in the fridge or something. So I will think, okay, I can use them up before they go off, and then make something out of it …" Jessica, UK

5.2.3. Researching and experimenting

Food research and experimentation also emerged as largely new practices in the context of the pandemic. For example, Adola describes looking up how to freeze curries, to ensure there

would always be food available if she got sick and could not source and prepare food for her son:

"I looked it up, I've done some research, and I've read that you can freeze curries if you make them fresh and make them a certain way and make this much amount and it's going to last you this much. So I looked into prepped food". Adola, UK

Other participants described searching for new recipes online and for a range of information to diversify their meals. UK participants reported searching for new recipes, relying on their phones more often during the lockdown, especially for new recipes, cooking tips and food storage ideas. Mobile apps facilitated these practices. For example, many participants used the YouTube app to watch food and cooking videos. NZ participants mainly relied on YouTube videos to improve their culinary skills. For the families that craved fast foods (such as KFC and McDonalds) during the total lockdown, watching YouTube videos, Google and apps (SuperCook) helped them learn to make improvised versions of these foods at home.

"Oh mom, we feel like KFC." And I search up on Google how to make KFC, go to the supermarket, get all the ingredients in that, come home with the big bottle of oil and then fry them some KFC. And they'll say, "Oh, this is nice."" Rani, NZ.

Mandy describes having the time to experiment with new recipes during lockdown, which before had always seemed too time consuming:

"All the recipes seems too complicated to me, that take so much time, I've experimented all of those things during COVID-19 because we were at home and there weren't much to do at home". Mandy, UK

Like Mandy, other participants also reported experimenting with food and cooking in ways they had not tried before the pandemic. For example, non-perishable products including flour, rice and pasta were heavily consumed as families reported making bread, cakes, pasta dishes and pies from scratch:

"Before COVID-19, I would just buy the ready-made bases with a few toppings. Post-COVID-19, in this day and age now, since last year, I make the dough myself at home. That's the difference. Because I make the dough myself, the children obviously help me. They see the kneading process, they see the process". Karima, UK

Research and experimentation represent practices that brought our participants closer to food, by becoming more involved and engaged with practices of food preparation that had formerly been largely unreflexive and wholly mundane.

For many of our participants, enhanced experimentation and research transformed cooking practices into leisure practices in the context of the additional time available during the pandemic, and the lack of other available leisure pursuits. Baking and cooking were mentioned as pleasurable, and often imbued with the meanings of interconnected practices such as parenting with care and love to create connection with children.

"We were making cakes. We were making pastries. We were making naan bread. We thought, "okay, let's try making naan bread, at home." And you have that time, so we could do these things and also get the kids involved, as well. Any recipe that they liked, I said,

"come on. Let's try to make it." Before, we never used to bake. (…) Because the kids, you need to get them entertained. And I don't, I don't like them being on their gadgets too much, on the social media and the devices. You've got to give them alternatives, as well, so we started cooking together, and going for walks together. " Sonia, UK

Relatedly, participants described more regular occasions when family members eat together as food changed in significance now it was more often homemade. Furthermore, our data illuminates that participants felt proud of their new skills and the time they were taking to cook for their family. For example, they learned to make handmade bread, describing this as rewarding.

"And recently I became really good at this, it made me so happy. Because recently I noticed that it changed my mind set". Jessica, UK

Through their enhanced involvement with food, and time spent cooking, participants also described feeling more in control of food waste, and more knowledgeable about the food they had in their homes. They felt proud they were not wasting as much food as they used to in the past, as Karima describes:

"A lot of people are complaining about COVID- 19, but for me, it has put a lot of things into perspective. Before, I was buying food, I wasn't caring about, and I know it sounds silly to say this, and I'm admitting this, but I wasn't caring if I had used half and onion and the other half would go in the bin." Karima, UK

Feeling more involved with food, through researching and experimenting practices, may have therefore impacted food waste. In this sense, lockdown was like a 'wake up call' where participants spent more time in the kitchen, learnt to cook differently, learnt new techniques, and spent the time researching and experimenting with longer recipes from scratch. Our data also suggests that the performance of research, experimentation, preparation and cooking practices may have changed long term as a result of the pandemic. 50% of NZ participants and 63% of UK participants reported they will continue to prepare food at home.

6. Discussion

Our research aimed to increase our understanding of how food practices were disrupted and adapted among low socio-economic families with primary school children during COVID-19. Drawing on practice theory, our research advances other qualitative research exploring changes in culinary behaviours due to COVID-19 by using a social practice theory lens (Menon et al., 2022; Ronto et al., 2021; Trofholz et al., 2022), in this way, our research that illuminates the adaptation of food practices to manage disruption brought by COVID-19 (Forno et al., 2022; Hoolohan et al., 2022). Our findings show a variety of ways that formerly habituated and largely unreflexive food-related practices were disrupted, causing anxiety and uncertainty amongst participants who had to cope with major disruptions caused by the pandemic (Phipps & Ozanne, 2017). Furthermore, we found that disruption to food practices triggered the emergence of three new practices, 'asking for help', 'planning' and 'researching and experimenting'. These practices shape the dynamics of the nexus of food practices that includes acquiring, storing, preparing, eating, and disposing, and condition the ways disrupted food practices adapt.

Overall, our findings demonstrate how the disruption to normal household, work and food routines, triggered by the pandemic, resulted in changes to the organisation of mundane household practices involving food. We show that across both countries, family budgets were strained through less work and more food provisioning was required due to children staying home from school. The stresses of the pandemic, and the boredom of reduced leisure activities triggered increased snacking but also increased home cooking and food experimentation. Furthermore, a number of changes in shopping habits were triggered by reduced budgets, anxieties over the transmissibility of the virus and the new 'rules' of supermarket shopping, including lower availability of products and distancing policies. Many families struggled to make food last the whole week, so new practices emerged to ensure that families, particularly the children, could still be fed. Another key change was to the time available to participants now that work, travel, and leisure practices were so constrained. Therefore, the ability to plan more carefully and experiment with recipes and new food preparation techniques, for example, increased due to decreased competition for time (Hoolohan et al., 2022).

Our research contributes to extant practices disruption research in a number of ways. Firstly, our study illuminates that against this backdrop of disruption, participants asked for help more often, engaged in more planning, and did more research about food in order to experiment more with new recipes and techniques. These new practices were either entirely new to participants or emerged from formerly insubstantial practices that gained new significance during the pandemic. For example, participants may have used supermarket vouchers in the past, but now engaged in food share schemes with neighbours. Food bank usage was common for the NZ participants, while UK participants reported more social sharing of food between friends and family (Lemke, Vorster, van Rensburg, & Ziche, 2003). Similarly, participants may always have done some planning and list-writing before shopping, for example, but the pandemic triggered the use of new apps for list management, the management of large purchases bulk grocery goods for baking and batch cooking, and the careful curation of household provisions (Steils & Obaidalahe, 2020). For many, engaging with food deeply, through research and experimentation, was largely new. Food provisioning and cooking had mostly been functional before the pandemic, but in the absence of much leisure opportunities, experimenting with new dishes and recipes gave food a new meaning. Eating together became more common, and participants felt more in control of food waste as their knowledge of kitchen storage increased. Our findings show that the disruption caused by the pandemic triggered an expansion of the food practice nexus with some practices being adapted and new practices emerging.

Secondly, our study illuminates the dynamic interplay between existing, emergent, and adapting practices that represents a shifting socio-cultural environment for everyday food practice performances for our participants. Our study illuminates that these three emergent practices of planning, asking for help and experimenting, shaped the meanings of other practices involving food. Experimenting meant that cooking would involve children more often, and end with new recipes being enjoyed by the whole family. Baking and cooking were often imbued with the meanings of interconnected practices such as parenting with care and love to create connection with children. In line with previous research, increased home cooking (Gerritsen et al., 2021; Ronto et al., 2021) and family involvement in cooking and baking was observed during the pandemic (Snuggs & McGregor, 2021). Also, positively, asking for help meant neighbours got to know each other, bringing communities together. Planning also shifted the meanings of food practices, including shopping, which was no longer an activity to enjoy but something only done when provisions had completely run out.

Thirdly, the three emergent practices also triggered an adaptation in the skills that participants brought to their food practices. Adapted skills included varied ways to store, freeze, batch cook, and use leftovers, which were particularly triggered by planning practices. However, researching and experimenting provided opportunities for participants to accrue cooking skills, and develop a closer engagement or involvement with food. This engagement, and participants' new skills of food management, often resulted in a sense of security and control, and allowed participants to use up fresh (and usually going off) ingredients. In fact, our research demonstrates that meal prepping and freezing food resulted in reduced food waste (having both economic and environmental advantages). These findings are somewhat in contrast to findings by Brizi and Biraglia (2021), who found that the need for cognitive closure was associated with individuals perceiving they did not have enough food at home, and as a result ended up buying more food and wasting more food.

Finally, the new practices triggered changes to the material aspects of existing food practices. Different food was eaten, as participants learnt to cook with different supplies based on planned bulk buying, home baking and tinned or frozen foods. Less fresh meat and vegetables were consumed in some cases, although where participants asked for help, food parcels could increase availability of fresh food. These material changes combined with the other changes to the materiality of food practices during the pandemic, such as increases in comfort food and in some cases, occasions when meals were skipped entirely. Our findings corroborate COVID-19 research which has found that child boredom during lockdown is associated with increased snacking (Philippe, Chabanet, Issanchou, & Monnery-Patris, 2021). Skipping meals in food insecure households is a practice noted by other research (Harvey, 2016) but seem to have been exacerbated due to COVID-19 (Adams, Caccavale, Smith, & Bean, 2020).

6.1. Implications

Our practice theoretic approach illuminates the interconnection between existing, emergent, and adapted food practices during major disruptions. The study has important implications to how policy can support the stabilisation of disrupted food practices during future crisis, particularly by focusing on the emergent practices of 'asking for help', 'planning' and 'researching and experimenting' that helped settle practice instability.

Firstly, policymakers and NGOs must make 'asking for help' easy, convenient and reduce stigma surrounding it (Pudam et al., 2017). Policymakers and NGOs can use our findings as an opportunity to innovate accessible and affordable solutions that enable emergent health and sustainability behaviours for families and encourage lasting change. Furthermore, some of our participants reported food banks and neighbours as their main source of fresh foods during the pandemic, and highlighted positive outcomes from engagement with them, such as varied food and social connection. During the lockdowns, NZ families receiving food parcels experienced a slight improvement in the quality and quantity of food consumed as several charity organisations and the government handed out food parcels to vulnerable people which contained healthier food than they would normally buy. Given that many families lost their jobs due to COVID-19 and were experiencing financial hardship, questions remain about help needed in the wake of the pandemic when stigma around seeking help may have returned despite generally positive experiences of seeking help found in our study. Considering ways to help families after the pandemic is especially important as lowered income reduced the focus on healthy food during the pandemic, and focused more on tinned provisions or skipping meals to ensure children could be fed. Moreover, in NZ, supermarket

gift cards instead of food parcels were being trialled, which suggested they support healthier purchasing practices and gave families the opportunity to buy the food they preferred. As such, there should be further research on the products and services offered to families, such as vouchers or rebates (McFadden et al., 2014), exploring what works best for different situations and family structures.

Secondly, our research demonstrates the positive impact of careful planning, bulk cooking and freezing on participants, and these skills could be routinely encouraged by supermarkets and through social marketing programmes. For example, shopping lists or a mini whiteboard to plan meals could be given away by supermarkets and reusable containers to freeze food could also be distributed. Further promotion of apps to keep track of what is in the fridge/cupboards before going food shopping, to plan recipes and to use cheaper alternative ingredients, is also recommended to encourage practices that lead to reduced food waste. Internet of Things (IoT) will also aid consumers in this regard, such as smart fridges which allow users to see what is in the fridge or be automatically alerted when food is running low. However, equity issues with IoT are largely unexplored, as many of our participant families will not be able to afford the latest fridge technologies, therefore better accessibility to these technologies must be considered. Designing interventions that integrate planning routines within food practices can help build skills (e.g., using apps, bulk cooking and freezing) aiding families to cope.

Thirdly, increased food experimentation and cooking research can be introduced to consumers through school classes and local community cooking classes. Social media channels can also be set up like Meat-Free Mondays to encourage new ways of cooking. We also found that greater involvement with cooking transformed cooking into a fun, leisure activity and eating into a family occasion. Local communities can work to normalise cooking by supporting people to learn new skills and experiment, particularly including different methods for stretching limited ingredients. Encouraging the use of local and seasonal products and economically friendly recipes can further inspire consumers to use up leftovers to create new meals. In this vein, families are also encouraged to reduce their food waste.

While our findings relate to the disruptions caused by COVID-19, our insights can also be used to explore disruption more generally such as those from social (i.e., political uprising), economic (i.e., recession) or environmental (i.e., earthquake) events. Our findings demonstrate the importance of recognising the diversity of experiences and situations during disruptions, such as the COVID-19 pandemic and lockdowns.

Moreover, while there were no significant differences between countries in terms of practices, these practices were amplified by some UK participants. For example, this translated into more anxiety, panic buying, concern, and apprehension to go to food banks and supermarkets from the UK families, more so than in NZ. Such differences occurred due to the critical situation of the UK and the high number of COVID-19 cases, whereas in NZ community spread was minimal.

6.2. Limitations and future research

Our study is not without limitations. Our research is based on a small sample in two countries which limits its generalisability. As we demonstrate, while experiences and practices may be similar, the severity of these may differ depending on government policy. Thus, future research is encouraged to examine practices across a wider range of countries with varied

lockdown and COVID-19 restrictions. We also choose to specifically focus on low socio-economic families with primary school children, thus research on other vulnerable populations, such as essential workers, older people, and those living alone, are encouraged (Hoolohan et al., 2022). Our qualitative approach is limited to specific (short) period, thus research could be expanded to include longitudinal qualitative or quantitative research which delves deeper into the long term effects of COVID-19 or other disrupting events such as natural disasters.

7. Conclusion

Our research explored disrupted and emergent food practices as families tried to cope with COVID-19. We undertook a multi-phase study with low socio-economic status families with primary school children across the United Kingdom and New Zealand. Our findings demonstrate that disruption triggers the emergence of three practices to cope with changes in people's lives; 'asking for help', 'planning' and 'research and experimentation'. These generic practices shaped the materials, meanings and competencies of disrupted food practices enabling their adaptation. Many participants called on the support of the community such as food banks and unexpectedly food was shared by the local community. Participants now planned their food more than ever before through online shopping lists and stockpiling. Food research and experimentation also emerged as largely new practices, freezing foods, learning new recipes online (e.g., YouTube), experimenting with foods and cooking. As such, experimentation and research transformed cooking practices into leisure practices. We discuss the practical implications for policy makers and non-governmental organisations aiding families to cope with the difficulties and aftermath of sudden and large-scale disruption such as a pandemic.

Ethical statement

This research was approved by the University of Auckland Human Participants Ethics Committee (UAHPEC22124) and by the University of York's (UK) ELMPS Ethics Committee (39/2020–21). All participants gave informed consent before taking part in the study and before each element of the project.

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Data availability

The authors do not have permission to share data.

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