

Parental experiences of eating concerns in autistic children during COVID-19 lockdowns: implications for future practice

Claire Dhillon-Burrows, Sarah Sodimu, Saskia Keville, Amanda Ludlow & Bobbie L. Smith

To cite this article: Claire Dhillon-Burrows, Sarah Sodimu, Saskia Keville, Amanda Ludlow & Bobbie L. Smith (10 Aug 2023): Parental experiences of eating concerns in autistic children during COVID-19 lockdowns: implications for future practice, International Journal of Developmental Disabilities, DOI: [10.1080/20473869.2023.2243412](https://doi.org/10.1080/20473869.2023.2243412)

To link to this article: <https://doi.org/10.1080/20473869.2023.2243412>



© 2023 The Author(s). Published by Informa UK Limited, trading as Taylor & Francis Group



Published online: 10 Aug 2023.



Submit your article to this journal [↗](#)



Article views: 427





View related articles [↗](#)



View Crossmark data [↗](#)

Parental experiences of eating concerns in autistic children during COVID-19 lockdowns: implications for future practice

Claire Dhillon-Burrows, Sarah Sodimu, Saskia Keville , Amanda Ludlow  and Bobbie L. Smith 

Department of Psychology, Sport and Geography, University of Hertfordshire, Hatfield, Hertfordshire, UK

Prior to the COVID-19 pandemic, some autistic children exhibited maladaptive eating behaviours, yet the pandemic presented additional challenges for families beyond the general disruption COVID-19. The present study investigated parental perspectives of their autistic child's eating behaviours in the United Kingdom during the COVID-19 pandemic. Using reflexive thematic analysis, semi-structured interviews of 15 caregivers of children diagnosed with autism spectrum disorder were analysed. Three main themes were constructed: importance of control; exposure to food and family mealtimes; and an increase in snack and 'junk' food. Eating behaviours in autistic children were both positively and negatively affected by the COVID-19 lockdown. Whilst all parents felt under pressure with extra care responsibilities, some described less concern over food intake during the first lockdown because they were able to support their child's mealtimes and have new food experiences. By the end of the lockdowns, many parents reported worsening of eating behaviours, with children more likely to have a restricted diet, and eating more snack foods. Food shortages also triggered additional stress with parents unable to access their child's preferred food. The findings suggested reducing anxiety triggers and increasing food exposure in safe contexts may aid autistic children in trying new varieties of food. However, to minimise long-term eating difficulties during times of uncertainty when food access may be difficult, parents of autistic children would benefit from wider understanding, acceptance and support managing their child's selective eating.

Keywords: Eating behaviours; COVID-19; autism; selective eating; food insecurity

The coronavirus (COVID-19) pandemic led to a global health crisis and saw the United Kingdom (UK) government enforcing confinement for all except essential activity (Parmet and Sinha 2020). Surrounded in uncertainty, resultant changes of lifestyles following the enforcement of lockdown saw many individuals struggling to adapt, with parents suddenly finding themselves having to balance working from home and home-schooling their children. With intolerance of uncertainty being an issue within anxiety in autism (Boulter *et al.* 2014), the pandemic may have intensified its impact for autistic individuals. Additionally, with parents of an autistic child generally reporting a

more stressful parental existence (Hayes and Watson 2013), the COVID-19 pandemic posed significant challenges with the shutting down of special education systems and withdrawal of face-to-face treatment, meaning parents lost a vital support network, essentially becoming full-time carers (Eshraghi *et al.* 2020, Baweja *et al.* 2022). Parents with at least one autistic child were identified as being vulnerable to the effects of COVID-19 lockdowns due to the interference in normal routines, such as eating and mealtime behaviours, as well as the constant changes in restrictions (Narzisi 2020, Kawabe *et al.* 2020). Given the lifelong nature of autism and the clear difficulties reported by these families arising from the pandemic, understanding the effects of this on their child's eating behaviours over time, alongside any potential benefits within the lockdown experience, seems important in guiding future clinical practices.

The critical situation brought by the COVID-19 pandemic and consequent periods of confinement dramatically changed many people's lifestyle. Indeed, diets

Correspondence to: Dr Bobbie L. Smith, Department of Psychology, Sport and Geography, University of Hertfordshire, College Lane, Hatfield, Hertfordshire AL10 9AB, UK. E-mail: b.smith21@herts.ac.uk
This is an Open Access article distributed under the terms of the Creative Commons Attribution License (<http://creativecommons.org/licenses/by/4.0/>), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited. The terms on which this article has been published allow the posting of the Accepted Manuscript in a repository by the author(s) or with their consent.

during the lockdown were found to have a larger energy intake and lower nutritional quality than pre-COVID-19 eating patterns (Muscogiuri *et al.* 2020), including a greater preference for energy-dense foods, often high in refined sugars and saturated fats (Gasmi *et al.* 2020). Moreover, lockdown and quarantine measures exacerbated pre-existing eating difficulties in individuals with autism (Degli Espinosa *et al.* 2020), with parents reporting changes in their autistic child's eating behaviours, feeding practices and food shopping motivations during this period (Philippe *et al.* 2021).

Pre-pandemic research indicated autistic children tend to have maladaptive eating behaviours, such as heightened emotional over- and under-eating in comparison to children without a clinical diagnosis (Smith and Ludlow 2022). Indeed, a more severe form of picky eating, food selectivity (a refusal and avoidance of novel and familiar food; Johnson *et al.* 2018), is the most frequently cited eating concern in autistic individuals (e.g., Beighley *et al.* 2013). Implications of heightened food selectivity include a restrictive diet and, if chronic, a greater risk of a later eating disorder diagnosis (Herle *et al.* 2020). Thus, compared to those without autism, individuals with an autism diagnosis are more likely to also have an eating disorder diagnosis (Huke *et al.* 2013, Westwood and Tchanturia 2017).

Food selectivity is likely to be explained by a variety of contributing factors, such as heightened levels of sensory sensitivity in autistic children, for those with severe reactions to texture, smell and presentation of food (Cermak *et al.* 2010, Rogers *et al.* 2012). Greater food avoidance may also be explained through heightened rigidity, where rejection is centred around the expectation of how the food will look (Zickgraf *et al.* 2022). Taken together, these factors often lead to children accepting only a limited range of foods, including brand-specific ones. Food insecurity increased during the COVID-19 pandemic as many individuals struggled to access essential foods, affecting levels of household stress and overall behaviour (Leddy *et al.* 2020). The supply chain shortages in supermarkets made it particularly challenging for parents of autistic children, limiting access to perceived safe foods that their child would eat (Karpur *et al.* 2022).

Despite the recognition that autistic children can have difficulties with food selectivity and mealtimes, few studies have specifically addressed how the COVID-19 pandemic affected their eating and mealtime behaviours. Instead, the few studies carried out to date have tended to capture eating concerns as part of broader surveys exploring health consequences of the pandemic. For example, Masi *et al.* (2021) carried out a cross-sectional survey addressing the impact of the pandemic on the overall wellbeing of parents and their children with neurodevelopmental conditions, reporting that the disruption to the children's routine negatively

affected their child's sleep quality and quantity, reduced their levels of exercise and led to a poorer diet. Parental reports have also expressed worsening of children's eating behaviours such as binge eating, food selectivity and unusual eating patterns (Tokatly Latzer *et al.* 2021).

Importantly, a recent post-pandemic study in Chile with a sample of 72 families of autistic children between the ages of two and twelve found as many as 97.67% presented with food selectivity (Ahumada *et al.* 2022). However, it is important to note the high percentage reflected in the Chilean study may also reflect the inclusion of very young children in the study. For example, 46% of neurotypical children are reported as being picky eaters at some point between 1.5 and 6 years (Cardona-Cano *et al.* 2015). Moreover, the true extent of the eating difficulties in an autistic population is difficult to determine due to various terminology adopted in different studies (e.g., picky eating vs selective eating) which are often poorly defined and inconsistently used (Johnson *et al.* 2018).

The existing characteristics of this condition around routines and intolerance of uncertainty may have been compounded by the increased anxiety surrounding pandemic-driven changes in everyday routine and reduced access to food products. Therefore, there may have been disruption in the eating patterns and mealtime experiences for the autistic community during this period. Consequently, the current study sought to understand parents' experiences of eating behaviour and mealtimes during the COVID-19 pandemic for autistic children.

Materials and methods

Participants

Using snowballing methods and adverts placed with local autism support groups, a UK-based purposive sample of participants was recruited. Fifteen parents (1 father, 1 stepfather, 13 mothers) between the ages of 35 and 54 years ($M = 44.07$; $SD = 5.12$; Table 1) were recruited. All were parents of children with a formal diagnosis of autism, aged 6 to 16 years old ($M = 11.36$; $SD = 2.71$; 8 males, 6 females). Thirteen parents identified as White British, one as White Irish and another identified as White and Black Caribbean.

Interview guide

After reviewing existing literature on eating during COVID-19 (Coulthard *et al.* 2021, Bolek 2021), as well as eating concerns in neurodiverse populations (Tokatly Latzer *et al.* 2021, Cermak *et al.* 2010), a semi-structured interview schedule was developed. Open-ended questions created the opportunity for participants to elaborate on their experiences and personal views within the aims of the research. Prompts and follow-up

Table 1. Participant's demographic information.

Parent	pseudonym	Relationship to child	Age	Marital status	Occupation	Child's age	Child's clinical diagnosis	Ethnicity	Child's assigned sex	Sensory food behaviour ⁴
	Common issues (e.g., vomiting)	Allergies and intolerances								
Chloe	Mother	42 Married	Stay-at-home	12	ASD,	White British	Male	Yes	Yes	No
Iona	Mother	43 Married	Self-employed	8	ASD ¹ , ARFID	White British	Male	Yes	Yes	No
Michelle	Mother	40 Married	Stay-at-home parent	9	ASD, Ehlers Danlos	White British	Male	Yes	Yes	No
Rosie	Mother	46 Married	Carer	13	ASD, Dyspraxia	White British	Male	Yes	Yes	No
³ Lisa	Mother	35 Married	Self-employed	9	ASD ² , ADHD	White British	Male	Yes	Yes	No
³ Michael	Father	35 Married	Freelance marketer							
Anna	Mother	46 Single	Talk therapist	10	ASD	White British	Female	Yes.	Nausea eating with babies – doesn't like how they eat. Low satiety regulation	Yes
Lucille	Mother	46 Married	Teacher	14	ASD ¹ , ARFID, auditory, sensory and special processing disorders, hypermobility, and low muscle tone.	Mixed White and Black Caribbean	Female	Yes	Restricts food intake. Doesn't eat in front of others. Likes small plates/ portions of food	No
Therese	Mother	47 Lives with Partner	Works part-time from home	12	ASD ² , ADHD, mood dysregulation and anxiety disorder	White British	Female	Yes	Yes	No
Erin	Mother	41 Married	Undisclosed	6	ASD ² , ADHD	White Irish	Female	Yes	No	No
Paul	Stepfather	54 Married	Structural engineer	16	ASD, Social anxiety disorder	White British	Female	Yes	Yes	No
Eva	Mother	47 Married	Musician and teacher	13	ASD, Depression	White British	Female	Yes	Yes	No
Becky	Mother	48 Married	Engineer	12	ASD ¹ , ARFID	White British	Male	Yes	No	No
Susie	Mother	49 Married	Working from home	11	ASD ² , ADHD	White British	Male	Yes	No	No
Jessica	Mother	42 Single	Stay-at-home parent	14	ASD ² , ADHD, anxiety disorder	White British	Male	Yes	No	No

¹ARFID – avoidant restrictive food intake disorder.

²ADHD – attention-deficit/hyperactivity disorder.

³Parents interviewed together.

⁴For example, hypersensitivity to taste, texture, smell; gagging.

Table 2. Main and subthemes.

Main themes	Subthemes
The importance of control	Ability to manage food portions and meals Anxiety-focused eating
Exposure to food and family mealtimes	Lack of access to certain food Families eating together more
Increase in snacks and 'junk' food	New eating and food experiences Increase in snacking and reduced meals Snacks relieved boredom

questions were used to explore experiences in more depth. Core questions included:

- Can you explain a little about what your child’s eating was like before the COVID-19 lockdown?
- What impact has the pandemic had, if any, on your child’s eating?
- What has your child’s eating been like whilst managing the transitions between being at home and being at school since the lockdowns began?
- What is the best advice you would give to parents about managing their child’s eating during this time?

Data collection

The first two authors carried out the interviews via video conferencing software, either Zoom or Microsoft Teams due to the COVID-19 restrictions at the time. Interview lengths ranged from 19 to 89 min ($M = 44.1$; $SD = 22.89$). Following the interview, participants were given the opportunity to share further information, thanked for their time and were given a debrief sheet that included supportive websites.

Ethical considerations

Approval was given by the institution’s Ethics Committee (protocol numbers: LMS/PGT/UH/04525 and LMS/PGT/UH/04567). Participant information sheets were given, and informed consent was sought from the participants who were made aware of interviews being audio-recorded, stored, transcribed verbatim with identifying details removed, recordings deleted on transcription, and anonymised data used in a publication.

Data analysis

The study adopted an inductive reflexive thematic analysis, with a critical realist approach taken (Braun and Clarke 2021). This approach meant that the comments and observations made by parents were taken at face-value, and themes were organised on a semantic level (Braun et al. 2016).

Each interview was replayed multiple times to create a strong familiarity with the data and to correct any transcript discrepancies. During this process, any initial thoughts were noted, transcripts were coded and initial candidate themes were identified. The purpose of this was to grasp what participants said and give the researcher room to make reflections and interpretations;

this ensured participants’ perspectives were adopted. A final document was then produced to encapsulate the main themes and subthemes with supporting quotes from the raw data. To ensure quality and credibility, reflexive conversations alongside extensive assessments and refining of themes were undertaken with the third, fourth and fifth authors, verbatim quotations and the identification of any disparities within themes were agreed upon by all authors, and participant validation was employed on the final list of main themes to ensure the authenticity of interpretations in reflecting the parents’ experiences (Braun and Clarke 2021, Treharne and Riggs 2015). No parents requested amendments, believing that the themes encompassed their interview and eating-related experiences during COVID-19 lockdowns.

Results

Analysis of the fourteen semi-structured interviews resulted in the following main and sub themes (Table 2).

The importance of control

Feeling and asserting control was central to food selection, consumption and general mealtime behaviours for parents and their autistic child. The lockdown restrictions enabled families to have greater control over mealtimes given this was being managed at home 24/7. However, the limited availability of certain foods meant that families had to find alternative methods of encouraging food acceptance.

Ability to manage food portions and meals

All parents referred to themselves or their child as having, or needing, control over food and weight. A few participants mentioned this linked to school closure, with one parent (Jessica) having to ‘juggle meals’, specifying her child’s weight loss was due to him no longer eating school lunches where he was offered ‘second and sometimes third helpings’. Moreover, parents recounted being able to support and prompt eating and mealtimes because their child was at home all day and they could manage meals:

We prompt him. So, if he’s left to his own devices, he just doesn’t think about it? He’s got other things to do. But if we are there it’s like “OK, it’s 10:30, its snack time, eat this. It’s lunchtime”, ... you keep refocusing his attention on the food

and you know you just provide support really, and when that supports not there then less gets eaten. (Becky)

At home we were doing the buffet. So not that it is a buffet, but everything is in food, in bowls, on plates, on the table and she could select, even stuff she wouldn't normally eat, she was at least trying it, and we'll say, "that's OK, you know, you can try again at another time", and she was willing to do that. There wasn't any defiance anymore because she was quite calm about it, and we were definitely making progress. (Erin)

One explanation for the need for control over portions seemed to stem from conflict between the child wanting to reduce food intake and parents wanting their child to meet their essential nutritional requirements and maintain a healthy diet and weight. Some parents were able to increase their child's food consumption to help their child gain 'much needed' weight:

He's put on weight because we're in control of three meals a day now, not just two and snack times. And so, we just plied him with food ... when we're able to control things ... you can make sure his needs are met. So, it's been positive on the food front. (Becky)

This need to manage their child's access to food and intake, to ensure they maintained a steady weight, was reiterated by Jessica:

I think because I manage him ... He doesn't kind of help himself or anything but fruit ... So, like the access to kind of biscuits and all that kind of thing ... the kids don't have access to them 'cause they would just eat a lot.

Yet this was also complicated by the adverse perceptions their children had about their bodies compared to others, with Jessica noting, for example, how her son was 'conscious of his weight. He wouldn't want to take part in physical education because he didn't like getting changed in front of people'. Indeed, for other parents before the pandemic, many said their children had a negative body image and expressed their child's wish to 'lose weight' (Paul), how they called themselves 'fat' (Eva); or 'too big' and feared becoming fat despite being 'a perfectly healthy weight' (Erin). Additionally, they recounted how their children struggled with the views and opinions of others. One parent said her autistic child ruminated on comments from her peers who told her she 'looked like she was pregnant' (Lucille).

Anxiety-focused eating

Many parents noted the varying impact that COVID-19-related uncertainties and anxiety had on eating, resulting in more emotionally-driven undereating. For example, Iona discussed how the worry associated with the constant world focus on COVID-19 exhibited itself through her child's eating:

We were all glued to the TV and we will listen to the news about the COVID numbers and deaths and so on, and obviously that was scaring him as well, so he was trying to get his head around what was going on. And so yeah obviously it was food on the surface but mostly it was his anxiety that went through the roof so. (Iona)

For some of the children, the anxiety led to more restrictive eating behaviours, conceptualised as a means of regaining control. For example:

The more anxious she is, first of all, the less she eats ... she will be a lot, what seems like pickiness, but it is just trying to control things ... It just, eating goes out the window because that's one thing she can try and exert control over. (Erin)

Lucille similarly noted an interrelationship between eating and control. Her food preferences 'changes every few days, so you can't shop ... You have to shop every couple of days because she'll eat something to death and then she'll go off it ... it was something she could control'.

Eva explained how she thought her daughter had 'developed a huge amount of anxiety about lots of things, but germs in particular, and part of that was restricting food as her anxiety levels rose massively'. With Chloe emphasizing how her child's eating became 'progressively' worse through each of the lockdowns:

...as we went progressively through things started to categorically drop off and one by one, he really started to restrict things. By the end of the first lockdown, He had a more limited diet, I wouldn't say it was as limited as it is now, I think the second lockdown has properly really cemented it. (Chloe)

Michael reflected on the force psychological issues had on his son's eating, adding 'stress and anxiety tends to make him even more restricted, he's more, he's more likely to be willing to give something a pass'. Contrastingly, some parents who felt their children were less anxious at home:

I think it's just being less anxious. I presume, being at home and understanding she knows where she is and she's more in control over where she's eating and there is fewer outside factors that would disrupt her so it's probably because she's more comfortable eating at home. (Paul)

It seemed that the greater 'understanding', comfort and reduced disruption afforded at home potentially generated certainty, facilitating his child's eating.

Lack of access to certain food

Parents often had to bulk buy to ensure food availability and certainty, for example, Michelle stated: '... he'll only eat like certain brands that come from certain stores, I have to like buy them in bulk.' Yet this become more difficult when food supplies were disrupted during the pandemic with some foods being in short supply, reducing parental control over food supplies making it difficult for parents to source their child's usual foods and brands:

Being autistic, the whole thing about controlling the circumstances, controlling your environment to give you the sense of safety is very important to him. Where we can, we try to satisfy that need without being so restrictive ... So, when I had to say, "no, I'm really sorry I haven't been able to get a normal brand of yogurt, it's just not on the shelves", it would be kind of, "well, all right then. I haven't really got a choice". No, you haven't, and it's not in my control ... based on what I could find, substituting whatever it was I

could get, so there was a certain element of "What's the ingredients in tonight's surprise dinner?" ... I couldn't control what I could and couldn't buy. (Susie)

Difficulty sourcing foods seemed to negatively impact a 'sense of safety', generating uncertainty. Lisa stated she had '... not been able to get hold of his safe foods, that's been really, really tough'; and Michael reflected on the increased financial burden from COVID-19 which generated uncertainties around food availability saying: '... that puts more pressure on yourself again tends to lead to spending more money on your shops, every time you shop, because you buy in just think, to make sure you have something extra and don't run out'.

Exposure to food and family mealtimes

The restrictions encouraged mealtimes to become a focal point of social activity with creativity being poured into them. This shift created multiple opportunities for greater food exposure and shared mealtimes, which may not have been possible pre-pandemic due to busy working lives. Aside from anxieties related to COVID-19, most parents noted that the consistency and comfort at home provided exposure to family mealtimes and new foods, enabling some positive shifts for some with selective and restricted eating.

Families eating together more

Family mealtimes during lockdown underwent some change for the families involved in this study. For example:

He [participant's husband] tends to come in earlier now... because I think he quite likes being with us in the evening meals... So, and he's changed his working hours... so, I would say that the meals, the timings changed and because he's there, they're just a bit more elaborate. (Becky)

Most of the parents reported eating together during lockdown with some changing their mealtimes and work schedules to sit down together. Iona even referred to how her son instigated family dinners: 'Well lockdown was amazing because my husband was always at home, so we had this, he was demanding for having family dinners... so he really enjoyed sitting around the table with us'.

Particularly within the first lockdown there seemed to be a shared experience of togetherness across parental accounts. Chloe spoke about the 'novelty' of the first lockdown, how during this time her mother moved in with them and how this was positive for her son, saying: '... so it was nice because she was there, and I think he would have missed her otherwise she's around the house every day'.

Families who already regularly ate together continued to do so: 'We've always eaten together and that was maintained throughout lockdown' (Susie). However, for some families, lockdown made mealtimes more problematic often due to family dynamics and a

reluctance to eat in front of others. For two parents, following the establishment of new routines at home (e.g. screen time, being in bedrooms) this led to their autistic child refusing to partake in family meals when they would have been willing pre-pandemic:

It was just getting to the point where mealtimes were explosive because he [autistic child's brother] wouldn't come off the screen and he wanted to eat on the sofa, and he wouldn't need to sit at the table. So, there was always stress and tension around it and she just didn't like that. So, she wanted to remove herself from that to a certain extent. But I think also she didn't want us to see what she was eating. (Eva)

Our eating habits did change in lockdown because she got so bad that she wouldn't even come down for dinner. She would say "I'd rather not eat, then come and sit downstairs for dinner". So, in that respect then both my girls they don't eat downstairs, they eat in their bedroom. (Lucille)

New eating and food experiences

Food became more of an event for some of the autistic children during lockdown periods. Parents described how their autistic child had increased exposure to food through family mealtimes but also through themed food evenings, mezze-style meals and takeaway treats being served:

When the weather was beautiful, we'd eat in the garden and that became, you know, it was more of an event... every Friday night was always pizza night no matter what... we watch a movie, and we have pizza and that's a that started during lockdown. (Anna)

Almost all parents reported that their children were exposed to more elaborate meals, new flavours, or different varieties of food:

There was a lot of requests for takeaway food in lockdown. We don't do a lot of takeaway food, but I think that lots of people were like, you know, Friday nights pizza or you know, Saturday night is take-away night, which isn't something that we do, but there was lots of requests from her then, which you know, I'd grant as a one off. (Therese)

Several autistic children were exposed to new food experiences by preparing or baking food for themselves and their family members during lockdown periods. For example, Paul recounted that his daughter would 'actually even prepare food herself as well, and not just for her, but also for the family' and that 'the one thing that she did enjoy, actually, was baking. When she baked and she had made it, she felt much more comfortable about eating it'. Similarly, Eva noted this autonomous food preparation increased willingness to eat it:

The one positive thing was when there were a few meals that she cooked from start to finish and she had to be in complete control of them, so it couldn't be that we could do it together. She had to kind of go "right, I'm going to make this and I'm going to follow the recipe and it's all got to be working perfectly", but when she'd done that, she felt much more inclined to eat it.

Furthermore, Susie explained how 'we got them [the children] cooking one night a week... Gave them

something to do and gave them some sense of kind of control in a situation that was completely calm'; and Michael spoke about the enhanced creativity, stating: 'I mean we even tried things like making our own McDonald's packaging, yeah, to try and find a way around it'.

During the COVID-19 lockdown periods, some parents reported their children exposed themselves more to new foods and flavours. For example, Paul described how his daughter began to eat meat after becoming vegetarian:

She's definitely more comfortable with what she eats and variety of food and more balanced food as well. She was a vegetarian, and it was more to do with texture of the meat rather than what, whether it was from an animal, and I think the fact that she's happy with the texture, she does eat meat now, so that's definitely positive that's come out of this. (Paul)

For some, eating difficulties remained; for Lucille's daughter, her issues created complexities which impacted her ability to eat meals:

She didn't know what she liked [to eat] and literally she wasn't even eating ... she was probably eating one meal a day ... there is no meals exactly that she eats. It is just snacks. That's what she survives on these snacks. (Lucille)

Increase in snacks and 'junk' food

As the COVID-19 lockdowns progressed, parents stated their children's food intake increasingly consisted of snacks and reduced mealtime eating. This change was often due to managing emotional responses to the pandemic, specifically to alleviate boredom and health-related anxiety. This increased parental fatigue over meal preparation.

Increase in snacking and reduced meals

The lockdown period had resulted in some children reducing their snacking and consuming healthier meals. For example, Paul explained: 'We think she eats a balanced meal now. I think probably snacking less but eating healthier snacks as well. Lots of fruits. But we had less, less of that before'.

More commonly during the later lockdown periods, almost all parents reported an increase in the consumption of snacks and foods that were energy-dense and high in refined sugar and saturated fat (often labelled as 'junk' by the parents who were interviewed): 'The structured meals definitely decreased. By lockdown 3 there was a really big decrease in it and absolutely much more snacking, and "can I have cake for breakfast?", yeah' (Therese); and 'it and made him less sort of adventurous with his food ... He was eating all high carb stuff, chips, pasta ...' (Rosie).

More substantive eating in the form of meals also became a problem for some children, with many parents reporting a decrease in the number of meals consumed during lockdown periods; for Eva's daughter this increased

snacking, also describing how her child's hunger was out of synchronisation with the rest of the family:

I think she didn't want to eat with us. She didn't want to eat what we were eating. She really craved junk ... she wouldn't eat till probably three or four in the afternoon. We, you know, we had a variety of things for breakfast attempt. She wouldn't eat them then she just says, "I'm not hungry, I'm not hungry" and then we'd often have a bit of a to-do around 3 or 4 where I'd say, "You need to eat something" and she'd just say "fine, give me a packet of crisps", and you know it's it was very difficult because obviously just wanted to eat something. So, we give her the crisps. (Eva)

Thus, given healthy food was often rejected, some parents who struggled to get their child to eat nutritious foods, saw a scenario of any-food-was-better-than-no-food emerging:

She doesn't eat meals, so it's either like a bowl of chips. I mean McDonald, [child's name] would eat every day and Domino's [pizza], um, so it's mainly chips, churros and it changes ... So other than that there is no meals exactly that she eats. It is just snacks. That's what she survives on these snacks. (Lucille)

Some parents commented on shop visits during lockdown, impacting availability, or even an option to minimise access to 'junk' food when lockdown meant shops were closed: 'Once the shops reopened up, ... she would go in and buy food, but more rubbish food. So, it is about what she's been able to access as well, you know?' (Therese). Yet lockdown also impacted on accessibility due to lockdown rules, including the permitted once-daily walk outside, and food availability, which increased their child's snacking:

That [shop] became the place where we go every day in lockdown one, but of course when you get there, it's a corner shop so there wasn't access to any fresh or anything healthy and as a kid, why we go to the corner shop to buy an apple? So, there was lots more, you know that's the trip out. So that's the trip to the corner shop and she'd buy something as a snack that was generally crisps or chocolate. (Eva)

Snacks relieved boredom

Alongside parents' own fatigue around food preparation, they specified several reasons for increased snacking by their autistic child which centred around emotions, particularly boredom from being home all day. Some parents were unable to keep their child occupied throughout lockdown periods because of having to work or other family commitments, and because all amenities, clubs and schools were closed. For example, Therese described how stress levels affected her autistic child's eating behaviour, increasing snacking:

It's been affected because of the loss of structure and routine to the day ... and boredom, and I think by lockdown three she was bored as well and ... that's a lot of bad snacking ... if she's anxious then she won't eat, and that applies at home as well. But if she's comfortable, when she's relaxed, then she'll snack.

To complicate matters, other factors exacerbated unhealthy dietary behaviours, with Eva's child developing a fear for germs during lockdown periods:

I did wonder actually if the desire now to eat what I would call, junk, is also a slight issue about the fact that it's packaged and therefore not touched ... whereas obviously fresh food can go off and you know has a sell by date, so I do also wonder if that's why she's a bit funny about meat now because there's the possibility of having germs. (Eva)

Perhaps it was unsurprising, with additional stressors over lockdown and mealtime behaviours, several parents found lockdown affected how they prepared and offered food to their autistic child. One parent recalled that meals were 'less formal, less structured; lockdown three particularly. Just lazier' (Therese). Anna recounted how she became almost fatigued with meal preparation: 'I maybe haven't cooked as much ... like I think I've got into a real rut with food I cook for them.' Even parents who usually veered away from snacks found themselves adding them to get more calories in, to break-up the day or match school routines:

We'll tend to offer our snack just because it's another way of not getting more calories in and he doesn't necessarily always eat that these days. When he was at home we were trying to offer, you know, three meals and two snacks so no wonder he put weight on. (Becky)

Discussion

Previous research has illustrated that, compared to peers, autistic children are more likely to develop eating difficulties, with food selectivity often cited as the most common eating challenge (Beighley *et al.* 2013). These difficulties can be complex and challenging for parents to manage without support, even in usual circumstances, notwithstanding a global pandemic (Alhuzimi 2021). Therefore, this study sought to explore parental experiences of eating behaviours in an autistic child amidst the COVID-19 pandemic and its impact. Parents spoke at length about a range of challenges and uncertainties they faced during lockdown, with the added pressure of supporting and navigating their child through considerable periods of change, without the usual external support services (Tokatly Latzer *et al.* 2021). Importantly, in this study, over time the restrictions within lockdown augmented a wide spectrum of eating behaviours in their children, from overeating to restrictive eating, yet also a willingness to try new foods when environmental conditions were more stable and relaxed.

These more positive experiences often related to the first COVID-19 lockdown, where the novelty of being at home and shared community experience, created a more relaxed approach (Pavlopoulou *et al.* 2020). Support from spouses and other family members were highly valued during this time and seemed to ease the difficulty with eating concerns (Goedeke *et al.* 2019). All families in the study tried eating together during lockdown with food and meals becoming more of an event involving themed evenings, takeaway nights, children cooking their own food and more elaborate mealtimes. This sense of fun-like

togetherness seemed to generate stability and certainty resulting in some children being more willing to try a new variety of foods and new flavours, particularly if they had the added certainty and control of being involved in the meal preparation. Amenability to trying new food after involvement in food preparation supports the idea that repeated visual and tactile exposure to food in safe contexts without coercive feeding and no expectations of eating, improves the willingness of autistic children to taste new foods (Nederkoom *et al.* 2015, Kim *et al.* 2018). Indeed, acknowledging the need for sensation-seeking when bored can promote eating healthy, more exciting foods (Moynihan *et al.* 2015). Therefore, post-COVID-19, an avenue for future research would be to acknowledge eating concerns and associated anxieties, alongside the need for sensation-seeking, autonomy in food preparation and developing strategies for parents. The aim being to create a more relaxed, enjoyable eating environment for their autistic children, where the goal is fun rather than eating, thus, facilitating pathways which may eventually help improve their child's overall eating habits.

The importance of family mealtimes and food-related parenting practices for a child's development is increasingly recognised (Jones 2018), with family mealtimes associated with a decreased risk of unhealthy eating, obesity, and fewer behaviour concerns (Hammons and Fiese 2011, Sen 2010). Prior research has shown that the home food environment of preschool-aged children is positively associated with children's diet quality (e.g., parental encouragement/modelling), while an inverse relationship has been found between some home food environment and child dietary intake (e.g., unhealthy food availability, permissive feeding; Wyse *et al.* 2011). For families encountering transient moments of stress, mealtimes have been shown to be particularly challenging with parents unintentionally making trade-offs between intake of healthier foods to manage their children's behaviour (Berge *et al.* 2018).

During lockdown, both the positive and negative impact of the home environment and parental feeding practices occurred; for example, while home cooking increased (Carroll *et al.* 2020, Berge *et al.* 2021), so did coercive food-related parenting practices (e.g., food restriction, pressure to eat; Adams *et al.* 2020), shown to be associated with negative child weight outcomes in other studies (Shloim *et al.* 2015). In the current study, as the pandemic lockdowns progressed, food-related concerns and uncertainties were a major source of difficulty for families, with all of the children already noted as having sensory related issues around the smell, taste or textures of food; and some having other common gut-health issues, such as vomiting, which were not always related to disordered eating (see Table 1). It is known that unusual eating rituals are common in autistic children (Ahearn *et al.* 2001), and food selectivity is common for autistic children in other countries (for

example, Chile; Ahumada *et al.* 2022). Thus, within times of greater uncertainty, the exaggeration of sensory sensitivities and rigidity around food could have been another expression of anxiety during the lockdown (Lim *et al.* 2020) or could also be related to underlying health conditions. In most cases, the pandemic exacerbated atypical eating behaviours in autistic children (Degli Espinosa *et al.* 2020). For some children in the current study, this led to more overeating and consumption of energy-dense snacks. However, for others, food became even more restricted during the later lockdowns, particularly those displaying higher levels of anxiety due to wider anxiety triggers and environmental factors involving family dynamics around mealtimes. This kind of emotionally reactive and externally influenced eating driven by new routines prevented some of the autistic children from eating with their families.

Food insecurity also arose during the pandemic, with several parents mentioning their struggle to access essential foods, affecting levels of household stress and overall behaviour (Leddy *et al.* 2020). As noted by the parents in the current study and mirroring previous reports, the shortage in supermarkets was particularly stressful and challenging for parents of autistic children, where selective eating in children meant only certain brands would be eaten (Karpur *et al.* 2022); again, this was potentially compounded by additional sensory issues related to food. The fact that parents were unable to access these foods for extended amounts of time may have resulted in greater food selectivity and poorer diet, which may encourage a later unwillingness to try new foods and decreased appetite.

A key strength of this study is being one of the first to use qualitative methods to examine parental experiences of eating behaviours in autistic children over the longer time course of COVID-19 lockdowns in the UK. Furthermore, we were able to incorporate the father's perspective, which is important for our understanding of these issues, as prior research has often focused only on mothers' perspectives (Bogossian *et al.* 2019). However, it is important to note some limitations of the current study. Only one of the families was from an underrepresented minority group, as is too often the case in autism research (Ratto *et al.* 2017, Broder-Fingert *et al.* 2019). Further, given the range of country-specific lockdown measures influencing eating habits the research findings are limited to the United Kingdom. That said, other countries have noted potential generic autism specific issues around intolerance of uncertainty (e.g. Boulter *et al.* 2014, Vasa *et al.* 2018) and food selectivity (Beighley *et al.* 2013, Ahumada *et al.* 2022), perhaps indicating that autistic children may be more vulnerable wherever they reside, and this vulnerability could exacerbate eating issues during times of uncertainty, unrest, cost-of-living issues or food shortages. Moreover, the socioeconomic status of the families was not reported in the current study, yet

this would have been helpful to better understand the food insecurity findings in a wider context; especially as those from more deprived groups are reportedly more adversely affected by food insecurity (e.g. Loopstra *et al.* 2019). This was particularly the case during the pandemic, with school closures reducing access to (free) school meals (Pautz and Damian Dempsey 2022).

While the current study focused on experiences of eating for autistic children during the pandemic, many issues relating to food and eating behaviours remain real issues of concern. The current cost-of-living crisis has now surpassed COVID-19, as the main concern for families, with many now having to choose between feeding and paying bills (Hill and Webber 2022). Even before the COVID-19 pandemic, households with autistic children were more likely to be food insecure than households of children without disabilities (Karpur *et al.* 2022), with analysis of Autism Speaks' Food Insecurity Survey, showing families with autistic individuals being nearly four times more likely to be very low food secure during the COVID-19 pandemic in comparison to the general population (Baweja *et al.* 2022). Despite this, compared to the general population, they were significantly less likely to access food banks or religious institutions for essential provisions (Karpur *et al.* 2022), both requiring wider contact with others which may be more difficult for families with autistic children. Additionally, there is an implication here that food banks may not be an option for some families with autistic children, possibly because the limited range of food may exacerbate food and eating stressors for children with sensory food behaviours.

The current study shows some of the unique food-related difficulties faced by parents of autistic children during COVID-19 lockdowns, and how these were navigated, some positively. The findings emphasise the need for healthcare professionals to be aware of eating concerns for families of autistic children given the widespread implications affecting the physical and mental well-being of individuals; especially during times of uncertainty which can adversely impact anxiety in autistic individuals (Boulter *et al.* 2014). Previous, successful food-based intervention studies have included parent education on nutrition and reward-based systems for both neurodivergent and neurotypical populations (Sharp *et al.* 2014, Balantekin *et al.* 2020). Therefore, guidance should be provided to parents' for balancing their child's dietary needs alongside enhancing greater flexibility around food choices; and the positive trajectories that can emerge in less pressured, family-focused scenarios. This may include ways to maximize nourishment from available food items, fun-related family-based meal preparation techniques for offering foods that the child does not usually eat (without the expectation of consumption), and treatment with nutritional

supplements as needed. Moreover, tips on appropriate limit setting of snacks and establishing a schedule and routines should also be considered (Trofholz *et al.* 2022). Given autism is a lifelong disability, research should explore experiences of autistic adults and how to best support them to navigate eating and food related issues during times of uncertainty and when food accessibility is compromised; particularly for those with reduced or no family support networks.

Research addressing families with autistic children who are likely to struggle feeding their children due to increased living costs will be vital moving forwards, as professionals find ways to help families access food but also to support those who are more likely to selectively eat and may be unwilling to eat beyond a limited range of foods. Importantly, support for families during other time periods where there is disruption to routine and increased uncertainty, should also be prioritised to ensure helpful feeding practices remain even in times of stress and public health crises (Trofholz *et al.* 2022). Further, given there is currently limited guidance around food accessibility to meet the specific needs of autistic individuals and their families (especially for those with reduced or no family support networks), outreach practices and autism-friendly policies at food banks, for example, should be considered particularly during times involving uncertainty, cost-of-living and accessibility issues.

Disclosure statement

The authors report there are no competing interests to declare.

ORCID

Saskia Keville  <http://orcid.org/0000-0003-2401-5226>

Amanda Ludlow  <http://orcid.org/0000-0003-2843-7290>

Bobbie L. Smith  <http://orcid.org/0000-0002-8824-3407>

Data availability statement

Some data that support the findings of this study may be available on request from the corresponding author. The data are not publicly available due to their containing information that could compromise the privacy of research participants.

References

Adams, E. L., Caccavale, L. J., Smith, D. and Bean, M. K. 2020. Food insecurity, the home food environment, and parent feeding practices in the era of COVID-19. *Obesity (Silver Spring, Md.)*, 28, 2056–2063.

Ahearn, W. H., Castine, T., Nault, K. and Green, G. 2001. An assessment of food acceptance in children with autism or pervasive developmental disorder-not otherwise specified. *Journal of Autism and Developmental Disorders*, 31, 505–511.

Ahumada, D., Guzmán, B., Rebolledo, S., Opazo, K., Marileo, L., Parra-Soto, S. and Viscardi, S. 2022. Eating patterns in children with autism spectrum disorder. *Healthcare*, 10, 1829.

Alhuzimi, T. 2021. Stress and emotional wellbeing of parents due to change in routine for children with Autism Spectrum Disorder (ASD) at home during COVID-19 pandemic in Saudi Arabia. *Research in Developmental Disabilities*, 108, 103822.

Balantekin, K. N., Anzman-Frasca, S., Francis, L. A., Ventura, A. K., Fisher, J. O. and Johnson, S. L. 2020. Positive parenting approaches and their association with child eating and weight: A narrative review from infancy to adolescence. *Pediatric Obesity*, 15, e12722.

Baweja, R., Brown, S. L., Edwards, E. M. and Murray, M. J. 2022. COVID-19 pandemic and impact on patients with autism spectrum disorder. *Journal of Autism and Developmental Disorders*, 52, 473–482.

Beighley, J. S., Matson, J. L., Rieske, R. D. and Adams, H. L. 2013. Food selectivity in children with and without an autism spectrum disorder: Investigation of diagnosis and age. *Research in Developmental Disabilities*, 34, 3497–3503.

Berge, J., Hazzard, V., Larson, L., Hahn, S., Emery, R. and Neumark-Sztainer, D. 2021. Are family/shared meals a protective routine during COVID-19 in diverse households. *Journal of Adolescent Health*, 24, 101575.

Berge, J. M., Tate, A., Trofholz, A., Fertig, A., Crow, S., Neumark-Sztainer, D. and Miner, M. 2018. Examining within-and across-day relationships between transient and chronic stress and parent food-related parenting practices in a racially/ethnically diverse and immigrant population. *International Journal of Behavioral Nutrition and Physical Activity*, 15, 1–12.

Bogossian, A., King, G., Lach, L. M., Currie, M., Nicholas, D., McNeill, T. and Saini, M. 2019. (Un)packing father involvement in the context of childhood neurodisability research: A scoping review. *Disability and Rehabilitation*, 41, 110–124.

Bolek, S. 2021. Food purchasing, preservation, and eating behavior during COVID-19 pandemic: A consumer analysis. *Italian Journal of Food Science*, 33, 14–24.

Boulter, C., Freeston, M., South, M. and Rodgers, J. 2014. Intolerance of uncertainty as a framework for understanding anxiety in children and adolescents with autism spectrum disorders. *Journal of Autism and Developmental Disorders*, 44, 1391–1402.

Braun, V. and Clarke, V. 2021. *Thematic analysis: A practical guide*. London, UK: SAGE Publications Ltd.

Braun, V., Clarke, V. and Weate, P. 2016. Using thematic analysis in sport and exercise research. In: B. Smith and A. C. Sparkes, eds. *Routledge handbook of qualitative research in sport and exercise*. London: Routledge, pp.191–205.

Broder-Fingert, S., Silva, C., Silverstein, M. and Feinberg, E. 2019. Participant characteristics in autism intervention studies. *Autism*, 23, 265–266.

Cano, S. C., Tiemeier, H., Hoeken, D. V., Tharner, A., Jaddoe, V. W. V., Hofman, A., Verhulst, F. C. and Hoek, H. W. 2015. Trajectories of picky eating during childhood: A general population study. *The International Journal of Eating Disorders*, 48, 570–579.

Carroll, N., Sadowski, A., Laila, A., Hruska, V., Nixon, M., Ma, D. W. ... and Guelph Family Health Study. 2020. The impact of COVID-19 on health behavior, stress, financial and food security among middle to high income Canadian families with young children. *Nutrients*, 12, 2352.

Cermak, S. A., Curtin, C. and Bandini, L. G. 2010. Food selectivity and sensory sensitivity in children with autism spectrum disorders. *Journal of the American Dietetic Association*, 110, 238–246.

Coulthard, H., Sharps, M., Cunliffe, L. and van den Tol, A. 2021. Eating in the lockdown during the COVID 19 pandemic; self-reported changes in eating behaviour, and associations with BMI, eating style, coping and health anxiety. *Appetite*, 161, 105082.

Degli Espinosa, F., Metko, A., Raimondi, M., Impenna, M. and Scognamiglio, E. 2020. A model of support for families of children with autism living in the COVID-19 lockdown: Lessons from Italy. *Behavior Analysis in Practice*, 13, 550–558.

Eshraghi, A. A., Li, C., Alessandri, M., Messinger, D. S., Eshraghi, R. S., Mittal, R. and Armstrong, F. D. 2020. COVID-19: Overcoming the challenges faced by individuals with autism and their families. *The Lancet. Psychiatry*, 7, 481–483.

Gasmi, A., Noor, S., Tippairote, T., Dadar, M., Menzel, A. and Bjørklund, G. 2020. Individual risk management strategy and potential therapeutic options for the COVID-19 pandemic. *Clinical Immunology (Orlando, Fla.)*, 215, 108409.

- Goedeke, S., Shepherd, D., Landon, J. and Taylor, S. 2019. How perceived support relates to child autism symptoms and care-related stress in parents caring for a child with autism. *Research in Autism Spectrum Disorders*, 60, 36–47.
- Hammons, A. J. and Fiese, B. H. 2011. Is frequency of shared family meals related to the nutritional health of children and adolescents? *Pediatrics*, 127, e1565–e1574.
- Hayes, S. A. and Watson, S. L. 2013. The impact of parenting stress: A meta-analysis of studies comparing the experience of parenting stress in parents of children with and without autism spectrum disorder. *Journal of Autism and Developmental Disorders*, 43, 629–642.
- Herle, M., Smith, A. D., Kininmonth, A. and Llewellyn, C. 2020. The role of eating behaviours in genetic susceptibility to obesity. *Current Obesity Reports*, 9, 512–521.
- Hill, K. and Webber, R. 2022. From pandemic to cost of living crisis: Low-income households in challenging times. Retrieved from [From-pandemic-to-cost-of-living-crisis-low-income-families-in-challenging-times-Full-report.pdf](#) (michaelharrison.org.uk)
- Huke, V., Turk, J., Saeidi, S., Kent, A. and Morgan, J. F. 2013. Autism spectrum disorders in eating disorder populations: A systematic review. *European Eating Disorders Review*, 21, 345–351.
- Johnson, S. L., Moding, K. J. and Bellows, L. L. 2018. Children's challenging eating behaviors: Picky eating, food neophobia, and food selectivity. In *Pediatric food preferences and eating behaviors*. Cambridge, US: Academic Press, pp.73–92.
- Jones, B. L. 2018. Making time for family meals: Parental influences, home eating environments, barriers and protective factors. *Physiology & Behavior*, 193, 248–251.
- Karpur, A., Vasudevan, V., Shih, A. and Frazier, T. 2022. Brief report: Impact of COVID-19 in individuals with autism spectrum disorders: Analysis of a national private claims insurance database. *Journal of Autism and Developmental Disorders*, 52, 2350–2356.
- Kawabe, K., Hosokawa, R., Nakachi, K., Yoshino, A., Horiuchi, F. and Ueno, S. I. 2020. Excessive and problematic internet use during the coronavirus disease 2019 school closure: Comparison between Japanese youth with and without autism spectrum disorder. *Frontiers in Public Health*, 8, 609347.
- Kim, S. Y., Chung, K. M. and Jung, S. 2018. Effects of repeated food exposure on increasing vegetable consumption in preschool children with autism spectrum disorder. *Research in Autism Spectrum Disorders*, 47, 26–35.
- Leddy, A. M., Weiser, S. D., Palar, K. and Seligman, H. 2020. A conceptual model for understanding the rapid COVID-19-related increase in food insecurity and its impact on health and healthcare. *The American Journal of Clinical Nutrition*, 112, 1162–1169.
- Lim, T., Tan, M. Y., Aishworiya, R. and Kang, Y. Q. 2020. Autism spectrum disorder and COVID-19: Helping caregivers navigate the pandemic. *Annals of the Academy of Medicine, Singapore*, 49, 384–386.
- Loopstra, R., Reeves, A. and Tarasuk, V. 2019. The rise of hunger among low-income households: An analysis of the risks of food insecurity between 2004 and 2016 in a population-based study of UK adults. *Journal of Epidemiology and Community Health*, 73, 668–673.
- Masi, A., Mendoza Diaz, A., Tully, L., Azim, S. I., Woolfenden, S., Efron, D. and Eapen, V. 2021. Impact of the COVID-19 pandemic on the well-being of children with neurodevelopmental disabilities and their parents. *Journal of Paediatrics and Child Health*, 57, 631–636.
- Moynihan, A. B., Tilburg, W. A. V., Igou, E. R., Wisman, A., Donnelly, A. E. and Mulcaire, J. B. 2015. Eaten up by boredom: Consuming food to escape awareness of the bored self. *Frontiers in Psychology*, 6, 369.
- Muscogiuri, G., Barrea, L., Savastano, S. and Colao, A. 2020. Nutritional recommendations for CoVID-19 quarantine. *European Journal of Clinical Nutrition*, 74, 850–851.
- Narzisi, A. 2020. Handle the autism spectrum condition during Coronavirus (COVID-19) stay at home period: Ten tips for helping parents and caregivers of young children. *Brain Sciences*, 10, 207.
- Nederkoorn, C., Jansen, A. and Havermans, R. C. 2015. Feel your food. The influence of tactile sensitivity on picky eating in children. *Appetite*, 84, 7–10.
- Parmet, W. E. and Sinha, M. S. 2020. Covid-19—the law and limits of quarantine. *The New England Journal of Medicine*, 382, e28.
- Pautz, H. and Damian Dempsey, D. 2022. Covid-19 and the crisis of food insecurity in the UK. *Contemporary Social Science*, 17, 434–449.
- Pavlopoulou, G., Wood, R. and Papadopoulos, C. 2020. Impact of Covid-19 on the experiences of parents and family carers of autistic children and young people in the UK. UCL Research Briefing ID: 4992C01D-4415-480D-8088-341CF13EE1EB.
- Philippe, K., Chabanet, C., Issanchou, S. and Monnery-Partris, S. 2021. Child eating behaviors, parental feeding practices and food shopping motivations during the COVID-19 lockdown in France: (How) did they change? *Appetite*, 161, 105132.
- Ratto, A. B., Anthony, B. J., Pugliese, C., Mendez, R., Safer-Lichtenstein, J., Dudley, K. M., Kahn, N. F., Kenworthy, L., Biel, M., Martucci, J. L. and Anthony, L. G. 2017. Lessons learned: Engaging culturally diverse families in neurodevelopmental disorders intervention research. *Autism*, 21, 622–634.
- Rogers, L. G., Magill-Evans, J. and Rempel, G. R. 2012. Mothers' challenges in feeding their children with autism spectrum disorder—Managing more than just picky eating. *Journal of Developmental and Physical Disabilities*, 24, 19–33.
- Sen, B. 2010. The relationship between frequency of family dinner and adolescent problem behaviors after adjusting for other family characteristics. *Journal of Adolescence*, 33, 187–196.
- Sharp, W. G., Burrell, T. L. and Jaquess, D. L. 2014. The Autism MEAL Plan: A parent-training curriculum to manage eating aversions and low intake among children with autism. *Autism*, 18, 712–722.
- Shloim, N., Edelson, L. R., Martin, N. and Hetherington, M. M. 2015. Parenting styles, feeding styles, feeding practices, and weight status in 4–12 year-old children: A systematic review of the literature. *Frontiers in Psychology*, 6, 1849.
- Smith, B. L. and Ludlow, A. K. 2022. An exploration of eating behaviours and caregiver mealtime actions of children with Tourette syndrome. *Frontiers in Pediatrics*, 10, 933154.
- Tokatly Latzer, I., Leitner, Y. and Karnieli-Miller, O. 2021. Core experiences of parents of children with autism during the COVID-19 pandemic lockdown. *Autism*, 25, 1047–1059.
- Trehanne, G. J. and Riggs, D. W. 2015. Ensuring quality in qualitative research. In Rohleder, P. and Lyons, A. (Eds.), *Qualitative research in clinical and health psychology*, 1st ed. London: Red Globe Press, pp.57–73.
- Troffholz, A., Hersch, D., Norderud, K., Berge, J. M. and Loth, K. 2022. Changes to the home food environment and parent feeding practices during the COVID-19 pandemic: A qualitative exploration. *Appetite*, 169, 105806.
- Vasa, R. A., Kreiser, N. L., Keefer, A., Singh, V. and Mostofsky, S. H. 2018. Relationships between autism spectrum disorder and intolerance of uncertainty. *Autism Research*, 11, 636–644.
- Westwood, H. and Tchanturia, K. 2017. Autism spectrum disorder in anorexia nervosa: An updated literature review. *Current Psychiatry Reports*, 19, 1–10.
- Wyse, R., Campbell, E., Nathan, N. and Wolfenden, L. 2011. Associations between characteristics of the home food environment and fruit and vegetable intake in preschool children: A cross-sectional study. *BMC Public Health*, 11, 938.
- Zickgraf, H. F., Richard, E., Zucker, N. L. and Wallace, G. L. 2022. Rigidity and sensory sensitivity: Independent contributions to selective eating in children, adolescents, and young adults. *Journal of Clinical Child and Adolescent Psychology*, 51, 675–687.