

“It’s always on the safe list”: Investigating experiential accounts of picky eating adults.

Gemma Fox¹

Helen Coulthard ¹

Iain Williamson¹

Debbie Wallis¹

¹Division of Psychology, Faculty of Health & Life Sciences, Hawthorn Building, De Montfort University, Leicester, LE1 9BH

Corresponding Author: Ms Gemma Fox, Division of Psychology, Faculty of Health & Life Sciences, Hawthorn Building, De Montfort University, Leicester, LE1 9BH,
gemma.fox2@my365.dmu.ac.uk

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Abstract

Previous research into severely restricted eating for reasons which are not cultural, medical, due to a lack of food or due to concerns about body image has focused predominantly on “picky/fussy eating” in children. Despite evidence that picky eating does continue into adulthood and recognition in the new diagnostic category Avoidant Restrictive Food Intake Disorder (ARFID) that problematically avoidant and restrictive patterns of eating affect people across the lifespan, relatively little is known about the challenges and consequences faced by older adolescents and adults. This research employs qualitative methods to explore the experience of living as an adult with picky eating behaviours. Semi-structured interviews were undertaken with thirteen adults who identify as picky eaters and eat a highly limited diet, as determined by a checklist food questionnaire. Data were analysed using interpretative phenomenological analysis (IPA). Two themes are presented in this paper: “Constructions of food” and “Motivators for and barriers to change”. These themes show the importance of how individuals perceive food, their diet and themselves, and implications for clinical practice and future research in light of these findings are considered.

Introduction

Picky eating is a widely used descriptive term which refers to a diet characterised by food refusal and food neophobia (Cardona Cano, Hoek & Bryant-Waugh, 2015). Whilst it is important to recognise that the two terms are not interchangeable (Cardona Cano et al., 2015), it has been suggested that picky eating may reflect a subclinical manifestation of some presentations of Avoidant Restrictive Food Intake Disorder (Kauer, Pelchat, Rozin, & Zickgraf, 2015). Avoidant Restrictive Food Intake Disorder (ARFID) is a new diagnostic category in the DSM 5, replacing the DSM IV category of ‘feeding disorder of infancy or early childhood’ (American Psychiatric Association, 2013). An individual with this disorder substantially restricts their food intake, and presents with associated physiological and/or psychosocial problems (APA, 2013). In order to meet the diagnostic criteria for ARFID, the restrictive eating behaviours must not be culturally sanctioned or due to either a lack of available food or a medical problem (e.g. allergy), the restrictions must not occur exclusively during the course of another eating disorder (either anorexia nervosa or bulimia nervosa), and there must be no evidence of disturbances of the individual’s perception of their body weight or shape (APA, 2013). Several aspects of research and theory in this area are both complex and contested (Taylor, Wernimont, Northstone & Emmett, 2015). Pliner and Hobden (1992) suggest that food neophobia is one end of a neophobia-neophilia continuum, and it may well be the case that picky eating can also be conceptualised in this way. There are generally two separate constructs that research in this area

has focused on: food neophobia and 'picky/fussy' eating. Food neophobia refers to avoidance of novel foods and is a normal development trend seen in children from about 18 months e.g. Pliner, 2008). , Alternatively 'picky/fussy' eating refers to rejection of foods that are familiar and/or unfamiliar to the individual (Dovey, Staples, Gibson & Halford, 2008). As 'picky/fussy' eating is not a clinical label, this type of eating behaviour is sometimes referred to as food faddiness/refusal (e.g. Gravestock, 2000), restrictive eating, selective eating, choosy eating, food avoidance emotional disorder, chronic food refusal, or sensory food aversions (Bryant Waugh, Markham, Kreipe, & Walsh, 2010). The label "picky eating" has been used throughout this paper, as this reflects both the label used in other research in the area (e.g. Thomson, Cummins, Brown & Kyle, 2015) and the way that participants in this study chose to identify themselves.

A severely restricted diet can have a number of effects on the individual. Physiologically, there is a risk of malnutrition: a study comparing picky and non-picky nine year old girls found that the picky eaters consumed significantly less fibre, vitamin E and folate than their non-picky counterparts, and were at higher risk of inadequate intake of vitamins C and E (Galloway, Fioritio, Lee & Birch, 2005). This could lead to lethargy, concentration problems, stunted growth, changes in weight, cell damage, a weakened immune system, and/or digestive problems (Bryant Waugh et al., 2010; Dovey et al., 2008); the latter is particularly problematic as it may cause the individual to associate a recently eaten food with abdominal pains caused by constipation, which may then lead to them cutting out that food and further restricting their diet (Taylor, Northstone, Wernimont & Emmett, 2016; Dovey et al., 2008). In addition to these potential physiological consequences, studies of picky children have shown a link between picky eating and anxiety (Farrow & Coulthard, 2012) and suggest that some picky children may face difficulties in peer relationships due to teasing about their eating habits (Bryant-Waugh, 2013). Adult picky eaters report more symptoms of depression and OCD than non-picky peers and are more likely to score within the clinical range for these disorders (Kauer et al., 2015; Wildes et al., 2012). The direction of the relationship between picky eating and OCD and/or depression remain unclear: as outlined by Kauer et al. (2015) it may be the case that the picky eating is a manifestation of OCD/depressive traits, or it may be that there are underlying personality risk factors for both OCD/depression and picky eating. In addition adult picky eaters show higher disgust sensitivity than normal eaters (Kauer et al., 2015), and previous studies have shown that disgust is closely linked to food rejection (Martins & Pliner, 2008). Research into picky eating in children has shown a link between picky eating and anxiety, sensory sensitivity, and more problem behaviours than non-picky peers (Farrow & Coulthard, 2012; Jacobi, Schmitz & Agras, 2008).

Although we have some understanding of the nutritional and developmental consequences of restricted eating it is apparent that there is limited research exploring the social and psychological consequences, although there is a recent move towards this (e.g. Ellis, Galloway, Webb & Martz, 2017). Previous research into this type of eating behaviour has focused predominantly on “picky/fussy eating” in children (Wildes et al., 2012), as this type of eating behaviour was categorised as ‘feeding disorders in infancy and early childhood’ in the DSM IV (APA, 2013). Existing literature suggests that there are potential physiological and psycho-social consequences amongst children (Galloway et al., 2005; Farrow & Coulthard, 2012; Bryant-Waugh, 2013), but little is known about the challenges and consequences that adults face. There is to date only one qualitative study examining the experiences of picky eating adults (Thompson et al., 2015) which highlights the specificities of a picky eater’s diet, such as the importance of sensory properties of the foods or the physical disgust response that participants reported in response to a food they do not eat. They also discuss the impact this restricted diet can have on the individual, from their perception of themselves to the impact on eating socially. However there were some methodological limitations with regard to this paper as the participants were a mix of self-identified picky eaters and accounts of parents who identified their adult children as picky eaters (Thompson et al., 2015). Thompson et al. (2015) identify a need for further research into the specific practices of picky eating adults and the impact this has on their lives: the present study aims to expand on this initial work by exploring the lived first-hand experience of adults with picky eating behaviours. This sample have been selected as this is a population of individuals who for a variety of reasons appear to be accessing and receiving very limited support for their eating problems and for whom interventions are arguably rather under-developed (Kauer et al., 2015), and so a better understanding of their perceptions and conceptualisations could begin to inform future interventions for those whose restricted diets are causing them significant concern.

Method

Participants

Participants were recruited through purposive sampling via an online support group for adult picky eaters which is used by people from several countries. An advert briefly detailing the purpose of the study and what participation would involve was posted onto this group, with contact details for the primary researcher and an invitation to contact the researcher for further information if they were interested in participation. The advert stated that the researcher was a PhD student interested in selective eating in adulthood, and continued as follows: “As you may know, Avoidant Restrictive

Food Intake Disorder (ARFID) is a newly recognised eating disorder which is characterised by a very restricted diet for reasons that are not cultural, religious, moral or relating to concerns around body weight and/or shape. However little is known about how having such a restricted diet affects the lives of adults. I am looking to interview people over the age of 16 who have a restricted diet (eating less than 20 types of food), to learn more about living with selective/picky eating as an adult. Please note that you do not have to have a diagnosis of ARFID in order to take part in this research.”

In total, thirteen individuals participated. Eleven participants were women (aged 18-67 years) and two were men (aged 22-32 years). Inclusion criteria were: self-identifying as a picky eater; eating a diet of twenty foods or fewer; aged sixteen or over; and able to speak English fluently. A formal diagnosis of ARFID was not a requirement, as ARFID is a newly recognised condition and it has been deemed unlikely that many adults who meet the diagnostic criteria will have an official diagnosis. We were also interested in understanding the difficulty of those who have significant difficulties but who may not reach the threshold of a clinical diagnosis. All participants who volunteered to take part met these inclusion criteria. Details of participants are included in Table 1 below.

Table 1: Participant information

Name (pseudonyms given)	Location	Gender	Age	Self-reported age at onset of avoidant-restrictive eating	Number of foods eaten	Types of foods eaten
Adele	USA - WA	Female	30	Approx 6 months.	13	White bread, cheese, pepperoni, baby back ribs, pizza (^), spaghetti (~), hamburgers, peanut butter and jelly (*), cereal (*), crackers, oranges, apples, bananas.
Ellie	Netherlands	Female	28	Approx 1 year old, with number of foods gradually reducing until 6 years.	9	Bread, cheese (*), peanut butter (*), cookies, pizza (*), fries (only a certain size/width), pasta (*~), chicken sate (*), whipped cream (~).
Amy	England	Female	18	18 months – 2 years.	12	White bread, pasta (only plain/with cheese), pizza (^), potatoes, cheese (*), crisps, sweets, chocolate, cake (only store brought), cereal (*), baked beans, garlic bread.
Natalie	England	Female	29	<2 years, at introduction of textured foods.	17	Bread, chips, garlic bread, crisps (*), ice cream (^), chocolate brownies, biscuits (^), pancakes, cakes (^),

						cereal (*), cereal bars (*), chocolate, cheesecake (^), waffles, custard, lemon curd, honey.
Irene	USA - OH	Female	41	2-3 years.	19	Bread, French fries, pizza (^), crispy bacon, crisps, popcorn, bologna, nuts, cereals, hot dogs (*), green beans, apples, bananas, raisins, peanut butter, chocolate (^), pretzels, crackers, protein bars (^).
Imogen	Scotland	Female	28	Birth	18	White bread, chicken, pork, beef, potatoes, carrots, parsnips, broccoli, pizza (^), mushrooms, tomato sauce (~), cheese, pasta, eggs (yolks not whites), tuna (*), rice, curry (^), cereal (*).
Maddie	Wales	Female	34	<2 years, at introduction of textured foods.	15	White bread, crisps (^), chocolate, pork (*), beef (*), cheese (only melted), cereal (*), chips (*), soup (~), cake (^), Yorkshire puddings, pancakes, ice cream (^), pasta (only plain), pizza (without sauce).
Emily	Israel	Female	30	Approx 3 years.	20	Bread (^), rice, potatoes, tomatoes, popcorn, onion rings, mushrooms, eggs, chocolate, ice cream, cheese (*), tofu, sunflower seeds, pickles, soup (^), chicken (*~), bissli (Israeli wheat snack), pasta, pizza (^), oranges.
Ellen	USA - FL	Female	27	Approx 5 – 7 years.	20	White bread, potatoes (*), raspberries, strawberries, bananas, tomato sauce, mushrooms (only cooked), onion rings (*), pasta (only plain), rice, fake meat

						(vegetarian alternatives, *), tofu, cheese (*), eggs, peanut butter, Nutella, cakes, cookies, sweets, nuts.
Andrew	USA - MA	Male	22	Approx 3-4 years, after introduction of “solid foods”.	13	Bread, tuna mayonnaise, crackers (*), popcorn, peanut butter, hot dogs, pancakes, waffles, muffins (^), cereal (*), ice cream (^), pastrami (*), mustard (*).
Annie	USA - NY	Female	67	<2 years, at introduction of textured foods.	14	Bread (*), French fries, pancakes, chicken, beef (~), peanut butter and jelly, eggs, cheese (*, only melted), pasta, pizza, soup (~), rice, tomato sauce, crackers (*), bananas.
Steven	Canada	Male	32	Birth – 6 months,	9	Bread, garlic bread, pancakes, waffles, crackers (*), crisps (*^), chocolate, sweets, cookies.
Olivia	USA - PA	Female	55	Birth – 6 months.	11	Bread, potatoes (*), pancakes, waffles, crisps, crackers, cheese (*), eggs, bacon, cakes, cookies.

Key: (*) only certain brands/types (^) only certain flavours (~) only home made

Materials and procedure

Prior to beginning the interview, participants were required to provide a free recall list of the foods that they eat, in order to ensure that those participating had a suitably restricted diet, identified for the purpose of this study as up to twenty different foods. Participants were advised on what was meant by different foods, for example that specific brands or flavours of the same foods (e.g. crisps) were not considered to be different foods. The decision to use a maximum of twenty foods to reflect a limited diet was made as there is not yet a single agreed-upon measure for what constitutes picky eating (Kauer et al, 2015), but recent research has used a maximum of either ten or twenty types of food to indicate a narrow range of foods in the diet (e.g. Kauer et al, 2015; Zickgraf et al, 2016). A semi-structured interview schedule was developed and piloted by the research team which comprised experts in eating disorders research and qualitative research methods. The interview schedule was composed of a series of open-ended questions relating to a range of relevant topics, with prompts used only as necessary. Questions covered areas such as participant's food preferences and choices, the impact of their eating behaviour on various areas of their lives, and their views on treatment and recovery. A copy of the interview schedule is available from the first author on request. Upon completing the interview, participants were given a debrief sheet, which contained contact details for the research team and some additional online support forums.

The study was advertised to potential participants on social media in a post containing brief details about the aim of the research, inclusion criteria, what participation would involve and contact details for the researchers. Those who wished for further information or wished to participate were invited to contact the lead researcher for a copy of the detailed information sheet and to arrange an interview where appropriate. The interview schedule was used to guide the interviews in a flexible and participant-driven fashion, in keeping with the inductive approach used (Smith & Eatough, 2007). Interviews lasted for approximately one hour, and were recorded and carried out in person at the participants' homes (N=1) or via voice over internet protocol (VOIP) software (N=12). Data were transcribed using basic Jefferson notation. Semi-structured interviews are typically considered to be the most appropriate form of data collection for Interpretative Phenomenological Analysis (IPA), as they allow the researcher to address a comprehensive range of aspects of the phenomenon under scrutiny whilst also exploring ample opportunity to discuss additional areas that arise (Smith & Eatough, 2007). Interviewing over the internet (rather than using phone or e-mail formats) facilitated inclusion of a geographically dispersed sample whilst maintaining the ability to ensure the collection of rich experiential data which form the currency of IPA. Participants were given the choice of using the audio or video mode of VOIP. This gave the participants an element of control in

how they took part in the research. Unlike email interviews the synchronous nature of interaction insured that the comfort and well-being of participants could be monitored, enhancing both methodological and ethical components of the research. (Opdenakker, 2006). The length of the interviews is indicative that participants felt appropriately comfortable to give a relatively detailed account of their experiences.

Analytical Approach

Interpretative Phenomenological Analysis was chosen as this approach frames participants as 'experts in their own experiences', and so can offer researchers a detailed understanding of a specific topic (Reid, Flowers & Larkin, 2005). As picky eating in adults is a poorly understood phenomenon, this was deemed to be an appropriate approach to take to provide a starting point for understanding this condition and how it affects those who live with it. It is important to note that IPA acknowledges that a direct account of lived experience can never be presented, but instead the participant's experiences are filtered and interpreted by the researchers (Willig, 2013), and so a reflexive account is a key part of such research (Reid et al, 2005). In this study, the interviews were conducted by the lead author, who does not have a restricted diet aside from choosing not to eat meat for ideological reasons. Some participants asked during the interview whether she was a picky eater as well, but this appeared to be asked to assess her understanding of the phenomenon (e.g. so that they knew how much depth they needed to explain their reactions to food in) as there was no noticeable change in the participants demeanour or willingness to answer questions once they had this knowledge. The data were analysed jointly by the interviewer and the remaining research team, who have a particular interest and expertise in food neophobia and picky eating in children, phenomenological methodologies, and eating pathology respectively. None of the research team consider themselves to be picky eaters, but some do avoid certain foods for ideological reasons. This lack of personal lived experience of the phenomenon at hand hopefully reduces the likelihood that during analysis themes were shaped in a way that would match our own experiences or expectations. Whilst we recognise that our own beliefs and previous research will have influenced our expectations and judgements, the use of a team of researchers with knowledge in multiple relevant areas should protect against any one researcher's expectations shaping the analysis of the data to an excessive degree.

Each transcript was analysed systematically and individually (i.e. as an idiographic case study) in the first instance, using the four stage process outlined by Willig (2013). The first stage involved reading the transcript several times and producing basic notes reflecting the initial ideas and observations. Second, simple themes were developed. Third, these simple themes were clustered and labelled,

becoming superordinate themes. These were reviewed alongside the transcript to ensure relevance. The fourth stage involved putting these superordinate themes into tables, with quotations from the text that illustrated each theme. This process was repeated with each transcript. Several themes were identified through our analysis. For the present analysis two themes are discussed in depth: “Constructions of food” and “Motivators for and barriers to change”. Each theme has a number of constituent subthemes. These themes have been selected for discussion as they focus on the ways in which participants perceive food and the implications these perceptions have on their attitudes towards seeking help to broaden their diet. We have chosen to focus on these two themes for several reasons. IPA theorists favour depth over breadth in analysis (Smith & Eatough, 2008). From a methodological perspective they allow us to present an analysis which we argue meets Elliot, Fischer and Rennie’s (1999) quality criteria of ensuring coherence of the overall analysis and that all sub-themes are grounded in sufficient examples to ensure clarity and credibility. From a more applied perspective we have selected themes that we believe make the most useful contribution to both understanding and potentially informing interventions to support people with these difficulties.

Theme 1 – Constructions of food

This theme relates to the ways in which participants perceive, describe and construct food. Accepted foods were viewed as safe with palatable properties whereas foods that were not consumed were viewed as hazardous, anxiety- or disgust-provoking and in some cases not recognised as ‘food’ at all. In many cases participants accepted the irrationality of their sensations and cognitions.

Safe foods

There was a trend amongst participants to describe the foods that they eat as “safe foods”:

“I mean potato is one of my like (.) major safe foods” – Amy

“...I usually only order them from New York pizza, because I know that one I can eat so even if it’s a pizza and it looks like I can eat it, I won’t eat until I’m (.) until I know it’s a safe food.” – Ellie

Describing the foods that they eat as safe implies that other foods are dangerous. Constructing food this way echoes findings from Bäckström, Pirttilä-Backman & Tuorila (2003), who found that people often use dichotomous thinking to characterise new and unfamiliar foods; indeed one of the five dichotomies identified from their research was safe/unsafe. This is illustrated below.

“...there’s the sort of secondary gain type thing (.) so what is positive that you get from (.) having this eating disorder (.) um (.) I suppose. There are (.) that’s unique to each

individual, I think for me it was the safety of sort of (.) knowing that I'm not gonna get food poisoning from chips (.) and um (.) not gonna get ill from chips." Natalie.

This then provides an internal logic for restricting their diet: new and unfamiliar foods are potentially hazardous and thus it is legitimate to reject them. Indeed, anticipation of harm following ingestion is one of the three key motivations for food rejection identified by Rozin & Fallon (1987). This reasoning is considered to be an adaptive response, developed to protect us from eating potentially toxic or harmful substances in our evolutionary past (Pliner, Pelchat & Grabski, 1993), and is a normal stage of child development (Dovey et al., 2008). Pliner (2008) describes this as a cognitive schema which biases people towards avoiding new foods. Rozin & Fallon (1987) specify that anticipation of harm does not necessarily mean physical harm, but can also include social harm, particularly damage to the individual's social standing. To illustrate what is meant by "damage to the individual's social standing", Rozin & Fallon (1987) give examples such as ordering a cheap wine at a fancy restaurant. As previous work has shown, many picky adults experience a strong disgust response to foods that they do not eat (Thompson et al., 2015); it may be the case that this disgust response itself makes eating these foods so aversive that it feels physically harmful or unsafe, or it may be that picky adults are concerned about potential social harm from others observing this strong disgust response and judging them for it. However, it should be noted that whilst it could be the case that this belief in safe and unsafe foods plays a causative role in the restricted diet, there is also the possibility that this view is used to justify the participants' limited diet and food neophobia.

This subtheme is also linked in with both predictability and routine, and the sensory properties of foods. For Natalie the ability to approach a new food needs to come from the safety and relative familiarity of an accepted food:

"I suppose that the (.) the foods that I've added to my diet, such as the garlic bread, that's been quite a recent addition, and someone said it- it's just like toast, so (...) because they're safe I suppose, they're the foods that I know have a um (.) a palatable texture for me." Natalie.

Foods must meet certain criteria to be considered "safe", and these criteria are often related to the sensory properties of the food, particularly texture. The use of these sensory properties as a determinant of what is or is not "safe" is not surprising; a number of studies have shown that sensory properties of foods are most often cited as the primary motivation for people's food choices (Martins & Pliner, 2005). Another factor often linked to whether a food is "safe" or not is familiarity. This will be discussed in more detail shortly, but it is worth noting here that research using non-neophobic participants has shown that novel foods are slightly more likely to be perceived as

dangerous than familiar foods, and that this perception of novel foods as dangerous is an important predictor of willingness to taste the food in question (Pliner et al, 1993).

Foods considered unpalatable

For some participants foods which were not “on the safe list” were not seen as edible at all, as illustrated in the extracts below.

“It’s sort of like, if you imagine going to other cultures where they’re eating bugs and worms and you’re like “ohhh (.) how do they do that?” That’s what most food looks like to me.” Adele.

The perception of certain types of food as inedible has been shown to exist among the general population. For example Tucker (2014) reports that the appearance of insects acts as a barrier to consumption in western societies, with participants in focus groups stating that eating insects would be more acceptable if they were in processed food (i.e. not recognisable as insects). This parallels Adele’s quotation above, and illustrates the impact that our visual perceptions of food can have on our food choices. Other participant’s take the idea of conceptualising food as inedible one step further, and compare foods that they do not eat to inedible substances (i.e. shoes) as opposed to things that are recognised as food in other cultures (i.e. insects).

“I don’t wanna eat that weird stuff you know to me it’s not food (.) for me I mean I realise its food and I realise people eat it but for me it’s not even food to me it’s just stuff you know?” Annie.

“It’s like, if you have something in front of you that you’ve never eaten before? Everybody else would say “hmm I’m gonna try it, I’m curious” to me it looks like (.) as edible as like (.) baked shoes. I’m like I’m not putting that in my mouth. I know it’s food but it just doesn’t register as food.” Ellie.

This comparison of unaccepted foods to inedible objects is likely to inhibit their motivations to change their diet, as they are conceptualising these foods as something that should never be eaten rather than something that potentially could be consumed. As with the idea of food as “safe” or “unsafe”, this conceptualisation of certain types of food as other non-food substances could be causative of or a justification for a restricted diet.

Acceptability due to similarity to familiar foods

Frequently the primary factor that determined whether a new food was deemed as “safe” or not to try was how similar it was to the foods that participants could already eat.

"Um (...) though I do like experimenting with different flavours in sort of a sponge cake. I might try (.) sort of (.) a lemon sponge cake with uh (.) orange flavoured icing for example, it's always with the safe (.) on the safe list, if you will." Natalie.

"...basically with tomatoes like when I started eating tomatoes it was more on the rational spectrum like when I think, when I started I was okay so I do eat ketchup and I do eat tomato sauce on pasta, so how different is that going to be?" Emily.

However, whilst sensory or taste familiarity helped to build a bridge to trying new foods, such attempts more commonly lead to rejection of the new food rather than incorporation into the diet.

"I probably wouldn't even consider trying it. I um (...) yeah, that's probably the end game, is that I wouldn't even consider it- unless it would be similar to something that I already ate? And then I might consider it, but probably still say no." Steven.

Preference for familiar foods is not specific to picky eaters, and has been shown to predict food choices in other populations (Wise, 2015). Furthermore, a lack of familiarity with a food has been shown to act as a barrier to consumption: Hoek et al. (2011) found that lack of familiarity with meat substitutes was the primary predictor of low consumption of these foods, whilst Baker, Shin & Kim (2016) state that edible insects are perceived as a high-risk food source in Western cultures due to unfamiliarity. Whilst developing the Food Choice Questionnaire, Steptoe, Pollard and Wardle (1995) observed a positive association between mood and the importance of familiarity of food, suggesting that those who need to regulate a stress response through their diet prefer familiar foods. Given that a number of participants reported anxiety in relation to food and eating, this may create a cycle whereby an individual seeks out familiar foods to relieve their anxiety, thus reinforcing the idea that new foods are "unsafe" and anxiety provoking.

The use of familiar foods and flavours could potentially play a role in the treatment of ARFID. This is suggested as a way of circumventing the schema described earlier (novel foods as unsafe to eat) by Pliner (2008), and research has shown that using a familiar flavour with a novel food (known as flavour-flavour learning) increases willingness to taste the food amongst non-picky children (Pliner & Stallberg-White, 2000), and has been shown to be effective in increasing children's acceptance of novel vegetables (Hausner, Olsen & Møller, 2012). This appears to be a strategy used by some of the participants in this study in order to diversify their diet, as can be seen in the above extract from Natalie where she describes experimenting by using different flavours when making cakes.

Food as a source of anxiety

Some participants described food that was not considered “safe” as a source of anxiety for them.

“...but then the plate is in front of me and it’s just like I freeze. I can’t. Even if I-if I- I had the bravery to think I can try it, then it’s in front of me and I can’t.” Ellie.

“I think um, I think in most cases I’m just literally afraid of it, I don’t wanna throw up or get sick or (.) it’ll taste bad and I’m just afraid of that.” Irene.

There are a number of possible explanations for this food related anxiety; for example it could be that the fear is related to the specific food itself (e.g. perceived risks or negative consequences of eating the food), the sensory aspects of the food (e.g. previous negative sensory experiences when trying either that food or a similar food), or it could be due to a more broad association between eating/mealtimes and negative past experiences. Whilst the participants here describe their anxiety as a result of food, more general anxiety may also play a role: state anxiety has been linked to food neophobia in adults (Pliner et al. 1993) and selective eating in children (Farrow & Coulthard, 2012). It is also worth noting that research has shown a link between picky eating in adults and OCD symptomology (Kauer et al. 2015). Again, the directionality of this apparent relationship is not yet clear, and Kauer et al. (2015) point out that it whilst it could be that the restricted eating is a manifestation of OCD symptoms (e.g. “I must avoid eating X otherwise something terrible will happen), it is also possible that there is an underlying risk factor predisposing people to both OCD and avoidant-restrictive eating.

Sensory properties of foods

All of the participants described accepting or rejecting foods based on their sensory properties.

Texture was often a key feature:

“Uh I don’t like (.) I have like a texture issue. So if something’s crunchy, it can’t be juicy, so like a vegetable has juice when you bite into it. And if something’s juicy it’s gotta be mushy, like tofu is like, practically like eggs. Uh (.) so I’m very particular with textures like that, and if things have skin and the skin gets stuck to my teeth I get really (.) I won’t whatever it is that I was eating that caused that...it’s mostly the texture cos I will eat like oils that are infused with vegetable flavours, and I love them, but I just can’t eat the actual vegetables.” Ellen.

However for Ellie, foods were rejected because of both texture and for being too complex in terms of taste:

“I can’t stand chunks, no soup, no macaroni like my mom made it, because it has all kind of chunks with different structures, different tastes and bleurgh! Hahaha, I just can’t eat that, so it’s all plain and very simple, and I’d rather have one taste, and it even

goes so far if I eat like bread with cheese, I don't eat bread with peanut butter in the same setting. I can eat both, but it's just one or it's the other. Not both." Ellie.

Visual and olfactory properties were also common sensory reasons for food not being palatable:

"I don't like cabbage, I don't like the way it smells. Erm, I don't like tomatoes cos (.) they look squishy and (.) horrible. Erm (.) different reasons. Usually cos of the way it looks or the way it smells, that's usually the two main ones." Imogen.

Sensory sensitivity is thought to play an important role in selective eating. Farrow and Coulthard (2012) suggest that sensory sensitivity explains the link they found between state anxiety and picky eating in children. Food selectivity is often an issue for children with autism, and this is thought to be due to sensory processing difficulties that these individuals face, particularly with regards to textures (Cermak, Curtin & Bandini, 2010). Avoiding certain textures of food can be part of what is known as 'oral defensiveness', a sub-section of 'tactile defensiveness' (Cermak et al., 2010), and has also been linked to selective eating in children with ADHD (Ghanizadeh, 2013). Although these difficulties with sensory processing are often related to developmental disorders, it is important to note that this is not always the case, and indeed amongst typically developing children tactile defensiveness has been linked to picky eating and food aversions (Smith et al., 2005). Interestingly, research using non-picky eating adults has shown that sensory properties are an important factor when choosing familiar foods, but not novel ones (Martins & Pliner, 2005), so this is not a factor that only picky eaters consider.

For some participants there was conflict between different sensory properties of the same food.

"...it's a taste and texture issue, it's not just that I don't like the taste of things, it als- like I can't get it down, texturally, like (.) for example, um, like I like the smell of french fries, but I can't eat them. Like the texture (.) I just can't do it." Steven.

"I've tried eating pizza a few times like kind of since then, and every time I've been unable to even like swallow a bite, it's just- it's so disgusting um (.) it's like, just gross, texturally? It smells fantastic, which is really frustrating, um but it just tastes like abhorrent, it's horrendous." Andrew.

This suggests that texture may play a larger role in food selection amongst picky eating adults than smell does. Previous research into food rejection supports this assumption. For example, Martins &

Pliner (2006) found that the aversive textural properties of a food are one of the key factors that people use to determine whether a food is disgusting or not, and research by Dovey et al. (2012) suggests that when asked to try a novel food, adult's decisions are more dependent on the tactile properties of the food whereas children are more reliant on visual cues.

Theme 2 – Motivators for and barriers to change

This theme covers both the factors that participants identify as motivators for changing their eating habits, and the barriers they face which hinder or outright prevent them from doing so. Participants often recognised that their behaviours had actual or potential consequences for health, well-being and relationships. However they also recognised a series of barriers to change including psychological and financial challenges as well as lack of appropriate support.

Health as a motivator

The primary reason participants gave for wanting to change their eating behaviours was concerns about their future health.

“...in the last year or so I've been trying to find more ways to get protein so that's why I started eating the fake meat more. And I was like “oh mushrooms would be good for that” so I've started eating those. Um just (.) mainly some ways to try to get healthier and have more variety, um (.) in the tiny ways that I can.” Ellen.

However, most of the participants reported tolerating psychological discomfort about the nutritional poverty of their diet and described needing concrete cues to action to motivate serious change. These were often loosely defined but could relate to a change in their own health status or a news story that suggested they were at elevated risk of serious ill-health:

“There is definitely a concern in the back of my mind though, like that y'know, if something's wrong and I have to make a change, that (.) that would probably be the only things that would actually make me (.) really put a tonne of effort into trying new foods. Is that if there was a health scare that it was like you've gotta be eating this like if a doctor sat me down and was like “you know what? Something's gotta change.” Steven.

“Y'know the fact that I'm absolutely fine and healthy, that y'know there's nothing wrong with me, then I've kind of (.) changed my mind towards it. Y'know if something happened and I went downhill then yeah definitely I'd go and see someone, try and get something sorted. But because I'm absolutely fine (.) I don't see a problem with it.” Amy.

Interestingly, none of the participants reported any concerns about their current health, regardless of age. Indeed a number of American participants reported having annual physical

examinations which, they argued, showed that they were in good health and therefore this made it easier to resist change in their eating. Research has shown that “picky” children tend to weigh less than their non-picky counterparts and may be at higher risk of deficiencies in certain vitamins and minerals (Galloway et al., 2005; Xue et al., 2015), but there is currently no clear evidence regarding the long term health effects of most types of picky eating (Mascola, Bryson & Agras, 2010). The lack of significant evidence suggesting there are definite health risks to an individual eating a restricted diet may explain the viewpoints shown by Amy and Steven above; although they feel that health would be a strong enough motivator to prompt them to make changes, it is not currently an issue for them so they do not need to make any immediate changes.

Social motivators

Social factors especially around being able to eat out with friends and partners also acted as a potential motivator for change, particularly in being more open about trying foods:

“...so (.) that’s why I did- with the last person I was seeing I did like (.) made an effort to, when he suggested something for me to eat, I would try to like (.) taste it and go around it or (.) I wouldn’t make it on my own, not before it and not after it, but I would be inclined of trying it.” Emily.

“...it’s getting more difficult now that I’m getting older. Because (...) when I was younger everyone just wanted to go out and have pizza and fries and burgers and (.) that was a lot easier for me cos I could always find something to eat, whereas now (.) y’know people wanna go out... and have a nice dinner and I’m (.) the person who’s at like a five star restaurant ordering a side dish and (.) then I end up starving afterwards and no one else is hungry cos they obviously ate a whole meal, um. It’s (.) it’s getting to be a lot worse as I get older. So (...) I wish that I could do something about it.” Ellen.

These comments reflect the findings from Wilde et al.’s (2012) study, which showed that adults who identified as picky eaters reported significantly more social anxiety in relation to eating than both normal eaters and individuals with diagnosed eating disorders. Many participants felt that their social functioning had not been significantly impaired by their eating during childhood, but as they had gotten older it had become more and more of a problem. This is illustrated above by Ellen, who describes how she feels that it was more acceptable to eat the foods she considers as “safe” at a younger age, but as an adult there is an increased pressure to eat different types of foods. Research has shown that the motivations underlying food choices change with age, with adults more likely to choose foods based on “natural content” and “ethical considerations” as they age (Steptoe et al., 1995). As

an adult the way an individual eats holds cultural significance, and typically is not solely about sustenance or convenience. In some cases, this was a strong enough motivator for change that they did attempt to increase the variety in their diet (e.g. Emily), although for many it was seen more as a potential secondary benefit if they were able to make changes rather than it being the driving factor behind it.

Financial barriers

As well as motivators for change, participants identified practical barriers preventing change. Unlike other chronic conditions participants in all countries felt reliant on private treatment which most could not afford.

"I met a girl who was like a life coach and a hypnotherapist and things like that [yeah], so I said financially, I said once I get myself straight I will come and see you and I had I think about 3 or 4 sessions but then when you've got a child its money, money, money all the time [yeah], I have to put it on the back burner...With hypnotherapy for me the biggest barrier was the cost...I mean even though it was only £35 a session a week, that's £140 a month..." Maddie.

"It does seem to depend on who can afford it, and that's a problem, and it's gonna be a problem over here as well cos it's not obviously a huge deal. That's why they don't recognise it. So it'll end up specialist clinics and they'll charge you for it (.) if you're over a certain age." Imogen.

As is shown here, the cost of treatment was an issue for participants in both the USA and the UK despite the differences in the respective healthcare systems. Although the UK has a national health service (NHS) which is free at the point of use, there is currently no provision for recognition of picky eating or diagnosis of ARFID available through this service, and no information about picky eating in adults available through the official NHS website (www.nhs.uk). Whilst there is some provision for children with a diagnosis of ARFID (National Feeding and Eating Disorders Clinic, 2017) any adult seeking treatment for picky eating or ARFID in the UK would have no option but to pay for treatment privately. Research into barriers to treatment for other eating disorders has shown that financial concerns were the most frequently cited barrier (Cachelin, Rebeck, Veisel & Striegel-Moore, 2001).

Lack of faith in professionals

Another barrier which was frequently reported by participants was a lack of faith in health care professionals understanding their problem or taking them seriously.

“...with the NHS they are absolutely useless quite frankly because they don’t know what it is, they don’t know where to send you, they don’t know who to go to, so yeah there is a barrier there because they don’t understand it, they don’t know what to do with you.”
Maddie.

“I don’t think anybody has any awareness of it. Medical professionals- I mean I’m in the medical profession erm (.) I don’t think anybody has a clue.” Imogen.

“Oh yeah there’s a big thing, and that is that you’re not taken seriously. That’s (.) that stops you from seeking help. I mean, if you know that they’re gonna be like “well you’re just gonna have to step up and do it” then you don’t go tell your story to someone.”
Ellie.

A number of participants had attempted to seek help but reported negative experiences that made them reluctant to return. As mentioned above, for participants from the UK there is no information or provision available on the NHS for adults with picky eating or ARFID, and so even if the participant’s General Practitioner had an understanding of the problem, they would not have anywhere to refer them to for diagnosis and treatment. In Cachelin et al.’s (2001) study exploring barriers to treatment for women with other eating disorders, the belief that “others can’t help” was the third most frequently endorsed reason not to seek treatment, followed by “fear of being labelled”, as is mirrored by Ellie’s quote above.

Fear of change

Some participants were conflicted when it came to making changes to their diet; although they reported wanting to change their diet and were able to explain the motivations to do so, the barriers discussed above were not enough in and of themselves to prevent change. Instead, for some participants, the fear of actually going through with treatment and making changes proved to be the main barrier.

“...my fear would be you're going to try and do something to change me (.) its funny I just thought about hypnotism I don't wanna be like subconsciously forced to eat something (laughs) you know what I mean that’s frightening I mean the thought of somebody influencing my subconscious to eat something I don't wanna eat is not something I really wanna do...” Annie.

Disempowerment regarding recovery

Some participants were not able to imagine making the changes that they wanted to make.

“I can’t even imagine it, it’s- it’s (.) just so (.) chances are it would involve so much stress and trauma and everything else it’s something I don’t even think about.” Irene.

"...when it comes to the food issue it's like this big brick wall I know what I want and I don't want anything else (.) and nothings going to change it (.) and that's why I wouldn't even consider trying to change it because its not gonna happen (.) it sounds bad but its true..." Annie.

Visualising change has been shown to be an important factor in changing behaviour around diet and eating. For example, Adriaanse, de Ridder and de Wit (2009) showed that planning specifically how one will substitute unhealthy snacking for healthy snacking (which includes visualising the new behaviour) can help increase consumption of healthy snacks. The participants' inability to imagine themselves having made that change may speak to a lack of self-efficacy with regards to their ability to make such changes, which may in turn explain why none of the participants had been able to significantly broaden their diet. Self efficacy has been shown to play an important role in changing health behaviours as those with low self-efficacy are more likely to focus on their perceived inabilities rather than attending to the task at hand (Strecher, DeVellis, Becker & Rosenstock, 1986).

"So I don't think to be honest that I'm ever going to change if I'm being honest, I mean I'd like to but I don't foresee it happening in my life time, I don't foresee any cure or anything like that for it." Maddie.

Whilst Irene and Annie are able to conceptualise changing their diet as something that they would have to do themselves, Maddie describes the idea of changing as being entirely out of her control, absolving her of any responsibility for changing her diet as it is down to others to find a "cure". Research has shown that adults with an internal locus of control are more likely to engage in a number of health behaviours, including eating a healthier diet (Cobb-Clark, Kassenboehmer & Schurer, 2014); however, the relationship between locus of control and dietary change is less clear (AbuSabha & Achterberg, 1997). Recent research into adults who need to make dietary changes due to diabetes suggests that people with an external locus of control are less likely to identify both barriers to change and strategies to overcome any barriers than those with an internal locus of control, which implies that they are less likely to be able to make changes to their diet without adequate support (McLaughlin, Whitlock, Lester & McGraw, 2017). This difference in locus of control may explain why some participants appear to avoid change due to a fear of the process, while others avoid change as they simply do not think it is a possibility.

Importance of routine and predictability

For some participants this fear of change may link with the importance placed on routine and predictability.

“I’m just trying to think what I identified as the secondary gain for me (...) I think it was mainly about that safety and security. And having some predictability as well. So even now, even though my sort of main meal if you will is (.) chips and garlic bread I have chips one night garlic bread the next. So there is that predictability about what I’m gonna have.” Natalie.

Natalie is discussing how having that predictability was identified as a secondary gain of her eating behaviour when she was attending therapy. Participants often explained that foods they were able to eat would be predictable, and for some participants even variation in their “safe foods” would make it unacceptable:

“...everything has to be like processed, I don’t eat a lot of organic food and I don’t like the concept of freshly made food, I’d rather have it be processed cos I (.) I know what I’m getting then and everything’s gonna taste the same cos there’s no variants and it’s packaged and processed.” Ellen.

“Um, I guess the texture thing, with foods I do eat, is (.) if I (.) am used to consuming it with a certain texture, I expect that texture.” Andrew.

This may reflect the link seen in children between “picky eating” and Autistic Spectrum Disorder (e.g. Schreck, Williams & Smith, 2004; Sharp et al., 2013), which is thought to be due to sensory processing issues often reported in autistic individuals (Cermak et al., 2010). Among the diagnostic criteria for Autism Spectrum Disorder (ASD) are “insistence on sameness” and “inflexible adherence to routines” (Stoppelbein, Biasini, Pennick & Greening, 2016). Although none of the participants in the current study disclosed having ASD, it is possible that many adults with avoidant-restrictive eating are on the autistic spectrum, and show more autistic traits than the general population, such as this need for predictability and routine with regards to their food. Alternatively, this need for predictability may hint at a way of managing day to day anxiety: a structured routine is often a key component of self-care for people with anxiety difficulties or other mental health problems (Lucock et al., 2011).

Discussion

Two of the themes identified from the data have been discussed in detail in this paper:

“constructions of foods” and “motivators for and barriers to change”. Participants had certain ways of constructing food, such as the idea of “safe” foods: that is, foods that they felt able to eat. Often other foods which were not constructed as “safe” acted as a source of anxiety for participants. This anxiety around “unsafe” foods suggests that participants reject these foods as they perceive a level of danger from them, whereas research has shown that non-picky eaters are more likely to reject foods based on the perceived sensory properties of the food (Pelchat, Pliner & Grabski, 1993, as cited in Martins & Pliner, 2006). This difference in perceptions of food may be linked to the physical disgust response to “unsafe” foods that was reported by participants both in this study and in work by Thompson et al. (2015), or may be due to a cognitive schema in place amongst picky eaters, as suggested by Pliner (2008). Interestingly, a number of participants referred to foods that they did not eat as being unrecognisable as food at all, instead perceiving these things as inedible and comparing them to items that “normal” eaters would not eat either, such as shoes. Whether a food was “safe” or not often depended on its sensory properties, such as texture or taste, or how similar it was to a food that was already acceptable or “safe”. Previous research has shown that an individual’s willingness to eat a specific food is often influenced by their familiarity with it (e.g. Hoek et al., 2011). Furthermore, the use of familiar flavours and flavour-flavour learning has been shown to increase children’s willingness to try new foods (Pliner & Stallberg-White, 2000), and was a strategy used by many participants when they were trying to add a new food to their diet. This technique could be considered by professionals working with picky eating adults to encourage them to broaden their diet (Pliner, 2008), particularly if used alongside other behaviour change techniques that have been shown to be effective in the long term for adults making changes to their diets, such as Motivational Interviewing and Self-Monitoring of eating behaviour (Samdal, Eide, Barth, Williams & Meland, 2017).

Participants identified some common motivators for change, such as concerns about their future health and concerns about the effect that their eating had on their social life; the latter point in particular supports findings from Wildes et al. (2012) who suggested that the social consequences of picky eating are particularly salient for adults. However these motivating factors were countered with a number of barriers to changing their diet, some of which were objective factors like finances, and some were more subjective, such as a fear of change. The fear of change that many participants reported may reflect a lack of self-efficacy with regards to making dietary changes, and is a point for clinicians to consider when working with adults with avoidant-restrictive eating. The importance attached to the routine and predictability of accepted foods may mirror links seen in children between Autistic traits and a restricted diet (e.g. Sharp et al. 2013), particularly when considered in

conjunction with the importance participants placed on the textures of foods (Cermak et al., 2010). However it is important to note that none of the participants in this study reported a diagnosis of Autism, and although they may have been further along the autistic spectrum alternative explanations for this must also be considered. For example the desire for a predictable and structured routine may be a way for participants to avoid the food related anxiety that many reported when confronted with “unsafe” foods, or to manage increased levels of anxiety in general (Lucock et al., 2011).

There are some limitations to consider in the current study: particularly relevant is that this study did not use a clinical sample, but self-identified picky eaters who met the inclusion criteria of eating fewer than twenty different foods. It was made clear in the wording of the recruitment advertisement that a clinical diagnosis was not necessary, as this was not the focus of the research. This wording may have put off those who do have a diagnosis, and so these findings may not be applicable to a clinical population. However research with non-clinical samples such as this may still have important implications for those with a clinical diagnosis of ARFID, whether due to the existence of picky eating on a continuum or due to picky eating reflecting a sub-clinical manifestation of ARFID, as has been suggested by Kauer et al (2015). Furthermore although participants in the present study did not have a clinical diagnosis of ARFID, this may be as a result of the current lack of provision for adults with ARFID rather than participants not meeting the diagnostic criteria. Participants were asked to provide a list of the foods that they did eat, but this was reliant on a single self-report rather than observations or food diaries taken over a longer period of time, and so may not be the most reliable measure of the participants’ actual diets. Additionally although no participant disclosed any current eating disorders, diagnoses of other eating disorders were not ruled out in this study, so it is possible that participants may have had another eating disorder which impacted on their views of food and eating.

This is the first study to look at the lived experience of encountering foods in a sample of adults with picky eating, and leads us to a greater understanding of how they conceptualise foods and view the prospect of changing their diet. It is clear that for some, the motivation to change is simply not enough to overcome the negative cognitive and affective responses to foods not on the safe list. Whilst recognising that this study was conducted with a small sample of picky eaters, it is clear that the health professionals encountered by participants so far are not fully informed about picky eating in adulthood and the impact that it can have. This paper has illustrated the importance of increasing awareness and understanding of this problem. In a recent review of the literature around picky eating, Cardona Caro, Hoeik & Bryant Waugh (2015) identify a need for the development of treatment strategies; this paper has identified a number of areas that clinicians could consider when

working with picky eating adults who wish to broaden their diet. For instance, aspects such as the clients level of anxiety around changing their behaviour and level of faith in healthcare practitioners are likely to have an impact on their engagement with treatment. The treatment plan should consider factors like the client's level of self-efficacy and locus of control, as this is likely to inform how much support the client will need when making dietary changes (McLaughlin et al., 2017).

Whilst this paper has provided a starting point for understanding the experiences of such individuals, further research is needed to expand on many of the points made in this paper. For example, a broader study of the potential link between sensory sensitivity, autistic traits, anxiety and picky eating in adults could help to explain the need for predictability and routine that many participants in the current study described. It has been suggested that there are different subtypes of ARFID, with varying aetiologies, some of which are based on sensory processing, some on food avoidance and some from a lack of interest in eating (Chatoor & Gariban, 2004), and recent research appears to support this idea (e.g. Norris et al., 2018). Our paper examined shared attributes in adult picky eating may have more relevance to some of these eating patterns than others, and future research would benefit from examining these subtypes separately. The potential impact of underlying motivations and factors such as locus of control and self-efficacy on successfully making dietary changes would be another interesting area for future research, as research that suggests that these factors will play a role in treatment has not focused on dietary change in picky eating, but usually for medical reasons (e.g. Cobb-Clark et al., 2014; McLaughlin et al., 2017). This, alongside further research into the barriers to making these changes (particularly examining whether the barriers identified in the current study are generalizable to the majority of picky eating adults) would provide important information for healthcare professionals to use when working with adult picky eaters to encourage them to broaden their diets.

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